

Heléns

ENGLISH



Heléns - your business partner

There are plenty of wholesale tube suppliers. But there's only one Heléns and we are different. You can call us tube specialists if you like.

Our customers no longer need a traditional tube wholesaler or stockist. Although tubes themselves are an important part of their products, and in many cases, critical. Imagine that a little tube can mean so much in the world! The fact of the matter is that no longer will any tube do. The good old honest tube has changed and become a piece of the jigsaw in a larger context – one which improves your product, makes your production more efficient and adds flexibility to your organisation. Contributing in the end to make your company more competitive.

Business ideas in a changing world

Heléns sells tubes and steel products. We make every effort to co-operate with customers who set high demands on their partner suppliers.

For these customers we shall provide

- tailored production support
- a made-to-measure stock
- aggressive development support

Ordinary tubes

At Heléns you will find a unique stock of tubes, with the right breadth and depth. This means that availability and our readiness to deliver what you want are extremely high. The result is that we usually have just what you want.


Unusual tubes

Now we are no longer talking about standard tubes, this is more a matter of special purpose products. You decide exactly what you need – shape, surface, process treatment, coatings, weldability, strength, etc. We propose and you decide.

Europe's leading supplier

Our clients know that through us they gain access to all the important European tube manufacturers. We are specialised, major players in the industry and are part of the Benteler Group. This makes us an interesting partner for all tube manufacturers.





Tubes that holds your day together

Heléns

Products

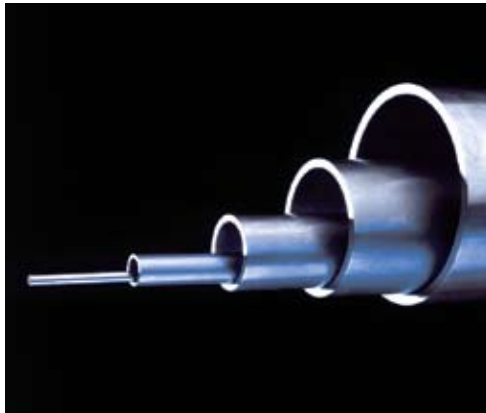
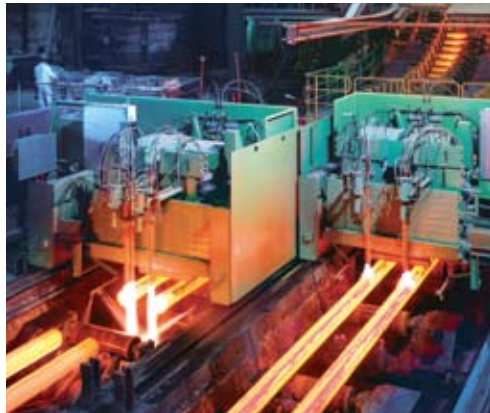
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Stainless

Stainless for a tougher demands

Our stainless assortment is used in applications where extra high demands are made on tubes, tube fittings and bars.

Our tubes are available in the usual stainless grades: EN 1.4301, EN 1.4307, EN 1.4541, EN 1.4404, EN 1.4571 and EN 1.4432.



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Stainless

Welded process tubes

Welded stainless process tubes and dairy tubes, tolerance according to EN-ISO 1127, welding factor v = 1.0 in fabrication lengths of 6000 mm -0/+100 mm.

| Dimension | | Weight kg/m | Norm | Type | EN 1.4307 EN 1.4301 | EN 1.4541 | EN 1.4404 | EN 1.4571 | EN 1.4432 |
|-----------|------|----------------|------------|--------------|------------------------|-----------|-----------|-----------|-----------|
| OD | Wall | | | | | | | | |
| 6.00 | 1.00 | 0.125 | EN 10217-1 | annealed | | | | X | |
| 6.00 | 1.00 | 0.125 | EN 10217-1 | annealed | X | | | | |
| 6.00 | 1.00 | 0.125 | EN 10217-1 | annealed | | | X | | |
| 6.00 | 1.00 | 0.125 | EN 10217-2 | annealed | | X | | | |
| 8.00 | 1.00 | 0.175 | EN 10217-1 | not annealed | | | | X | |
| 8.00 | 1.00 | 0.175 | EN 10217-1 | annealed | X | | | X | |
| 8.00 | 1.00 | 0.175 | EN 10217-1 | annealed | | | X | | |
| 8.00 | 1.00 | 0.175 | EN 10217-2 | annealed | | X | | | |
| 8.00 | 1.50 | 0.244 | EN 10217-1 | annealed | X | | | | |
| 8.00 | 1.50 | 0.244 | EN 10217-2 | annealed | | X | | | |
| 10.00 | 1.00 | 0.225 | EN 10217-1 | annealed | | X | | | |
| 10.00 | 1.00 | 0.225 | EN 10217-1 | annealed | X | | | | |
| 10.00 | 1.00 | 0.225 | EN 10217-1 | annealed | | | X | | |
| 10.00 | 1.00 | 0.225 | EN 10217-2 | annealed | | | | X | |
| 10.00 | 1.50 | 0.319 | EN 10217-1 | annealed | X | | | | |
| 10.00 | 1.50 | 0.319 | EN 10217-1 | annealed | | X | | | |
| 10.00 | 1.50 | 0.319 | EN 10217-1 | annealed | | | | X | |
| 12.00 | 1.00 | 0.275 | EN 10217-1 | not annealed | | | | X | |
| 12.00 | 1.00 | 0.275 | EN 10217-1 | annealed | X | | | | |
| 12.00 | 1.00 | 0.275 | EN 10217-1 | annealed | | | X | | |
| 12.00 | 1.00 | 0.275 | EN 10217-2 | annealed | X | | | | |
| 12.00 | 1.00 | 0.275 | EN 10217-2 | annealed | | X | | | |
| 12.00 | 1.00 | 0.275 | EN 10217-2 | annealed | | | | X | |
| 12.00 | 1.50 | 0.394 | DIN 11850 | CDK400 | X | | | | |
| 12.00 | 1.50 | 0.394 | EN 10217-1 | annealed | X | | | | |
| 12.00 | 1.50 | 0.394 | EN 10217-1 | annealed | | X | | | |
| 12.00 | 1.50 | 0.394 | EN 10217-1 | not annealed | | | | X | |
| 12.00 | 1.50 | 0.394 | EN 10217-1 | annealed | | | | X | |
| 12.00 | 1.50 | 0.394 | EN 10217-1 | annealed | X | | | | |
| 12.00 | 2.00 | 0.501 | EN 10217-1 | annealed | X | | | | |
| 14.00 | 1.00 | 0.326 | EN 10217-1 | not annealed | | | | X | |
| 14.00 | 1.00 | 0.326 | EN 10217-2 | annealed | X | | | | |
| 14.00 | 1.00 | 0.326 | EN 10217-2 | annealed | | | | X | |
| 14.00 | 1.50 | 0.470 | EN 10217-1 | annealed | X | | | | |
| 14.00 | 1.50 | 0.470 | EN 10217-1 | annealed | | | | X | |
| 14.00 | 2.00 | 0.601 | EN 10217-1 | annealed | X | | | | |
| 14.00 | 2.00 | 0.601 | EN 10217-1 | annealed | | | | X | |

Dairy tubes DIN 11850
CCm not annealed, pickled
CCb not annealed, bright
BC annealed
CD not annealed, ground
BD annealed, ground

K240, K320, K400, K800 state grain size for any grinding

| Dimension | | Weight kg/m | Norm | Type | EN 1.4307 EN 1.4301 | EN 1.4541 | EN 1.4404 | EN 1.4571 | EN 1.4432 |
|-----------|------|----------------|------------|--------------|------------------------|-----------|-----------|-----------|-----------|
| OD | Wall | | | | | | | | |
| 15.00 | 1.00 | 0.351 | EN 10217-1 | annealed | X | | | | |
| 15.00 | 1.00 | 0.351 | EN 10217-1 | annealed | | | X | | |
| 15.00 | 1.00 | 0.351 | EN 10217-2 | annealed | | | | X | |
| 15.00 | 1.50 | 0.507 | EN 10217-1 | annealed | | X | | | |
| 15.00 | 1.50 | 0.507 | EN 10217-1 | not annealed | | | | X | |
| 15.00 | 1.50 | 0.507 | EN 10217-1 | annealed | | | | X | |
| 15.00 | 1.50 | 0.507 | EN 10217-1 | annealed | X | | | | |
| 15.00 | 2.00 | 0.651 | EN 10217-1 | annealed | X | | | | |
| 16.00 | 1.00 | 0.376 | EN 10217-1 | not annealed | X | | | | |
| 16.00 | 1.00 | 0.376 | EN 10217-1 | not annealed | | | | X | |
| 16.00 | 1.00 | 0.376 | EN 10217-1 | annealed | X | | | | |
| 16.00 | 1.00 | 0.376 | EN 10217-1 | annealed | | | X | | |
| 16.00 | 1.00 | 0.376 | EN 10217-2 | annealed | | X | | | |
| 16.00 | 1.00 | 0.376 | EN 10217-2 | annealed | | | | X | |
| 16.00 | 1.50 | 0.545 | EN 10217-1 | annealed | | | | X | |
| 16.00 | 1.50 | 0.545 | EN 10217-1 | annealed | X | | | | |
| 16.00 | 2.00 | 0.701 | EN 10217-1 | annealed | | | | X | |
| 16.00 | 2.00 | 0.701 | EN 10217-1 | annealed | X | | | | |
| 17.20 | 1.60 | 0.625 | EN 10217-1 | annealed | X | | | | |
| 17.20 | 2.00 | 0.761 | EN 10217-1 | annealed | X | | | | |
| 17.20 | 2.00 | 0.761 | EN 10217-1 | annealed | | X | | | |
| 17.20 | 2.00 | 0.761 | EN 10217-1 | annealed | | | | X | |
| 17.20 | 2.30 | 0.858 | EN 10217-1 | annealed | X | | | | |
| 17.20 | 2.35 | 0.874 | EN 10217-1 | not annealed | | | | X | |
| 18.00 | 1.00 | 0.426 | DIN 11850 | BC | X | | | | |
| 18.00 | 1.00 | 0.426 | DIN 11850 | CDK400 | X | | | | |
| 18.00 | 1.00 | 0.426 | DIN 11850 | BC | | | X | | |
| 18.00 | 1.00 | 0.426 | EN 10217-1 | not annealed | X | | | | |
| 18.00 | 1.00 | 0.426 | EN 10217-1 | not annealed | | | | X | |
| 18.00 | 1.00 | 0.426 | EN 10217-1 | annealed | X | | | | |
| 18.00 | 1.00 | 0.426 | EN 10217-1 | annealed | | | X | | |
| 18.00 | 1.00 | 0.426 | EN 10217-2 | annealed | X | | | | |
| 18.00 | 1.00 | 0.426 | EN 10217-2 | annealed | | X | | | |
| 18.00 | 1.00 | 0.426 | EN 10217-2 | annealed | | | | X | |
| 18.00 | 1.50 | 0.620 | DIN 11850 | CC m | X | | | | |
| 18.00 | 1.50 | 0.620 | DIN 11850 | CDK400 | X | | | | |
| 18.00 | 1.50 | 0.620 | DIN 11850 | BC | | | X | | |
| 18.00 | 1.50 | 0.620 | DIN 11850 | CC m | | | X | | |
| 18.00 | 1.50 | 0.620 | DIN 11850 | BC | | | | X | |
| 18.00 | 1.50 | 0.620 | DIN 11850 | CC m | | | | X | |
| 18.00 | 1.50 | 0.620 | EN 10217-1 | annealed | X | | | | |
| 18.00 | 1.50 | 0.620 | EN 10217-1 | annealed | | | X | | |
| 18.00 | 1.50 | 0.620 | EN 10217-2 | annealed | X | | | | |
| 18.00 | 1.50 | 0.620 | EN 10217-2 | annealed | | X | | | |
| 18.00 | 1.50 | 0.620 | EN 10217-2 | annealed | | | | X | |
| 18.00 | 2.00 | 0.801 | EN 10217-1 | annealed | X | | | | |
| 18.00 | 2.00 | 0.801 | EN 10217-1 | annealed | | X | | | |
| 18.00 | 2.00 | 0.801 | EN 10217-2 | annealed | | | | X | |
| 19.00 | 1.50 | 0.657 | DIN 11850 | BC | X | | | | |
| 19.00 | 1.50 | 0.657 | DIN 11850 | CC m | X | | | | |
| 19.00 | 1.50 | 0.657 | DIN 11850 | BC | | | X | | |

Dairy tubes DIN 11850
CCm not annealed, pickled
CCb not annealed, bright
BC annealed
CD not annealed, ground
BD annealed, ground

K240, K320, K400, K800 state grain size for any grinding

| Dimension | | Weight kg/m | Norm | Type | EN 1.4307 EN 1.4301 | EN 1.4541 | EN 1.4404 | EN 1.4571 | EN1.4432 |
|-----------|------|----------------|------------|---------------|------------------------|-----------|-----------|-----------|----------|
| OD | Wall | | | | | | | | |
| 28.00 | 1.50 | 0.995 | DIN 11850 | BC | X | | | | |
| 28.00 | 1.50 | 0.995 | DIN 11850 | CC m | X | | | | |
| 28.00 | 1.50 | 0.995 | DIN 11850 | CDK400 | X | | | | |
| 28.00 | 1.50 | 0.995 | DIN 11850 | BC | | | X | | |
| 28.00 | 1.50 | 0.995 | DIN 11850 | CC m | | | X | | |
| 28.00 | 1.50 | 0.995 | DIN 11850 | BC | | | | X | |
| 28.00 | 1.50 | 0.995 | DIN 11850 | CC m | | | | X | |
| 28.00 | 1.50 | 0.995 | EN 10217-1 | annealed | | X | | | |
| 28.00 | 1.50 | 0.995 | EN 10217-1 | annealed | X | | | | |
| 28.00 | 1.50 | 0.995 | EN 10217-1 | annealed | | | X | | |
| 28.00 | 2.00 | 1.302 | EN 10217-1 | annealed | X | | | | |
| 28.00 | 2.00 | 1.302 | EN 10217-1 | annealed | | | | X | |
| 29.00 | 1.50 | 1.033 | DIN 11850 | BC | X | | | | |
| 29.00 | 1.50 | 1.033 | DIN 11850 | CC m | X | | | | |
| 29.00 | 1.50 | 1.033 | DIN 11850 | BC | | | X | | |
| 29.00 | 1.50 | 1.033 | DIN 11850 | CC m | | | X | | |
| 30.00 | 1.00 | 0.726 | EN 10217-1 | annealed | X | | | | |
| 30.00 | 1.50 | 1.070 | EN 10217-1 | annealed | X | | | | |
| 30.00 | 1.50 | 1.070 | EN 10217-1 | not annealed | | | X | | |
| 30.00 | 2.00 | 1.402 | DIN 11850 | BC | X | | | | |
| 30.00 | 2.00 | 1.402 | DIN 11850 | BC | | | X | | |
| 30.00 | 2.00 | 1.402 | EN 10217-1 | not annealed | X | | | | |
| 30.00 | 2.00 | 1.402 | EN 10217-1 | an. K320 | X | | | | |
| 30.00 | 2.00 | 1.402 | EN 10217-1 | not annealed | | | | X | |
| 30.00 | 2.00 | 1.402 | EN 10217-1 | annealed | | | | | X |
| 30.00 | 2.00 | 1.402 | EN 10217-2 | annealed | X | | | | |
| 30.00 | 2.00 | 1.402 | EN 10217-2 | annealed | | | X | | |
| 30.00 | 2.00 | 1.402 | EN 10217-2 | annealed | | X | | | |
| 30.00 | 2.00 | 1.402 | EN 10217-2 | annealed | | | | X | |
| 30.00 | 2.50 | 1.722 | EN 10217-1 | annealed | X | | | | |
| 30.00 | 3.00 | 2.028 | EN 10217-1 | annealed | | | | X | |
| 31.80 | 1.25 | 0.956 | DIN 11850 | BC | X | | | | |
| 32.00 | 1.50 | 1.146 | EN 10217-1 | annealed | X | | | | |
| 32.00 | 1.50 | 1.146 | EN 10217-1 | annealed | X | | | | |
| 32.00 | 2.00 | 1.502 | EN 10217-1 | annealed | X | | | | |
| 33.70 | 1.60 | 1.286 | EN 10217-1 | not annealed | X | | | | |
| 33.70 | 1.60 | 1.286 | EN 10217-1 | not annealed | | | | X | |
| 33.70 | 2.00 | 1.588 | EN 10217-1 | not annealed | X | | | | |
| 33.70 | 2.00 | 1.588 | EN 10217-1 | an. K320 | X | | | | |
| 33.70 | 2.00 | 1.588 | EN 10217-1 | not annealed | | X | | | |
| 33.70 | 2.00 | 1.588 | EN 10217-1 | not ann. pick | | | | X | |
| 33.70 | 2.00 | 1.588 | EN 10217-1 | not ann. pick | | | X | | |
| 33.70 | 2.00 | 1.588 | EN 10217-1 | annealed | X | | | | |
| 33.70 | 2.00 | 1.588 | EN 10217-2 | annealed | X | | | | |
| 33.70 | 2.00 | 1.588 | EN 10217-2 | annealed | | | X | | |
| 33.70 | 2.00 | 1.588 | EN 10217-2 | annealed | | X | | | |
| 33.70 | 2.00 | 1.588 | EN 10217-2 | annealed | | | | X | |
| 33.70 | 2.00 | 1.588 | EN 10217-2 | annealed | | | | | |
| 33.70 | 2.00 | 1.588 | EN 10217-2 | annealed | | | | | |
| 33.70 | 2.60 | 2.025 | EN 10217-1 | not annealed | X | | | | |
| 33.70 | 2.60 | 2.025 | EN 10217-1 | an. K320 | X | | | | |
| 33.70 | 2.60 | 2.025 | EN 10217-1 | not annealed | | X | | | |

Dairy tubes DIN 11850

| | |
|-----|-----------------------|
| CCm | not annealed, pickled |
| CCb | not annealed, bright |
| BC | annealed |
| CD | not annealed, ground |
| BD | annealed, ground |

K240, K320, K400, K800 state grain size for any grinding

| Dimension | | Weight kg/m | Norm | Type | EN 1.4307 EN 1.4301 | EN 1.4541 | EN 1.4404 | EN 1.4571 | EN1.4432 |
|-----------|------|----------------|------------|--------------|------------------------|-----------|-----------|-----------|----------|
| OD | Wall | | | | | | | | |
| 33.70 | 2.60 | 2.025 | EN 10217-2 | annealed | X | | | | |
| 33.70 | 2.60 | 2.025 | EN 10217-2 | annealed | | X | | | |
| 33.70 | 2.60 | 2.025 | EN 10217-2 | annealed | | | | X | |
| 33.70 | 3.20 | 2.444 | EN 10217-1 | not annealed | X | | | | |
| 33.70 | 3.20 | 2.444 | EN 10217-1 | annealed | X | | | | |
| 33.70 | 3.20 | 2.444 | EN 10217-1 | not annealed | | X | | | |
| 33.70 | 3.20 | 2.444 | EN 10217-2 | annealed | | X | | X | |
| 33.70 | 3.20 | 2.444 | EN 10217-2 | annealed | | | | X | |
| 33.70 | 3.25 | 2.478 | EN 10217-1 | annealed | | | X | | |
| 34.00 | 1.00 | 0.826 | DIN 11850 | BC | X | | | | |
| 34.00 | 1.00 | 0.826 | DIN 11850 | CC m | X | | | | |
| 34.00 | 1.00 | 0.826 | DIN 11850 | CDK400 | X | | | | |
| 34.00 | 1.00 | 0.826 | DIN 11850 | BC | | | | X | |
| 34.00 | 1.50 | 1.221 | DIN 11850 | BC | X | | | | |
| 34.00 | 1.50 | 1.221 | DIN 11850 | BDK400 | X | | | | |
| 34.00 | 1.50 | 1.221 | DIN 11850 | CC m | X | | | | |
| 34.00 | 1.50 | 1.221 | DIN 11850 | CC m | | | X | | |
| 35.00 | 1.50 | 1.258 | DIN 11850 | BC | X | | | | |
| 35.00 | 1.50 | 1.258 | DIN 11850 | CC m | X | | | | |
| 35.00 | 1.50 | 1.258 | DIN 11850 | BC | | | X | | |
| 35.00 | 1.50 | 1.258 | DIN 11850 | CC m | | | X | | |
| 35.00 | 1.50 | 1.258 | EN 10217-1 | not annealed | | | | X | |
| 35.00 | 1.50 | 1.258 | EN 10217-1 | annealed | | | | X | |
| 35.00 | 1.50 | 1.258 | EN 10217-1 | annealed | X | | | | |
| 35.00 | 2.00 | 1.653 | EN 10217-1 | annealed | X | | | | |
| 35.00 | 2.00 | 1.653 | EN 10217-1 | annealed | | | | X | |
| 38.00 | 1.50 | 1.371 | EN 10217-1 | not annealed | X | | | | |
| 38.00 | 1.50 | 1.371 | EN 10217-1 | not annealed | | | X | | |
| 38.00 | 1.50 | 1.371 | EN 10217-1 | annealed | X | | | | |
| 38.00 | 2.00 | 1.803 | EN 10217-1 | annealed | X | | | | |
| 38.00 | 2.00 | 1.803 | EN 10217-1 | not annealed | | | | X | |
| 38.10 | 1.25 | 1.153 | DIN 11850 | BC | X | | | | |
| 38.10 | 1.65 | 1.506 | DIN 11850 | BC | | | X | | |
| 40.00 | 1.00 | 0.977 | DIN 11850 | BC | X | | | | |
| 40.00 | 1.00 | 0.977 | DIN 11850 | CC m | X | | | | |
| 40.00 | 1.00 | 0.977 | DIN 11850 | CDK400 | X | | | | |
| 40.00 | 1.00 | 0.977 | DIN 11850 | CC m | | | X | | |
| 40.00 | 1.00 | 0.977 | DIN 11850 | BC | | | | X | |
| 40.00 | 1.00 | 0.977 | DIN 11850 | CC m | | | | X | |
| 40.00 | 1.50 | 1.446 | DIN 11850 | BC | X | | | | |
| 40.00 | 1.50 | 1.446 | DIN 11850 | CC m | X | | | | |
| 40.00 | 1.50 | 1.446 | DIN 11850 | CDK400 | X | | | | |
| 40.00 | 1.50 | 1.446 | DIN 11850 | BC | | | X | | |
| 40.00 | 1.50 | 1.446 | DIN 11850 | CC m | | | X | | |
| 40.00 | 1.50 | 1.446 | DIN 11850 | BC | | | | X | |
| 40.00 | 1.50 | 1.446 | DIN 11850 | CC m | | | | X | |
| 40.00 | 2.00 | 1.903 | EN 10217-1 | not annealed | X | | | | |
| 40.00 | 2.00 | 1.903 | EN 10217-1 | annealed | X | | | | |
| 40.00 | 2.00 | 1.903 | EN 10217-1 | an. K320 | X | | | | |

Dairy tubes DIN 11850

| | |
|-----|-----------------------|
| CCm | not annealed, pickled |
| CCb | not annealed, bright |
| BC | annealed |
| CD | not annealed, ground |
| BD | annealed, ground |

K240, K320, K400, K800 state grain size for any grinding

| Dimension | | Weight kg/m | Norm | Type | EN 1.4307 EN 1.4301 | EN 1.4541 | EN 1.4404 | EN 1.4571 | EN 1.4432 |
|-----------|------|----------------|------------|---------------|------------------------|-----------|-----------|-----------|-----------|
| OD | Wall | | | | | | | | |
| 40.00 | 2.00 | 1.903 | EN 10217-1 | not annealed | | | | X | |
| 40.00 | 2.00 | 1.903 | EN 10217-1 | annealed | | | | X | |
| 41.00 | 1.50 | 1.484 | DIN 11850 | BC | X | | | | |
| 41.00 | 1.50 | 1.484 | DIN 11850 | CC m | X | | | | |
| 41.00 | 1.50 | 1.484 | DIN 11850 | BC | | | X | | |
| 41.00 | 1.50 | 1.484 | DIN 11850 | CC m | | | X | | |
| 42.00 | 1.50 | 1.521 | EN 10217-1 | annealed | X | | | | |
| 42.40 | 1.60 | 1.635 | EN 10217-1 | not annealed | X | | | | |
| 42.40 | 1.60 | 1.635 | EN 10217-1 | not annealed | | | | X | |
| 42.40 | 2.00 | 2.023 | EN 10217-1 | not ann. pick | X | | | | |
| 42.40 | 2.00 | 2.023 | EN 10217-1 | an. K320 | X | | | | |
| 42.40 | 2.00 | 2.023 | EN 10217-1 | not annealed | | X | | | |
| 42.40 | 2.00 | 2.023 | EN 10217-1 | annealed | | X | | | |
| 42.40 | 2.00 | 2.023 | EN 10217-1 | not annealed | | | | X | |
| 42.40 | 2.00 | 2.023 | EN 10217-1 | annealed | X | | | | |
| 42.40 | 2.00 | 2.023 | EN 10217-1 | annealed | | | X | | |
| 42.40 | 2.00 | 2.023 | EN 10217-2 | annealed | X | | | | |
| 42.40 | 2.00 | 2.023 | EN 10217-2 | annealed | | | X | | |
| 42.40 | 2.00 | 2.023 | EN 10217-2 | annealed | | X | | | |
| 42.40 | 2.00 | 2.023 | EN 10217-2 | annealed | | | | X | |
| 42.40 | 2.00 | 2.023 | EN 10217-2 | annealed | | X | | | |
| 42.40 | 2.60 | 2.591 | EN 10217-1 | not annealed | X | | | | |
| 42.40 | 2.60 | 2.591 | EN 10217-1 | an. K320 | X | | | | |
| 42.40 | 2.60 | 2.591 | EN 10217-1 | not annealed | | X | | | |
| 42.40 | 2.60 | 2.591 | EN 10217-1 | not annealed | | | | X | |
| 42.40 | 2.60 | 2.591 | EN 10217-2 | annealed | X | | | | |
| 42.40 | 2.60 | 2.591 | EN 10217-2 | annealed | | X | | | |
| 42.40 | 2.60 | 2.591 | EN 10217-2 | annealed | | | | X | |
| 42.40 | 3.20 | 3.141 | EN 10217-1 | not annealed | X | | | | |
| 42.40 | 3.20 | 3.141 | EN 10217-1 | annealed | X | | | | |
| 42.40 | 3.20 | 3.141 | EN 10217-1 | not annealed | | X | | | |
| 42.40 | 3.20 | 3.141 | EN 10217-1 | not annealed | | | | X | |
| 42.40 | 3.20 | 3.141 | EN 10217-1 | not annealed | | | | X | |
| 42.40 | 3.20 | 3.141 | EN 10217-2 | annealed | | | X | | |
| 42.40 | 3.20 | 3.141 | EN 10217-2 | annealed | | | | X | |
| 42.40 | 3.25 | 3.186 | EN 10217-1 | annealed | | | X | | |
| 43.00 | 1.50 | 1.559 | EN 10217-1 | not annealed | | | | X | |
| 43.00 | 1.50 | 1.559 | EN 10217-1 | not ann. pick | | | X | | |
| 44.50 | 1.50 | 1.615 | EN 10217-1 | not ann. pick | X | | | | |
| 44.50 | 1.50 | 1.615 | EN 10217-2 | annealed | X | | | | |
| 44.50 | 2.00 | 2.128 | EN 10217-1 | annealed | | | | | X |
| 44.50 | 2.00 | 2.128 | EN 10217-2 | annealed | X | | | | |
| 44.50 | 2.00 | 2.128 | EN 10217-2 | annealed | | X | | | |
| 44.50 | 2.00 | 2.128 | EN 10217-2 | annealed | | | | X | |
| 44.50 | 2.00 | 2.128 | EN 10217-2 | annealed | | | | X | |
| 44.50 | 2.60 | 2.728 | EN 10217-1 | not annealed | | | | X | |
| 48.30 | 1.60 | 1.871 | EN 10217-1 | not annealed | X | | | | |
| 48.30 | 1.60 | 1.871 | EN 10217-1 | not annealed | | | | X | |
| 48.30 | 2.00 | 2.319 | EN 10217-1 | not annealed | | X | | | |
| 48.30 | 2.00 | 2.319 | EN 10217-1 | not annealed | | | | X | |
| 48.30 | 2.00 | 2.319 | EN 10217-1 | not ann. pick | X | | | | |
| 48.30 | 2.00 | 2.319 | EN 10217-1 | not ann. pick | | | X | | |
| 48.30 | 2.00 | 2.319 | EN 10217-2 | annealed | X | | | | |
| 48.30 | 2.00 | 2.319 | EN 10217-2 | annealed | | | X | | |

Dairy tubes DIN 11850

CCm not annealed, pickled
CCb not annealed, bright
BC annealed
CD not annealed, ground
BD annealed, ground

K240, K320, K400, K800 state grain size for any grinding

| Dimension | | Weight kg/m | Norm | Type | EN 1.4307 EN 1.4301 | EN 1.4541 | EN 1.4404 | EN 1.4571 | EN 1.4432 |
|-----------|------|----------------|------------|---------------|------------------------|-----------|-----------|-----------|-----------|
| OD | Wall | | | | | | | | |
| 48.30 | 2.00 | 2.319 | EN 10217-2 | annealed | | | | X | |
| 48.30 | 2.60 | 2.975 | EN 10217-1 | not annealed | X | | | | |
| 48.30 | 2.60 | 2.975 | EN 10217-1 | an. K320 | X | | | | |
| 48.30 | 2.60 | 2.975 | EN 10217-1 | not annealed | | X | | | |
| 48.30 | 2.60 | 2.975 | EN 10217-1 | not annealed | | | | X | |
| 48.30 | 2.60 | 2.975 | EN 10217-2 | annealed | X | | | | |
| 48.30 | 2.60 | 2.975 | EN 10217-2 | annealed | | X | | | |
| 48.30 | 2.60 | 2.975 | EN 10217-2 | annealed | | | | X | |
| 48.30 | 3.20 | 3.614 | EN 10217-1 | not annealed | X | | | | |
| 48.30 | 3.20 | 3.614 | EN 10217-1 | annealed | X | | | | |
| 48.30 | 3.20 | 3.614 | EN 10217-1 | not annealed | | | | X | |
| 48.30 | 3.20 | 3.614 | EN 10217-1 | annealed | | | | X | |
| 48.30 | 3.20 | 3.614 | EN 10217-2 | annealed | | X | | | |
| 48.30 | 3.20 | 3.614 | EN 10217-2 | annealed | | | | X | |
| 48.30 | 3.25 | 3.666 | EN 10217-1 | not annealed | | X | | | |
| 48.30 | 3.60 | 4.029 | EN 10217-1 | not annealed | X | | | | |
| 48.30 | 3.60 | 4.029 | EN 10217-1 | not annealed | | | | X | |
| 48.30 | 3.60 | 4.029 | EN 10217-2 | annealed | | | | X | |
| 50.00 | 1.50 | 1.822 | EN 10217-1 | not annealed | X | | | | |
| 50.00 | 1.50 | 1.822 | EN 10217-1 | an. K320 | X | | | | |
| 50.00 | 1.50 | 1.822 | EN 10217-1 | annealed | X | | | | |
| 50.00 | 2.00 | 2.404 | EN 10217-1 | not annealed | X | | | | |
| 50.00 | 2.00 | 2.404 | EN 10217-1 | not annealed | | X | | | |
| 50.00 | 2.00 | 2.404 | EN 10217-1 | annealed | X | | | | |
| 50.00 | 3.00 | 3.531 | EN 10217-1 | not annealed | X | | | | |
| 50.80 | 1.25 | 1.551 | DIN 11850 | BC | X | | | | |
| 50.80 | 1.50 | 1.852 | DIN 11850 | BC | X | | | | |
| 50.80 | 1.65 | 2.031 | DIN 11850 | BC | | | X | | |
| 51.00 | 2.00 | 2.454 | EN 10217-1 | annealed | X | | | | |
| 52.00 | 1.00 | 1.277 | DIN 11850 | BC | X | | | | |
| 52.00 | 1.00 | 1.277 | DIN 11850 | CC m | X | | | | |
| 52.00 | 1.00 | 1.277 | DIN 11850 | BC | | | X | | |
| 52.00 | 1.50 | 1.897 | DIN 11850 | BC | X | | | | |
| 52.00 | 1.50 | 1.897 | DIN 11850 | CC m | X | | | | |
| 52.00 | 1.50 | 1.897 | DIN 11850 | CDK400 | X | | | | |
| 52.00 | 1.50 | 1.897 | DIN 11850 | BC | | | X | | |
| 52.00 | 1.50 | 1.897 | DIN 11850 | CC m | | | X | | |
| 52.00 | 1.50 | 1.897 | DIN 11850 | BC | | | | X | |
| 52.00 | 1.50 | 1.897 | DIN 11850 | CC m | | | | X | |
| 52.00 | 1.50 | 1.897 | DIN 11850 | CC m | | | | X | |
| 53.00 | 1.50 | 1.934 | DIN 11850 | BC | X | | | | |
| 53.00 | 1.50 | 1.934 | DIN 11850 | CC m | X | | | | |
| 53.00 | 1.50 | 1.934 | DIN 11850 | BC | | | X | | |
| 53.00 | 1.50 | 1.934 | DIN 11850 | CC m | | | X | | |
| 53.00 | 1.50 | 1.934 | EN 10217-1 | not annealed | | | | X | |
| 53.00 | 1.50 | 1.934 | EN 10217-1 | not ann. pick | | | X | | |
| 54.00 | 2.00 | 2.604 | DIN 11850 | BC | X | | | | |
| 54.00 | 2.00 | 2.604 | DIN 11850 | BC | | | X | | |
| 54.00 | 2.00 | 2.604 | EN 10217-1 | not ann. pick | X | | | | |
| 54.00 | 2.00 | 2.604 | EN 10217-1 | not annealed | | X | | | |
| 54.00 | 2.00 | 2.604 | EN 10217-1 | not annealed | | | | X | |
| 54.00 | 2.00 | 2.604 | EN 10217-1 | not an. K320 | | | | X | |

Dairy tubes DIN 11850

CCm not annealed, pickled
CCb not annealed, bright
BC annealed
CD not annealed, ground
BD annealed, ground

K240, K320, K400, K800 state grain size for any grinding

| Dimension | | Weight kg/m | Norm | Type | EN 1.4307 EN 1.4301 | EN 1.4541 | EN 1.4404 | EN 1.4571 | EN 1.4432 |
|-----------|------|----------------|------------|---------------|------------------------|-----------|-----------|-----------|-----------|
| OD | Wall | | | | | | | | |
| 54.00 | 2.00 | 2.604 | EN 10217-1 | annealed | | | | | X |
| 55.00 | 1.50 | 2.009 | EN 10217-1 | not annealed | X | | | | |
| 55.00 | 2.00 | 2.654 | EN 10217-1 | not annealed | X | | | | |
| 57.00 | 2.00 | 2.754 | EN 10217-1 | annealed | X | | | | |
| 57.00 | 2.90 | 3.929 | EN 10217-1 | annealed | X | | | | |
| 57.00 | 3.00 | 4.056 | EN 10217-1 | annealed | | | | X | |
| 60.30 | 1.60 | 2.352 | EN 10217-1 | not annealed | X | | | | |
| 60.30 | 1.60 | 2.352 | EN 10217-1 | not annealed | | | | X | |
| 60.30 | 1.60 | 2.352 | EN 10217-1 | annealed | X | | | | |
| 60.30 | 2.00 | 2.920 | EN 10217-1 | not annealed | | X | | | |
| 60.30 | 2.00 | 2.920 | EN 10217-1 | annealed | | X | | | |
| 60.30 | 2.00 | 2.920 | EN 10217-1 | not annealed | | | | X | |
| 60.30 | 2.00 | 2.920 | EN 10217-1 | not ann. pick | X | | | | |
| 60.30 | 2.00 | 2.920 | EN 10217-1 | not ann. pick | | | X | | |
| 60.30 | 2.00 | 2.920 | EN 10217-2 | annealed | X | | | | |
| 60.30 | 2.00 | 2.920 | EN 10217-2 | annealed | | X | X | | |
| 60.30 | 2.00 | 2.920 | EN 10217-2 | annealed | | | | X | |
| 60.30 | 2.60 | 3.757 | EN 10217-1 | not annealed | X | | | | |
| 60.30 | 2.60 | 3.757 | EN 10217-1 | not annealed | | | | X | |
| 60.30 | 2.60 | 3.757 | EN 10217-2 | annealed | X | X | | | |
| 60.30 | 2.60 | 3.757 | EN 10217-2 | annealed | | | | | X |
| 60.30 | 2.65 | 3.757 | EN 10217-1 | not annealed | | X | | | |
| 60.30 | 2.90 | 4.168 | EN 10217-1 | not annealed | | X | | | |
| 60.30 | 2.90 | 4.168 | EN 10217-1 | not annealed | | | | X | |
| 60.30 | 2.90 | 4.168 | EN 10217-2 | annealed | X | | | | |
| 60.30 | 2.90 | 4.168 | EN 10217-2 | annealed | | X | | | |
| 60.30 | 2.90 | 4.168 | EN 10217-2 | annealed | | | | X | |
| 60.30 | 3.00 | 4.168 | EN 10217-1 | not annealed | | | | X | |
| 60.30 | 3.60 | 5.111 | EN 10217-1 | not annealed | | X | | | |
| 60.30 | 3.60 | 5.111 | EN 10217-2 | annealed | | X | | | |
| 60.30 | 3.60 | 5.111 | EN 10217-2 | annealed | | | | X | |
| 60.30 | 3.65 | 5.178 | EN 10217-1 | not annealed | X | | | | |
| 60.30 | 3.65 | 5.178 | EN 10217-1 | not annealed | | | | X | |
| 63.50 | 1.50 | 2.329 | DIN 11850 | BC | X | | | | |
| 63.50 | 1.50 | 2.329 | DIN 11850 | CC m | X | | | | |
| 63.50 | 1.50 | 2.329 | DIN 11850 | BC | | | X | | |
| 63.50 | 1.65 | 2.555 | DIN 11850 | BC | | | X | | |
| 63.50 | 1.65 | 2.555 | DIN 11850 | CC m | | | X | | |
| 65.00 | 1.50 | 2.385 | EN 10217-1 | not annealed | X | | | | |
| 65.00 | 2.00 | 3.155 | EN 10217-1 | not annealed | X | | | | |
| 68.00 | 1.50 | 2.498 | EN 10217-1 | not annealed | | | | X | |
| 70.00 | 1.50 | 2.573 | DIN 11850 | BC | X | | | | |
| 70.00 | 1.50 | 2.573 | DIN 11850 | CC m | X | | | | |
| 70.00 | 2.00 | 3.405 | DIN 11850 | BC | X | | | | |
| 70.00 | 2.00 | 3.405 | DIN 11850 | CC m | X | | | | |
| 70.00 | 2.00 | 3.405 | DIN 11850 | CDK400 | X | | | | |
| 70.00 | 2.00 | 3.405 | DIN 11850 | BC | | | X | | |
| 70.00 | 2.00 | 3.405 | DIN 11850 | CC m | | | X | | |
| 70.00 | 2.00 | 3.405 | DIN 11850 | BC | | | | X | |

Dairy tubes DIN 11850

CCm not annealed, pickled
CCb not annealed, bright
BC annealed
CD not annealed, ground
BD annealed, ground

K240, K320, K400, K800 state grain size for any grinding

| Dimension | | Weight kg/m | Norm | Type | EN 1.4307 EN 1.4301 | EN 1.4541 | EN 1.4404 | EN 1.4571 | EN 1.4432 |
|-----------|------|----------------|------------|---------------|------------------------|-----------|-----------|-----------|-----------|
| OD | Wall | | | | | | | | |
| 70.00 | 2.00 | 3.405 | EN 10217-1 | not ann. pick | X | | | | |
| 70.00 | 2.00 | 3.405 | EN 10217-1 | annealed | | | | | X |
| 70.00 | 2.90 | 4.873 | EN 10217-1 | annealed | X | | | | |
| 76.10 | 1.50 | 2.802 | DIN 11850 | BC | X | | | | |
| 76.10 | 1.65 | 3.076 | DIN 11850 | BC | | | X | | |
| 76.10 | 2.00 | 3.711 | DIN 11850 | BC | X | | | | |
| 76.10 | 2.00 | 3.711 | DIN 11850 | CC m | X | | | | |
| 76.10 | 2.00 | 3.711 | EN 10217-1 | not annealed | | X | | | |
| 76.10 | 2.00 | 3.711 | EN 10217-1 | annealed | | X | | | |
| 76.10 | 2.00 | 3.711 | EN 10217-1 | not annealed | | | | X | |
| 76.10 | 2.00 | 3.711 | EN 10217-1 | not ann. pick | X | | | | |
| 76.10 | 2.00 | 3.711 | EN 10217-1 | not ann. pick | | | X | | |
| 76.10 | 2.00 | 3.711 | EN 10217-2 | annealed | | | X | | |
| 76.10 | 2.00 | 3.711 | EN 10217-2 | annealed | | X | | | |
| 76.10 | 2.00 | 3.711 | EN 10217-2 | annealed | | | | X | |
| 76.10 | 2.30 | 3.711 | EN 10217-2 | annealed | | X | | | |
| 76.10 | 2.30 | 4.250 | EN 10217-2 | annealed | | | | X | |
| 76.10 | 2.60 | 4.785 | EN 10217-1 | not annealed | X | | | | |
| 76.10 | 2.60 | 4.785 | EN 10217-1 | not annealed | | | | X | |
| 76.10 | 2.60 | 4.785 | EN 10217-2 | annealed | | X | | | |
| 76.10 | 2.60 | 4.785 | EN 10217-2 | annealed | | | | X | |
| 76.10 | 2.90 | 5.315 | EN 10217-1 | not annealed | X | | | | |
| 76.10 | 2.90 | 5.315 | EN 10217-1 | not annealed | | X | | | |
| 76.10 | 2.90 | 5.315 | EN 10217-1 | not annealed | | | | X | |
| 76.10 | 2.90 | 5.315 | EN 10217-2 | annealed | | X | | | |
| 76.10 | 2.90 | 5.315 | EN 10217-2 | annealed | | | | X | |
| 76.10 | 3.00 | 5.491 | EN 10217-1 | not annealed | X | | | | |
| 76.10 | 3.60 | 6.535 | EN 10217-1 | not annealed | X | | | | |
| 76.10 | 3.60 | 6.535 | EN 10217-1 | not annealed | | | | X | |
| 80.00 | 1.50 | 2.948 | EN 10217-1 | annealed | X | | | | |
| 83.00 | 1.50 | 3.061 | EN 10217-1 | not annealed | | | | X | |
| 84.00 | 2.00 | 4.107 | EN 10217-1 | not ann. pick | X | | | | |
| 84.00 | 2.00 | 4.107 | EN 10217-1 | not ann. pick | | | | | X |
| 85.00 | 2.00 | 4.157 | DIN 11850 | BC | X | | | | |
| 85.00 | 2.00 | 4.157 | DIN 11850 | CC m | X | | | | |
| 85.00 | 2.00 | 4.157 | DIN 11850 | CDK400 | X | | | | |
| 85.00 | 2.00 | 4.157 | DIN 11850 | BC | | | X | | |
| 85.00 | 2.00 | 4.157 | DIN 11850 | CC m | | | X | | |
| 85.00 | 2.00 | 4.157 | DIN 11850 | CC m | | | | X | |
| 88.90 | 2.00 | 4.352 | EN 10217-1 | not annealed | | X | | | |
| 88.90 | 2.00 | 4.352 | EN 10217-1 | not annealed | | | | X | |
| 88.90 | 2.00 | 4.352 | EN 10217-1 | not ann. pick | X | | | | |
| 88.90 | 2.00 | 4.352 | EN 10217-1 | not ann. pick | | | X | | |
| 88.90 | 2.00 | 4.352 | EN 10217-2 | annealed | X | | | | |
| 88.90 | 2.00 | 4.352 | EN 10217-2 | annealed | | | X | | |
| 88.90 | 2.00 | 4.352 | EN 10217-2 | annealed | | X | | | |
| 88.90 | 2.00 | 4.352 | EN 10217-2 | annealed | | | | X | |
| 88.90 | 2.30 | 4.987 | EN 10217-1 | not annealed | | | | X | |
| 88.90 | 2.30 | 4.987 | EN 10217-2 | annealed | | X | | | |
| 88.90 | 2.30 | 4.987 | EN 10217-2 | annealed | | | | X | |

Dairy tubes DIN 11850

CCm not annealed, pickled
CCb not annealed, bright
BC annealed
CD not annealed, ground
BD annealed, ground

K240, K320, K400, K800 state grain size for any grinding

| Dimension | | Weight kg/m | Norm | Type | EN 1.4307 EN 1.4301 | EN 1.4541 | EN 1.4404 | EN 1.4571 | EN 1.4432 |
|-----------|------|----------------|--------------|---------------|------------------------|-----------|-----------|-----------|-----------|
| OD | Wall | | | | | | | | |
| 88.90 | 2.60 | 5.618 | EN 10217-1 | not annealed | | X | | | |
| 88.90 | 2.60 | 5.618 | EN 10217-1 | not annealed | | | | X | |
| 88.90 | 2.60 | 5.618 | EN 10217-1 | annealed | | | | X | |
| 88.90 | 2.60 | 5.618 | EN 10217-2 | annealed | X | | | | |
| 88.90 | 2.60 | 5.618 | EN 10217-2 | annealed | | X | | | |
| 88.90 | 2.60 | 5.618 | EN 10217-2 | annealed | | | | X | |
| 88.90 | 2.90 | 6.245 | EN 10217-1 | not annealed | | | | X | |
| 88.90 | 2.90 | 6.245 | EN 10217-2 | annealed | | X | | | |
| 88.90 | 2.90 | 6.245 | EN 10217-2 | annealed | | | | X | |
| 88.90 | 3.00 | 6.453 | EN 10217-1 | not annealed | X | | | | |
| 88.90 | 3.00 | 6.453 | EN 10217-2 | annealed | X | | | | |
| 88.90 | 3.20 | 6.867 | EN 10217-1 | not annealed | | | | X | |
| 88.90 | 3.20 | 6.867 | EN 10217-2 | annealed | | X | | | |
| 88.90 | 3.20 | 6.867 | EN 10217-2 | annealed | | | | X | |
| 88.90 | 3.65 | 7.792 | EN 10217-1 | annealed | X | | | | |
| 88.90 | 3.65 | 7.792 | EN 10217-1 | annealed | | | | X | |
| 88.90 | 4.00 | 8.504 | EN 10217-1 | not annealed | X | | | | |
| 88.90 | 4.00 | 8.504 | EN 10217-1 | not annealed | | | | X | |
| 88.90 | 4.00 | 8.504 | EN 10217-2 | annealed | | X | | | |
| 88.90 | 4.00 | 8.504 | EN 10217-2 | annealed | | | | X | |
| 88.90 | 5.00 | 10.504 | EN 10217-1 | annealed | X | | | | |
| 100.00 | 1.50 | 3.700 | 17455 WZ 2.2 | not annealed | X | | | | |
| 101.60 | 1.50 | 3.760 | DIN 11850 | CC m | X | | | | |
| 101.60 | 2.00 | 4.988 | DIN 11850 | CC m | X | | | | |
| 101.60 | 2.00 | 4.988 | DIN 11850 | CDK400 | X | | | | |
| 101.60 | 2.00 | 4.988 | DIN 11850 | BC | | | X | | |
| 101.60 | 2.00 | 4.988 | EN 10217-1 | annealed | X | | | | |
| 101.60 | 2.00 | 4.988 | EN 10217-1 | annealed | X | | | | |
| 101.60 | 3.00 | 7.407 | EN 10217-1 | not ann. pick | X | | | | |
| 101.60 | 3.00 | 7.407 | EN 10217-1 | not ann. pick | | | | X | |
| 104.00 | 2.00 | 5.108 | DIN 11850 | BC | X | | | | |
| 104.00 | 2.00 | 5.108 | DIN 11850 | CC m | X | | | | |
| 104.00 | 2.00 | 5.108 | DIN 11850 | CDK400 | X | | | | |
| 104.00 | 2.00 | 5.108 | DIN 11850 | BC | | | X | | |
| 104.00 | 2.00 | 5.108 | DIN 11850 | CC m | | | X | | |
| 104.00 | 2.00 | 5.108 | DIN 11850 | CC m | | | | X | |
| 104.00 | 2.00 | 5.108 | EN 10217-1 | not ann. pick | X | | | | |
| 104.00 | 2.00 | 5.108 | EN 10217-1 | not ann. pick | | | | | X |
| 104.00 | 2.00 | 5.108 | EN 10217-1 | not ann. pick | X | | | | |
| 108.00 | 2.00 | 5.308 | EN 10217-1 | not ann. pick | | | | X | |
| 108.00 | 2.00 | 5.308 | EN 10217-1 | not ann. pick | | | | | |
| 108.00 | 2.60 | 6.862 | EN 10217-1 | not ann. pick | X | | | | |
| 108.00 | 3.00 | 7.888 | EN 10217-1 | not ann. pick | X | | | | |
| 108.00 | 3.00 | 7.888 | EN 10217-1 | not ann. pick | | | | X | |
| 108.00 | 4.00 | 10.417 | EN 10217-1 | not ann. pick | X | | | | |
| 108.00 | 4.00 | 10.417 | EN 10217-1 | not ann. pick | | X | | | |
| 108.00 | 4.00 | 10.417 | EN 10217-1 | not ann. pick | | | | X | |
| 108.00 | 5.00 | 12.896 | EN 10217-1 | not ann. pick | X | | | | |
| 108.00 | 5.00 | 12.896 | EN 10217-1 | not ann. pick | | | | X | |
| 114.30 | 1.50 | 4.237 | EN 10217-1 | not annealed | X | | | | |
| 114.30 | 2.00 | 5.624 | EN 10217-1 | not ann. pick | | X | | | |

Dairy tubes DIN 11850

CCm not annealed, pickled
CCb not annealed, bright
BC annealed
CD not annealed, ground
BD annealed, ground

K240, K320, K400, K800 state grain size for any grinding

| Dimension | | Weight kg/m | Norm | Type | EN 1.4307 EN 1.4301 | EN 1.4541 | EN 1.4404 | EN 1.4571 | EN 1.4432 |
|-----------|------|----------------|------------|---------------|------------------------|-----------|-----------|-----------|-----------|
| OD | Wall | | | | | | | | |
| 114.30 | 2.00 | 5.624 | EN 10217-1 | not ann. pick | X | | | | |
| 114.30 | 2.00 | 5.624 | EN 10217-1 | not ann. pick | | | X | | |
| 114.30 | 2.00 | 5.624 | EN 10217-2 | annealed | X | | | | |
| 114.30 | 2.00 | 5.624 | EN 10217-2 | not ann. pick | | | X | | |
| 114.30 | 2.00 | 5.624 | EN 10217-2 | annealed | | X | | | |
| 114.30 | 2.00 | 5.624 | EN 10217-2 | annealed | | | | X | |
| 114.30 | 2.60 | 7.272 | EN 10217-1 | not ann. pick | X | | | | |
| 114.30 | 2.60 | 7.272 | EN 10217-1 | not ann. pick | | X | | | |
| 114.30 | 2.60 | 7.272 | EN 10217-1 | annealed | | X | | | |
| 114.30 | 2.60 | 7.272 | EN 10217-1 | not ann. pick | | | | X | |
| 114.30 | 2.60 | 7.272 | EN 10217-2 | annealed | X | | | | |
| 114.30 | 2.60 | 7.272 | EN 10217-2 | annealed | | X | | | |
| 114.30 | 2.60 | 7.272 | EN 10217-2 | annealed | | | | X | |
| 114.30 | 2.90 | 8.089 | EN 10217-1 | not ann. pick | | | | X | |
| 114.30 | 3.00 | 8.361 | EN 10217-1 | not ann. pick | X | | | | |
| 114.30 | 3.00 | 8.361 | EN 10217-1 | not ann. pick | | | | X | |
| 114.30 | 3.60 | 9.979 | EN 10217-1 | not ann. pick | X | | | | |
| 114.30 | 3.60 | 9.979 | EN 10217-1 | not ann. pick | | | | X | |
| 114.30 | 3.60 | 9.979 | EN 10217-2 | annealed | | X | | | |
| 114.30 | 3.60 | 9.979 | EN 10217-2 | annealed | | | | X | |
| 114.30 | 4.00 | 11.048 | EN 10217-1 | not annealed | | | | X | |
| 114.30 | 4.05 | 11.181 | EN 10217-1 | not ann. pick | X | | | | |
| 114.30 | 5.00 | 13.684 | EN 10217-1 | not ann. pick | X | | | | |
| 129.00 | 2.00 | 6.360 | DIN 11850 | CC m | X | | | | |
| 129.00 | 2.00 | 6.360 | DIN 11850 | CDK400 | X | | | | |
| 129.00 | 2.00 | 6.360 | DIN 11850 | CC m | | | X | | |
| 129.00 | 2.00 | 6.360 | DIN 11850 | CC m | | | | X | |
| 129.00 | 2.00 | 6.360 | EN 10217-1 | not ann. pick | X | | | | |
| 129.00 | 2.00 | 6.360 | EN 10217-1 | not ann. pick | | | | | X |
| 129.00 | 2.00 | 6.360 | EN 10217-1 | not ann. pick | | | | | |
| 133.00 | 2.00 | 6.560 | EN 10217-1 | not ann. pick | X | | | | |
| 133.00 | 2.00 | 6.560 | EN 10217-1 | not ann. pick | | X | | | |
| 133.00 | 2.00 | 6.560 | EN 10217-1 | not ann. pick | | | | X | |
| 133.00 | 3.00 | 9.766 | EN 10217-1 | not ann. pick | X | | | | |
| 133.00 | 3.00 | 9.766 | EN 10217-1 | not ann. pick | | | | X | |
| 133.00 | 4.00 | 12.921 | EN 10217-1 | not ann. pick | X | | | | |
| 133.00 | 4.00 | 12.921 | EN 10217-1 | not ann. pick | | | | X | |
| 139.70 | 2.00 | 6.896 | EN 10217-1 | not ann. pick | | X | | | |
| 139.70 | 2.00 | 6.896 | EN 10217-1 | not ann. pick | | | | X | |
| 139.70 | 2.00 | 6.896 | EN 10217-1 | not ann. pick | X | | | | |
| 139.70 | 2.00 | 6.896 | EN 10217-1 | not ann. pick | | | X | | |
| 139.70 | 2.60 | 8.926 | EN 10217-1 | not ann. pick | X | | | | |
| 139.70 | 2.60 | 8.926 | EN 10217-1 | not ann. pick | | X | | | |
| 139.70 | 2.60 | 8.926 | EN 10217-1 | not ann. pick | | | | X | |
| 139.70 | 2.60 | 8.926 | EN 10217-2 | not ann. pick | | | | X | |
| 139.70 | 3.00 | 10.269 | EN 10217-1 | not ann. pick | X | | | | |
| 139.70 | 3.00 | 10.269 | EN 10217-1 | not ann. pick | | X | | | |
| 139.70 | 4.00 | 13.592 | EN 10217-1 | not ann. pick | X | | | | |
| 139.70 | 4.00 | 13.592 | EN 10217-1 | not ann. pick | | | | X | |
| 139.70 | 4.00 | 13.592 | EN 10217-2 | not ann. pick | | | | X | |

Dairy tubes DIN 11850

CCm not annealed, pickled
CCb not annealed, bright
BC annealed
CD not annealed, ground
BD annealed, ground

K240, K320, K400, K800 state grain size for any grinding

| Dimension | | Weight kg/m | Norm | Type | EN 1.4307 EN 1.4301 | EN 1.4541 | EN 1.4404 | EN 1.4571 | EN 1.4432 |
|-----------|------|----------------|------------|---------------|------------------------|-----------|-----------|-----------|-----------|
| OD | Wall | | | | | | | | |
| 154.00 | 2.00 | 7.612 | DIN 11850 | CC m | X | | | | |
| 154.00 | 2.00 | 7.612 | DIN 11850 | CDK400 | X | | | | |
| 154.00 | 2.00 | 7.612 | DIN 11850 | CC m | | | X | | |
| 154.00 | 2.00 | 7.612 | DIN 11850 | CC m | | | | X | |
| 154.00 | 2.00 | 7.612 | EN 10217-1 | not ann. pick | X | | | | |
| 154.00 | 2.00 | 7.612 | EN 10217-1 | not ann. pick | | | | | X |
| 159.00 | 2.00 | 7.863 | EN 10217-1 | not ann. pick | X | | | | |
| 159.00 | 2.00 | 7.863 | EN 10217-1 | not ann. pick | | | | X | |
| 159.00 | 2.60 | 10.182 | EN 10217-1 | not ann. pick | X | | | | |
| 159.00 | 3.00 | 11.719 | EN 10217-1 | not ann. pick | X | | | | |
| 159.00 | 3.00 | 11.719 | EN 10217-1 | not ann. pick | | | | X | |
| 159.00 | 4.00 | 15.525 | EN 10217-1 | not ann. pick | X | | | | |
| 159.00 | 4.00 | 15.525 | EN 10217-1 | not ann. pick | | | | X | |
| 168.30 | 2.00 | 8.328 | EN 10217-1 | not ann. pick | | X | | | |
| 168.30 | 2.00 | 8.328 | EN 10217-1 | not ann. pick | | | | X | |
| 168.30 | 2.00 | 8.328 | EN 10217-1 | not ann. pick | X | | | | |
| 168.30 | 2.00 | 8.328 | EN 10217-1 | not ann. pick | | | X | | |
| 168.30 | 2.60 | 10.788 | EN 10217-1 | not ann. pick | X | | | | |
| 168.30 | 2.60 | 10.788 | EN 10217-1 | not ann. pick | | | X | | |
| 168.30 | 2.60 | 10.788 | EN 10217-1 | not ann. pick | | X | | | |
| 168.30 | 2.60 | 10.788 | EN 10217-1 | not ann. pick | | | | X | |
| 168.30 | 2.60 | 10.788 | EN 10217-1 | not ann. pick | | | | | |
| 168.30 | 2.60 | 10.788 | EN 10217-2 | not ann. pick | | | | X | |
| 168.30 | 3.00 | 12.417 | EN 10217-1 | not ann. pick | X | | | | |
| 168.30 | 3.00 | 12.417 | EN 10217-1 | not ann. pick | | X | | | |
| 168.30 | 3.00 | 12.417 | EN 10217-1 | not ann. pick | | | | X | |
| 168.30 | 3.00 | 12.417 | EN 10217-1 | not ann. pick | | | | | |
| 168.30 | 3.00 | 12.417 | EN 10217-2 | not ann. pick | | X | | | |
| 168.30 | 3.00 | 12.417 | EN 10217-2 | not ann. pick | | | | X | |
| 168.30 | 4.00 | 16.456 | EN 10217-1 | not ann. pick | X | | | | |
| 168.30 | 4.00 | 16.456 | EN 10217-1 | not ann. pick | | X | | | |
| 168.30 | 4.00 | 16.456 | EN 10217-1 | not ann. pick | | | | X | |
| 168.30 | 4.00 | 16.456 | EN 10217-1 | not ann. pick | | | | | |
| 168.30 | 4.00 | 16.456 | EN 10217-2 | not ann. pick | | X | | | |
| 168.30 | 5.00 | 20.445 | EN 10217-1 | not ann. pick | X | | | | |
| 168.30 | 5.00 | 20.445 | EN 10217-1 | not ann. pick | | X | | | |
| 168.30 | 5.00 | 20.445 | EN 10217-1 | not ann. pick | | | | X | |
| 168.30 | 5.00 | 20.445 | EN 10217-2 | not ann. pick | | | | X | |
| 204.00 | 2.00 | 10.116 | DIN 11850 | CC m | X | | | | |
| 204.00 | 2.00 | 10.116 | DIN 11850 | CC m | | | X | | |
| 204.00 | 2.00 | 10.116 | EN 10217-1 | not ann. pick | | | | X | |
| 204.00 | 2.00 | 10.116 | EN 10217-1 | not ann. pick | X | | | | |
| 204.00 | 2.00 | 10.116 | EN 10217-1 | not ann. pick | | | | | X |
| 219.10 | 2.00 | 10.872 | EN 10217-1 | not ann. pick | | X | | | |
| 219.10 | 2.00 | 10.872 | EN 10217-1 | not ann. pick | | | | X | |
| 219.10 | 2.00 | 10.872 | EN 10217-1 | not ann. pick | X | | | | |
| 219.10 | 2.00 | 10.872 | EN 10217-1 | not ann. pick | | | X | | |
| 219.10 | 2.60 | 14.095 | EN 10217-1 | not ann. pick | X | | | | |
| 219.10 | 2.60 | 14.095 | EN 10217-1 | not ann. pick | | X | | | |
| 219.10 | 2.60 | 14.095 | EN 10217-1 | not ann. pick | | | | X | |
| 219.10 | 3.00 | 16.233 | EN 10217-1 | not ann. pick | X | | | | |
| 219.10 | 3.00 | 16.233 | EN 10217-1 | not ann. pick | | X | | | |
| 219.10 | 3.00 | 16.233 | EN 10217-1 | not ann. pick | | | | X | |

Dairy tubes DIN 11850

CCm not annealed, pickled
CCb not annealed, bright
BC annealed
CD not annealed, ground
BD annealed, ground

K240, K320, K400, K800 state grain size for any grinding

| Dimension | | Weight kg/m | Norm | Type | EN 1.4307 EN 1.4301 | EN 1.4541 | EN 1.4404 | EN 1.4571 | EN 1.4432 |
|-----------|------|----------------|------------|---------------|------------------------|-----------|-----------|-----------|-----------|
| OD | Wall | | | | | | | | |
| 219.10 | 3.00 | 16.233 | EN 10217-2 | not ann. pick | | | | X | |
| 219.10 | 4.00 | 21.544 | EN 10217-1 | not ann. pick | X | | | | |
| 219.10 | 4.00 | 21.544 | EN 10217-1 | not ann. pick | | X | | | |
| 219.10 | 4.00 | 21.544 | EN 10217-1 | not ann. pick | | | | X | |
| 219.10 | 4.00 | 21.544 | EN 10217-2 | not ann. pick | | | | X | |
| 219.10 | 5.00 | 26.805 | EN 10217-1 | not ann. pick | X | | | | |
| 219.10 | 5.00 | 26.805 | EN 10217-1 | not ann. pick | | X | | | |
| 219.10 | 5.00 | 26.805 | EN 10217-1 | not ann. pick | | | | X | |
| 219.10 | 5.00 | 26.805 | EN 10217-2 | not ann. pick | | X | | | |
| 219.10 | 6.30 | 33.570 | EN 10217-2 | not ann. pick | | | | X | |
| 254.00 | 2.00 | 12.620 | DIN 11850 | CC m | | | X | | |
| 254.00 | 2.00 | 12.620 | EN 10217-1 | not ann. pick | | | | X | |
| 254.00 | 2.00 | 12.620 | EN 10217-1 | not ann. pick | X | | | | |
| 254.00 | 2.00 | 12.620 | EN 10217-1 | not ann. pick | | | | | X |
| 255.00 | 2.50 | 15.800 | EN 10217-1 | not ann. pick | | | | | X |
| 256.00 | 3.00 | 19.010 | EN 10217-1 | not ann. pick | X | | | | |
| 256.00 | 3.00 | 19.010 | EN 10217-1 | not ann. pick | | | | | X |
| 273.00 | 2.60 | 17.604 | EN 10217-1 | not ann. pick | X | | | | |
| 273.00 | 2.60 | 17.604 | EN 10217-1 | not ann. pick | | X | | | |
| 273.00 | 2.60 | 17.604 | EN 10217-1 | not ann. pick | | | | X | |
| 273.00 | 3.00 | 20.282 | EN 10217-1 | not ann. pick | X | | | | |
| 273.00 | 3.00 | 20.282 | EN 10217-1 | not ann. pick | | X | | | |
| 273.00 | 3.00 | 20.282 | EN 10217-1 | not ann. pick | | | | X | |
| 273.00 | 3.00 | 20.282 | EN 10217-2 | not ann. pick | | | | X | |
| 273.00 | 4.00 | 26.943 | EN 10217-1 | not ann. pick | X | | | | |
| 273.00 | 4.00 | 26.943 | EN 10217-1 | not ann. pick | | X | | | |
| 273.00 | 4.00 | 26.943 | EN 10217-1 | not ann. pick | | | | X | |
| 273.00 | 5.00 | 33.554 | EN 10217-1 | not ann. pick | X | | | | |
| 273.00 | 5.00 | 33.554 | EN 10217-1 | not ann. pick | | X | | | |
| 273.00 | 5.00 | 33.554 | EN 10217-1 | not ann. pick | | | | X | |
| 273.00 | 5.00 | 33.554 | EN 10217-1 | not ann. pick | | | | | |
| 273.00 | 5.00 | 33.554 | EN 10217-2 | not ann. pick | | X | | | |
| 273.00 | 5.00 | 33.554 | EN 10217-2 | not ann. pick | | | | X | |
| 273.10 | 2.00 | 13.577 | EN 10217-1 | not ann. pick | X | | | | |
| 273.10 | 2.00 | 13.572 | EN 10217-1 | not ann. pick | | | X | | |
| 273.10 | 3.00 | 20.250 | EN 10217-1 | not ann. pick | X | | | | |
| 304.00 | 2.00 | 15.124 | EN 10217-1 | not ann. pick | | | | X | |
| 304.00 | 2.00 | 15.124 | EN 10217-1 | not ann. pick | X | | | | |
| 304.00 | 2.00 | 15.124 | EN 10217-1 | not ann. pick | | | | | X |
| 305.00 | 2.50 | 18.940 | EN 10217-1 | not ann. pick | | | | | X |
| 306.00 | 3.00 | 22.761 | EN 10217-1 | not ann. pick | | | | X | |
| 306.00 | 3.00 | 22.761 | EN 10217-1 | not ann. pick | | | | | X |
| 306.00 | 3.00 | 22.720 | EN 10217-1 | not ann. pick | X | | | | |
| 323.90 | 3.00 | 24.106 | EN 10217-1 | not ann. pick | X | | | | |
| 323.90 | 3.00 | 24.106 | EN 10217-1 | not ann. pick | | X | | | |
| 323.90 | 3.00 | 24.106 | EN 10217-1 | not ann. pick | | | | X | |
| 323.90 | 3.00 | 24.106 | EN 10217-1 | not ann. pick | | | X | | |
| 323.90 | 3.00 | 24.106 | EN 10217-2 | not ann. pick | | | | X | |
| 323.90 | 4.00 | 32.041 | EN 10217-1 | not ann. pick | X | | | | |
| 323.90 | 4.00 | 32.041 | EN 10217-1 | not ann. pick | | X | | | |
| 323.90 | 4.00 | 32.041 | EN 10217-1 | not ann. pick | | | | X | |

Dairy tubes DIN 11850

CCm not annealed, pickled
CCb not annealed, bright
BC annealed
CD not annealed, ground
BD annealed, ground

K240, K320, K400, K800 state grain size for any grinding

| Dimension | | Weight kg/m | Norm | Type | EN 1.4307 EN 1.4301 | EN 1.4541 | EN 1.4404 | EN 1.4571 | EN 1.4432 |
|-----------|------|----------------|------------|---------------|------------------------|-----------|-----------|-----------|-----------|
| OD | Wall | | | | | | | | |
| 323.90 | 4.00 | 32.041 | EN 10217-2 | not ann. pick | | | | X | |
| 323.90 | 5.00 | 39.926 | EN 10217-1 | not ann. pick | | X | | | |
| 323.90 | 5.00 | 39.926 | EN 10217-1 | not ann. pick | | | | X | |
| 355.00 | 2.50 | 22.070 | EN 10217-1 | not ann. pick | | | | | X |
| 355.60 | 3.00 | 26.487 | EN 10217-1 | not ann. pick | X | | | | |
| 355.60 | 3.00 | 26.487 | EN 10217-1 | not ann. pick | | X | | | |
| 355.60 | 3.00 | 26.487 | EN 10217-2 | not ann. pick | | | | X | |
| 355.60 | 4.00 | 35.216 | EN 10217-1 | not ann. pick | | X | | | |
| 355.60 | 4.00 | 35.216 | EN 10217-1 | not ann. pick | | | | X | |
| 356.00 | 3.00 | 26.517 | EN 10217-1 | not ann. pick | X | | | | X |
| 356.00 | 3.00 | 26.517 | EN 10217-1 | not ann. pick | | | | | X |
| 406.00 | 3.00 | 30.273 | EN 10217-1 | not ann. pick | | | | | |
| 406.40 | 3.00 | 30.303 | EN 10217-1 | not ann. pick | | X | | | |
| 406.40 | 3.00 | 30.303 | EN 10217-1 | not ann. pick | | | | X | |
| 406.40 | 3.00 | 30.303 | EN 10217-1 | not ann. pick | X | | | | |
| 406.40 | 3.00 | 30.303 | EN 10217-2 | not ann. pick | | | | X | |
| 406.40 | 4.00 | 40.304 | EN 10217-1 | not ann. pick | | X | | | |
| 406.40 | 4.00 | 40.304 | EN 10217-1 | not ann. pick | | | | X | |
| 508.00 | 3.00 | 37.936 | EN 10217-1 | not ann. pick | | | | X | |
| 508.00 | 3.00 | 37.936 | EN 10217-1 | not ann. pick | | | | X | |
| 508.00 | 3.00 | 37.936 | EN 10217-2 | not ann. pick | | | | X | |
| 508.00 | 4.00 | 50.481 | EN 10217-1 | not ann. pick | | | | X | |
| 609.60 | 4.00 | 60.657 | EN 10217-1 | not ann. pick | | | | X | |

Dairy tubes DIN 11850

CCm

CCb

BC

CD

BD

K240, K320, K400, K800

not annealed, pickled

not annealed, bright

annealed

not annealed, ground

annealed, ground

state grain size for any grinding

Stainless

Welded ornamental tubes

Welded stainless construction tubes EN 10296-2 (DIN 17455),
not annealed, in fabrication lengths of 6000 mm -0/+100 mm.

| Dimension | | Weight kg/m | TIG/HF | Surface | EN 1.4301 |
|-----------|------|----------------|--------|---------|--------------|
| OD | Wall | | | | |
| 8.00 | 1.00 | 0.175 | TIG | | X |
| 8.00 | 1.50 | 0.244 | TIG | | X |
| 10.00 | 1.00 | 0.225 | TIG | | X |
| 10.00 | 1.50 | 0.319 | TIG | | X |
| 12.00 | 1.00 | 0.275 | TIG | | X |
| 12.00 | 1.50 | 0.394 | TIG | | X |
| 12.00 | 2.00 | 0.501 | TIG | | X |
| 13.00 | 1.50 | 0.432 | TIG | | X |
| 14.00 | 1.00 | 0.326 | TIG | | X |
| 14.00 | 1.00 | 0.326 | TIG | K320 | X |
| 14.00 | 1.50 | 0.470 | TIG | | X |
| 14.00 | 1.50 | 0.470 | TIG | K320 | X |
| 14.00 | 2.00 | 0.601 | TIG | | X |
| 14.00 | 2.00 | 0.601 | TIG | K320 | X |
| 15.00 | 1.00 | 0.351 | TIG | | X |
| 15.00 | 1.00 | 0.351 | TIG | K320 | X |
| 15.00 | 1.50 | 0.507 | TIG | | X |
| 15.00 | 1.50 | 0.507 | TIG | K320 | X |
| 15.00 | 2.00 | 0.651 | TIG | | X |
| 15.00 | 2.00 | 0.651 | TIG | K320 | X |
| 16.00 | 1.00 | 0.376 | TIG | | X |
| 16.00 | 1.00 | 0.376 | TIG | K320 | X |
| 16.00 | 1.50 | 0.545 | TIG | | X |
| 16.00 | 1.50 | 0.545 | TIG | K320 | X |
| 16.00 | 2.00 | 0.701 | TIG | | X |
| 16.00 | 2.00 | 0.701 | TIG | K320 | X |
| 17.20 | 2.00 | 0.761 | TIG | | X |
| 18.00 | 1.00 | 0.426 | TIG | | X |
| 18.00 | 1.50 | 0.620 | TIG | | X |
| 18.00 | 1.50 | 0.620 | TIG | K320 | X |
| 18.00 | 2.00 | 0.801 | TIG | | X |
| 18.00 | 2.00 | 0.801 | TIG | K320 | X |
| 20.00 | 1.00 | 0.476 | TIG | | X |
| 20.00 | 1.00 | 0.476 | TIG | K320 | X |
| 20.00 | 1.50 | 0.695 | TIG | | X |
| 20.00 | 1.50 | 0.695 | TIG | K320 | X |
| 20.00 | 2.00 | 0.901 | TIG | | X |
| 20.00 | 2.00 | 0.901 | TIG | K320 | X |
| 20.00 | 3.00 | 1.277 | TIG | | X |
| 21.30 | 1.50 | 0.744 | HF | | X |
| 21.30 | 2.00 | 0.967 | HF | | X |
| 21.30 | 2.00 | 0.967 | HF | K320 | X |

Execution

TIG or HF welds

External surface

Not ground or Ground K320 or K 240

| Dimension | | Weight kg/m | TIG/HF | Surface | EN 1.4301 |
|-----------|------|----------------|--------|---------|--------------|
| OD | Wall | | | | |
| 21.30 | 2.50 | 1.177 | HF | K320 | X |
| 21.30 | 2.50 | 1.177 | HF | | X |
| 22.00 | 1.00 | 0.526 | TIG | | X |
| 22.00 | 1.20 | 0.625 | TIG | | X |
| 22.00 | 1.50 | 0.770 | TIG | | X |
| 22.00 | 1.50 | 0.770 | TIG | K320 | X |
| 22.00 | 2.00 | 1.002 | TIG | K320 | X |
| 25.00 | 1.00 | 0.601 | HF | | X |
| 25.00 | 1.00 | 0.601 | TIG | | X |
| 25.00 | 1.20 | 0.715 | TIG | | X |
| 25.00 | 1.20 | 0.715 | TIG | K320 | X |
| 25.00 | 1.50 | 0.883 | HF | K320 | X |
| 25.00 | 1.50 | 0.883 | HF | | X |
| 25.00 | 1.50 | 0.883 | TIG | | X |
| 25.00 | 2.00 | 1.152 | HF | | X |
| 25.00 | 2.00 | 1.152 | TIG | | X |
| 25.00 | 2.00 | 1.152 | HF | K320 | X |
| 25.00 | 2.50 | 1.409 | HF | | X |
| 25.00 | 3.00 | 1.653 | HF | | X |
| 26.90 | 1.50 | 0.954 | HF | | X |
| 26.90 | 2.00 | 1.247 | HF | K320 | X |
| 26.90 | 2.00 | 1.247 | HF | | X |
| 26.90 | 2.50 | 1.527 | HF | | X |
| 26.90 | 3.00 | 1.795 | HF | | X |
| 28.00 | 2.00 | 1.302 | TIG | | X |
| 30.00 | 1.00 | 0.726 | TIG | K320 | X |
| 30.00 | 1.00 | 0.726 | HF | | X |
| 30.00 | 1.00 | 0.726 | HF | | X |
| 30.00 | 1.50 | 1.070 | HF | | X |
| 30.00 | 1.50 | 1.070 | HF | | X |
| 30.00 | 1.50 | 1.070 | TIG | K320 | X |
| 30.00 | 2.00 | 1.402 | HF | K320 | X |
| 30.00 | 2.00 | 1.402 | HF | | X |
| 30.00 | 3.00 | 2.028 | HF | | X |
| 30.00 | 3.00 | 2.028 | HF | | X |
| 30.00 | 3.00 | 2.028 | HF | K240 | X |
| 32.00 | 1.50 | 1.146 | HF | K240 | X |
| 32.00 | 2.00 | 1.502 | HF | | X |
| 32.00 | 2.00 | 1.502 | HF | | X |
| 32.00 | 3.00 | 2.178 | HF | | X |
| 33.70 | 1.50 | 1.209 | HF | | X |
| 33.70 | 2.00 | 1.588 | HF | K320 | X |
| 33.70 | 2.00 | 1.588 | HF | | X |
| 33.70 | 2.50 | 1.953 | HF | | X |
| 33.70 | 2.50 | 1.953 | HF | | X |
| 33.70 | 3.00 | 2.306 | HF | | X |
| 33.70 | 3.00 | 2.306 | HF/TIG | K320 | X |
| 35.00 | 1.50 | 1.258 | HF | | X |
| 35.00 | 1.50 | 1.258 | HF | | X |
| 35.00 | 1.50 | 1.258 | TIG | | X |
| 35.00 | 2.00 | 1.653 | HF | | X |

Type TIG or HF welds
External surface Not ground or Ground K320 or K 240

| Dimension | | Weight kg/m | TIG/HF | Surface | EN 1.4301 |
|-----------|------|----------------|--------|---------|--------------|
| OD | Wall | | | | |
| 38.00 | 1.50 | 1.371 | HF | K320 | X |
| 38.00 | 1.50 | 1.371 | HF | | X |
| 38.00 | 2.00 | 1.803 | HF | | X |
| 38.00 | 2.00 | 1.803 | HF | | X |
| 38.00 | 2.50 | 2.222 | HF | | X |
| 38.00 | 3.00 | 2.629 | HF | K320 | X |
| 40.00 | 2.00 | 1.903 | HF | | X |
| 40.00 | 2.00 | 1.903 | HF | | X |
| 40.00 | 3.00 | 2.779 | HF | | X |
| 40.00 | 3.00 | 2.779 | HF | | X |
| 42.40 | 1.50 | 1.536 | HF | K320 | X |
| 42.40 | 2.00 | 2.023 | HF | | X |
| 42.40 | 2.00 | 2.023 | HF | | X |
| 42.40 | 2.50 | 2.498 | HF | | X |
| 42.40 | 2.50 | 2.498 | HF | | X |
| 42.40 | 3.00 | 2.960 | HF | K320 | X |
| 42.40 | 3.00 | 2.960 | HF | | X |
| 42.40 | 3.00 | 2.960 | HF/TIG | | X |
| 43.00 | 1.50 | 1.559 | HF | | X |
| 45.00 | 1.50 | 1.634 | HF | | X |
| 45.00 | 1.50 | 1.634 | HF | K320 | X |
| 45.00 | 2.00 | 2.153 | HF | K320 | X |
| 45.00 | 2.00 | 2.153 | HF | | X |
| 48.30 | 1.50 | 1.758 | HF | | X |
| 48.30 | 2.00 | 2.319 | HF | | X |
| 48.30 | 2.00 | 2.319 | HF | K320 | X |
| 48.30 | 2.50 | 2.867 | HF | K320 | X |
| 48.30 | 2.50 | 2.867 | HF | | X |
| 48.30 | 3.00 | 3.403 | HF | | X |
| 48.30 | 3.00 | 3.403 | HF | | X |
| 48.30 | 3.00 | 3.403 | HF | | X |
| 48.30 | 4.00 | 4.437 | HF | K320 | X |
| 50.00 | 1.50 | 1.822 | HF | | X |
| 50.00 | 1.50 | 1.822 | HF | | X |
| 50.00 | 2.00 | 2.404 | HF | | X |
| 50.00 | 2.00 | 2.404 | HF | | X |
| 50.00 | 3.00 | 3.531 | HF | K320 | X |
| 50.00 | 3.00 | 3.531 | HF | | X |
| 60.00 | 5.00 | 6.886 | HF | | X |
| 60.30 | 1.50 | 2.209 | HF | | X |
| 60.30 | 2.00 | 2.920 | HF | | X |
| 60.30 | 2.00 | 2.920 | HF | K320 | X |
| 60.30 | 2.50 | 3.618 | HF | K320 | X |
| 60.30 | 2.50 | 3.618 | HF | | X |
| 60.30 | 3.00 | 4.304 | HF | | X |
| 60.30 | 3.00 | 4.304 | HF | | X |
| 60.30 | 3.00 | 4.304 | HF | | X |
| 60.30 | 4.00 | 5.639 | HF | | X |
| 70.00 | 5.00 | 8.138 | HF | | X |
| 76.10 | 1.50 | 2.802 | HF | | X |
| 76.10 | 2.00 | 3.711 | HF | | X |
| 76.10 | 3.00 | 5.491 | HF | | X |

Type TIG or HF welds
External surface Not ground or Ground K320 or K 240

| Dimension | | Weight kg/m | TIG/HF | Surface | EN 1.4301 |
|-----------|------|----------------|--------|---------|--------------|
| OD | Wall | | | | |
| 80.00 | 1.50 | 2.948 | HF | K320 | X |
| 80.00 | 2.00 | 3.906 | HF | | X |
| 80.00 | 2.00 | 3.906 | HF | | X |
| 80.00 | 3.00 | 5.784 | HF | | X |
| 80.00 | 4.00 | 7.612 | HF | | X |
| 80.00 | 5.00 | 9.390 | HF | K320 | X |
| 88.90 | 1.50 | 3.283 | HF | | X |
| 88.90 | 2.00 | 4.352 | HF | | X |
| 88.90 | 2.00 | 4.352 | HF | | X |
| 88.90 | 3.00 | 6.453 | HF | | X |
| 88.90 | 4.00 | 8.504 | HF | K400 | X |
| 101.60 | 3.00 | 7.407 | HF | | X |
| 101.60 | 4.00 | 9.776 | HF | | X |
| 108.00 | 2.00 | 5.308 | HF | | X |
| 114.30 | 2.00 | 5.624 | HF | | X |
| 168.30 | 2.00 | 8.328 | HF | | X |

Type TIG or HF welds
External surface Not ground or Ground K320 or K 240

Stainless

Welded box sections
Welded box sections, in fabrication lengths of 6000 mm
-0/+100 mm. In brushed or untreated finish unless otherwise stated.

| Dimension | | | Weight Kg/m | Type | EN 1.4307 EN 1.4301 | EN 1.4404 | EN 1.4571 | EN1.4571 |
|-----------|----|------|----------------|-----------|------------------------|-----------|-----------|----------|
| OD | OD | Wall | | | | | | |
| 10 | 10 | 1.0 | 0.300 | K240/K320 | X | | | |
| 15 | 15 | 1.0 | 0.463 | | X | | | |
| 15 | 15 | 1.5 | 0.676 | | X | | | |
| 15 | 15 | 1.5 | 0.676 | | X | | | |
| 15 | 15 | 1.5 | 0.676 | | X | | | |
| 20 | 10 | 1.2 | 0.538 | K240/K320 | X | | | |
| 20 | 10 | 1.2 | 0.538 | | X | | | |
| 20 | 10 | 1.5 | 0.676 | | X | | | |
| 20 | 10 | 1.5 | 0.676 | K240/K320 | X | | | |
| 20 | 15 | 1.5 | 0.798 | | X | | | |
| 20 | 15 | 1.5 | 0.798 | K240/K320 | X | | | |
| 20 | 20 | 1.0 | 0.626 | K240/K320 | X | | | |
| 20 | 20 | 1.2 | 0.745 | | X | | | |
| 20 | 20 | 1.2 | 0.745 | K240/K320 | X | | | |
| 20 | 20 | 1.5 | 0.920 | | X | | | |
| 20 | 20 | 1.5 | 0.920 | K240/K320 | X | | | |
| 20 | 20 | 1.5 | 0.920 | | | | X | |
| 20 | 20 | 2.0 | 1.202 | | X | | | |
| 20 | 20 | 2.0 | 1.202 | K240/K320 | X | | | |
| 20 | 20 | 2.0 | 1.202 | | | | X | |
| 25 | 10 | 1.5 | 0.798 | K240/K320 | X | | | |
| 25 | 10 | 1.5 | 0.798 | | X | | | |
| 25 | 15 | 1.5 | 0.920 | | X | | | |
| 25 | 15 | 1.5 | 0.920 | K240/K320 | X | | | |
| 25 | 25 | 1.2 | 0.941 | K240/K320 | | | | |
| 25 | 25 | 1.2 | 0.941 | K240/K320 | X | | | |
| 25 | 25 | 1.2 | 0.941 | | X | | | |
| 25 | 25 | 1.5 | 1.164 | | X | | | |
| 25 | 25 | 1.5 | 1.164 | K240/K320 | X | | | |
| 25 | 25 | 1.5 | 1.164 | | | | X | |
| 25 | 25 | 2.0 | 1.527 | K240/K320 | X | | X | |
| 25 | 25 | 2.0 | 1.527 | | X | | | |
| 25 | 25 | 2.0 | 1.527 | | | | | |
| 25 | 25 | 3.0 | 2.216 | | X | | | |
| 30 | 10 | 1.5 | 0.920 | | X | | | |
| 30 | 10 | 1.5 | 0.920 | K240/K320 | X | | | |
| 30 | 15 | 1.2 | 0.825 | K240/K320 | X | | | |
| 30 | 15 | 1.2 | 0.825 | | X | | | |
| 30 | 15 | 1.5 | 1.042 | | X | | | |
| 30 | 15 | 1.5 | 1.042 | K240/K320 | X | | | |
| 30 | 15 | 1.5 | 1.042 | K240/K320 | | | X | |
| 30 | 15 | 2.0 | 1.365 | | X | | | |
| 30 | 15 | 2.0 | 1.365 | | X | | | |
| 30 | 20 | 1.2 | 0.921 | | X | | | |

| Dimension | | | Weight Kg/m | Type | EN 1.4307 EN 1.4301 | EN 1.4404 | EN 1.4571 | EN 1.4571 |
|-----------|----|------|----------------|-----------|------------------------|-----------|-----------|-----------|
| OD | OD | Wall | | | | | | |
| 30 | 20 | 1.2 | 0.921 | K240/K320 | X | | | |
| 30 | 20 | 1.5 | 1.164 | | X | | | |
| 30 | 20 | 1.5 | 1.164 | K240/K320 | X | | | |
| 30 | 20 | 2.0 | 1.527 | | X | | | |
| 30 | 20 | 2.0 | 1.527 | K240/K320 | X | | | |
| 30 | 20 | 2.0 | 1.527 | | | | X | |
| 30 | 30 | 1.2 | 1.136 | K240/K320 | X | | | |
| 30 | 30 | 1.2 | 1.136 | | X | | | |
| 30 | 30 | 1.5 | 1.409 | | X | | | |
| 30 | 30 | 1.5 | 1.409 | K240/K320 | X | | | |
| 30 | 30 | 1.5 | 1.409 | | | | X | |
| 30 | 30 | 2.0 | 1.853 | | X | | | |
| 30 | 30 | 2.0 | 1.853 | K240/K320 | X | | | |
| 30 | 30 | 2.0 | 1.853 | | | | X | |
| 30 | 30 | 3.0 | 2.704 | | X | | | |
| 30 | 30 | 3.0 | 2.704 | K240/K320 | X | | | |
| 30 | 30 | 3.0 | 2.704 | | | | X | |
| 35 | 20 | 1.5 | 1.259 | | X | | | |
| 35 | 35 | 1.2 | 1.303 | | X | | | |
| 35 | 35 | 1.2 | 1.303 | K240/K320 | X | | | |
| 35 | 35 | 1.5 | 1.653 | | X | | | |
| 35 | 35 | 1.5 | 1.653 | K240/K320 | X | | | |
| 35 | 35 | 2.0 | 2.178 | K240/K320 | X | | | |
| 35 | 35 | 2.0 | 2.178 | | X | | | |
| 35 | 35 | 2.0 | 2.178 | | | | X | |
| 35 | 35 | 2.0 | 2.178 | | | | | |
| 35 | 35 | 3.0 | 3.193 | | X | | | |
| 40 | 15 | 1.5 | 1.286 | | X | | | |
| 40 | 20 | 1.2 | 1.136 | | X | | | |
| 40 | 20 | 1.2 | 1.136 | K240/K320 | X | | | |
| 40 | 20 | 1.5 | 1.409 | | X | | | |
| 40 | 20 | 1.5 | 1.409 | | | | | |
| 40 | 20 | 1.5 | 1.409 | K240/K320 | X | | | |
| 40 | 20 | 2.0 | 1.853 | | X | | | |
| 40 | 20 | 2.0 | 1.853 | K240/K320 | X | | | |
| 40 | 20 | 2.0 | 1.853 | | | | X | |
| 40 | 20 | 2.0 | 1.853 | | | | | |
| 40 | 20 | 3.0 | 2.650 | | X | | | |
| 40 | 27 | 1.5 | 1.536 | | X | | | |
| 40 | 30 | 1.2 | 1.303 | K240/K320 | X | | | |
| 40 | 30 | 1.5 | 1.653 | | X | | | |
| 40 | 30 | 1.5 | 1.653 | K240/K320 | X | | | |
| 40 | 30 | 2.0 | 2.178 | | X | | | |
| 40 | 30 | 2.0 | 2.178 | K240/K320 | X | | | |
| 40 | 30 | 2.0 | 2.178 | | | | X | |
| 40 | 30 | 3.0 | 3.193 | | X | | | |
| 40 | 40 | 1.0 | 1.243 | K240/K320 | X | | | |
| 40 | 40 | 1.0 | 1.243 | | X | | | |
| 40 | 40 | 1.2 | 1.526 | | X | | | |
| 40 | 40 | 1.2 | 1.526 | K240/K320 | X | | | |
| 40 | 40 | 1.3 | 1.544 | | X | | | |
| 40 | 40 | 1.3 | 1.544 | K240/K320 | X | | | |
| 40 | 40 | 1.5 | 1.897 | K240/K320 | X | | | |
| 40 | 40 | 1.5 | 1.897 | | X | | | |
| 40 | 40 | 2.0 | 2.504 | | X | | | |
| 40 | 40 | 2.0 | 2.504 | K240/K320 | X | | | |
| 40 | 40 | 2.0 | 2.504 | | | | X | |

| Dimension | | | Weight Kg/m | Type | EN 1.4307 EN 1.4301 | EN 1.4404 | EN 1.4571 | EN 1.4571 |
|-----------|----|------|----------------|-----------|------------------------|-----------|-----------|-----------|
| OD | OD | Wall | | | | | | |
| 40 | 40 | 3.0 | 3.681 | | X | | | |
| 40 | 40 | 3.0 | 3.681 | | | X | | |
| 40 | 40 | 3.0 | 3.681 | K240/K320 | X | | | |
| 40 | 40 | 3.0 | 3.681 | | | | X | |
| 40 | 40 | 4.0 | 4.808 | | X | | | |
| 40 | 40 | 4.0 | 4.808 | | | | X | |
| 45 | 45 | 2.0 | 2.830 | | X | | | |
| 45 | 45 | 2.0 | 2.830 | K240/K320 | X | | | |
| 50 | 20 | 1.5 | 1.653 | | X | | | |
| 50 | 20 | 1.5 | 1.653 | K240/K320 | X | | | |
| 50 | 20 | 2.0 | 2.178 | | X | | | |
| 50 | 20 | 2.0 | 2.178 | K240/K320 | X | | | |
| 50 | 20 | 2.0 | 2.178 | | | | X | |
| 50 | 25 | 1.5 | 1.775 | | X | | | |
| 50 | 25 | 1.5 | 1.775 | K240/K320 | X | | | |
| 50 | 25 | 1.5 | 1.775 | | | | X | |
| 50 | 25 | 2.0 | 2.341 | K240/K320 | X | | | |
| 50 | 25 | 2.0 | 2.341 | | X | | | |
| 50 | 25 | 2.0 | 2.341 | | | | X | |
| 50 | 25 | 2.0 | 2.341 | | | | | |
| 50 | 30 | 1.5 | 1.897 | | X | | | |
| 50 | 30 | 1.5 | 1.897 | K240/K320 | X | | | |
| 50 | 30 | 1.5 | 1.897 | | | | X | |
| 50 | 30 | 2.0 | 2.504 | | X | | | |
| 50 | 30 | 2.0 | 2.504 | K240/K320 | X | | | |
| 50 | 30 | 2.0 | 2.504 | | | | X | |
| 50 | 30 | 2.0 | 2.504 | | | | | |
| 50 | 30 | 3.0 | 3.681 | | X | | | |
| 50 | 30 | 3.0 | 3.681 | K240/K320 | X | | | |
| 50 | 30 | 3.0 | 3.681 | | | | X | |
| 50 | 40 | 2.0 | 2.803 | | X | | | |
| 50 | 40 | 2.0 | 2.803 | K240/K320 | X | | | |
| 50 | 40 | 2.0 | 2.803 | | | | X | |
| 50 | 40 | 3.0 | 4.169 | | X | | | |
| 50 | 50 | 1.5 | 2.385 | | X | | | |
| 50 | 50 | 1.5 | 2.385 | K240/K320 | X | | | |
| 50 | 50 | 1.5 | 2.385 | | | | | |
| 50 | 50 | 2.0 | 3.155 | | X | | | |
| 50 | 50 | 2.0 | 3.155 | K240/K320 | X | | | |
| 50 | 50 | 2.0 | 3.155 | | | | X | |
| 50 | 50 | 3.0 | 4.657 | | X | | | |
| 50 | 50 | 3.0 | 4.657 | K240/K320 | X | | | |
| 50 | 50 | 3.0 | 4.657 | | | | X | |
| 50 | 50 | 4.0 | 6.110 | | X | | | |
| 50 | 50 | 4.0 | 6.110 | K240/K320 | X | | | |
| 50 | 50 | 4.0 | 6.110 | | | | X | |
| 50 | 50 | 5.0 | 7.512 | | X | | | |
| 60 | 20 | 1.5 | 1.897 | | X | | | |
| 60 | 20 | 1.5 | 1.897 | K240/K320 | X | | | |
| 60 | 20 | 2.0 | 2.504 | | X | | | |
| 60 | 20 | 2.0 | 2.504 | K240/K320 | X | | | |
| 60 | 20 | 2.0 | 2.504 | | | | X | |
| 60 | 30 | 1.5 | 2.141 | | X | | | |
| 60 | 30 | 1.5 | 2.141 | K240/K320 | X | | | |
| 60 | 30 | 1.5 | 2.141 | | | | X | |
| 60 | 30 | 2.0 | 2.830 | | X | | | |
| 60 | 30 | 2.0 | 2.830 | K240/K320 | X | | | |

| Dimension | | | Weight Kg/m | Type | EN 1.4307 EN 1.4301 | EN 1.4404 | EN 1.4571 | EN 1.4571 |
|-----------|----|------|----------------|-----------|------------------------|-----------|-----------|-----------|
| OD | OD | Wall | | | | | | |
| 60 | 30 | 2.0 | 2.830 | K240/K320 | | | X | |
| 60 | 30 | 3.0 | 4.169 | | X | | | |
| 60 | 30 | 3.0 | 4.169 | | X | | | |
| 60 | 30 | 3.0 | 4.169 | | | | X | |
| 60 | 40 | 1.5 | 2.385 | | X | | | |
| 60 | 40 | 2.0 | 3.155 | K240/K320 | X | | X | |
| 60 | 40 | 2.0 | 3.155 | | X | | | |
| 60 | 40 | 2.0 | 3.155 | | X | | | |
| 60 | 40 | 3.0 | 4.657 | K240/K320 | X | | | |
| 60 | 40 | 3.0 | 4.657 | | X | | | |
| 60 | 40 | 3.0 | 4.657 | K240/K320 | | | X | |
| 60 | 40 | 4.0 | 6.110 | | X | | | |
| 60 | 40 | 4.0 | 6.110 | | | | X | |
| 60 | 60 | 1.5 | 2.873 | | X | | | |
| 60 | 60 | 1.5 | 2.873 | | X | | | |
| 60 | 60 | 2.0 | 3.806 | K240/K320 | X | | X | |
| 60 | 60 | 2.0 | 3.806 | X | | | | |
| 60 | 60 | 2.0 | 3.806 | | | | | |
| 60 | 60 | 3.0 | 5.634 | X | | | | |
| 60 | 60 | 3.0 | 5.634 | X | | | | |
| 60 | 60 | 3.0 | 5.634 | K240/K320 | | | X | |
| 60 | 60 | 4.0 | 7.412 | | X | | | |
| 60 | 60 | 4.0 | 7.412 | | X | | | |
| 60 | 60 | 4.0 | 7.412 | | | | X | |
| 60 | 60 | 5.0 | 9.140 | | X | | | |
| 60 | 60 | 5.0 | 9.140 | K240/K320 | | | X | |
| 70 | 40 | 2.0 | 3.405 | | X | | | |
| 70 | 40 | 3.0 | 5.146 | | X | | | |
| 70 | 70 | 2.0 | 4.457 | | X | | | |
| 70 | 70 | 3.0 | 6.611 | | X | | | |
| 70 | 70 | 3.0 | 6.611 | K240/K320 | | | X | |
| 70 | 70 | 4.0 | 8.714 | | X | | | |
| 70 | 70 | 4.0 | 8.714 | | | | X | |
| 70 | 70 | 5.0 | 10.767 | | X | | | |
| 80 | 30 | 3.0 | 5.146 | | X | | | |
| 80 | 40 | 1.5 | 2.873 | K240/K320 | X | | X | |
| 80 | 40 | 1.5 | 2.873 | | X | | | |
| 80 | 40 | 2.0 | 3.806 | K240/K320 | X | | | |
| 80 | 40 | 2.0 | 3.806 | X | | | | |
| 80 | 40 | 2.0 | 3.806 | | | | | |
| 80 | 40 | 3.0 | 5.634 | K240/K320 | X | | X | |
| 80 | 40 | 3.0 | 5.634 | | X | | | |
| 80 | 40 | 3.0 | 5.634 | | | | | |
| 80 | 40 | 4.0 | 7.412 | | X | | | |
| 80 | 40 | 4.0 | 7.412 | | | | X | |
| 80 | 40 | 5.0 | 9.140 | K240/K320 | X | | | |
| 80 | 50 | 2.0 | 4.132 | | X | | | |
| 80 | 50 | 3.0 | 6.122 | | X | | | |
| 80 | 50 | 5.0 | 9.850 | | X | | | |
| 80 | 60 | 2.0 | 4.557 | | X | | | |
| 80 | 60 | 2.0 | 4.557 | K240/K320 | | | X | |
| 80 | 60 | 3.0 | 6.611 | | X | | | |
| 80 | 60 | 3.0 | 6.611 | | X | | | |
| 80 | 60 | 3.0 | 6.611 | | | | X | |
| 80 | 60 | 4.0 | 8.714 | | X | | | |

| Dimension | | | Weight Kg/m | Type | EN 1.4307 EN 1.4301 | EN 1.4404 | EN 1.4571 | EN 1.4571 | | | |
|-----------|-----|------|----------------|-----------|------------------------|-----------|-----------|-----------|---|---|--|
| OD | OD | Wall | | | | | | | | | |
| 80 | 60 | 4.0 | 8.714 | K240/K320 | | | X | | | | |
| 80 | 60 | 5.0 | 10.540 | | X | | | | | | |
| 80 | 80 | 2.0 | 5.108 | | X | | | | | | |
| 80 | 80 | 2.0 | 5.108 | | X | | | | | | |
| 80 | 80 | 2.0 | 5.108 | | | | X | | | | |
| 80 | 80 | 3.0 | 7.587 | K240/K320 | X | | X | | | | |
| 80 | 80 | 3.0 | 7.587 | | X | | | | | | |
| 80 | 80 | 3.0 | 7.587 | | | | | | | | |
| 80 | 80 | 4.0 | 10.016 | K240/K320 | X | | | | | | |
| 80 | 80 | 4.0 | 10.016 | | X | | | | | | |
| 80 | 80 | 4.0 | 10.016 | | X | | X | | | | |
| 80 | 80 | 5.0 | 12.395 | | | | | | | | |
| 80 | 80 | 5.0 | 12.395 | | | | | | | X | |
| 80 | 80 | 6.0 | 14.724 | | | | | | | | |
| 90 | 90 | 3.0 | 8.388 | | | | | | | | |
| 90 | 90 | 4.0 | 11.050 | K240/K320 | X | | | | | | |
| 100 | 40 | 2.0 | 4.457 | | X | | | | | | |
| 100 | 40 | 2.0 | 4.457 | | X | | | | | | |
| 100 | 40 | 3.0 | 6.611 | | X | | | | | | |
| 100 | 40 | 3.0 | 6.611 | | | | | | X | | |
| 100 | 40 | 4.0 | 9.365 | | X | | X | | | | |
| 100 | 40 | 4.0 | 9.365 | | | | | | | | |
| 100 | 50 | 2.0 | 4.783 | | X | | | | | | |
| 100 | 50 | 2.0 | 4.783 | | | | | | X | | |
| 100 | 50 | 3.0 | 7.099 | | X | | | | | | |
| 100 | 50 | 3.0 | 7.099 | K240/K320 | X | | X | | | | |
| 100 | 50 | 3.0 | 7.099 | | | | | | | | |
| 100 | 50 | 4.0 | 9.365 | | X | | | | | | |
| 100 | 50 | 4.0 | 9.365 | | | | | | X | | |
| 100 | 50 | 5.0 | 11.581 | | X | | | | | | |
| 100 | 50 | 5.0 | 11.581 | | X | | X | | | | |
| 100 | 50 | 6.0 | 14.648 | | | | X | | | | |
| 100 | 60 | 2.0 | 5.108 | | | | X | | | | |
| 100 | 60 | 2.0 | 5.108 | | | | | | X | | |
| 100 | 60 | 3.0 | 7.587 | | | | X | | | | |
| 100 | 60 | 3.0 | 7.587 | K240/K320 | X | | X | | | | |
| 100 | 60 | 3.0 | 7.587 | | | | | | | | |
| 100 | 60 | 4.0 | 10.016 | | X | | | | | | |
| 100 | 60 | 4.0 | 10.016 | | X | | | | | | |
| 100 | 60 | 4.0 | 10.016 | | | | | | X | | |
| 100 | 60 | 5.0 | 12.395 | | X | | X | | | | |
| 100 | 60 | 5.0 | 12.395 | | | | | | | | |
| 100 | 60 | 6.0 | 14.600 | | X | | | | | | |
| 100 | 80 | 3.0 | 8.564 | | X | | | | | | |
| 100 | 80 | 3.0 | 8.564 | | | | | | X | | |
| 100 | 80 | 4.0 | 11.318 | K240/K320 | X | | | | | | |
| 100 | 80 | 5.0 | 13.750 | | X | | | | | | |
| 100 | 100 | 2.0 | 6.410 | | X | | | | | | |
| 100 | 100 | 2.0 | 6.410 | | X | | | | | | |
| 100 | 100 | 2.0 | 6.410 | | | | | | X | | |
| 100 | 100 | 3.0 | 9.540 | K240/K320 | X | | | | | | |
| 100 | 100 | 3.0 | 9.540 | | X | | | | | | |
| 100 | 100 | 3.0 | 9.540 | | | | | | | | |
| 100 | 100 | 4.0 | 12.620 | | X | | | | | | |
| 100 | 100 | 4.0 | 12.620 | | | | | | X | | |

| Dimension | | | Weight Kg/m | Type | EN 1.4307 EN 1.4301 | EN 1.4404 | EN 1.4571 | EN 1.4571 | | | | | | |
|-----------|-----|------|----------------|-----------|------------------------|-----------|-----------|-----------|---|---|---|---|--|---|
| OD | OD | Wall | | | | | | | | | | | | |
| 100 | 100 | 5.0 | 15.650 | | X | | X | | | | | | | |
| 100 | 100 | 6.0 | 18.630 | | | | | | | | | | | |
| 100 | 100 | 6.0 | 18.630 | | | | | | | | | | | |
| 100 | 100 | 8.0 | 21.500 | | | | | | | | | | | |
| 120 | 40 | 2.0 | 5.108 | | | | | | | | | | | |
| 120 | 40 | 3.0 | 7.587 | K240/K320 | | | | | | | | | | |
| 120 | 40 | 3.0 | 7.587 | | | | X | | | | | | | |
| 120 | 40 | 4.0 | 9.807 | | | | X | | | | | | | |
| 120 | 60 | 2.0 | 5.759 | | | | X | | | | | | | |
| 120 | 60 | 3.0 | 8.564 | | | | X | | | | | | | |
| 120 | 60 | 3.0 | 8.564 | K240/K320 | X | | X | | | | | | | |
| 120 | 60 | 3.0 | 8.564 | | | | | | | | | | | |
| 120 | 60 | 4.0 | 11.318 | | | | | | | X | | | | |
| 120 | 60 | 4.0 | 11.318 | | | | | | | | X | | | |
| 120 | 60 | 5.0 | 14.022 | | | | | | | | | X | | |
| 120 | 60 | 5.0 | 14.022 | | X | X | | | | | | | | |
| 120 | 60 | 6.0 | 16.677 | | | | K240/K320 | X | | | | | | |
| 120 | 80 | 2.0 | 6.410 | | | | | | X | | | | | |
| 120 | 80 | 2.0 | 6.410 | | | | | | X | | | | | |
| 120 | 80 | 3.0 | 9.540 | | | | | | X | | | | | |
| 120 | 80 | 3.0 | 9.540 | K240/K320 | X | | | | X | | | | | |
| 120 | 80 | 3.0 | 9.540 | | | | | | | | | | | |
| 120 | 80 | 4.0 | 12.620 | | | | | X | | | | | | |
| 120 | 80 | 4.0 | 12.620 | | | | | | | | X | | | |
| 120 | 80 | 5.0 | 15.650 | | | | | | | | | X | | |
| 120 | 80 | 6.0 | 18.630 | K240/K320 | X | | | | X | | | | | |
| 120 | 120 | 2.0 | 7.555 | | | | | | | X | | | | |
| 120 | 120 | 3.0 | 11.493 | | | | | | | | | X | | |
| 120 | 120 | 3.0 | 11.493 | | | | | X | | | | | | |
| 120 | 120 | 3.0 | 11.493 | | | | | X | | | | | | |
| 120 | 120 | 4.0 | 15.224 | | X | | | X | | | | | | |
| 120 | 120 | 4.0 | 15.224 | | | | | | | | | | | |
| 120 | 120 | 5.0 | 18.905 | | | | | | X | | | | | |
| 120 | 120 | 5.0 | 18.905 | | | | | | | X | | | | |
| 120 | 120 | 6.0 | 22.536 | | | | | | | | X | | | |
| 140 | 80 | 3.0 | 10.517 | | X | | | | | | | | | |
| 140 | 80 | 4.0 | 13.922 | | X | | | | | | | | | |
| 140 | 80 | 5.0 | 17.287 | | X | | | | | | | | | |
| 140 | 140 | 5.0 | 21.120 | | X | | | | | | | | | |
| 150 | 50 | 3.0 | 9.540 | | X | | | | | | | | | |
| 150 | 50 | 3.0 | 9.540 | | X | | X | | | | | | | |
| 150 | 50 | 4.0 | 12.620 | | | | | | | | | | | |
| 150 | 50 | 5.0 | 15.650 | | | | | | | X | | | | |
| 150 | 80 | 5.0 | 17.709 | | | | | | | X | | | | |
| 150 | 100 | 3.0 | 11.982 | | | | | | | X | | | | |
| 150 | 100 | 3.0 | 11.982 | | X | | X | | | | | | | |
| 150 | 100 | 4.0 | 15.875 | | | | | | | | | | | |
| 150 | 100 | 5.0 | 19.719 | | | | | | X | | | | | |
| 150 | 100 | 6.0 | 23.513 | | | | | | X | | | | | |
| 150 | 100 | 6.0 | 23.513 | | | | | | X | | | | | |
| 150 | 100 | 10.0 | 33.650 | | X | | X | | | | | | | |
| 150 | 150 | 3.0 | 14.423 | | | | | | | X | | | | |
| 150 | 150 | 4.0 | 19.131 | | | | | | | | | X | | |
| 150 | 150 | 4.0 | 19.131 | | | | | | | | | | | X |
| 150 | 150 | 5.0 | 23.788 | | | | | | | | | | | |

| Dimension | | | Weight Kg/m | Type | EN 1.4307 EN 1.4301 | EN 1.4404 | EN 1.4571 | EN 1.4571 |
|-----------|-----|------|----------------|------|------------------------|-----------|-----------|-----------|
| OD | OD | Wall | | | | | | |
| 150 | 150 | 5.0 | 23.788 | | | | X | |
| 150 | 150 | 6.0 | 28.359 | | X | | | |
| 150 | 150 | 8.0 | 37.460 | | X | | | |
| 160 | 80 | 3.0 | 11.493 | | X | | | |
| 160 | 80 | 4.0 | 15.224 | | X | | | |
| 160 | 80 | 5.0 | 18.905 | | X | | X | |
| 160 | 80 | 5.0 | 18.905 | | | | | |
| 200 | 100 | 3.0 | 14.423 | | X | | | |
| 200 | 100 | 4.0 | 19.131 | | X | | | |
| 200 | 100 | 5.0 | 23.788 | | X | | | |
| 200 | 100 | 6.0 | 28.395 | | X | | | |
| 200 | 150 | 4.0 | 21.400 | | X | | | |
| 200 | 200 | 3.0 | 19.306 | | X | | | |
| 200 | 200 | 4.0 | 25.641 | | X | | | |
| 200 | 200 | 5.0 | 31.962 | | X | | | |
| 200 | 200 | 6.0 | 38.161 | | X | | | |
| 250 | 100 | 3.0 | 17.089 | | X | | | |
| 250 | 100 | 4.0 | 22.386 | | X | | | |
| 250 | 100 | 5.0 | 27.857 | | X | | | |
| 250 | 100 | 8.0 | 40.700 | | X | | | |
| 250 | 150 | 4.0 | 25.641 | | X | | | |
| 250 | 150 | 5.0 | 30.962 | | X | | | |
| 250 | 150 | 10.0 | 62.600 | | X | | | |

Stainless

Seamless tubes

Seamless stainless steel tubes in fabrication lengths of 5 - 7 m.

Type: ASTM/ASME SA 312 and ANSI B 36.19,

EN 10216-5 TC 1 (DIN 17458 PK 1), tolerance according to EN ISO 1127.

In bright annealed or annealed pickled conditions.

| Dimension | | Weight Kg/m | EN 1.4301 EN 1.4306 EN 1.4307 | EN 1.4541 | EN 1.4404 | EN 1.4571 |
|-----------|------|----------------|-------------------------------------|-----------|-----------|-----------|
| OD | Wall | | | | | |
| 4.00 | 1.00 | 0.075 | X | | | |
| 6.00 | 1.00 | 0.125 | X | | | |
| 6.00 | 1.00 | 0.125 | | | X | |
| 6.00 | 1.00 | 0.125 | | X | | |
| 6.00 | 1.00 | 0.125 | | | | X |
| 6.00 | 1.50 | 0.169 | | X | | |
| 6.00 | 1.50 | 0.169 | | | | X |
| 6.00 | 1.50 | 0.169 | X | | | |
| 6.00 | 2.00 | 0.200 | | | | X |
| 6.00 | 2.00 | 0.200 | X | | | |
| 7.00 | 1.00 | 0.150 | | X | | |
| 7.00 | 1.00 | 0.150 | | | | X |
| 7.00 | 1.00 | 0.150 | X | | | |
| 8.00 | 0.50 | 0.094 | | | | X |
| 8.00 | 1.00 | 0.175 | X | | | |
| 8.00 | 1.00 | 0.175 | | X | X | |
| 8.00 | 1.00 | 0.175 | | | | X |
| 8.00 | 1.50 | 0.244 | X | | | |
| 8.00 | 1.50 | 0.244 | | | X | |
| 8.00 | 1.50 | 0.244 | | X | X | |
| 8.00 | 1.50 | 0.244 | X | | | X |
| 8.00 | 1.50 | 0.244 | | X | | |
| 8.00 | 2.00 | 0.300 | | X | | |
| 8.00 | 2.00 | 0.300 | X | | | X |
| 9.00 | 1.00 | 0.200 | | | | X |
| 9.00 | 1.00 | 0.200 | X | | | |
| 10.00 | 0.50 | 0.119 | | | | X |
| 10.00 | 1.00 | 0.225 | X | | | |
| 10.00 | 1.00 | 0.225 | | | X | |
| 10.00 | 1.00 | 0.225 | | | X | |
| 10.00 | 1.00 | 0.225 | | X | | |
| 10.00 | 1.00 | 0.225 | | | | X |
| 10.00 | 1.50 | 0.319 | X | | | |
| 10.00 | 1.50 | 0.319 | | | X | |
| 10.00 | 1.50 | 0.319 | | X | | |
| 10.00 | 1.50 | 0.319 | | | | X |
| 10.00 | 2.00 | 0.401 | X | | | |
| 10.00 | 2.00 | 0.401 | | X | | |
| 10.00 | 2.00 | 0.401 | | | | X |
| 10.00 | 2.50 | 0.470 | | X | | |

| Dimension | | Weight Kg/m | EN 1.4301 EN 1.4306 EN 1.4307 | EN 1.4541 | EN 1.4404 | EN 1.4571 |
|-----------|------|----------------|-------------------------------------|-----------|-----------|-----------|
| OD | Wall | | | | | |
| 10.00 | 2.50 | 0.470 | | | | X |
| 10.00 | 2.50 | 0.470 | X | | | |
| 10.20 | 2.00 | 0.411 | | X | | |
| 10.20 | 2.00 | 0.411 | | | | X |
| 10.20 | 2.00 | 0.411 | X | | | |
| 11.00 | 1.00 | 0.250 | | X | | |
| 11.00 | 1.00 | 0.250 | | | | X |
| 11.00 | 1.50 | 0.357 | | X | | |
| 11.00 | 1.50 | 0.357 | | | | X |
| 12.00 | 0.50 | 0.144 | | | | X |
| 12.00 | 1.00 | 0.275 | X | | | |
| 12.00 | 1.00 | 0.275 | | | X | |
| 12.00 | 1.00 | 0.275 | | | X | |
| 12.00 | 1.00 | 0.275 | | X | | |
| 12.00 | 1.00 | 0.275 | | | | X |
| 12.00 | 1.50 | 0.394 | X | | X | |
| 12.00 | 1.50 | 0.394 | | | | |
| 12.00 | 1.50 | 0.394 | | X | | |
| 12.00 | 1.50 | 0.394 | | | | X |
| 12.00 | 2.00 | 0.501 | X | | | |
| 12.00 | 2.00 | 0.501 | | | X | |
| 12.00 | 2.00 | 0.501 | | X | | |
| 12.00 | 2.50 | 0.595 | | X | | |
| 12.00 | 2.50 | 0.595 | | | | X |
| 12.00 | 2.50 | 0.595 | X | | | |
| 12.00 | 3.00 | 0.676 | | X | | |
| 12.00 | 3.00 | 0.676 | | | | X |
| 12.00 | 3.00 | 0.676 | X | | | |
| 12.70 | 1.65 | 0.457 | | | X | |
| 12.70 | 1.65 | 0.457 | | X | | |
| 13.00 | 1.00 | 0.300 | | | | X |
| 13.00 | 1.50 | 0.432 | | | | X |
| 13.00 | 1.50 | 0.432 | X | | | |
| 13.00 | 2.50 | 0.657 | | X | | |
| 13.00 | 2.50 | 0.657 | | | | X |
| 13.00 | 2.50 | 0.657 | X | | | |
| 13.00 | 2.60 | 0.677 | | | | X |
| 13.50 | 1.60 | 0.477 | | X | | |
| 13.50 | 1.60 | 0.477 | | | | X |
| 13.50 | 1.60 | 0.477 | X | | | |
| 13.50 | 2.30 | 0.645 | | X | | |
| 13.50 | 2.30 | 0.645 | | | | X |
| 13.50 | 2.30 | 0.645 | X | | | |
| 13.50 | 2.60 | 0.710 | | X | | |
| 13.50 | 2.60 | 0.710 | | | | X |
| 13.50 | 2.90 | 0.770 | | X | | |
| 13.70 | 2.24 | 0.650 | | | X | |
| 14.00 | 1.00 | 0.326 | | | | X |
| 14.00 | 1.00 | 0.326 | X | | | |
| 14.00 | 1.50 | 0.470 | X | | | |
| 14.00 | 1.50 | 0.470 | | X | | |
| 14.00 | 1.50 | 0.470 | | | | X |
| 14.00 | 2.00 | 0.601 | | | X | |

| Dimension | | Weight Kg/m | EN 1.4301 EN 1.4306 EN 1.4307 | EN 1.4541 | EN 1.4404 | EN 1.4571 |
|-----------|------|----------------|-------------------------------------|-----------|-----------|-----------|
| OD | Wall | | | | | |
| 14.00 | 2.00 | 0.601 | | X | | |
| 14.00 | 2.00 | 0.601 | | | | X |
| 14.00 | 2.00 | 0.601 | X | | | |
| 14.00 | 2.50 | 0.720 | | X | | |
| 14.00 | 2.50 | 0.720 | | | | X |
| 14.00 | 2.50 | 0.720 | X | | | |
| 14.00 | 3.00 | 0.826 | | X | | |
| 14.00 | 3.00 | 0.826 | | | | X |
| 14.00 | 3.00 | 0.826 | X | | | |
| 15.00 | 1.00 | 0.351 | | X | | |
| 15.00 | 1.00 | 0.351 | | | | X |
| 15.00 | 1.00 | 0.351 | X | | | |
| 15.00 | 1.50 | 0.507 | X | | | |
| 15.00 | 1.50 | 0.507 | | | X | |
| 15.00 | 1.50 | 0.507 | | X | | |
| 15.00 | 1.50 | 0.507 | | | | X |
| 15.00 | 2.00 | 0.651 | X | | | |
| 15.00 | 2.00 | 0.651 | | X | | |
| 15.00 | 2.00 | 0.651 | | | | X |
| 15.00 | 2.00 | 0.651 | | X | | |
| 15.00 | 2.50 | 0.783 | | X | | |
| 15.00 | 2.50 | 0.651 | X | | | |
| 15.00 | 3.00 | 0.901 | | X | | |
| 15.00 | 3.00 | 0.901 | | | | X |
| 15.00 | 3.00 | 0.901 | X | | | |
| 16.00 | 1.00 | 0.376 | | X | | |
| 16.00 | 1.00 | 0.376 | | | | X |
| 16.00 | 1.00 | 0.376 | X | | | |
| 16.00 | 1.50 | 0.545 | X | | | |
| 16.00 | 1.50 | 0.545 | | X | | |
| 16.00 | 1.50 | 0.545 | | | | X |
| 16.00 | 2.00 | 0.701 | X | | | |
| 16.00 | 2.00 | 0.701 | | | X | |
| 16.00 | 2.00 | 0.701 | | X | | |
| 16.00 | 2.00 | 0.701 | | | | X |
| 16.00 | 2.50 | 0.845 | | X | | |
| 16.00 | 2.50 | 0.845 | | | | X |
| 16.00 | 2.50 | 0.845 | X | | | |
| 16.00 | 3.00 | 0.977 | | X | | |
| 16.00 | 3.00 | 0.977 | | | | X |
| 16.00 | 3.00 | 0.977 | X | | | |
| 16.00 | 3.50 | 1.096 | | | | X |
| 16.00 | 4.00 | 1.202 | | X | | |
| 16.00 | 4.00 | 1.202 | | | | X |
| 16.00 | 4.00 | 1.202 | X | | | |
| 17.15 | 3.20 | 1.120 | | | X | |
| 17.20 | 1.60 | 0.625 | | X | | |
| 17.20 | 1.60 | 0.625 | | | | X |
| 17.20 | 2.00 | 0.761 | | X | | |
| 17.20 | 2.00 | 0.761 | | | | X |
| 17.20 | 2.00 | 0.761 | X | | | |
| 17.20 | 2.30 | 0.858 | | X | | |
| 17.20 | 2.30 | 0.858 | | | | X |
| 17.20 | 2.30 | 0.858 | X | | | |
| 17.20 | 2.90 | 1.038 | | X | | |
| 17.20 | 2.90 | 1.038 | | | | X |
| 17.20 | 2.90 | 1.038 | X | | | |

| Dimension | | Weight Kg/m | EN 1.4301 EN 1.4306 EN 1.4307 | EN 1.4541 | EN 1.4404 | EN 1.4571 |
|-----------|------|----------------|-------------------------------------|-----------|-----------|-----------|
| OD | Wall | | | | | |
| 17.20 | 3.20 | 1.122 | | X | | |
| 17.20 | 3.60 | 1.226 | | | | X |
| 18.00 | 1.00 | 0.426 | | X | | |
| 18.00 | 1.00 | 0.426 | | | | X |
| 18.00 | 1.00 | 0.426 | X | | | |
| 18.00 | 1.50 | 0.620 | | | X | |
| 18.00 | 1.50 | 0.620 | | X | | |
| 18.00 | 1.50 | 0.620 | | | | X |
| 18.00 | 1.50 | 0.620 | X | | | |
| 18.00 | 2.00 | 0.801 | X | | | |
| 18.00 | 2.00 | 0.801 | | | X | |
| 18.00 | 2.00 | 0.801 | | X | | |
| 18.00 | 2.00 | 0.801 | | | | X |
| 18.00 | 2.50 | 0.970 | | X | | |
| 18.00 | 2.50 | 0.970 | | | | X |
| 18.00 | 2.50 | 0.970 | | | X | |
| 18.00 | 3.00 | 1.127 | | X | | |
| 18.00 | 3.00 | 1.127 | | | | X |
| 18.00 | 3.00 | 1.127 | X | | | |
| 18.00 | 4.00 | 1.402 | | X | | |
| 18.00 | 4.00 | 1.402 | | | | X |
| 20.00 | 1.00 | 0.476 | | X | | |
| 20.00 | 1.00 | 0.476 | | | | X |
| 20.00 | 1.00 | 0.476 | X | | | |
| 20.00 | 1.50 | 0.695 | X | | | |
| 20.00 | 1.50 | 0.695 | | X | | |
| 20.00 | 1.50 | 0.695 | | | | X |
| 20.00 | 2.00 | 0.901 | X | | | |
| 20.00 | 2.00 | 0.901 | | | X | |
| 20.00 | 2.00 | 0.901 | | X | | |
| 20.00 | 2.00 | 0.901 | | | | X |
| 20.00 | 2.00 | 0.901 | | | | X |
| 20.00 | 2.50 | 1.096 | X | | | |
| 20.00 | 2.50 | 1.096 | | X | | |
| 20.00 | 2.50 | 1.096 | | | | X |
| 20.00 | 3.00 | 1.277 | | X | | |
| 20.00 | 3.00 | 1.277 | | | | X |
| 20.00 | 3.00 | 1.277 | X | | | |
| 20.00 | 3.50 | 1.446 | | X | | |
| 20.00 | 3.50 | 1.446 | | | | X |
| 20.00 | 3.50 | 1.446 | X | | | |
| 20.00 | 4.00 | 1.603 | | X | | |
| 20.00 | 4.00 | 1.603 | | | | X |
| 20.00 | 4.00 | 1.603 | X | | | |
| 20.00 | 5.00 | 1.878 | | X | | |
| 20.00 | 5.00 | 1.878 | | | | X |
| 20.00 | 5.00 | 1.878 | X | | | |
| 20.00 | 5.00 | 1.878 | | X | | |
| 20.00 | 6.00 | 2.103 | X | | | |
| 21.30 | 1.60 | 0.789 | | X | | |
| 21.30 | 1.60 | 0.789 | | | | X |
| 21.30 | 2.00 | 0.967 | | X | | |
| 21.30 | 2.00 | 0.967 | | | | X |
| 21.30 | 2.00 | 0.967 | X | | | |
| 21.30 | 2.00 | 0.967 | | | X | |
| 21.30 | 2.10 | 1.016 | | | | |
| 21.30 | 2.11 | 1.014 | X | | | |
| 21.30 | 2.60 | 1.217 | | X | | |

| Dimension | | Weight Kg/m | EN 1.4301 EN 1.4306 EN 1.4307 | EN 1.4541 | EN 1.4404 | EN 1.4571 |
|-----------|------|----------------|-------------------------------------|-----------|-----------|-----------|
| OD | Wall | | | | | |
| 21.30 | 2.60 | 1.217 | | | | X |
| 21.30 | 2.60 | 1.217 | X | | | |
| 21.30 | 2.80 | 1.288 | | | X | |
| 21.30 | 2.90 | 1.336 | | X | | |
| 21.30 | 2.90 | 1.336 | | | | X |
| 21.30 | 3.00 | 1.375 | X | | | |
| 21.30 | 3.20 | 1.450 | | X | | |
| 21.30 | 3.20 | 1.450 | | | | X |
| 21.30 | 3.20 | 1.450 | X | | | |
| 21.30 | 3.70 | 1.645 | | | X | |
| 21.30 | 4.80 | 1.982 | | | X | |
| 21.33 | 3.73 | 1.648 | | | X | |
| 21.34 | 2.11 | 1.016 | | | X | |
| 21.34 | 2.11 | 1.016 | | X | | |
| 21.34 | 2.77 | 1.288 | | | X | |
| 21.34 | 2.77 | 1.288 | X | X | | |
| 21.34 | 3.73 | 1.648 | | | X | |
| 21.34 | 3.73 | 1.645 | | X | | |
| 21.34 | 3.73 | 1.645 | | | | X |
| 21.34 | 4.78 | 1.982 | | X | | |
| 21.34 | 4.78 | 1.982 | | | | X |
| 22.00 | 1.00 | 0.526 | | X | | |
| 22.00 | 1.00 | 0.526 | | | | X |
| 22.00 | 1.00 | 0.526 | X | | | |
| 22.00 | 1.50 | 0.770 | X | | | |
| 22.00 | 1.50 | 0.770 | | X | | |
| 22.00 | 1.50 | 0.770 | | | | X |
| 22.00 | 2.00 | 1.002 | X | | | |
| 22.00 | 2.00 | 1.002 | | | X | |
| 22.00 | 2.00 | 1.002 | | X | | |
| 22.00 | 2.50 | 1.221 | | X | | |
| 22.00 | 2.50 | 1.221 | | | | X |
| 22.00 | 3.00 | 1.427 | | X | | |
| 22.00 | 3.00 | 1.427 | | | | X |
| 22.00 | 3.00 | 1.277 | X | | | |
| 22.00 | 4.00 | 1.803 | | X | | |
| 22.00 | 4.00 | 1.803 | | | | X |
| 22.00 | 4.00 | 1.803 | X | | | |
| 22.00 | 6.00 | 2.404 | X | | | |
| 23.00 | 1.50 | 0.808 | | | | X |
| 24.00 | 1.50 | 0.845 | | X | | |
| 24.00 | 2.00 | 1.102 | X | | | |
| 24.00 | 3.00 | 1.578 | | | | X |
| 24.00 | 4.00 | 2.003 | | | | X |
| 25.00 | 1.00 | 0.601 | | X | | |
| 25.00 | 1.00 | 0.601 | | | | X |
| 25.00 | 1.00 | 0.601 | X | | | |
| 25.00 | 1.50 | 0.883 | | X | | |
| 25.00 | 1.50 | 0.883 | | | | X |
| 25.00 | 1.50 | 0.883 | X | | | |
| 25.00 | 2.00 | 1.152 | X | | | |
| 25.00 | 2.00 | 1.152 | | | X | |

| Dimension | | Weight Kg/m | EN 1.4301 EN 1.4306 EN 1.4307 | EN 1.4541 | EN 1.4404 | EN 1.4571 |
|-----------|------|----------------|-------------------------------------|-----------|-----------|-----------|
| OD | Wall | | | | | |
| 25.00 | 2.00 | 1.152 | | X | | |
| 25.00 | 2.00 | 1.152 | | | | X |
| 25.00 | 2.50 | 1.409 | X | | | |
| 25.00 | 2.50 | 1.409 | | X | | |
| 25.00 | 2.50 | 1.409 | | | | X |
| 25.00 | 3.00 | 1.653 | X | | | |
| 25.00 | 3.00 | 1.653 | | X | | |
| 25.00 | 3.00 | 1.653 | | | | X |
| 25.00 | 3.50 | 1.884 | X | | | |
| 25.00 | 4.00 | 2.103 | | X | | |
| 25.00 | 4.00 | 2.103 | | | | X |
| 25.00 | 4.00 | 2.103 | X | | | |
| 25.00 | 5.00 | 2.504 | | X | | |
| 25.00 | 5.00 | 2.504 | | | | X |
| 25.00 | 5.00 | 2.504 | X | | | |
| 25.00 | 6.00 | 2.855 | X | | | |
| 26.67 | 2.11 | 1.298 | X | | | |
| 26.67 | 2.87 | 1.710 | | | X | |
| 26.67 | 2.87 | 1.710 | X | | | |
| 26.67 | 3.91 | 2.228 | | | X | |
| 26.67 | 3.91 | 2.228 | | X | | |
| 26.67 | 3.91 | 2.228 | X | | | X |
| 26.67 | 5.54 | 2.931 | | X | | |
| 26.67 | 5.54 | 2.931 | | | | X |
| 26.70 | 2.10 | 1.298 | | | X | |
| 26.70 | 2.90 | 1.710 | | | X | |
| 26.70 | 3.90 | 2.228 | | | X | |
| 26.70 | 5.60 | 2.939 | | | X | |
| 26.90 | 1.60 | 1.014 | | X | | |
| 26.90 | 1.60 | 1.014 | | | | X |
| 26.90 | 2.00 | 1.247 | | X | | |
| 26.90 | 2.00 | 1.247 | | | | X |
| 26.90 | 2.00 | 1.247 | X | | | |
| 26.90 | 2.30 | 1.417 | | X | | |
| 26.90 | 2.30 | 1.417 | | | | X |
| 26.90 | 2.60 | 1.582 | | X | | |
| 26.90 | 2.60 | 1.582 | | | | X |
| 26.90 | 2.60 | 1.582 | X | | | |
| 26.90 | 2.90 | 1.743 | | X | | |
| 26.90 | 2.90 | 1.743 | | | | X |
| 26.90 | 3.20 | 1.899 | | X | | |
| 26.90 | 3.20 | 1.899 | | | | X |
| 26.90 | 3.20 | 1.899 | X | | | |
| 26.90 | 4.00 | 2.294 | | X | | |
| 28.00 | 1.00 | 0.676 | X | | | |
| 28.00 | 1.50 | 0.995 | | X | | |
| 28.00 | 1.50 | 0.995 | | | | X |
| 28.00 | 1.50 | 0.995 | X | | | |
| 28.00 | 2.00 | 1.302 | | X | | |
| 28.00 | 2.00 | 1.302 | | | | X |
| 28.00 | 2.00 | 1.302 | X | | | |
| 28.00 | 2.50 | 1.596 | X | | | |
| 28.00 | 2.50 | 1.596 | | | X | |

| Dimension | | Weight Kg/m | EN 1.4301 EN 1.4306 EN 1.4307 | EN 1.4541 | EN 1.4404 | EN 1.4571 |
|-----------|------|----------------|-------------------------------------|-----------|-----------|-----------|
| OD | Wall | | | | | |
| 28.00 | 2.50 | 1.596 | | X | | |
| 28.00 | 2.50 | 1.596 | | | | X |
| 28.00 | 3.00 | 1.878 | | X | | |
| 28.00 | 3.00 | 1.878 | | | | X |
| 28.00 | 3.00 | 1.878 | X | | | |
| 28.00 | 4.00 | 2.404 | | X | | |
| 28.00 | 4.00 | 2.404 | | | | X |
| 28.00 | 4.00 | 2.404 | X | | | |
| 28.00 | 5.00 | 2.880 | | X | | |
| 28.00 | 5.00 | 2.880 | | | | X |
| 30.00 | 1.00 | 0.726 | X | | | |
| 30.00 | 1.50 | 1.070 | | X | | |
| 30.00 | 1.50 | 1.070 | | | | X |
| 30.00 | 1.50 | 1.070 | X | | | |
| 30.00 | 2.00 | 1.402 | | X | | |
| 30.00 | 2.00 | 1.402 | | | | X |
| 30.00 | 2.00 | 1.402 | X | | | |
| 30.00 | 2.50 | 1.722 | | X | | |
| 30.00 | 2.50 | 1.722 | | | | X |
| 30.00 | 2.50 | 1.722 | X | | | |
| 30.00 | 2.60 | 1.784 | X | | | |
| 30.00 | 3.00 | 2.028 | X | | | |
| 30.00 | 3.00 | 2.028 | | | X | |
| 30.00 | 3.00 | 2.028 | | X | | |
| 30.00 | 3.00 | 2.028 | | | | X |
| 30.00 | 3.00 | 2.028 | | | | |
| 30.00 | 4.00 | 2.604 | X | | | |
| 30.00 | 4.00 | 2.604 | | X | | |
| 30.00 | 4.00 | 2.604 | | | | X |
| 30.00 | 5.00 | 3.130 | | X | | |
| 30.00 | 5.00 | 3.130 | | | | X |
| 30.00 | 5.00 | 3.130 | X | | | |
| 32.00 | 1.50 | 1.146 | X | | | |
| 32.00 | 2.00 | 1.502 | | X | | |
| 32.00 | 2.00 | 1.502 | | | | X |
| 32.00 | 3.00 | 2.178 | | X | | |
| 32.00 | 3.00 | 2.178 | | | | X |
| 32.00 | 3.00 | 2.178 | X | | | |
| 33.40 | 2.77 | 2.125 | | | X | |
| 33.40 | 2.77 | 2.125 | | X | | |
| 33.40 | 2.77 | 2.125 | | | | X |
| 33.40 | 2.77 | 2.125 | X | | | |
| 33.40 | 3.38 | 2.541 | | | X | |
| 33.40 | 3.38 | 2.541 | | X | | |
| 33.40 | 3.38 | 2.541 | | | | X |
| 33.40 | 3.38 | 2.541 | X | | | |
| 33.40 | 4.55 | 3.287 | | | X | |
| 33.40 | 4.55 | 3.287 | | X | | |
| 33.40 | 4.55 | 3.287 | | | | X |
| 33.40 | 4.55 | 3.287 | X | | | |
| 33.40 | 6.35 | 4.301 | | | X | |
| 33.40 | 6.35 | 4.301 | | X | | |
| 33.40 | 6.35 | 4.301 | | | | X |
| 33.70 | 2.00 | 1.588 | | X | | |
| 33.70 | 2.00 | 1.588 | | | | X |
| 33.70 | 2.00 | 1.588 | X | | | |

| Dimension | | Weight Kg/m | EN 1.4301 EN 1.4306 EN 1.4307 | EN 1.4541 | EN 1.4404 | EN 1.4571 |
|-----------|------|----------------|-------------------------------------|-----------|-----------|-----------|
| OD | Wall | | | | | |
| 33.70 | 2.60 | 2.025 | | X | | |
| 33.70 | 2.60 | 2.025 | | | | X |
| 33.70 | 2.60 | 2.025 | X | | | |
| 33.70 | 2.90 | 2.237 | | X | | |
| 33.70 | 2.90 | 2.237 | | | | X |
| 33.70 | 3.20 | 2.444 | | X | | |
| 33.70 | 3.20 | 2.444 | | | | X |
| 33.70 | 3.20 | 2.444 | X | | | |
| 33.70 | 3.60 | 2.713 | | X | | |
| 33.70 | 3.60 | 2.713 | | | | X |
| 33.70 | 4.05 | 3.007 | | X | | |
| 33.70 | 4.05 | 3.007 | | | | X |
| 33.70 | 4.05 | 3.007 | X | | | |
| 33.70 | 5.00 | 3.593 | | | | X |
| 34.00 | 2.00 | 1.603 | | | | X |
| 35.00 | 1.50 | 1.258 | | X | | |
| 35.00 | 1.50 | 1.258 | | | | X |
| 35.00 | 1.50 | 1.258 | X | | | |
| 35.00 | 2.00 | 1.653 | | X | | |
| 35.00 | 2.00 | 1.653 | | | | X |
| 35.00 | 2.00 | 1.653 | X | | | |
| 35.00 | 2.50 | 2.035 | | X | | |
| 35.00 | 2.50 | 2.035 | | | | X |
| 35.00 | 2.50 | 2.035 | X | | | |
| 35.00 | 3.00 | 2.404 | | X | | |
| 35.00 | 3.00 | 2.404 | | | | X |
| 35.00 | 3.00 | 2.404 | X | | | |
| 35.00 | 4.00 | 3.105 | | X | | |
| 35.00 | 4.00 | 3.105 | | | | X |
| 35.00 | 4.00 | 3.105 | X | | | |
| 35.00 | 5.00 | 3.756 | X | | | |
| 35.00 | 5.00 | 3.756 | | X | | |
| 35.00 | 5.00 | 3.756 | | | | X |
| 36.00 | 2.00 | 1.703 | | X | | |
| 36.00 | 2.00 | 1.703 | | | | X |
| 38.00 | 1.50 | 1.371 | | X | | |
| 38.00 | 1.50 | 1.371 | | | | X |
| 38.00 | 1.50 | 1.371 | X | | | |
| 38.00 | 2.00 | 1.803 | | X | | |
| 38.00 | 2.00 | 1.803 | | | | X |
| 38.00 | 2.00 | 1.803 | X | | | |
| 38.00 | 2.50 | 2.222 | | X | | |
| 38.00 | 2.50 | 2.222 | | | | X |
| 38.00 | 2.50 | 2.222 | X | | | |
| 38.00 | 2.60 | 2.305 | | | | X |
| 38.00 | 3.00 | 2.629 | X | | | |
| 38.00 | 3.00 | 2.629 | | X | | |
| 38.00 | 3.00 | 2.629 | | | | X |
| 38.00 | 3.60 | 3.101 | | X | | |
| 38.00 | 3.60 | 3.101 | | | | X |
| 38.00 | 4.00 | 3.405 | X | | | |
| 38.00 | 4.00 | 3.405 | | | X | |
| 38.00 | 4.00 | 3.405 | | X | | |
| 38.00 | 4.00 | 3.405 | | | | X |

| Dimension | | Weight Kg/m | EN 1.4301 EN 1.4306 EN 1.4307 | EN 1.4541 | EN 1.4404 | EN 1.4571 |
|-----------|------|----------------|-------------------------------------|-----------|-----------|-----------|
| OD | Wall | | | | | |
| 38.00 | 5.00 | 4.132 | X | X | | X |
| 38.00 | 5.00 | 4.132 | | | | |
| 38.00 | 5.00 | 4.132 | | | | |
| 38.00 | 6.00 | 4.808 | | | | X |
| 40.00 | 2.00 | 1.903 | | X | | |
| 40.00 | 2.00 | 1.903 | X | | | X |
| 40.00 | 2.00 | 1.903 | | | | |
| 40.00 | 2.50 | 2.348 | | X | | |
| 40.00 | 2.50 | 2.348 | | | | X |
| 40.00 | 2.50 | 2.348 | | | | |
| 40.00 | 3.00 | 2.779 | X | | | X |
| 40.00 | 3.00 | 2.779 | | | | |
| 40.00 | 4.00 | 3.606 | | X | | |
| 40.00 | 4.00 | 3.606 | | | | X |
| 40.00 | 5.00 | 4.382 | | X | | |
| 40.00 | 5.00 | 4.382 | X | | | X |
| 40.00 | 5.00 | 4.382 | | | | |
| 42.00 | 2.00 | 2.003 | | X | | |
| 42.00 | 2.00 | 2.003 | | | | X |
| 42.00 | 2.00 | 2.003 | X | | | |
| 42.00 | 3.00 | 2.930 | X | | X | |
| 42.00 | 3.00 | 2.930 | | X | | |
| 42.00 | 3.00 | 2.930 | | | | X |
| 42.00 | 3.00 | 2.930 | | | | |
| 42.00 | 3.00 | 2.930 | | X | | |
| 42.00 | 6.00 | 5.409 | | X | | |
| 42.16 | 2.77 | 2.732 | X | | X | |
| 42.16 | 3.56 | 3.441 | | | X | |
| 42.16 | 3.56 | 3.441 | | | | |
| 42.16 | 4.85 | 4.531 | | | X | |
| 42.16 | 4.85 | 4.531 | | X | | |
| 42.16 | 4.85 | 4.531 | X | | | X |
| 42.16 | 4.85 | 4.531 | | | | |
| 42.16 | 6.35 | 5.694 | | X | | |
| 42.16 | 6.35 | 5.694 | | | | X |
| 42.40 | 2.00 | 2.023 | | X | | |
| 42.40 | 2.00 | 2.023 | X | | | X |
| 42.40 | 2.00 | 2.023 | | | | |
| 42.40 | 2.60 | 2.591 | | X | | |
| 42.40 | 2.60 | 2.591 | | | | X |
| 42.40 | 2.60 | 2.591 | | X | | |
| 42.40 | 3.20 | 3.141 | X | X | | |
| 42.40 | 3.20 | 3.141 | | | | X |
| 42.40 | 3.20 | 3.141 | | | | |
| 42.40 | 3.60 | 3.498 | | X | | |
| 42.40 | 3.60 | 3.498 | | | | X |
| 42.40 | 4.05 | 3.889 | X | X | | |
| 42.40 | 4.05 | 3.889 | | | | X |
| 42.40 | 4.05 | 3.889 | | | | |
| 44.50 | 2.00 | 2.128 | | X | | |
| 44.50 | 2.00 | 2.128 | | | | X |
| 44.50 | 2.00 | 2.128 | X | | | |
| 44.50 | 2.50 | 2.629 | | | | |
| 44.50 | 2.50 | 2.629 | | X | | |
| 44.50 | 2.90 | 3.021 | | X | | X |

| Dimension | | Weight Kg/m | EN 1.4301 EN 1.4306 EN 1.4307 | EN 1.4541 | EN 1.4404 | EN 1.4571 |
|-----------|------|----------------|-------------------------------------|-----------|-----------|-----------|
| OD | Wall | | | | | |
| 44.50 | 2.90 | 3.021 | X | | | X |
| 44.50 | 4.00 | 4.056 | | X | | |
| 44.50 | 4.00 | 4.056 | | | | X |
| 44.50 | 5.50 | 5.371 | | | | |
| 48.26 | 2.77 | 3.155 | | | X | |
| 48.26 | 2.77 | 3.155 | X | | | |
| 48.26 | 3.68 | 4.108 | | | X | |
| 48.26 | 3.68 | 4.108 | | X | | |
| 48.26 | 3.68 | 4.108 | | | | X |
| 48.26 | 3.68 | 4.108 | | X | | |
| 48.26 | 5.08 | 5.493 | X | | | |
| 48.26 | 7.14 | 7.352 | | | X | |
| 48.26 | 7.14 | 7.352 | | X | | |
| 48.26 | 7.14 | 7.352 | | | | X |
| 48.30 | 2.00 | 2.319 | | X | | |
| 48.30 | 2.00 | 2.319 | X | | | X |
| 48.30 | 2.00 | 2.319 | | | | |
| 48.30 | 2.30 | 2.649 | | X | | |
| 48.30 | 2.30 | 2.649 | | | | X |
| 48.30 | 2.60 | 2.975 | X | X | | |
| 48.30 | 2.60 | 2.975 | | | | X |
| 48.30 | 2.80 | 3.155 | | | X | |
| 48.30 | 2.90 | 3.297 | | | | X |
| 48.30 | 3.20 | 3.614 | | X | | |
| 48.30 | 3.20 | 3.614 | | | | X |
| 48.30 | 3.20 | 3.614 | X | | | |
| 48.30 | 3.60 | 4.029 | | X | | |
| 48.30 | 3.60 | 4.029 | | | | X |
| 48.30 | 3.70 | 4.108 | | | X | |
| 48.30 | 4.05 | 4.487 | X | X | | |
| 48.30 | 4.05 | 4.487 | | | | X |
| 48.30 | 4.05 | 4.487 | | | | |
| 48.30 | 5.08 | 5.498 | | | X | |
| 48.30 | 5.08 | 5.498 | | X | | |
| 48.30 | 5.08 | 5.498 | | | | X |
| 48.30 | 6.30 | 6.626 | | X | | |
| 48.30 | 6.30 | 6.626 | | | | X |
| 48.30 | 8.00 | 8.073 | | X | | |
| 48.30 | 8.00 | 8.073 | | | | X |
| 50.00 | 1.50 | 1.822 | X | X | | |
| 50.00 | 2.00 | 2.404 | | | | |
| 50.00 | 2.00 | 2.404 | X | | | |
| 50.00 | 3.00 | 3.531 | | | | X |
| 50.00 | 3.00 | 3.531 | X | | | |
| 50.00 | 4.00 | 4.607 | X | X | | |
| 50.00 | 4.00 | 4.607 | | | | X |
| 50.00 | 5.00 | 5.634 | | X | | |
| 50.00 | 5.00 | 5.634 | | | | X |
| 50.00 | 5.00 | 5.634 | | X | | |
| 50.00 | 6.00 | 6.611 | X | X | | |
| 50.00 | 6.00 | 6.611 | | | | X |
| 50.00 | 6.00 | 6.611 | | | | |
| 51.00 | 2.60 | 3.151 | | X | | |
| 51.00 | 2.60 | 3.151 | | | | X |

| Dimension | | Weight Kg/m | EN 1.4301 EN 1.4306 EN 1.4307 | EN 1.4541 | EN 1.4404 | EN 1.4571 |
|-----------|-------|----------------|-------------------------------------|-----------|-----------|-----------|
| OD | Wall | | | | | |
| 51.00 | 4.00 | 4.708 | | X | | |
| 51.00 | 4.00 | 4.708 | | | | X |
| 54.00 | 2.00 | 2.604 | | X | | |
| 54.00 | 2.00 | 2.604 | | | | X |
| 54.00 | 2.00 | 2.604 | X | | | |
| 55.00 | 5.00 | 6.260 | | X | | |
| 55.00 | 5.00 | 6.260 | | | | X |
| 55.00 | 5.00 | 6.260 | X | | | |
| 57.00 | 2.00 | 2.754 | | X | | |
| 57.00 | 2.00 | 2.754 | | | | X |
| 57.00 | 2.00 | 2.754 | X | | | |
| 57.00 | 2.50 | 3.412 | | X | | |
| 57.00 | 2.90 | 3.929 | | X | | |
| 57.00 | 2.90 | 3.929 | | | | X |
| 57.00 | 2.90 | 3.929 | X | | | |
| 57.00 | 3.50 | 4.689 | | X | | |
| 57.00 | 3.50 | 4.689 | | | | X |
| 57.00 | 4.00 | 5.308 | | X | | |
| 57.00 | 4.00 | 5.308 | | | | X |
| 57.00 | 6.50 | 8.219 | | X | | |
| 57.00 | 6.50 | 8.219 | | | | X |
| 60.00 | 5.00 | 6.886 | | | | X |
| 60.00 | 5.00 | 6.886 | X | | | |
| 60.30 | 2.00 | 2.920 | | X | | |
| 60.30 | 2.00 | 2.920 | | | | X |
| 60.30 | 2.00 | 2.920 | X | | | |
| 60.30 | 2.60 | 3.757 | | X | | |
| 60.30 | 2.60 | 3.757 | | | | X |
| 60.30 | 2.60 | 3.757 | X | | | |
| 60.30 | 2.80 | 3.992 | | | X | |
| 60.30 | 2.90 | 4.168 | | X | | |
| 60.30 | 2.90 | 4.168 | | | | X |
| 60.30 | 2.90 | 4.168 | X | | | |
| 60.30 | 3.20 | 4.575 | | | | X |
| 60.30 | 3.25 | 4.643 | | X | | |
| 60.30 | 3.60 | 5.111 | | X | | |
| 60.30 | 3.60 | 5.111 | | | | X |
| 60.30 | 3.60 | 5.111 | X | | | |
| 60.30 | 3.90 | 5.524 | | | X | |
| 60.30 | 4.00 | 5.639 | | X | | |
| 60.30 | 4.00 | 5.639 | | | | X |
| 60.30 | 4.50 | 6.288 | | X | | |
| 60.30 | 4.50 | 6.288 | | | | X |
| 60.30 | 4.50 | 6.288 | X | | | |
| 60.30 | 5.00 | 6.924 | | X | | |
| 60.30 | 5.00 | 6.924 | | | X | |
| 60.30 | 5.50 | 7.601 | | | | X |
| 60.30 | 6.30 | 8.519 | | X | | |
| 60.30 | 6.30 | 8.519 | | | | X |
| 60.30 | 7.10 | 9.458 | | X | | |
| 60.30 | 7.10 | 9.458 | | | | X |
| 60.30 | 8.00 | 10.477 | | X | | |
| 60.30 | 8.00 | 10.477 | | | | X |
| 60.30 | 10.00 | 12.595 | | X | | |

| Dimension | | Weight Kg/m | EN 1.4301 EN 1.4306 EN 1.4307 | EN 1.4541 | EN 1.4404 | EN 1.4571 |
|-----------|-------|----------------|-------------------------------------|-----------|-----------|-----------|
| OD | Wall | | | | | |
| 60.30 | 10.00 | 12.595 | | | | X |
| 60.33 | 2.77 | 3.992 | | | X | |
| 60.33 | 3.91 | 5.524 | | | X | |
| 60.33 | 3.91 | 5.524 | X | | | |
| 60.33 | 5.54 | 7.601 | | | X | |
| 60.33 | 5.54 | 7.601 | | X | | |
| 60.33 | 5.54 | 7.601 | | | | X |
| 60.33 | 5.54 | 7.601 | X | | | |
| 60.33 | 8.74 | 11.290 | | X | | |
| 60.33 | 8.74 | 11.290 | | | | X |
| 60.33 | 8.74 | 11.290 | | | | X |
| 63.50 | 2.50 | 3.819 | | X | | |
| 63.50 | 2.50 | 3.819 | | | | X |
| 63.50 | 3.60 | 5.400 | | X | | |
| 63.50 | 3.60 | 5.400 | | | | X |
| 70.00 | 2.00 | 3.405 | | X | | |
| 70.00 | 2.00 | 3.405 | | | | X |
| 70.00 | 2.00 | 3.405 | X | | | |
| 70.00 | 2.90 | 4.873 | | | | X |
| 70.00 | 2.90 | 4.873 | X | | | |
| 70.00 | 4.00 | 6.611 | | X | | |
| 70.00 | 4.00 | 6.611 | | | | X |
| 70.00 | 4.00 | 6.611 | X | | | |
| 70.00 | 5.00 | 8.138 | | X | | |
| 70.00 | 5.00 | 8.138 | | | | X |
| 70.00 | 5.00 | 8.138 | X | | | |
| 73.03 | 3.05 | 5.345 | | | | X |
| 73.03 | 5.16 | 8.769 | | | X | |
| 73.03 | 5.16 | 8.769 | | X | | |
| 73.03 | 5.16 | 8.769 | | | | X |
| 73.03 | 5.16 | 8.769 | X | | | |
| 76.10 | 2.00 | 3.711 | | X | | |
| 76.10 | 2.00 | 3.711 | | | | X |
| 76.10 | 2.30 | 4.250 | | X | | |
| 76.10 | 2.30 | 4.250 | | | | X |
| 76.10 | 2.60 | 4.785 | | X | | |
| 76.10 | 2.60 | 4.785 | | | | X |
| 76.10 | 2.90 | 5.315 | | X | | |
| 76.10 | 2.90 | 5.315 | | | | X |
| 76.10 | 2.90 | 5.315 | X | | | |
| 76.10 | 3.20 | 5.841 | | X | | |
| 76.10 | 3.20 | 5.841 | | | | X |
| 76.10 | 3.60 | 6.535 | | X | | |
| 76.10 | 3.60 | 6.535 | | | | X |
| 76.10 | 3.60 | 6.535 | X | | | |
| 76.10 | 4.00 | 7.222 | | X | | |
| 76.10 | 4.00 | 7.222 | | | | X |
| 76.10 | 4.00 | 7.222 | X | | | |
| 76.10 | 4.50 | 8.068 | | X | | |
| 76.10 | 4.50 | 8.068 | | | | X |
| 76.10 | 4.50 | 8.068 | X | | | |
| 76.10 | 5.00 | 8.902 | | X | | |
| 76.10 | 5.00 | 8.902 | | | | X |
| 76.10 | 6.30 | 11.011 | | X | | |
| 76.10 | 6.30 | 11.011 | | | | X |

| Dimension | | Weight Kg/m | EN 1.4301 EN 1.4306 EN 1.4307 | EN 1.4541 | EN 1.4404 | EN 1.4571 |
|-----------|-------|----------------|-------------------------------------|-----------|-----------|-----------|
| OD | Wall | | | | | |
| 76.10 | 6.30 | 11.011 | X | | | |
| 76.10 | 7.10 | 12.267 | | | | X |
| 76.10 | 8.00 | 13.642 | | X | | |
| 76.10 | 8.00 | 13.642 | | | | X |
| 76.10 | 10.00 | 16.551 | | X | | |
| 76.10 | 10.00 | 16.551 | | | | X |
| 76.10 | 12.50 | 19.907 | | X | | |
| 76.10 | 12.50 | 19.907 | | | | X |
| 80.00 | 2.00 | 3.906 | | | | X |
| 80.00 | 2.00 | 3.906 | X | | | |
| 80.00 | 4.00 | 7.612 | | X | | |
| 80.00 | 4.00 | 7.612 | X | | | |
| 80.00 | 5.00 | 9.390 | | X | | |
| 80.00 | 5.00 | 9.390 | | | | X |
| 80.00 | 5.00 | 9.390 | X | | | |
| 82.50 | 3.60 | 7.112 | | X | | |
| 88.90 | 2.00 | 4.352 | | X | | |
| 88.90 | 2.00 | 4.352 | | | | X |
| 88.90 | 2.30 | 4.987 | | X | | |
| 88.90 | 2.30 | 4.987 | | | | X |
| 88.90 | 2.60 | 5.618 | | X | | |
| 88.90 | 2.60 | 5.618 | | | | X |
| 88.90 | 2.60 | 5.618 | X | | | |
| 88.90 | 2.90 | 6.245 | | X | | |
| 88.90 | 2.90 | 6.245 | | | | X |
| 88.90 | 3.05 | 6.557 | | | X | |
| 88.90 | 3.05 | 6.557 | X | | | |
| 88.90 | 3.10 | 6.557 | | | X | |
| 88.90 | 3.20 | 6.867 | | X | | |
| 88.90 | 3.20 | 6.867 | | | | X |
| 88.90 | 3.20 | 6.867 | X | | | |
| 88.90 | 3.60 | 7.689 | | X | | |
| 88.90 | 3.60 | 7.689 | | | | X |
| 88.90 | 4.05 | 8.605 | | X | | |
| 88.90 | 4.05 | 8.605 | | | | X |
| 88.90 | 4.05 | 8.605 | X | | | |
| 88.90 | 4.50 | 9.510 | | X | | |
| 88.90 | 4.50 | 9.510 | | | | X |
| 88.90 | 5.00 | 10.504 | | X | | |
| 88.90 | 5.00 | 10.504 | | | | X |
| 88.90 | 5.49 | 11.466 | | | X | |
| 88.90 | 5.49 | 11.466 | | X | | |
| 88.90 | 5.49 | 11.466 | | | | X |
| 88.90 | 5.49 | 11.466 | X | | | |
| 88.90 | 6.30 | 13.030 | | X | | |
| 88.90 | 6.30 | 13.030 | X | | | X |
| 88.90 | 7.62 | 15.509 | | | X | |
| 88.90 | 7.62 | 15.509 | | X | | |
| 88.90 | 7.62 | 15.509 | | | | X |
| 88.90 | 7.62 | 15.509 | X | | | |
| 88.90 | 11.00 | 21.457 | | X | | |
| 88.90 | 11.00 | 21.457 | | | | X |
| 88.90 | 11.13 | 21.674 | | | | X |

| Dimension | | Weight Kg/m | EN 1.4301 EN 1.4306 EN 1.4307 | EN 1.4541 | EN 1.4404 | EN 1.4571 |
|-----------|-------|----------------|-------------------------------------|-----------|-----------|-----------|
| OD | Wall | | | | | |
| 88.90 | 14.20 | 26.561 | | X | | |
| 88.90 | 14.20 | 26.561 | | | | X |
| 97.00 | 4.00 | 9.315 | | X | | |
| 101.60 | 3.60 | 8.834 | | | | X |
| 101.60 | 4.00 | 9.776 | | X | | |
| 101.60 | 4.00 | 9.776 | | | | X |
| 101.60 | 4.00 | 9.776 | X | | | |
| 101.60 | 5.00 | 12.094 | | | | X |
| 101.60 | 5.74 | 13.778 | | | X | |
| 101.60 | 5.74 | 13.778 | | X | | |
| 101.60 | 5.74 | 13.778 | | | | X |
| 101.60 | 5.74 | 13.778 | X | | | |
| 101.60 | 8.08 | 18.921 | X | | | |
| 108.00 | 3.00 | 7.888 | | X | | |
| 108.00 | 3.00 | 7.888 | | | | X |
| 108.00 | 4.00 | 10.417 | | X | | |
| 108.00 | 4.00 | 10.417 | | | | X |
| 108.00 | 4.00 | 10.417 | X | | | |
| 108.00 | 5.00 | 12.896 | | | | X |
| 108.00 | 6.30 | 16.043 | | X | | |
| 108.00 | 6.30 | 16.043 | | | | X |
| 108.00 | 6.30 | 16.043 | X | | | |
| 114.30 | 2.60 | 7.272 | | X | | |
| 114.30 | 2.60 | 7.272 | | | | X |
| 114.30 | 2.90 | 8.089 | | | | X |
| 114.30 | 3.05 | 8.496 | | | X | |
| 114.30 | 3.05 | 8.496 | | | | X |
| 114.30 | 3.05 | 8.496 | X | | | |
| 114.30 | 3.10 | 8.496 | | | X | |
| 114.30 | 3.20 | 8.902 | | | | X |
| 114.30 | 3.60 | 9.979 | | X | | |
| 114.30 | 3.60 | 9.979 | | | | X |
| 114.30 | 3.60 | 9.979 | X | | | |
| 114.30 | 4.00 | 11.048 | | X | | |
| 114.30 | 4.00 | 11.048 | | | | X |
| 114.30 | 4.50 | 12.372 | | X | | |
| 114.30 | 4.50 | 12.372 | | | | X |
| 114.30 | 5.40 | 14.725 | | X | | |
| 114.30 | 5.40 | 14.725 | | | | X |
| 114.30 | 6.02 | 16.322 | | | X | |
| 114.30 | 6.02 | 16.322 | | X | | |
| 114.30 | 6.02 | 16.322 | | | | X |
| 114.30 | 6.02 | 16.322 | X | | | |
| 114.30 | 6.30 | 17.037 | | X | | |
| 114.30 | 6.30 | 17.037 | | | | X |
| 114.30 | 7.10 | 19.058 | | X | | |
| 114.30 | 7.10 | 19.058 | | | | X |
| 114.30 | 7.10 | 19.058 | X | | | |
| 114.30 | 8.56 | 22.665 | | | X | |
| 114.30 | 8.56 | 22.665 | | X | | |
| 114.30 | 8.56 | 22.665 | X | | | X |
| 114.30 | 13.49 | 34.053 | | | X | |

| Dimension | | Weight Kg/m | EN 1.4301 EN 1.4306 EN 1.4307 | EN 1.4541 | EN 1.4404 | EN 1.4571 |
|-----------|-------|----------------|-------------------------------------|-----------|-----------|-----------|
| OD | Wall | | | | | |
| 114.30 | 14.20 | 35.592 | | X | | |
| 114.30 | 14.20 | 35.592 | | | | X |
| 114.30 | 20.00 | 47.225 | | X | | |
| 114.30 | 20.00 | 47.225 | | | | X |
| 121.00 | 4.00 | 11.719 | | X | | |
| 121.00 | 4.00 | 11.719 | | | | X |
| 127.00 | 4.00 | 12.320 | | X | | |
| 127.00 | 4.00 | 12.320 | | | | X |
| 133.00 | 4.00 | 12.921 | | X | | |
| 133.00 | 4.00 | 12.921 | | | | X |
| 133.00 | 6.30 | 19.987 | | X | | |
| 133.00 | 6.30 | 19.987 | | | | X |
| 133.00 | 6.30 | 19.987 | X | | | |
| 139.70 | 4.00 | 13.592 | | X | | |
| 139.70 | 4.00 | 13.592 | | | | X |
| 139.70 | 4.00 | 13.592 | X | | | |
| 139.70 | 5.00 | 16.864 | | X | | |
| 139.70 | 5.00 | 16.864 | | | | X |
| 139.70 | 6.30 | 21.044 | | X | | |
| 139.70 | 6.30 | 21.044 | | | | X |
| 139.70 | 7.10 | 23.574 | | X | | |
| 139.70 | 7.10 | 23.574 | | | | X |
| 141.30 | 6.55 | 22.101 | | | | X |
| 159.00 | 4.50 | 17.409 | | X | | |
| 159.00 | 4.50 | 17.409 | | | | X |
| 159.00 | 4.50 | 17.409 | X | | | |
| 159.00 | 6.30 | 24.089 | | X | | |
| 159.00 | 6.30 | 24.089 | | | | X |
| 159.00 | 6.30 | 24.089 | X | | | |
| 168.30 | 3.40 | 14.037 | | | X | |
| 168.30 | 3.40 | 14.039 | X | | | |
| 168.30 | 4.50 | 18.457 | | X | | |
| 168.30 | 4.50 | 18.457 | | | | X |
| 168.30 | 4.50 | 18.457 | X | | | |
| 168.30 | 5.00 | 20.445 | | X | | |
| 168.30 | 5.00 | 20.445 | | | | X |
| 168.30 | 5.00 | 20.445 | X | | | |
| 168.30 | 5.60 | 22.814 | | X | | |
| 168.30 | 5.60 | 22.814 | | | | X |
| 168.30 | 7.11 | 28.697 | | | X | |
| 168.30 | 7.11 | 28.697 | | X | | |
| 168.30 | 7.11 | 28.697 | X | | | X |
| 168.30 | 10.97 | 43.217 | | | X | |
| 168.30 | 10.97 | 43.217 | | X | | |
| 168.30 | 10.97 | 43.217 | | | | X |
| 168.30 | 10.97 | 43.217 | X | | | |
| 219.10 | 6.30 | 33.570 | | X | | |
| 219.10 | 6.30 | 33.570 | | | | X |
| 219.10 | 8.18 | 43.202 | | | X | |
| 219.10 | 8.18 | 43.202 | | X | | |
| 219.10 | 8.18 | 43.202 | | | | X |
| 219.10 | 12.70 | 65.637 | | X | | |
| 219.10 | 12.70 | 65.637 | | | | X |

Seamless pipes

ASTM A312/TP316L

Seamless stainless pipes in accordance with ANSI B 36.19, steel type ASTM A312 TP316L, in fabrication lengths 4–8 m, smooth ends, marked with charge number.

Test certificate in accordance with EN 10204/3.1.

| Dimension mm | Dimension inches | Weight kg/m |
|------------------|---------------------|----------------|
| RSÖ13.7 x 2.24 | 1/4" sch40s | 0.65 |
| RSÖ17.1 x 3.20 | 3/8" sch80s | 1.12 |
| RSÖ21.30 X 2.11 | 1/2" sch10s | 1.02 |
| RSÖ21.34 x 2.77 | 1/2" sch40s | 1.29 |
| RSÖ21.34 x 3.73 | 1/2" sch80s | 1.65 |
| RSÖ21.34 x 4.78 | 1/2" sch160 | 1.98 |
| RSÖ26.67 x 2.11 | 3/4" sch10s | 1.30 |
| RSÖ26.67 x 2.87 | 3/4" sch40s | 1.71 |
| RSÖ26.67 x 3.91 | 3/4" sch80s | 2.23 |
| RSÖ26.67 x 5.56 | 3/4" sch160 | 2.94 |
| RSÖ33.40 x 2.77 | 1" sch10s | 2.13 |
| RSÖ33.40 x 3.38 | 1" sch40s | 2.54 |
| RSÖ33.40 x 4.55 | 1" sch80s | 3.29 |
| RSÖ48.26 x 2.77 | 1.1/2" sch10s | 3.16 |
| RSÖ48.26 x3.68 | 1.1/2" sch40s | 4.11 |
| RSÖ48.26 x 5.08 | 1.1/2" sch80s | 5.49 |
| RSÖ60.33 x 2.77 | 2" sch10s | 3.99 |
| RSÖ60.33 x 3.91 | 2" sch40s | 5.52 |
| RSÖ60.33 x 5.54 | 2" sch80s | 7.60 |
| RSÖ88.90 X 3.05 | 3" sch10s | 6.56 |
| RSÖ88.90 x 5.49 | 3" sch40s | 11.47 |
| RSÖ114.30 x 3.05 | 4" sch10s | 8.50 |
| RSÖ114.30 x 6.02 | 4" sch40s | 16.32 |
| RSÖ168.28 x 3.40 | 6" sch10s | 14.04 |
| RSÖ168.28 x 7.11 | 6" sch40s | 28.69 |

Stainless

Round bars

Stainless drawn or ground bars in accordance with EN 1088/EN 10278, tolerance in accordance with ISO h9, fabrication lengths of 3–6 m.

| Dimension | Weight | EN 1.4301 | EN 1.4305 | EN 1.4404 |
|-----------|--------|-----------|-----------|-----------|
| OD | kg/m | | | |
| 5 | 0.16 | X | | |
| 5 | 0.16 | | X | |
| 6 | 0.22 | X | | |
| 6 | 0.22 | | X | |
| 8 | 0.40 | X | | |
| 8 | 0.40 | | X | |
| 8 | 0.40 | | | X |
| 10 | 0.62 | X | | |
| 10 | 0.62 | | X | |
| 10 | 0.62 | | | X |
| 12 | 0.89 | X | | |
| 12 | 0.89 | | X | |
| 12 | 0.89 | | | X |
| 14 | 1.21 | X | | |
| 14 | 1.21 | | X | |
| 15 | 1.42 | X | | |
| 15 | 1.42 | | X | |
| 16 | 1.58 | X | | |
| 16 | 1.58 | | X | |
| 16 | 1.58 | | | X |
| 18 | 2.00 | X | | |
| 18 | 2.00 | | X | |
| 20 | 2.47 | X | | |
| 20 | 2.47 | | X | |
| 20 | 2.47 | | | X |

| Dimension | Weight | EN 1.4301 | EN 1.4305 | EN 1.4404 |
|-----------|--------|-----------|-----------|-----------|
| OD | kg/m | | | |
| 22 | 2.98 | X | | |
| 22 | 2.98 | | X | |
| 25 | 3.85 | X | | |
| 25 | 3.85 | | X | |
| 25 | 3.85 | | | X |
| 30 | 5.55 | X | | |
| 30 | 5.55 | | X | |
| 30 | 5.55 | | | X |
| 35 | 7.60 | X | | |
| 35 | 7.60 | | X | |
| 40 | 9.92 | X | | |
| 40 | 9.92 | | X | |
| 40 | 9.92 | | | X |
| 45 | 12.56 | X | | |
| 45 | 12.56 | | X | |
| 50 | 15.50 | X | | |
| 50 | 15.50 | | X | |
| 50 | 15.50 | | | X |
| 60 | 22.32 | X | | |
| 60 | 22.32 | | X | |

Stainless tube fittings

Elbows

Welded stainless elbows in accordance with prEN 10253-3. 90° - R = 3S, 3D or D + 100. Dimensions: DN 15 - DN 600

Welded reducers

Welded stainless concentric and excentric reducers in accordance with prEN 10253-3. Dimensions: DN15 - DN600

T-pieces

Welded stainless equal T-pieces, pressed, welded or drawn, in accordance with prEN 10253-3. Dimensions: DN15 - DN600

Collars

Pressed, angle bar collars or welded ring with collar PN10, 16, 25 and also PN40. Dimensions: DN15 - DN600

Loose flanges

Hot galvanized loose flanges in pressure vessel or standard quality, PN10, 16, 25 and also PN40. Dimensions: DN15 - DN600

If you require additional information about our stainless tube fittings, please contact us!

Technical information

Welded round tubes in accordance with EN

Manufacturing norms: EN 10217-7, EN 10296-2, or EN 11850
Weld factor: $v = 1.0$
Delivery condition: not annealed – pickled or bright annealed, annealed and pickled
Delivery lengths: Fixed lengths or fabrication lengths of 6000 mm -0/+100 mm
Quality: EN 1.4301, EN 1.4307, EN 1.4541, EN 1.4404, EN 1.4432 and EN 1.4571. Other qualities available on request.
Tolerances: According to applicable norm
Certificate: EN 10204/3.1

Seamless round tubes in accordance with EN

Manufacturing norms: EN 10216-5 TC 1
Delivery condition: Heat treated
Delivery lengths: Fixed lengths or fabrication lengths of 4000 - 7000 mm
Quality: EN 1.4301, EN 1.4306, EN 1.4541, EN 1.4404, EN 1.4571. Other qualities available on request.
Tolerances: According to applicable norm
Certificate: EN 10204/3.1

Welded or seamless pipes in accordance with ASTM

Manufacturing norms: ASTM A 213, 249, 269, 312, 358, etc.
Weld factor: $v = 0.7 - 1.0$
Delivery lengths: Fixed lengths or fabrication lengths
Quality: TP 304, TP 304L, TP 316L
Other qualities available on request.
Tolerances: According to applicable norm
Certificate: EN 10204/3.1

Welded tube fittings

Manufacturing norms: EN 10253-3, ISO 5251
Weld factor: $v = 0.7$
Quality: EN 1.4301, EN 1.4307, EN 1.4541, EN 1.4404, EN 1.4432 and EN 1.4571. Other qualities available on request
Certificate: EN 10204/3.1

Box sections

Delivery condition: Cold-formed untreated, brushed or ground
Delivery lengths: Fixed lengths or fabrication lengths of 6000 mm -0/+50 mm
Quality: EN 1.4301, EN 1.4404, EN 1.4571
Other qualities available on request

Certificate, testing, marking

Agreements concerning certificate types as well as testing and marking to be made when ordering.

Packaging

Unless otherwise agreed, tubes is packaged in an adequate manner for material and labour costs only. Alternative packaging must be agreed when ordering. The following alternatives are available as standard.

- Bundled
 - Wooden racks
 - Plastic coated
- Holmenflex
 - Wooden crates

Tolerance table in accordance with EN - ISO 1127

| OD | Tol. class OD | Permitted deviation OD | Tol. class Wall | Permitted deviation Wall |
|--|----------------|--|-----------------|--|
| For seamless tubes independent of OD and for welded tubes with OD<168.3 mm | D2 D3 D4 | +/-1.0% (min.+/-0.5 mm) +/-0.75% (min.+/-0.3 mm) +/-0.5% (min.+/-0.1 mm) | T3 T4 | +/-10% (min.+0.2 mm) +/-7.5% (min.+0.15 mm) |
| For welded tubes with OD≥ 68.3 mm | | +/-1.0% (max.+/-3.0 mm) | T3 | +/-10% (min.+0.2 mm) |

Straightness for seamless and welded tubes

| Outer diameter mm | Permitted straightness deviation |
|-------------------------------------|------------------------------------|
| OD ≤ 17.2 | - |
| 17.2 ≤ OD ≤ 114.3 | 2.0 mm: 1000 mm 2.5 mm: 1000 mm |
| OD ≤ 114.3 | |
| For welded tubes with OD ≥ 168.3 mm | - |

Delivery condition

Tubes can be delivered in the following conditions:

- Not annealed
- Not annealed, pickled
- Annealed and pickled
- Bright annealed

Weld seam

After welding, the outer welding bead is removed. The weld seam should then exhibit a fine to moderately uneven surface. The tolerances given for the wall thickness do not apply to the weld seam. If there are special requirements, these must be agreed when ordering.

Surface

Agreement on surface characteristics should be made when ordering.

Tubes can be supplied with surfaces according to the table below.

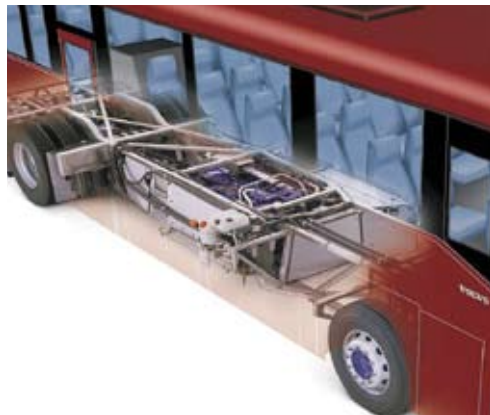
| Surface characteristic | Explanation |
|------------------------|--|
| Untreated | No processing after welding |
| Pickled | The tubes are pickled as the last stage of production |
| Brushed | The tubes are brushed as the last stage of production |
| Ground | The surface is ground Coarse grinding: Grain size 120 Normal grinding: Grain size 220 - 240 Fine grinding: Grain size 320 up to Mirror polished |
| Polished | After grinding, the surface is polished with grinding paste |

| Typical composition, % | | | | | | | | National steel designations, replaced by EN | | | | |
|------------------------------|--------|------|------|-------|-------|-----|--------|---|--------|------------------|------|----------|
| International steel types EN | ASTM | C | N | Cr | Ni | Mo | Other | B5 | DIN | NF | SS | |
| 1.4512 | 409 | 0.02 | - | 12.00 | - | - | Ti | 409S19 | 1.4512 | Z3 CT 12 | - | Ferritic |
| 1.4003 | S41050 | 0.02 | - | 11.50 | 0.40 | - | - | - | 1.4003 | - | - | |
| 1.4000 | 410S | 0.04 | - | 12.00 | - | - | - | 430S17 | 1.4000 | Z8 C12 | 2301 | |
| 1.4016 | 430 | 0.04 | - | 16.50 | - | - | - | 430S17 | 1.4016 | Z8 C17 | 2320 | |
| 1.4021 | S42010 | 0.20 | - | 13.00 | - | - | - | 420S29 | 1.4021 | Z20 C13 | 2303 | Mart. |
| 1.4028 | 420 | 0.30 | - | 12.50 | - | - | - | 420S45 | 1.4028 | Z33 C13 | 2304 | |
| 1.4418 | - | 0.03 | 0.04 | 16.00 | 5.00 | 1.0 | - | - | 1.4418 | Z6 CND 16-05-01 | 2387 | |
| 1.4362 | S32304 | 0.02 | 0.10 | 23.00 | 4.50 | - | - | - | 1.4362 | Z3 CN 23-04 Az | 2327 | Duplex |
| 1.4462 | S31803 | 0.02 | 0.17 | 22.00 | 5.50 | 3.0 | - | 318S13 | 1.4462 | Z3 CND 22-05 Az | 2377 | |
| 1.4410 | S32750 | 0.02 | 0.27 | 25.00 | 7.00 | 4.0 | - | - | - | Z3 cnd 26-06 Az | 2328 | |
| 1.4372 | 201 | 0.05 | 0.15 | 17.00 | 5.00 | - | Mn | - | - | Z12 CMN 17-07 Az | - | |
| 1.4310 | 301 | 0.10 | 0.04 | 17.00 | 7.00 | - | - | 301S21 | 1.4310 | Z11 CN 18-08 | 2331 | |
| 1.4307 | 304L | 0.02 | 0.06 | 18.30 | 9.20 | - | - | 304S11 | - | Z3 CN 18-10 | 2352 | |
| 1.4301 | 304 | 0.04 | 0.06 | 18.30 | 8.70 | - | - | 304S31 | 1.4301 | Z7 CN 18-09 | 2333 | |
| 1.4311 | 304LN | 0.02 | 0.14 | 18.30 | 8.70 | - | - | 304S61 | 1.4311 | Z3 CN 18-10 Az | 2371 | |
| 1.4541 | 321 | 0.04 | 0.01 | 17.30 | 9.20 | - | Ti | 321S31 | 1.4541 | Z6 CNT 18-10 | 2337 | |
| 1.4305 | 303 | 0.07 | 0.06 | 18.00 | 8.50 | - | S | 303S31 | 1.4305 | Z8 CNF 18-09 | 2346 | |
| 1.4567 | S30430 | 0.01 | 0.02 | 18.00 | 9.00 | - | Cu | - | 1.4567 | Z3 CNU 18-09 FF | - | |
| 1.4306 | 304L | 0.02 | 0.06 | 18.30 | 10.20 | - | - | 304S11 | 1.4306 | Z3 CN 18-10 | 2352 | |
| 1.4303 | 305 | 0.02 | 0.02 | 18.00 | 11.50 | - | - | 305S19 | 1.4303 | Z1 CN 18-12 | - | |
| 1.4404 | 316L | 0.02 | 0.06 | 17.30 | 11.00 | 2.2 | - | 316S11 | 1.4404 | Z3 CND 17-11-02 | 2348 | |
| 1.4401 | 316 | 0.04 | 0.04 | 16.80 | 10.70 | 2.2 | - | 316S31 | 1.4401 | Z7 CND 17-11-02 | 2347 | |
| 1.4406 | 316LN | 0.02 | 0.14 | 17.50 | 11.00 | 2.2 | - | 316S61 | 1.4406 | Z3 CND 17-11 Az | - | |
| 1.4571 | 316Ti | 0.04 | 0.01 | 17.00 | 11.00 | 2.2 | Ti | 320S31 | 1.4571 | Z6 CNDT 17-12 | 2350 | |
| 1.4432 | 316L | 0.02 | 0.06 | 17.00 | 11.70 | 2.7 | - | 316S13 | - | Z3 CND 17-12-03 | 2353 | |
| 1.4436 | 316 | 0.04 | 0.06 | 17.00 | 11.00 | 2.7 | - | 316S33 | 1.4436 | Z7 CND 18-12-03 | 2343 | |
| 1.4435 | 316L | 0.02 | 0.06 | 17.30 | 12.70 | 2.7 | - | 316S13 | 1.4435 | Z3 CND 18-14-03 | 2353 | |
| 1.4438 | 317L | 0.02 | 0.08 | 18.30 | 12.20 | 3.2 | - | 317S12 | 1.4438 | Z3 CND 19-15-04 | 2367 | |
| 1.4434 | 317LN | 0.02 | 0.12 | 17.00 | 11.00 | 3.2 | - | - | - | | 2373 | |
| 1.4439 | S31726 | 0.02 | 0.14 | 17.30 | 12.70 | 4.2 | - | - | | | - | |
| 1.4539 | N08904 | 0.01 | 0.06 | 20.00 | 25.00 | 4.5 | Cu | 904S13 | | | | |
| 1.4547 | S31254 | 0.01 | 0.20 | 20.00 | 18.00 | 6.1 | Cu | - | - | - | 2378 | |
| 1.4652 | S32654 | 0.01 | 0.50 | 24.00 | 22.00 | 7.3 | Mn, Cu | - | - | - | - | |
| 1.4948 | 304H | 0.05 | 0.06 | 18.30 | 8.70 | - | - | 304S51 | 1.4948 | Z6 CN 18-09 | 2333 | |
| 1.4878 | 321H | 0.05 | 0.01 | 17.30 | 9.20 | - | Ti | 321S51 | 1.4878 | Z6 CNT 18-09 | 2337 | |
| 1.4818 | S30415 | 0.05 | 0.15 | 18.50 | 9.50 | - | Si, Ce | - | - | - | - | |
| 1.4833 | 309S | 0.06 | 0.08 | 22.50 | 12.50 | - | - | 309S16 | 1.4833 | Z15 CN 24-13 | | |
| 1.4828 | - | 0.04 | 0.04 | 20.00 | 12.00 | - | Si | - | 1.4828 | z17 cns 20-12 | - | |
| 1.4835 | S30815 | 0.09 | 0.17 | 21.00 | 11.00 | - | Si, Ce | - | - | - | - | |
| 1.4845 | 310S | 0.05 | 0.06 | 25.00 | 20.00 | - | - | 310S16 | 1.4845 | z8 cn 25-20 | 2361 | |
| 1.4854 | S35315 | 0.05 | 0.15 | 25.00 | 35.00 | - | Si, Ce | - | - | - | - | |

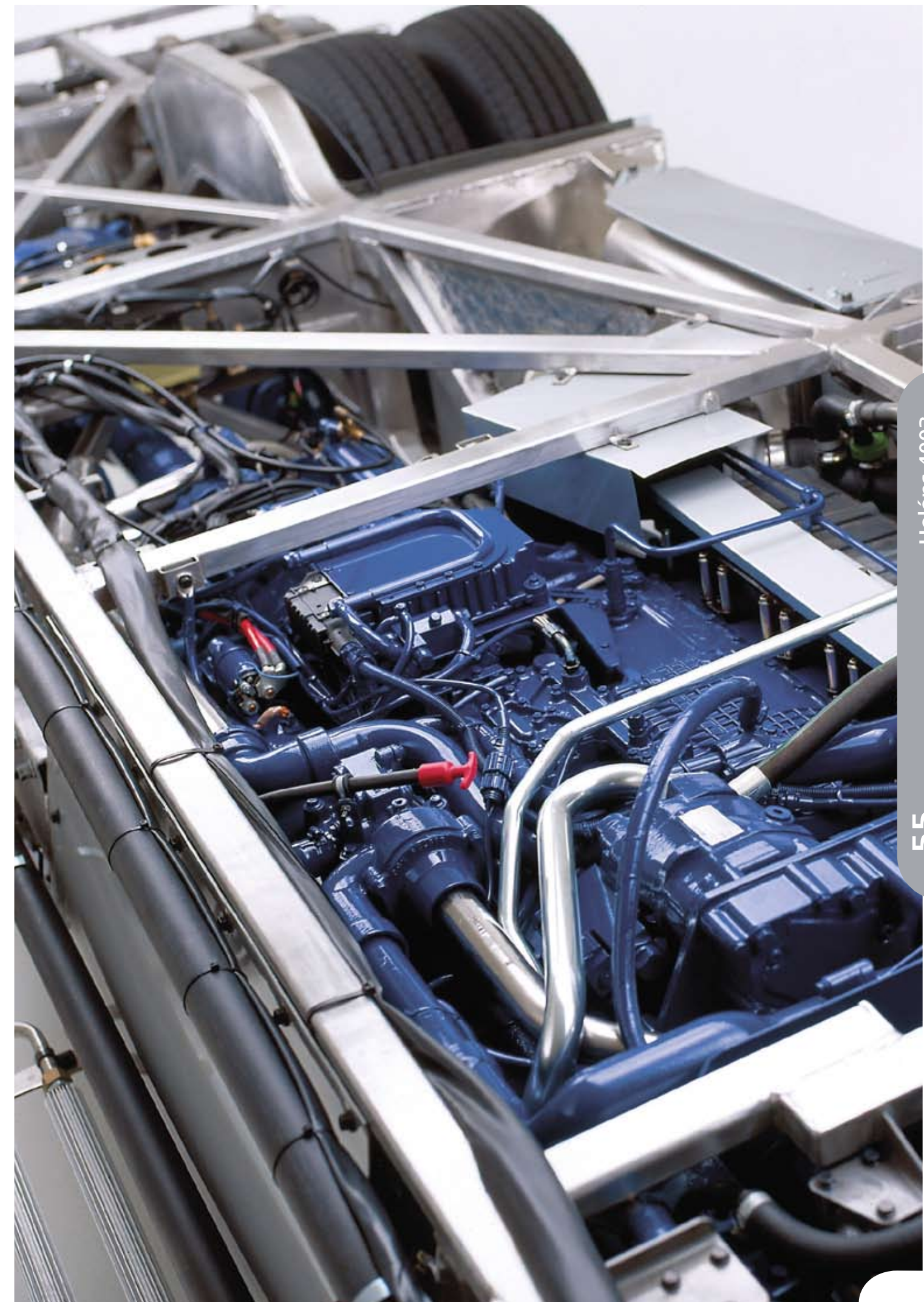
Heléns 4003

Stainless tubes and profiles for aggressive environments

Heléns 4003 is a cost-efficient replacement for high-alloy stainless steel where strength and lifespan are decisive criteria. The material offers great advantages compared with traditional steel, as no further treatment is required. To summarize – a high performance steel at a low price.



Square and rectangular tubes page 56
Technical information page 57



Square and rectangular tubes

| Dimension OD x OD x Wall | Weight kg/m | Dimension OD x OD x Wall | Weight kg/m |
|-----------------------------|----------------|-----------------------------|----------------|
| 20 x 10 x 1.2 | 0.48 | 60 x 40 x 3.0 | 4.19 |
| 20 x 20 x 1.5 | 0.81 | 60 x 40 x 4.0 | 5.38 |
| 20 x 20 x 2.0 | 1.03 | 60 x 60 x 2.0 | 3.51 |
| 30 x 10 x 1.2 | 0.67 | 60 x 60 x 3.0 | 5.11 |
| 30 x 20 x 1.5 | 1.05 | 60 x 60 x 4.0 | 6.62 |
| 30 x 30 x 1.5 | 1.28 | 70 x 50 x 2.0 | 3.51 |
| 30 x 30 x 2.0 | 1.65 | 80 x 30 x 2.0 | 3.20 |
| 38 x 38 x 1.5 | 1.65 | 80 x 30 x 3.0 | 4.65 |
| 40 x 20 x 1.5 | 1.28 | 80 x 40 x 2.0 | 3.51 |
| 40 x 20 x 2.0 | 1.65 | 80 x 40 x 3.0 | 5.11 |
| 40 x 30 x 1.5 | 1.51 | 80 x 40 x 4.0 | 6.62 |
| 40 x 30 x 2.0 | 1.96 | 80 x 60 x 3.0 | 6.04 |
| 40 x 30 x 3.0 | 2.79 | 80 x 60 x 4.0 | 7.85 |
| 40 x 40 x 1.5 | 1.74 | 80 x 80 x 3.0 | 6.97 |
| 40 x 40 x 2.0 | 2.27 | 80 x 80 x 4.0 | 9.09 |
| 40 x 40 x 3.0 | 3.26 | 90 x 50 x 3.0 | 6.04 |
| 40 x 40 x 4.0 | 4.14 | 90 x 50 x 4.0 | 7.85 |
| 50 x 30 x 1.5 | 1.74 | 90 x 80 x 4.0 | 9.71 |
| 50 x 30 x 2.0 | 2.27 | 100 x 40 x 2.0 | 4.13 |
| 50 x 30 x 3.0 | 3.26 | 100 x 40 x 3.0 | 6.04 |
| 50 x 30 x 4.0 | 4.14 | 100 x 40 x 4.0 | 7.85 |
| 50 x 40 x 2.0 | 2.58 | 100 x 50 x 3.0 | 6.51 |
| 50 x 40 x 3.0 | 3.72 | 100 x 50 x 4.0 | 8.47 |
| 50 x 50 x 1.5 | 2.21 | 100 x 60 x 3.0 | 6.97 |
| 50 x 50 x 2.0 | 2.89 | 100 x 60 x 4.0 | 9.09 |
| 50 x 50 x 3.0 | 4.19 | 100 x 80 x 3.0 | 7.90 |
| 50 x 50 x 4.0 | 5.38 | 100 x 80 x 4.0 | 10.33 |
| 60 x 30 x 2.0 | 2.58 | 100 x 80 x 6.0 | 14.89 |
| 60 x 30 x 3.0 | 3.72 | 120 x 40 x 2.0 | 4.75 |
| 60 x 40 x 2.0 | 2.89 | 120 x 40 x 3.0 | 6.97 |
| | | 120 x 60 x 3.0 | 7.90 |
| | | 120 x 60 x 4.0 | 10.33 |
| | | 120 x 80 x 3.0 | 8.83 |
| | | 140 x 80 x 4.0 | 12.80 |

Minimum demand for Heléns – Mechanical characteristics

| | Yield point R _{ps.2} min MPa | Ultimate strength R _m min MPa | Rupture extension A ₅ min % |
|-------------|--|---|---|
| Heléns 4003 | 320 | 450 | 10 |

Heléns 4003 – Chemical composition

| | C % max . | Si % max. | Mn % max. | P % max. | S % max. | N % max. | Cr % max. | Ni % max. |
|-------------|--------------|--------------|--------------|-------------|-------------|-------------|--------------|--------------|
| Heléns 4003 | 0.030 | 1.00 | 1.50 | 0.040 | 0.015 | 0.030 | 10.50-12.50 | 0.30-1.00 |

* Fulfils the demand for steel type X2CrNi12 (1.4003) in accordance with EN 10088-2

Square and rectangular tubes

| | |
|---------------------------|--|
| External size, W and H | ± 1% at least ± 0.5 mm, when W, H < 100 mm ± 0.8%. when W, H ≥ 100 mm |
| Concavity / Convexity | ± 0.8% of side length, at least ± 0.5 mm |
| Wall thickness, T | ± 10% mm of nominal thickness |
| Side right-angularity | 90° ±1 |
| External corner radius, R | 2.0T – 3.0T, where T < 2 mm *) 1.6T – 2.4T, where T > 2 mm |
| Length, L | 0/+50 mm |
| Straightness | 0.15 % of tubes total length |
| Twisting | 2 mm +0.5 mm/m |

*) Deviation from demands in standard EN 10219-2

Energy

Our stock of energy products is focused on tubes and pipes, fittings and flanges where pressure and temperature are important elements. We stock material in accordance with DIN, ASTM, EN and follow the Pressure Equipment Directive (PED).

Since many years we are a supplier to the petrochemical and powerplants, equipment manufacturers of pressure vessels for example boiler and heat exchangers, chemical and exploration (OCTG) companies.



Seamless boiler tubes and pipes page 60 - 71
Fittings and flanges page 71



Seamless boiler tubes and pipes

Seamless boiler tubes and pipes, type of steel see below, in fabrication lengths of 5 – 7 m,
bevelled ends, tubes larger than 44.5mm hard stamped with charge number,
other sizes marked with bundle tags.
Mill test certificate in accordance with EN 10204/3.1.

| OD mm | Wall mm | Weight kg/m | St35.8/I P235GH TC1 1.0345 | St35.8/III P235GH TC2 1.0345 | TT St35N | 15Mo3 16Mo3 1.5415 | 13CrMo4-4 13CrMo4-5 1.7335 | 10CrMo9-10 10CrMo9-10 1.7380 | ASME SA 106/B | ASME SA 333/6 |
|----------|------------|----------------|----------------------------------|------------------------------------|----------|--------------------------|----------------------------------|------------------------------------|------------------|------------------|
| 13.5 | 2.6 | 0.70 | | X | | | | | | |
| 13.5 | 2.6 | 0.70 | | | | X | | | | |
| 13.5 | 2.6 | 0.70 | | | | | | X | | |
| 13.5 | 2.9 | 0.76 | X | | | | | | | |
| 17.1 | 3.2 | 1.10 | | | | | | | X | |
| 17.2 | 2.9 | 1.02 | X | | | | | | | |
| 17.2 | 4.0 | 1.30 | X | | | | | | | |
| 20.0 | 2.0 | 0.89 | X | | | | | | | |
| 21.3 | 2.0 | 0.95 | X | | | | | | | |
| 21.3 | 2.0 | 0.95 | | X | | | | | | |
| 21.3 | 2.3 | 1.08 | X | | | | | | | |
| 21.3 | 2.6 | 1.20 | X | | | | | | | |
| 21.3 | 2.8 | 1.27 | | | | | | | X | |
| 21.3 | 2.9 | 1.32 | X | | | | | | | |
| 21.3 | 2.9 | 1.32 | | X | | | | | | |
| 21.3 | 2.9 | 1.32 | | | | X | | | | |
| 21.3 | 2.9 | 1.32 | | | | | | X | | |
| 21.3 | 3.2 | 1.43 | X | | | | | | | |
| 21.3 | 3.2 | 1.43 | | X | | | | | | |
| 21.3 | 3.2 | 1.43 | | | | X | | | | |
| 21.3 | 3.6 | 1.57 | X | | | | | | | |
| 21.3 | 3.6 | 1.57 | | | | X | | | | |
| 21.3 | 3.7 | 1.62 | | | | | | | X | |
| 21.3 | 3.7 | 1.62 | | | | | | | | X |
| 21.3 | 4.8 | 1.95 | | | | | | | X | |
| 25.0 | 2.0 | 1.13 | X | | | | | | | |
| 25.0 | 2.6 | 1.44 | X | | | | | | | |
| 25.0 | 2.9 | 1.58 | X | | | | | | | |
| 26.7 | 2.9 | 1.69 | | | | | | | X | |
| 26.7 | 2.9 | 1.69 | | | | | | | | X |
| 26.7 | 3.9 | 2.20 | | | | | | | X | |
| 26.7 | 3.9 | 2.20 | | | | | | | | X |
| 26.7 | 5.6 | 2.90 | | | | | | | X | |
| 26.9 | 2.3 | 1.40 | X | | | | | | | |
| 26.9 | 2.3 | 1.40 | | X | | | | | | |
| 26.9 | 2.6 | 1.56 | X | | | | | | | |
| 26.9 | 2.9 | 1.72 | X | | | | | | | |
| 26.9 | 2.9 | 1.72 | | | | | X | | | |
| 26.9 | 2.9 | 1.72 | | | | | | X | | |
| 26.9 | 3.2 | 1.87 | X | | | | | | | |
| 26.9 | 3.2 | 1.87 | | X | | | | | | |
| 26.9 | 3.6 | 2.07 | X | | | | | | | |
| 26.9 | 3.6 | 2.07 | | X | | | | | | |
| 26.9 | 3.6 | 2.07 | | | | X | | | | |
| 26.9 | 3.6 | 2.07 | | | | | | | | |

| D mm | Wall mm | Weight Kg/m | St35.8/I P235GH TC1 1.0345 | St35.8/III P235GH TC2 1.0345 | TT St35N | 15Mo3 16Mo3 1.5415 | 13CrMo4-4 13CrMo4-5 1.7335 | 10CrMo9-10 10CrMo9-10 1.7380 | ASME SA 106/B | ASME SA 333/6 |
|---------|------------|----------------|----------------------------------|------------------------------------|----------|--------------------------|----------------------------------|------------------------------------|------------------|------------------|
| 26.9 | 3.6 | 2.07 | | | | | X | | | |
| 26.9 | 3.6 | 2.07 | | | | | | X | | |
| 26.9 | 4.0 | 2.26 | X | | | | | | | |
| 26.9 | 4.5 | 2.49 | X | | | | | | | |
| 26.9 | 4.5 | 2.49 | | | | | | | | |
| 26.9 | 4.5 | 2.49 | | | | | X | | | |
| 26.9 | 5.0 | 2.70 | X | | | | | | | |
| 26.9 | 5.0 | 2.70 | | X | | | | | | |
| 26.9 | 5.0 | 2.70 | | | | | | | | |
| 26.9 | 5.0 | 2.70 | | | | | X | | | |
| 26.9 | 5.0 | 2.70 | | | | | | | | |
| 26.9 | 5.0 | 2.70 | | | | | | | | |
| 26.9 | 6.3 | 3.20 | | | | | | | | |
| 30.0 | 2.6 | 1.76 | X | | | | | | | |
| 31.8 | 2.6 | 1.87 | X | | | | | | | |
| 31.8 | 2.9 | 2.07 | X | | | | | | | |
| 31.8 | 3.2 | 2.26 | X | | | | | | | |
| 31.8 | 3.2 | 2.26 | | | | | | | | |
| 31.8 | 3.2 | 2.26 | | | | | X | | | |
| 31.8 | 3.6 | 2.50 | X | | | | | | | |
| 31.8 | 3.6 | 2.50 | | | | | | | | |
| 31.8 | 4.0 | 2.74 | X | | | | | | | |
| 31.8 | 4.0 | 2.74 | | | | | | | | |
| 31.8 | 4.0 | 2.74 | | | | | X | | | |
| 31.8 | 4.0 | 2.74 | | | | | | X | | |
| 31.8 | 4.0 | 2.74 | | | | | | | | |
| 31.8 | 4.5 | 3.03 | | | | | | | | |
| 31.8 | 4.5 | 3.03 | X | | | | | X | | |
| 31.8 | 5.0 | 3.30 | | | | | | | | |
| 31.8 | 5.0 | 3.30 | | | | | | | | |
| 31.8 | 5.6 | 3.62 | X | | | | | | | |
| 31.8 | 5.6 | 3.62 | | | | | | | | |
| 31.8 | 5.6 | 3.62 | | | | | X | | | |
| 31.8 | 6.3 | 3.96 | | | | | | | | |
| 33.4 | 3.4 | 2.50 | | | | | | | X | |
| 33.4 | 3.4 | 2.50 | | | | | | | | X |
| 33.4 | 4.6 | 3.24 | | | | | | | X | |
| 33.4 | 4.6 | 3.24 | | | | | | | | X |
| 33.4 | 6.4 | 4.24 | | | | | | | X | |
| 33.7 | 2.6 | 1.99 | X | | | | | | | |
| 33.7 | 2.6 | 1.99 | | X | | | | | | |
| 33.7 | 2.6 | 1.99 | | | X | | | | | |
| 33.7 | 2.6 | 1.99 | | | | | | | | |
| 33.7 | 2.9 | 2.20 | | X | | | | | | |
| 33.7 | 3.2 | 2.41 | X | | | | | | | |
| 33.7 | 3.2 | 2.41 | | | | | | | | |
| 33.7 | 3.6 | 2.67 | X | | | | | | | |
| 33.7 | 3.6 | 2.67 | | X | | | | | | |
| 33.7 | 3.6 | 2.67 | | | | | X | | | |
| 33.7 | 3.6 | 2.67 | | | | | | X | | |
| 33.7 | 3.6 | 2.67 | | | | | | | | |
| 33.7 | 4.0 | 2.93 | X | | | | | | | |
| 33.7 | 4.0 | 2.93 | | | X | | | | | |
| 33.7 | 4.0 | 2.93 | | | | X | | | | |
| 33.7 | 4.0 | 2.93 | | | | | X | | | |
| 33.7 | 4.0 | 2.93 | | | | | | X | | |

| D mm | Wall mm | Weight Kg/m | St35.8/I P235GH TC1 1.0345 | St35.8/III P235GH TC2 1.0345 | TT St35N | 15Mo3 16Mo3 1.5415 | 13CrMo4-4 13CrMo4-5 1.7335 | 10CrMo9-10 10CrMo9-10 1.7380 | ASME SA 106/B | ASME SA 333/6 |
|---------|------------|----------------|----------------------------------|------------------------------------|----------|--------------------------|----------------------------------|------------------------------------|------------------|------------------|
| 33.7 | 4.0 | 2.93 | | | | | | X | | |
| 33.7 | 4.5 | 3.24 | X | | | | | | | |
| 33.7 | 4.5 | 3.24 | | X | | | | | | |
| 33.7 | 4.5 | 3.24 | | | | X | | | | |
| 33.7 | 4.5 | 3.24 | | | | | | X | | |
| 33.7 | 5.0 | 3.54 | X | | | | | | | |
| 33.7 | 5.0 | 3.54 | | X | | | | | | |
| 33.7 | 5.0 | 3.54 | | | X | | | | | |
| 33.7 | 5.0 | 3.54 | | | | X | | | | |
| 33.7 | 5.0 | 3.54 | | | | | X | | | |
| 33.7 | 5.6 | 3.88 | | | | X | | | | |
| 33.7 | 5.6 | 3.88 | | | | | | X | | |
| 33.7 | 6.3 | 4.26 | X | | | | | | | |
| 33.7 | 6.3 | 4.26 | | | | | | X | | |
| 38.0 | 2.6 | 2.27 | X | | | | | | | |
| 38.0 | 2.9 | 2.51 | X | | | | | | | |
| 38.0 | 3.2 | 2.75 | | X | | | | | | |
| 38.0 | 3.2 | 2.75 | | | | X | | | | |
| 38.0 | 3.6 | 3.05 | | | | X | | | | |
| 38.0 | 3.6 | 3.05 | | | | | | X | | |
| 38.0 | 4.0 | 3.35 | X | | | | | | | |
| 38.0 | 4.0 | 3.35 | | X | | | | | | |
| 38.0 | 4.0 | 3.35 | | | | X | | | | |
| 38.0 | 4.0 | 3.35 | | | | | X | | | |
| 38.0 | 4.5 | 3.72 | | | | X | | | | |
| 38.0 | 4.5 | 3.72 | | | | | X | | | |
| 38.0 | 5.0 | 4.07 | X | | | | | | | |
| 38.0 | 5.0 | 4.07 | | X | | | | | | |
| 38.0 | 5.0 | 4.07 | | | X | | | | | |
| 38.0 | 5.0 | 4.07 | | | | | X | | | |
| 38.0 | 5.0 | 4.07 | | | | | | X | | |
| 38.0 | 5.0 | 4.07 | | | | X | | | | |
| 38.0 | 5.6 | 4.47 | | | | | | X | | |
| 38.0 | 6.3 | 4.93 | X | | | | | | | |
| 38.0 | 6.3 | 4.93 | | | | | | X | | |
| 42.2 | 3.6 | 3.39 | | | | | | | X | |
| 42.2 | 4.9 | 4.47 | | | | | | | X | |
| 42.4 | 2.6 | 2.55 | X | | | | | | | |
| 42.4 | 2.6 | 2.55 | | X | | | | | | |
| 42.4 | 2.6 | 2.55 | | | X | | | | | |
| 42.4 | 2.6 | 2.55 | | | | X | | | | |
| 42.4 | 2.6 | 2.55 | | | | | | | | |
| 42.4 | 3.2 | 3.09 | X | | | | | | | |
| 42.4 | 3.2 | 3.09 | | X | | | | | | |
| 42.4 | 3.2 | 3.09 | | | | X | | | | |
| 42.4 | 3.6 | 3.44 | X | | | | | | | |
| 42.4 | 3.6 | 3.44 | | | | X | | | | |
| 42.4 | 4.0 | 3.79 | X | | | | | | | |
| 42.4 | 4.0 | 3.79 | | | | X | | | | |
| 42.4 | 4.0 | 3.79 | | | | | X | | | |
| 42.4 | 4.5 | 4.21 | X | | | | | | | |
| 42.4 | 5.0 | 4.61 | X | | | | | | | |
| 42.4 | 5.0 | 4.61 | | X | | | | | | |
| 42.4 | 5.0 | 4.61 | | | | X | | | | |
| 42.4 | 5.6 | 5.08 | | | | | | | | |
| 42.4 | 5.6 | 5.08 | | | | | X | | | |

| D mm | Wall mm | Weight kg/m | St35.8/I P235GH TC1 1.0345 | St35.8/III P235GH TC2 1.0345 | TT St35N | 15Mo3 16Mo3 1.5415 | 13CrMo4-4 13CrMo4-5 1.7335 | 10CrMo9-10 10CrMo9-10 1.7380 | ASME SA 106/B | ASME SA 333/6 |
|---------|------------|----------------|----------------------------------|------------------------------------|----------|--------------------------|----------------------------------|------------------------------------|------------------|------------------|
| 42.4 | 6.3 | 5.61 | X | | | | | | | |
| 42.4 | 6.3 | 5.61 | | X | | | | | | |
| 42.4 | 6.3 | 5.61 | | | | X | | | | |
| 42.4 | 6.3 | 5.61 | | | | | | X | | |
| 42.4 | 7.1 | 6.18 | X | | | | | | | |
| 42.4 | 7.1 | 6.18 | | | | X | | | | |
| 42.4 | 8.0 | 6.79 | | | | X | | | | |
| 44.5 | 2.6 | 2.69 | X | | | | | | | |
| 44.5 | 2.9 | 2.98 | X | | | | | | | |
| 44.5 | 3.2 | 3.26 | | X | | | | | | |
| 44.5 | 3.2 | 3.26 | | | | X | | | | |
| 44.5 | 3.6 | 3.63 | X | | | | | | | |
| 44.5 | 3.6 | 3.63 | | X | | | | | | |
| 44.5 | 3.6 | 3.63 | | | | X | | | | |
| 44.5 | 3.6 | 3.63 | | | | | X | | | |
| 44.5 | 3.6 | 3.63 | | | | | | X | | |
| 44.5 | 4.0 | 4.00 | X | | | | | | | |
| 44.5 | 4.0 | 4.00 | | X | | | | | | |
| 44.5 | 4.0 | 4.00 | | | | X | | | | |
| 44.5 | 4.0 | 4.00 | | | | | X | | | |
| 44.5 | 4.5 | 4.44 | | | | X | | | | |
| 44.5 | 5.0 | 4.87 | X | | | | | | | |
| 44.5 | 5.0 | 4.87 | | X | | | | | | |
| 44.5 | 5.0 | 4.87 | | | | X | | | | |
| 44.5 | 5.0 | 4.87 | | | | | | X | | |
| 44.5 | 5.0 | 4.87 | | | | | X | | | |
| 44.5 | 6.3 | 5.94 | | | | | X | | | |
| 48.3 | 2.6 | 2.93 | X | | | | | | | |
| 48.3 | 2.6 | 2.93 | | X | | | | | | |
| 48.3 | 2.6 | 2.93 | | | X | | | | | |
| 48.3 | 2.6 | 2.93 | | | | X | | | | |
| 48.3 | 2.6 | 2.93 | | | | | X | | | |
| 48.3 | 2.6 | 2.93 | | | | | | X | | |
| 48.3 | 2.6 | 2.93 | | | | | | | | |
| 48.3 | 2.9 | 3.26 | X | | | | | | | |
| 48.3 | 2.9 | 3.26 | | | | X | | | | |
| 48.3 | 3.2 | 3.56 | X | | | | | | | |
| 48.3 | 3.2 | 3.56 | | X | | | | | | |
| 48.3 | 3.6 | 3.97 | X | | | | | | | |
| 48.3 | 3.6 | 3.97 | | X | | | | | | |
| 48.3 | 3.6 | 3.97 | | | | X | | | | |
| 48.3 | 3.7 | 4.05 | | | | | | | X | |
| 48.3 | 3.7 | 4.05 | | | | | | | | X |
| 48.3 | 4.0 | 4.37 | X | | | | | | | |
| 48.3 | 4.0 | 4.37 | | | | X | | | | |
| 48.3 | 4.0 | 4.37 | | | | | | X | | |
| 48.3 | 4.5 | 4.86 | X | | | | | | | |
| 48.3 | 4.5 | 4.86 | | | | X | | | | |
| 48.3 | 5.0 | 5.34 | X | | | | | | | |
| 48.3 | 5.0 | 5.34 | | | | X | | | | |
| 48.3 | 5.1 | 5.41 | | | | | | | X | |
| 48.3 | 5.1 | 5.41 | | | | | | | | X |
| 48.3 | 5.6 | 5.90 | X | | | | | | | |
| 48.3 | 5.6 | 5.90 | | | | X | | | | |
| 48.3 | 5.6 | 5.90 | | | | | | X | | |
| 48.3 | 6.3 | 6.53 | X | | | | | | | |
| 48.3 | 6.3 | 6.53 | | | | X | | | | |

| D mm | Wall mm | Weight kg/m | St35.8/I P235GH TC1 1.0345 | St35.8/III P235GH TC2 1.0345 | TT St35N | 15Mo3 16Mo3 1.5415 | 13CrMo4-4 13CrMo4-5 1.7335 | 10CrMo9-10 10CrMo9-10 1.7380 | ASME SA 106/B | ASME SA 333/6 |
|---------|------------|----------------|----------------------------------|------------------------------------|----------|--------------------------|----------------------------------|------------------------------------|------------------|------------------|
| 76.1 | 8.0 | 13.40 | | X | | | | | | |
| 76.1 | 8.0 | 13.40 | | | | X | | | | |
| 76.1 | 10.0 | 16.30 | X | | | | | | | |
| 76.1 | 10.0 | 16.30 | | | | X | | | | |
| 76.1 | 12.5 | 19.60 | | | | X | | | | |
| 76.1 | 12.5 | 19.60 | | | | | X | | | |
| 82.5 | 3.2 | 6.26 | X | | | | | | | |
| 82.5 | 4.0 | 7.74 | | X | | | | | | |
| 82.5 | 4.0 | 7.74 | | | | X | | | | |
| 82.5 | 5.0 | 9.56 | X | | | | | | | |
| 82.5 | 8.0 | 14.70 | X | | | | | | | |
| 82.5 | 10.0 | 17.90 | X | | | | | | | |
| 82.5 | 12.5 | 21.60 | X | | | | | | | |
| 88.9 | 3.2 | 6.76 | X | | | | | | | |
| 88.9 | 3.2 | 6.76 | | X | | | | | | |
| 88.9 | 3.2 | 6.76 | | | | X | | | | |
| 88.9 | 3.6 | 7.57 | X | | | | | | | |
| 88.9 | 3.6 | 7.57 | | | | X | | | | |
| 88.9 | 4.0 | 8.38 | X | | | | | | | |
| 88.9 | 4.0 | 8.38 | | X | | | | | | |
| 88.9 | 4.0 | 8.38 | | | X | | | | | |
| 88.9 | 4.0 | 8.38 | X | | | | | | | |
| 88.9 | 4.5 | 9.37 | | | | | | | | |
| 88.9 | 4.5 | 9.37 | X | | | | | | | |
| 88.9 | 4.5 | 9.37 | | X | | | | | | |
| 88.9 | 4.5 | 9.37 | | | | X | | | | |
| 88.9 | 5.0 | 10.30 | X | | | | | | | |
| 88.9 | 5.0 | 10.30 | | X | | | | | | |
| 88.9 | 5.0 | 10.30 | | | | X | | | | |
| 88.9 | 5.5 | 11.30 | | | | | | X | | |
| 88.9 | 5.5 | 11.30 | | | | | | | | X |
| 88.9 | 5.6 | 11.50 | X | | | | | | | |
| 88.9 | 5.6 | 11.50 | | | | | X | | | |
| 88.9 | 6.3 | 12.80 | X | | | | | | | |
| 88.9 | 6.3 | 12.80 | | X | | | | | | |
| 88.9 | 6.3 | 12.80 | | | | X | | | | |
| 88.9 | 6.3 | 12.80 | | | | | | | | |
| 88.9 | 7.1 | 14.30 | X | | | | | | | |
| 88.9 | 7.1 | 14.30 | | X | | | | | | |
| 88.9 | 7.1 | 14.30 | | | | X | | | | |
| 88.9 | 7.6 | 15.30 | | | | | | X | | |
| 88.9 | 7.6 | 15.30 | | | | | | | | X |
| 88.9 | 8.0 | 16.00 | X | | | | | | | |
| 88.9 | 8.0 | 16.00 | | X | | | | | | |
| 88.9 | 8.0 | 16.00 | | | | X | | | | |
| 88.9 | 8.8 | 17.40 | X | | | | | | | |
| 88.9 | 8.8 | 17.40 | | X | | | | | | |
| 88.9 | 8.8 | 17.40 | | | | X | | | | |
| 88.9 | 10.0 | 19.50 | X | | | | | | | |
| 88.9 | 10.0 | 19.50 | | X | | | | | | |
| 88.9 | 10.0 | 19.50 | | | | X | | | | |
| 88.9 | 11.0 | 21.10 | | | | X | | | | |
| 88.9 | 11.1 | 21.40 | | | | | | X | | |
| 88.9 | 12.5 | 23.60 | X | | | | | | | |
| 101.6 | 3.6 | 8.70 | X | | | | | | | |
| 101.6 | 4.5 | 10.80 | X | | | | | | | |
| 101.6 | 5.0 | 11.90 | X | | | | | | | |

| D mm | Wall mm | Weight kg/m | St35.8/I P235GH TC1 1.0345 | St35.8/III P235GH TC2 1.0345 | TT St35N | 15Mo3 16Mo3 1.5415 | 13CrMo4-4 13CrMo4-5 1.7335 | 10CrMo9-10 10CrMo9-10 1.7380 | ASME SA 106/B | ASME SA 333/6 |
|---------|------------|----------------|----------------------------------|------------------------------------|----------|--------------------------|----------------------------------|------------------------------------|------------------|------------------|
| 101.6 | 5.0 | 11.90 | | X | | | | | | |
| 101.6 | 5.0 | 11.90 | | | | X | | | | |
| 101.6 | 6.3 | 14.80 | | X | | | | | | |
| 101.6 | 6.3 | 14.80 | | | | X | | | | |
| 101.6 | 7.1 | 16.50 | | X | | | | | | |
| 101.6 | 7.1 | 16.50 | | | | X | | | | |
| 101.6 | 11.0 | 24.60 | | | | | | X | | |
| 108.0 | 3.6 | 9.27 | X | | | | | | | |
| 108.0 | 4.5 | 11.50 | | X | | | | | | |
| 108.0 | 7.1 | 17.70 | | X | | | | | | |
| 108.0 | 12.5 | 29.40 | | | | X | | | | |
| 114.3 | 3.6 | 9.83 | X | | | | | | | |
| 114.3 | 3.6 | 9.83 | | X | | | | | | |
| 114.3 | 3.6 | 9.83 | | | X | | | | | |
| 114.3 | 3.6 | 9.83 | | | | X | | | | |
| 114.3 | 4.0 | 10.90 | X | | | | | | | |
| 114.3 | 4.0 | 10.90 | | X | | | | | | |
| 114.3 | 4.0 | 10.90 | | | | X | | | | |
| 114.3 | 4.5 | 12.20 | X | | | | | | | |
| 114.3 | 5.0 | 13.50 | X | | | | | | | |
| 114.3 | 5.0 | 13.50 | | X | | | | | | |
| 114.3 | 5.0 | 13.50 | | | | X | | | | |
| 114.3 | 5.6 | 15.00 | X | | | | | | | |
| 114.3 | 5.6 | 15.00 | | | | X | | | | |
| 114.3 | 6.0 | 16.10 | | | | | | | X | |
| 114.3 | 6.0 | 16.10 | | | | | | | | X |
| 114.3 | 6.3 | 16.80 | X | | | | | | | |
| 114.3 | 6.3 | 16.80 | | X | | | | | | |
| 114.3 | 6.3 | 16.80 | | | | X | | | | |
| 114.3 | 6.3 | 16.80 | | | | | | | | |
| 114.3 | 7.1 | 18.80 | X | | | | | | | |
| 114.3 | 7.1 | 18.80 | | | | | X | | | |
| 114.3 | 8.0 | 21.00 | X | | | | | | | |
| 114.3 | 8.0 | 21.00 | | X | | | | | | |
| 114.3 | 8.0 | 21.00 | | | | X | | | | |
| 114.3 | 8.0 | 21.00 | | | | | | | | |
| 114.3 | 8.6 | 22.30 | | | | | | | X | |
| 114.3 | 8.6 | 22.30 | | | | | | | | X |
| 114.3 | 8.8 | 22.90 | X | | | | | | | |
| 114.3 | 8.8 | 22.90 | | | | X | | | | |
| 114.3 | 12.5 | 31.40 | | | | X | | | | |
| 114.3 | 13.5 | 33.50 | | | | | | | X | |
| 114.3 | 16.0 | 38.80 | | | | X | | | | |
| 127.0 | 4.0 | 12.10 | X | | | | | | | |
| 127.0 | 6.3 | 18.80 | | X | | | | | | |
| 127.0 | 8.0 | 23.50 | | X | | | | | | |
| 127.0 | 8.8 | 25.70 | X | | | | | | | |
| 127.0 | 8.8 | 25.70 | | X | | | | | | |
| 127.0 | 10.0 | 28.90 | | | | X | | | | |
| 127.0 | 11.0 | 31.50 | | | | X | | | | |
| 133.0 | 4.0 | 12.70 | X | | | | | | | |
| 133.0 | 6.3 | 19.70 | X | | | | | | | |
| 133.0 | 5.6 | 17.60 | X | | | | | | | |
| 139.7 | 4.0 | 13.40 | X | | | | | | | |
| 139.7 | 4.0 | 13.40 | | X | | | | | | |
| 139.7 | 4.0 | 13.40 | | | | X | | | | |
| 139.7 | 4.0 | 13.40 | | | | | | | | |

| D mm | Wall mm | Weight kg/m | St35.8/I P235GH TC1 1.0345 | St35.8/III P235GH TC2 1.0345 | TT St35N | 15Mo3 16Mo3 1.5415 | 13CrMo4-4 13CrMo4-5 1.7335 | 10CrMo9-10 10CrMo9-10 1.7380 | ASME SA 106/B | ASME SA 333/6 |
|---------|------------|----------------|----------------------------------|------------------------------------|----------|--------------------------|----------------------------------|------------------------------------|------------------|------------------|
| 139.7 | 4.5 | 15.00 | X | | | | | | | |
| 139.7 | 5.0 | 16.60 | X | | | | | | | |
| 139.7 | 5.0 | 16.60 | | | | X | | | | |
| 139.7 | 5.6 | 18.50 | X | | | | | | | |
| 139.7 | 5.6 | 18.50 | | | | X | | | | |
| 139.7 | 6.3 | 20.70 | X | | | | | | | |
| 139.7 | 6.3 | 20.70 | | X | | | | | | |
| 139.7 | 6.3 | 20.70 | | | | X | | | | |
| 139.7 | 7.1 | 23.20 | X | | | | | | | |
| 139.7 | 7.1 | 23.20 | | X | | | | | | |
| 139.7 | 7.1 | 23.20 | | | | X | | | | |
| 139.7 | 8.0 | 26.00 | X | | | | | | | |
| 139.7 | 8.0 | 26.00 | | | | X | | | | |
| 139.7 | 8.8 | 28.40 | X | | | | | | | |
| 139.7 | 10.0 | 32.00 | X | | | | | | | |
| 139.7 | 12.5 | 39.20 | X | | | | | | | |
| 139.7 | 12.5 | 39.20 | | | | X | | | | |
| 139.7 | 14.2 | 43.90 | | | | X | | | | |
| 139.7 | 16.0 | 48.80 | | | | X | | | | |
| 141.3 | 6.6 | 21.80 | | | | | | | X | |
| 141.3 | 9.5 | 31.00 | | | | | | | X | |
| 159.0 | 7.1 | 26.60 | | X | | | | | | |
| 159.0 | 8.0 | 29.80 | X | | | | | | | |
| 168.3 | 4.5 | 18.20 | X | | | | | | | |
| 168.3 | 4.5 | 18.20 | | X | | | | | | |
| 168.3 | 4.5 | 18.20 | | | | X | | | | |
| 168.3 | 5.0 | 20.10 | X | | | | | | | |
| 168.3 | 6.3 | 25.20 | X | | | | | | | |
| 168.3 | 6.3 | 25.20 | | X | | | | | | |
| 168.3 | 6.3 | 25.20 | | | | X | | | | |
| 168.3 | 7.1 | 28.20 | X | | | | | | | |
| 168.3 | 7.1 | 28.20 | | | | X | | | | |
| 168.3 | 7.1 | 28.30 | | | | | | | X | |
| 168.3 | 7.1 | 28.30 | | | | | | | | X |
| 168.3 | 8.0 | 31.60 | | | | X | | | | |
| 168.3 | 8.8 | 34.60 | X | | | | | | | |
| 168.3 | 8.8 | 34.60 | | X | | | | | | |
| 168.3 | 8.8 | 34.60 | | | | X | | | | |
| 168.3 | 10.0 | 39.00 | X | | | | | | | |
| 168.3 | 10.0 | 39.00 | | X | | | | | | |
| 168.3 | 10.0 | 39.00 | | | | X | | | | |
| 168.3 | 11.0 | 42.70 | X | | | | | | | |
| 168.3 | 11.0 | 42.70 | | X | | | | | | |
| 168.3 | 11.0 | 42.70 | | | | X | | | | |
| 168.3 | 11.0 | 42.70 | | | | | | | X | |
| 168.3 | 11.0 | 42.70 | | | | | | | | |
| 168.3 | 11.0 | 42.70 | | X | | | | | | |
| 168.3 | 12.5 | 48.00 | | | | X | | | | |
| 168.3 | 12.5 | 48.00 | | X | | | | | | |
| 168.3 | 14.2 | 54.00 | | | | X | | | | |
| 168.3 | 14.2 | 54.00 | | X | | | | | | |
| 168.3 | 16.0 | 60.10 | X | | | | | | | |
| 168.3 | 16.0 | 60.10 | | X | | | | | | |
| 168.3 | 20.0 | 73.10 | | | | X | | | | |
| 193.7 | 5.6 | 26.00 | X | | | | | | | |

| D mm | Wall mm | Weight kg/m | St35.8/I P235GH TC1 1.0345 | St35.8/III P235GH TC2 1.0345 | TT St35N | 15Mo3 16Mo3 1.5415 | 13CrMo4-4 13CrMo4-5 1.7335 | 10CrMo9-10 10CrMo9-10 1.7380 | ASME SA 106/B | ASME SA 333/6 |
|---------|------------|----------------|----------------------------------|------------------------------------|----------|--------------------------|----------------------------------|------------------------------------|------------------|------------------|
| 193.7 | 7.1 | 32.70 | | X | | | | | | |
| 193.7 | 8.0 | 36.60 | | X | | | | | | |
| 193.7 | 14.2 | 62.90 | | X | | | | | | |
| 193.7 | 17.5 | 76.00 | | X | | | | | | |
| 193.7 | 17.5 | 76.00 | | | | X | | | | |
| 219.1 | 6.3 | 33.10 | X | | | | | | | |
| 219.1 | 6.3 | 33.10 | | X | | | | | | |
| 219.1 | 6.3 | 33.10 | | | | X | | | | |
| 219.1 | 6.4 | 33.30 | | | | | | | X | |
| 219.1 | 7.0 | 36.80 | | | | | | | X | |
| 219.1 | 8.0 | 41.60 | X | | | | | | | |
| 219.1 | 8.2 | 42.60 | | | | | | | X | |
| 219.1 | 8.2 | 42.60 | | | | | | | | X |
| 219.1 | 8.8 | 45.60 | X | | | | | | | |
| 219.1 | 10.0 | 51.60 | X | | | | | | | |
| 219.1 | 10.0 | 51.60 | | X | | | | | | |
| 219.1 | 10.0 | 51.60 | | | | X | | | | |
| 219.1 | 10.3 | 53.10 | | | | | | | X | |
| 219.1 | 12.5 | 63.70 | X | | | | | | | |
| 219.1 | 12.5 | 63.70 | | | | X | | | | |
| 219.1 | 12.7 | 64.60 | | | | | | | X | |
| 219.1 | 14.2 | 71.80 | | X | | | | | | |
| 219.1 | 17.5 | 87.00 | | X | | | | | | |
| 219.1 | 20.0 | 98.20 | | X | | | | | | |
| 219.1 | 22.2 | 108.00 | | | | X | | | | |
| 219.1 | 25.0 | 120.00 | | X | | | | | | |
| 244.5 | 22.2 | 122.00 | | | | X | | | | |
| 273.0 | 6.3 | 41.40 | X | | | | | | | |
| 273.0 | 6.3 | 41.40 | | X | | | | | | |
| 273.0 | 6.3 | 41.40 | | | | X | | | | |
| 273.0 | 6.4 | 41.80 | | | | | | | X | |
| 273.0 | 7.8 | 51.00 | | | | | | | X | |
| 273.0 | 8.0 | 52.30 | X | | | | | | | |
| 273.0 | 8.0 | 52.30 | | X | | | | | | |
| 273.0 | 8.8 | 57.30 | X | | | | | | | |
| 273.0 | 8.8 | 57.30 | | X | | | | | | |
| 273.0 | 9.3 | 60.30 | | | | | | | X | |
| 273.0 | 10.0 | 41.40 | X | | | | | | | |
| 273.0 | 10.0 | 41.40 | | X | | | | | | |
| 273.0 | 10.0 | 41.40 | | | | X | | | | |
| 273.0 | 10.0 | 41.40 | | | | | | | | |
| 273.0 | 12.5 | 80.30 | X | | | | | | | |
| 273.0 | 12.7 | 81.60 | | | | | | | X | |
| 273.0 | 20.0 | 125.00 | | X | | | | | | |
| 273.0 | 28.0 | 169.00 | | X | | | | | | |
| 298.5 | 7.1 | 51.00 | X | | | | | | | |
| 323.9 | 7.1 | 55.50 | X | | | | | | | |
| 323.9 | 7.1 | 55.50 | | | | X | | | | |
| 323.9 | 8.4 | 65.20 | | | | | | | X | |
| 323.9 | 9.5 | 73.90 | | | | | | | X | |
| 323.9 | 10.0 | 77.40 | X | | | | | | | |
| 323.9 | 12.7 | 97.50 | | | | | | | X | |
| 355.6 | 8.0 | 68.60 | X | | | | | | | |
| 355.6 | 8.0 | 68.60 | | | | X | | | | |
| 355.6 | 9.5 | 81.30 | | | | | | | X | |

| D mm | Wall mm | Weight kg/m | St35.8/I P235GH TC1 1.0345 | St35.8/III P235GH TC2 1.0345 | TT St35N | 15Mo3 16Mo3 1.5415 | 13CrMo4-4 13CrMo4-5 1.7335 | 10CrMo9-10 10CrMo9-10 1.7380 | ASME SA 106/B | ASME SA 333/6 |
|---------|------------|----------------|----------------------------------|------------------------------------|----------|--------------------------|----------------------------------|------------------------------------|------------------|------------------|
| 355.6 | 11.0 | 93.50 | | X | | | | | | |
| 355.6 | 12.7 | 107.40 | | | | | | | X | |
| 368.0 | 17.5 | 151.00 | | | | X | | | | |
| 406.4 | 8.8 | 86.30 | X | | | | | | | |
| 406.4 | 9.5 | 93.30 | | | | | | | X | |
| 406.4 | 12.7 | 123.30 | | | | | | | X | |
| 457.0 | 9.5 | 105.20 | | | | | | | X | |
| 457.0 | 10.0 | 110.00 | X | | | | | | | |
| 457.0 | 12.7 | 139.20 | | | | | | | X | |
| 457.0 | 14.3 | 155.80 | | | | | | | X | |
| 508.0 | 9.5 | 117.20 | | | | | | | X | |
| 508.0 | 11.0 | 135.00 | X | | | | | | | |
| 508.0 | 12.7 | 155.10 | | | | | | | X | |
| 610.0 | 9.5 | 141.10 | | | | | | | X | |
| 610.0 | 12.5 | 184.00 | X | | | | | | | |
| 610.0 | 12.7 | 187.10 | | | | | | | X | |

Fittings and flanges

Hot formed fittings

Bends, T-pieces, reducers and caps in dimensions 21.3–610 mm.

Forged fittings

Of type threaded or socket-weld. Bends, T-pieces, couplings, caps, nipples and plugs in dimensions 17.1–60.3 mm.

Flanges

Welding neck flanges, socket-weld flanges, blind flanges, threaded flanges and slip-on flanges, 21.3–610 mm in different pressure classes.

For additional information, please contact us or visit us at www.helens.se.

Hydraulics

Piston rods

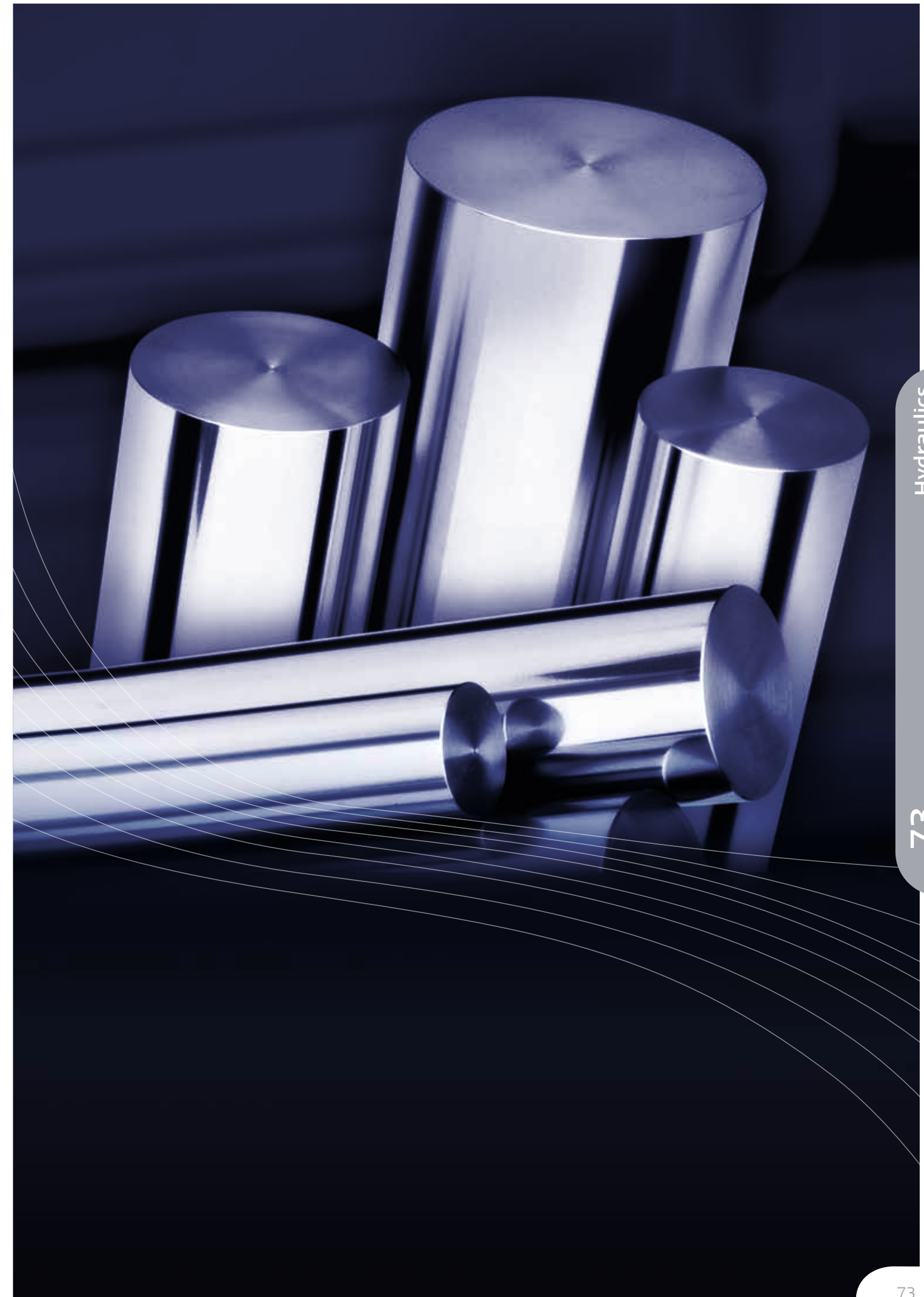
In order to fulfil all requirements, Heléns offers a wide program of piston rods in a number of qualities. Normal chromed rods of the highest class, NiCr 350 for tougher demands and two stainless variants; AISI 329 and 1.4542. On request, we are pleased to offer chromed tubes.

Cylinder tubes

Heléns stock a wide assortment of skived and roller-burnished or honed cylinder tubes. Our cylinder tubes has good surface smoothness and narrow tolerances. For simpler applications, we can offer a large assortment of bright-drawn cylinder tubes.



Piston rods. page 74
Technical information. page 75-76
Cylinder tubes. page 77-78
Technical information. page 79



Pistonrods

Heléns stock several types of pistonrod as standard. They are primarily characterized by very good corrosion resistance, weldability and machinability.

- Chromed piston rod in quality 20MnV6, NiCr 350 (Ni min 30 my, Cr min 20 my), tolerance ISO f7.
- Chromed stainless piston rod in quality AISI 329 and 1.4542. With the assistance of manufacturers and our warehouse, we can supply additional dimensions and qualities. We can also arrange piston tubes on request.

| Dimension Ø mm | Weight kg/m | Standard | NiCr 350 | AISI 329* | 1.4542* |
|-------------------|----------------|----------|----------|-----------|---------|
| 16 | 1.58 | X | | | |
| 18 | 2.00 | X | | X | |
| 20 | 2.47 | X | | X | X |
| 22 | 2.98 | | | X | |
| 25 | 3.87 | X | X | X | X |
| 28 | 4.83 | | | X | |
| 30 | 5.55 | X | X | X | X |
| 32 | 6.32 | X | X | X | X |
| 35 | 7.55 | X | | X | X |
| 36 | 8.00 | X | | X | |
| 40 | 9.87 | X | X | X | X |
| 45 | 12.48 | X | X | X | X |
| 50 | 15.41 | X | X | X | X |
| 55 | 18.70 | X | | | |
| 56 | 19.33 | X | X | X | |
| 60 | 22.20 | X | X | X | X |
| 63 | 24.50 | X | X | | X |
| 65 | 26.05 | X | | X | X |
| 70 | 30.20 | X | X | X | X |
| 75 | 34.70 | X | | X | |
| 80 | 39.50 | X | X | X | X |
| 90 | 49.90 | X | X | X | X |
| 100 | 61.60 | X | | X | X |
| 110 | 74.60 | X | X | X | X |
| 125 | 96.33 | X | X | X | |
| 140 | 120.84 | X | X | X | |
| 150 | 138.72 | | | X | |
| 160 | 157.83 | X | | | |

*) For AISI 329 and 1.4542, there is an additional alloying cost that is determined on the day of delivery

Technical information

Piston rods

| Standard piston rods / NiCr 350 / Stainless AISI 329 / Stainless 1.4542 | |
|---|--|
| Standard | Corrosion resistance according to 9227 (NSS) 18 ≤ Diameter ≤ 120 mm, 72 h rating 10 Diameter > 120 mm, 48 h rating 10 Rating according to ISO 10289 |
| NiCr 350 | Min 1000 h rating 10 according to ISO 10289 in neutral salt spray test according to ISO 9227 (AASS 350 h according to ISO 9227) |
| Stainless AISI 329 | Min 500 h rating 10 according to ISO 10289 in neutral salt spray test according to ISO 9227 (AASS) |
| Stainless 1.4542 | Min 1000h rating 10 according to ISO 10289 in neutral salt spray test according to ISO 9227 (NSS) |

Mechanical properties - Standard

| STANDARD | | | | | | | | | |
|----------|-----------------------|-------------------------|-------------------------------|--------------------|-----------|------------------------|------------------------------|-----------------------|--------------------------|
| Re | Yield strength MPa | Tensile strength MPa | Extension A ₅ % | Chrome layer my | Tolerance | Surface hardness HV | Surface finish Ra my max. | Straight-ness mm/m | Fabrication length mm |
| Ø ≤ 16 | ≥ 450 | 550-780 | ≥ 17 | ≥ 14 | f8 | HV ≥ 850 | 0.2 | ≤ 0.3 | 2.7- 6 m |
| Ø ≤ 18 | | 550-780 | | ≥ 14 | f7 | | | ≤ 0.1 | |
| Ø ≤ 20 | ≥ 450 | 550-780 | ≥ 17 | ≥ 20 | f7 | HV ≥ 850 | 0.2 | ≤ 0.1 | 5.4-7.6 |
| Ø > 20 | ≥ 450 | 550-780 | ≥ 18 | ≥ 20 | f7 | HV ≥ 850 | 0.2 | ≤ 0.1 | 5.4-7.6 |
| Ø ≤ 70 | | | | | | | | | |
| Ø > 70 | ≥ 390 | 530-780 | ≥ 18 | ≥ 20 | f7 | HV ≥ 850 | 0.2 | ≤ 0.1 | 5.4-7.6 |

Chrome layer Ø = 18 mm min. 14 my
Chromelayer Ø < 18 mm min. 20 my

Mechanical properties - Stainless AISI 329

| STAINLESS AISI 329 | | | | | | | | | |
|--------------------|-----------------------|-------------------------|-------------------------------|--------------------|-----------|------------------------|------------------------------|-----------------------|--------------------------|
| Re | Yield strength MPa | Tensile strength MPa | Extension A ₅ % | Chrome layer my | Tolerance | Surface hardness HV | Surface finish Ra my max. | Straight-ness mm/m | Fabrication length mm |
| Ø 18-150 | ≥ 460 | > 600 | ≥ 20 | ≥ 20 | f7 | 850 HV | 0.2 | ≤ 0.1 | 5.4-7.6 |

Mechanical properties - Stainless 1.4542

| 1.4542 | | | | | | | | | |
|------------|-----------------------|-------------------------|-------------------------------|--------------------|-----------|------------------------|-------------------------|-----------------------|--------------------------|
| Re | Yield strength MPa | Tensile strength MPa | Extension A ₅ % | Chrome layer my | Tolerance | Surface hardness HV | Surface finish Ra my | Straight-ness mm/m | Fabrication length mm |
| Ø 20 - 110 | > 725 | > 860 | ≥ 16 | ≥ 20 | f7 | 850 HV | | ≤ 0.3 | 6.0-6.5 |

Mechanical properties - NiCr 350

| NiCr 350 | | | | | | | | | |
|----------|-----------------------|-------------------------|-------------------------------|-----------------|-------------------------|-------------------------------|-----------|-------------------------|-----------------------|
| Re | Yield strength MPa | Tensile strength MPa | Extension A ₅ % | Impact strength | Chrome layer | Nickel layer | Tolerance | Surface finish Ra my | Straight-ness mm/m |
| Ø 25-90 | 520 min. | 650-800 | 19 min. | 27 J at -20°C | min. 20 my | min. 30 my | ISO f7 | ≤ 0.2 | 0.1 |
| Ø 90-125 | 440 min. | 550-700 | 19 min. | No guarantee* | Surface hardness | Surface hardness | ISO f7 | ≤ 0.2 | 0.1 |
| Ø > 125 | 350 min. | 550-700 | 19 min. | 27 KVJ at -20° | ≥ 850 HV _{0.1} | approx. 300 HV _{0.1} | ISO f7 | ≤ 0.2 | 0.1 |

* 27J at -20° on request

Technical information

Chemical composition

| STANDARD PISTON RODS / NiCr 350 / STAINLESS AISI 329 / 1.4542 | | | | | | | | | | |
|---|-----------|-----------|-----------|-----------|------------|-------|------------|-------|-------|----|
| Steel quality | C% | Mn% | Si% | V% | P% | Cr% | S% | Ni% | Mo% | N% |
| 20MnV6 | 0.16-0.22 | 1.30-1.70 | 0.10-0.50 | 0.10-0.20 | max. 0.035 | | max. 0.035 | | | |
| 20MnV6 (NiCr 350) | 0.16-0.22 | 1.30-1.70 | 0.10-0.50 | 0.10-0.20 | max. 0.035 | | max. 0.035 | | | |
| AISI 329 | ≤ 0.05 | ≤ 2 | ≤ 1 | | ≤ 0.035 | 25-28 | ≤ 0.030 | 4.5-6 | 1.3-2 | |
| 1.4542 | ≤ 0.06 | ≤ 1.0 | ≤ 0.6 | | ≤ 0.030 | 15-17 | ≤ 0.030 | 4-5 | ≤ 0.5 | |

Packaging

| Standard piston rods / NiCr 350 / Stainless AISI 329 / 1.4542 | |
|---|------------------|
| Standard Ø12-Ø16 | Cardboard sleeve |
| Standard Ø18-Ø50 | Plastic sleeve |
| Standard Ø55-Ø160 | Cardboard sleeve |
| NiCr 350 | Cardboard sleeve |
| Stainless AISI 329 | Cardboard sleeve |
| Stainless 1.4542 | Cardboard sleeve |

Cylinder tubes

Heléns stock two types of cylinder tubes:

1. Honed/Skived and roller burnished cylinder tubes material
E355+SR (St 52 BK + S),
EN 10305-1 and 10305-2 (DIN 2391/2393), tolerance ISO H8,
Ra = max 0.4 my.
2. Bright drawn cylinder tubes RTU material E355C (St 52-3 BK),
EN 10305-2 (DIN 2393), tolerance ISO H9/H10,
Ra = max 0.8 my.

| Dimension Ø mm | Weight kg/m | Honed/Skived and roller burnished | Bright drawn |
|-------------------|----------------|--------------------------------------|--------------|
| 32.00 x 25.00 | 2.46 | | X |
| 42.00 x 32.00 | 4.56 | | x |
| 45.00 x 35.00 | 4.93 | | X |
| 50.00 x 40.00 | 5.55 | X | X |
| 55.00 x 45.00 | 6.17 | X | X |
| 60.00 x 50.00 | 6.78 | X | X |
| 65.00 x 55.00 | 7.40 | X | X |
| 70.00 x 60.00 | 8.01 | X | X |
| 73.00 x 63.00 | 8.38 | X | X |
| 75.00 x 63.00 | 10.21 | X | |
| 75.00 x 65.00 | 8.63 | X | X |
| 80.00 x 70.00 | 9.25 | X | X |
| 85.00 x 70.00 | 14.33 | x | |
| 85.00 x 75.00 | 9.87 | X | |
| 90.00 x 75.00 | 15.30 | X | |
| 90.00 x 80.00 | 10.48 | X | X |
| 92.00 x 80.00 | 12.73 | X | |
| 95.00 x 80.00 | 16.18 | X | |
| 95.00 x 85.00 | 11.10 | X | |
| 100.00 x 80.00 | 22.19 | X | |
| 100.00 x 85.00 | 17.10 | X | |
| 100.00 x 90.00 | 11.71 | X | X |
| 105.00 x 90.00 | 18.03 | X | |
| 110.00 x 100.00 | 12.95 | X | X |
| 112.00 x 100.00 | 16.16 | X | |
| 115.00 x 100.00 | 19.88 | X | |
| 120.00 x 100.00 | 27.12 | X | |

| Dimension Ø mm | Weight kg/m | Honed, Skived and roller burnished | Bright-drawn |
|-------------------|----------------|---------------------------------------|--------------|
| 125.00 x 110.00 | 21.73 | X | |
| 130.00 x 110.00 | 29.59 | X | |
| 130.00 x 115.00 | 22.66 | X | |
| 130.00 x 120.00 | 15.41 | X | |
| 135.00 x 120.00 | 23.58 | X | |
| 140.00 x 125.00 | 24.51 | X | |
| 145.00 x 125.00 | 33.29 | X | |
| 145.00 x 130.00 | 25.43 | X | |
| 155.00 x 140.00 | 27.28 | X | |
| 160.00 x 140.00 | 36.99 | X | |
| 165.00 x 140.00 | 46.95 | X | |
| 165.00 x 150.00 | 29.13 | X | |
| 170.00 x 150.00 | 39.46 | X | |
| 180.00 x 160.00 | 41.92 | X | |
| 185.00 x 160.00 | 53.17 | X | |
| 190.00 x 160.00 | 64.74 | X | |
| 200.00 x 180.00 | 46.86 | X | |
| 205.00 x 180.00 | 59.34 | X | |
| 225.00 x 200.00 | 65.50 | X | |
| 230.00 x 200.00 | 79.53 | X | |
| 245.00 x 220.00 | 71.67 | X | |
| 280.00 x 250.00 | 98.02 | X | |

X = on stock. Other dimensions and special variants can be offered on request.

Technical information

Cylinder tubes

Chemical composition

| | Steel grade | Type | Fabrication length mm | Chemical composition | | | | |
|--|----------------------------------|---|--------------------------|----------------------|-----------|-----------|------------|------------|
| | | | | C% | Mn% | Si% | S% | P% |
| Honed/Skived and roller-burnished cylinder tubes | E355+SR corresp. to St 52 BK + S | Cold drawn stress-relieved tube corresponding to EN 10305-1 or EN 10305-2 (DIN 2391 or DIN 2393) Honed/roller-burnished | 5000 - 8000 | max. 0.22 | max. 1.60 | max. 0.55 | max. 0.035 | max. 0.003 |
| Bright drawn cylinder tubes | E355C corresp. to St52-3 BK | Welded cold drawn corresponding to EN 10305-2 | 5000 - 7000 | max 0.22 | max 1.60 | max 0.55 | max 0.025 | max 0.025 |

Mechanical properties

| | Yield strength MPa min. | Tensile strength MPa min. | Extension A ₅ % min. | Surface finish Ra | Tol Id | Tol Od | Straightness |
|--|----------------------------|------------------------------|------------------------------------|----------------------|--------|---------------------------------------|-----------------------|
| Honed/Skived and roller-burnished cylinder tubes | 515 | 580 | 15 | Max. 0.4 my | H8-H10 | According to EN 10305-1 or EN 10305-2 | 1:2000 mm or 0.8/1000 |
| Bright drawn cylinder tubes | 590 | 650 | 10 | Max. 0.8 my | H9-H10 | According to EN 10305-2 | 1:2000 mm |

Seamless hot rolled tubes

Heavy wall tubes

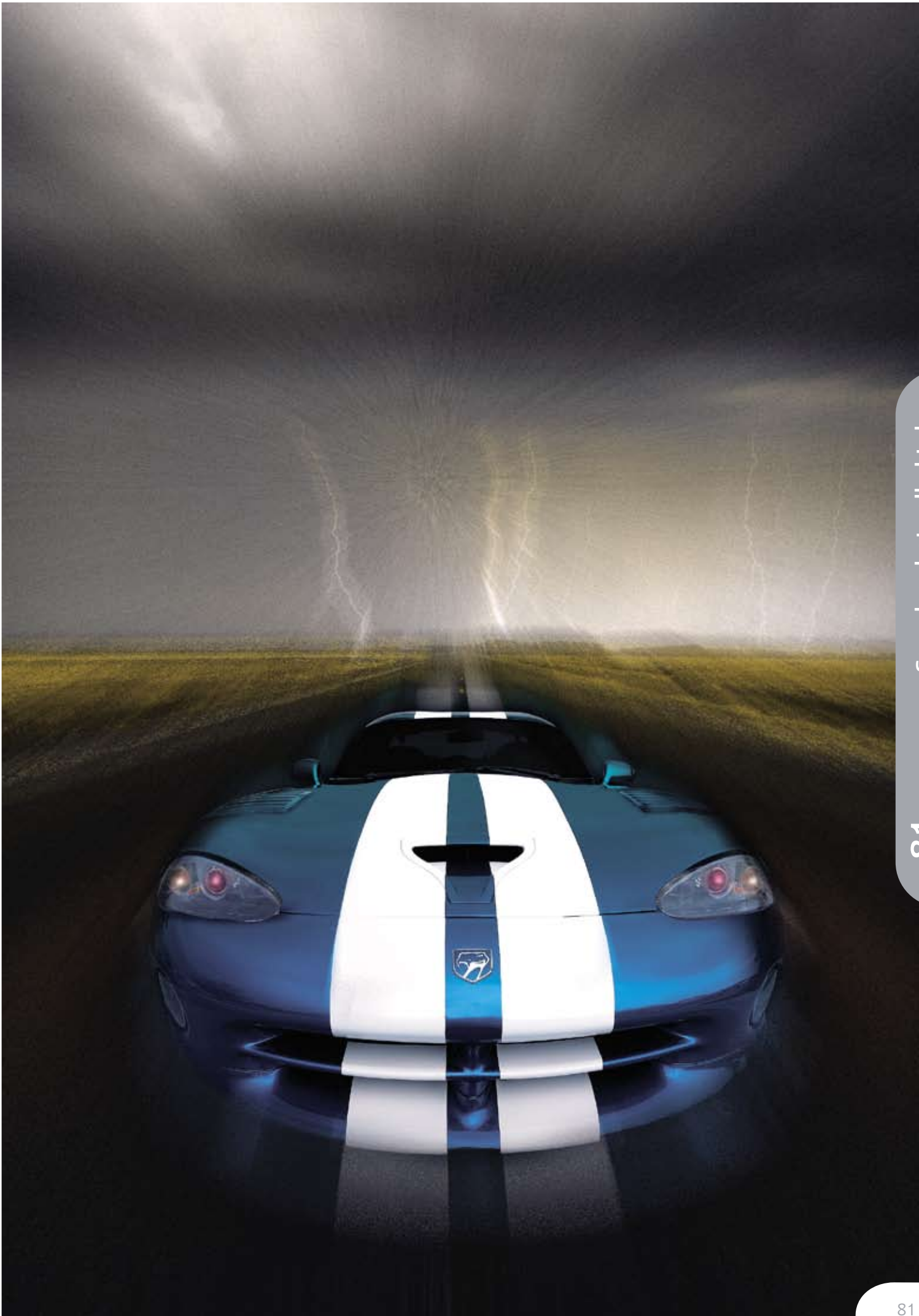
Seamless hot rolled steel tubes for construction, mechanical and general engineering purposes. Heléns have a complete range of grades and dimensions to suit your production. In cooperation with leading suppliers, we can offer the best alternatives with in quenched and tempered, case hardened and bearing steel.

Hollow bars

Heléns have a wide assortment of hollow bars for machining. The low alloy steel in hollow bars possesses excellent mechanical properties, machinability and weldability. The hollow bars are manufactured in accordance with EN 10294 with guaranteed clean turned sizes.



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Heavy wall tubes

According to EN 10210-1 + 2 and EN 10297-1
Seamless hot rolled steel tubes, double certified, in grade S355J2H in accordance with EN 10210-1 and grade E355+AR in accordance with EN 10297-1, tolerances according to EN 10210-2. The closest approximation is S52172-03. The tubes are impact tested at -20 degrees, stamped with heat number and delivered in random lengths or fixed cut lengths. Certificate in accordance with EN10204/3.1 can be supplied on request.

| Dimension OD x Wall | ID | Weight kg/m |
|------------------------|-------|----------------|
| 25.00 x 3.20 | 18.60 | 1.70 |
| 25.00 x 6.30 | 12.40 | 2.90 |
| 26.90 x 2.60 | 21.70 | 1.60 |
| 26.90 x 7.10 | 12.70 | 3.50 |
| 30.00 x 3.20 | 23.60 | 2.10 |
| 33.70 x 3.20 | 27.30 | 2.40 |
| 33.70 x 3.60 | 26.50 | 2.70 |
| 33.70 x 4.00 | 25.70 | 2.90 |
| 33.70 x 4.50 | 24.70 | 3.20 |
| 33.70 x 5.00 | 23.70 | 3.50 |
| 33.70 x 5.60 | 22.50 | 3.90 |
| 33.70 x 6.30 | 21.10 | 4.20 |
| 33.70 x 8.00 | 17.70 | 5.10 |
| 38.00 x 3.20 | 31.60 | 2.80 |
| 38.00 x 3.60 | 30.80 | 3.10 |
| 38.00 x 4.00 | 30.00 | 3.40 |
| 38.00 x 5.00 | 28.00 | 4.10 |
| 38.00 x 5.60 | 26.80 | 4.50 |
| 38.00 x 6.30 | 25.40 | 4.90 |
| 38.00 x 7.10 | 23.80 | 5.40 |
| 38.00 x 8.00 | 22.00 | 5.90 |
| 38.00 x 8.80 | 20.40 | 6.30 |
| 38.00 x 10.00 | 18.00 | 6.90 |
| 42.40 x 3.20 | 36.00 | 3.10 |
| 42.40 x 3.60 | 35.20 | 3.40 |
| 42.40 x 4.00 | 34.40 | 3.80 |
| 42.40 x 5.00 | 32.40 | 4.60 |
| 42.40 x 5.60 | 31.20 | 5.10 |
| 42.40 x 6.30 | 29.80 | 5.60 |
| 42.40 x 7.10 | 28.20 | 6.20 |
| 42.40 x 8.00 | 26.40 | 6.80 |
| 44.50 x 2.90 | 38.70 | 3.00 |
| 44.50 x 3.20 | 38.10 | 3.30 |
| 44.50 x 3.60 | 37.30 | 3.60 |
| 44.50 x 4.00 | 36.50 | 4.00 |
| 44.50 x 5.00 | 34.50 | 4.90 |
| 44.50 x 5.60 | 33.30 | 5.40 |
| 44.50 x 7.10 | 30.30 | 6.60 |

| Dimension OD x Wall | ID | Weight kg/m |
|------------------------|-------|----------------|
| 44.50 x 8.00 | 28.50 | 7.20 |
| 44.50 x 10.00 | 24.50 | 8.50 |
| 48.30 x 2.90 | 42.50 | 3.30 |
| 48.30 x 3.20 | 41.90 | 3.60 |
| 48.30 x 3.60 | 41.10 | 4.00 |
| 48.30 x 4.00 | 40.30 | 4.40 |
| 48.30 x 5.00 | 38.30 | 5.30 |
| 48.30 x 5.60 | 37.10 | 5.90 |
| 48.30 x 6.30 | 35.70 | 6.50 |
| 48.30 x 7.10 | 34.10 | 7.20 |
| 48.30 x 8.00 | 32.30 | 8.00 |
| 48.30 x 12.50 | 23.30 | 11.00 |
| 51.00 x 3.20 | 44.60 | 3.80 |
| 51.00 x 3.60 | 43.80 | 4.20 |
| 51.00 x 4.00 | 43.80 | 4.60 |
| 51.00 x 5.00 | 41.00 | 5.70 |
| 51.00 x 5.60 | 39.80 | 6.30 |
| 51.00 x 6.30 | 38.40 | 6.90 |
| 51.000x 7.10 | 36.80 | 7.70 |
| 51.00 x 8.00 | 35.00 | 8.50 |
| 51.00 x 8.80 | 33.40 | 9.20 |
| 51.00 x 10.00 | 31.00 | 10.10 |
| 51.00 x 11.00 | 29.00 | 10.90 |
| 51.00 x 12.50 | 26.00 | 11.90 |
| 51.00 x 14.20 | 22.60 | 12.90 |
| 54.00 x 8.00 | 38.00 | 9.10 |
| 54.00 x 10.00 | 34.00 | 10.90 |
| 54.00 x 12.50 | 29.00 | 12.80 |
| 54.00 x 14.20 | 25.60 | 13.90 |
| 57.00 x 3.20 | 50.60 | 4.30 |
| 57.0 x 4.000 | 49.00 | 5.20 |
| 57.0 0x 5.00 | 47.00 | 6.40 |
| 57.00 x 6.30 | 44.40 | 7.90 |
| 57.00 x 7.10 | 42.80 | 8.70 |
| 57.00 x 8.00 | 41.00 | 9.70 |
| 57.00 x 8.80 | 39.40 | 10.50 |
| 57.00 x 12.50 | 32.00 | 13.70 |
| 57.00 x 14.20 | 28.60 | 15.00 |

| Dimension OD x Wall | ID | Weight kg/m |
|------------------------|-------|----------------|
| 57.00 x 16.00 | 25.00 | 16.20 |
| 60.30 x 3.20 | 53.90 | 4.50 |
| 60.30 x 3.60 | 53.10 | 5.00 |
| 60.30 x 4.00 | 52.30 | 5.60 |
| 60.30 x 4.50 | 51.30 | 6.20 |
| 60.30 x 5.00 | 50.30 | 6.80 |
| 60.30 x 5.60 | 49.10 | 7.60 |
| 60.30 x 6.30 | 47.70 | 8.40 |
| 60.30 x 7.10 | 46.10 | 9.30 |
| 60.30 x 8.00 | 44.30 | 10.30 |
| 60.30 x 8.80 | 42.70 | 11.20 |
| 60.30 x 10.00 | 40.30 | 12.40 |
| 60.30 x 11.00 | 38.10 | 13.40 |
| 60.30 x 12.50 | 35.30 | 14.70 |
| 60.30 x 14.20 | 31.90 | 16.10 |
| 60.30 x 16.00 | 28.30 | 17.50 |
| 60.30 x 17.50 | 25.30 | 18.50 |
| 63.50 x 4.00 | 55.50 | 5.90 |
| 63.50 x 5.00 | 53.50 | 7.20 |
| 63.50 x 6.30 | 50.90 | 8.90 |
| 63.50 x 7.10 | 49.30 | 9.90 |
| 63.50 x 8.00 | 47.50 | 11.00 |
| 63.50 x 8.00 | 47.50 | 11.00 |
| 63.50 x 8.80 | 45.90 | 11.90 |
| 63.50 x 10.00 | 43.50 | 13.20 |
| 63.50 x 11.00 | 41.50 | 14.20 |
| 63.50 x 12.50 | 38.50 | 15.70 |
| 63.50 x 14.20 | 35.10 | 17.30 |
| 63.50 x 16.00 | 31.50 | 18.70 |
| 63.50 x 17.50 | 28.50 | 19.90 |
| 70.00 x 3.20 | 63.60 | 5.30 |
| 70.00 x 4.00 | 62.00 | 6.50 |
| 70.00 x 5.00 | 60.00 | 8.00 |
| 70.00 x 6.30 | 57.40 | 9.90 |
| 70.00 x 7.10 | 55.80 | 11.00 |
| 70.00 x 8.00 | 54.00 | 12.20 |
| 70.00 x 8.80 | 52.40 | 13.30 |
| 70.00 x 10.00 | 50.00 | 14.80 |
| 70.00 x 11.00 | 48.00 | 16.00 |
| 70.00 x 12.50 | 45.00 | 17.70 |
| 70.00 x 14.20 | 41.60 | 19.50 |
| 70.00 x 16.00 | 38.00 | 21.30 |
| 70.00 x 20.00 | 30.00 | 24.70 |
| 76.10 x 3.20 | 69.70 | 5.80 |
| 76.10 x 3.60 | 68.90 | 6.40 |
| 76.10 x 4.00 | 68.10 | 7.10 |
| 76.10 x 4.50 | 67.10 | 8.00 |
| 76.10 x 5.00 | 66.10 | 8.80 |

| Dimension OD x Wall | ID | Weight kg/m |
|------------------------|-------|----------------|
| 76.10 x 5.60 | 64.90 | 9.70 |
| 76.10 x 6.30 | 63.50 | 10.80 |
| 76.10 x 7.10 | 61.90 | 12.10 |
| 76.10 x 8.00 | 60.10 | 13.40 |
| 76.10 x 8.80 | 58.50 | 14.60 |
| 76.10 x 10.00 | 56.10 | 16.30 |
| 76.10 x 11.00 | 54.10 | 17.70 |
| 76.10 x 12.50 | 51.10 | 19.60 |
| 76.10 x 14.20 | 47.70 | 21.70 |
| 76.10 x 16.00 | 44.10 | 23.70 |
| 76.10 x 17.50 | 41.10 | 25.30 |
| 76.10 x 20.00 | 36.10 | 27.70 |
| 82.50 x 4.00 | 74.50 | 7.70 |
| 82.50 x 5.00 | 72.50 | 9.60 |
| 82.50 x 5.60 | 71.30 | 10.60 |
| 82.50 x 6.30 | 69.90 | 11.80 |
| 82.50 x 7.10 | 68.20 | 13.20 |
| 82.50 x 8.00 | 66.50 | 14.70 |
| 82.50 x 8.80 | 64.90 | 16.00 |
| 82.50 x 10.00 | 62.50 | 17.90 |
| 82.50 x 11.00 | 60.50 | 19.40 |
| 82.50 x 12.50 | 57.50 | 21.60 |
| 82.50 x 14.20 | 54.10 | 23.90 |
| 82.50 x 16.00 | 50.50 | 26.20 |
| 82.50 x 17.50 | 47.50 | 28.10 |
| 82.50 x 20.00 | 42.50 | 30.80 |
| 82.50 x 22.20 | 39.10 | 33.00 |
| 82.50 x 25.00 | 32.50 | 35.50 |
| 88.90 x 3.60 | 81.70 | 7.60 |
| 88.90 x 4.00 | 80.90 | 8.40 |
| 88.90 x 4.50 | 79.90 | 9.40 |
| 88.90 x 5.00 | 78.90 | 10.40 |
| 88.90 x 5.60 | 77.70 | 11.50 |
| 88.90 x 6.30 | 76.30 | 12.80 |
| 88.90 x 8.00 | 72.90 | 16.00 |
| 88.90 x 8.80 | 71.30 | 17.40 |
| 88.90 x 10.00 | 68.90 | 19.50 |
| 88.90 x 11.00 | 66.70 | 21.10 |
| 88.90 x 12.50 | 63.90 | 23.60 |
| 88.90 x 14.20 | 60.50 | 26.20 |
| 88.90 x 16.00 | 56.90 | 28.80 |
| 88.90 x 17.50 | 53.90 | 30.80 |
| 88.90 x 20.00 | 48.90 | 34.00 |
| 88.90 x 22.20 | 44.50 | 36.50 |
| 88.90 x 25.00 | 38.90 | 39.40 |
| 95.00 x 5.00 | 85.00 | 11.10 |
| 95.00 x 6.30 | 82.40 | 13.80 |
| 95.00 x 7.10 | 80.80 | 15.40 |

| Dimension OD x Wall | ID | Weight kg/m |
|------------------------|--------|----------------|
| 95.00 x 8.00 | 79.00 | 17.20 |
| 95.00 x 8.80 | 77.40 | 18.70 |
| 95.00 x 10.00 | 75.00 | 21.00 |
| 95.00 x 12.50 | 70.00 | 25.40 |
| 95.00 x 14.20 | 66.60 | 28.30 |
| 95.00 x 16.00 | 63.00 | 31.20 |
| 95.00 x 17.50 | 60.00 | 33.50 |
| 101.60 x 3.60 | 94.40 | 8.70 |
| 101.60 x 4.00 | 93.60 | 9.60 |
| 101.60 x 4.50 | 92.60 | 10.80 |
| 101.60 x 5.00 | 91.60 | 11.90 |
| 101.60 x 5.60 | 90.40 | 13.30 |
| 101.60 x 6.30 | 89.00 | 14.80 |
| 101.60 x 7.10 | 87.40 | 16.60 |
| 101.60 x 8.00 | 85.60 | 18.50 |
| 101.60 x 8.80 | 84.00 | 20.10 |
| 101.60 x 10.00 | 81.60 | 22.60 |
| 101.60 x 11.00 | 79.60 | 24.60 |
| 101.60x 12.50 | 76.60 | 27.50 |
| 101.60 x 14.20 | 73.20 | 30.60 |
| 101.60 x 16.00 | 69.60 | 33.80 |
| 101.60 x 17.50 | 66.60 | 36.30 |
| 101.60 x 20.00 | 61.60 | 40.30 |
| 101.60 x 22.20 | 57.20 | 43.50 |
| 101.60 x 25.00 | 51.60 | 47.20 |
| 101.60 x 28.00 | 45.60 | 50.80 |
| 101.60 x 30.00 | 41.60 | 53.00 |
| 101.60 x 32.00 | 37.60 | 54.90 |
| 108.00 x 3.60 | 100.80 | 9.30 |
| 108.00 x 4.00 | 100.00 | 10.30 |
| 108.00 x 4.50 | 99.00 | 11.50 |
| 108.00 x 5.00 | 98.00 | 12.70 |
| 108.00 x 5.60 | 96.80 | 14.10 |
| 108.00 x 6.30 | 95.40 | 15.80 |
| 108.00 x 7.10 | 93.80 | 17.70 |
| 108.00 x 8.00 | 92.00 | 19.70 |
| 108.00 x 8.80 | 90.40 | 21.50 |
| 108.00 x 10.00 | 88.00 | 24.20 |
| 108.00 x 11.00 | 86.00 | 26.30 |
| 108.00 x 12.50 | 83.00 | 29.40 |
| 108.00 x 14.20 | 79.60 | 32.90 |
| 108.00 x 17.50 | 73.00 | 39.10 |
| 108.00 x 20.00 | 68.00 | 43.40 |
| 108.00 x 22.20 | 63.60 | 47.00 |
| 108.00 x 25.00 | 58.00 | 51.20 |
| 108.00 x 28.00 | 52.00 | 55.20 |
| 108.00 x 30.00 | 48.00 | 57.70 |
| 108.00 x 32.00 | 44.00 | 60.00 |
| 114.30 x 4.00 | 106.30 | 10.90 |

| Dimension OD x Wall | ID | Weight kg/m |
|------------------------|--------|----------------|
| 114.30 x 4.50 | 105.30 | 12.20 |
| 114.30 x 5.00 | 104.30 | 13.50 |
| 114.30 x 5.60 | 103.10 | 15.00 |
| 114.30 x 6.30 | 101.70 | 16.80 |
| 114.30 x 7.10 | 100.10 | 18.80 |
| 114.30 x 8.00 | 98.30 | 21.00 |
| 114.30 x 8.80 | 96.70 | 22.90 |
| 114.30 x 10.00 | 94.30 | 25.70 |
| 114.30 x 11.00 | 92.10 | 28.00 |
| 114.30 x 12.50 | 89.30 | 31.40 |
| 114.30 x 14.20 | 85.90 | 35.10 |
| 114.30 x 16.00 | 82.30 | 38.80 |
| 114.30 x 17.50 | 79.30 | 41.80 |
| 114.30 x 20.00 | 74.30 | 46.50 |
| 114.30 x 22.20 | 69.90 | 50.40 |
| 114.30 x 28.00 | 58.30 | 59.60 |
| 114.30 x 30.00 | 54.30 | 62.40 |
| 114.30 x 32.00 | 50.30 | 65.00 |
| 114.30 x 36.00 | 42.30 | 69.50 |
| 121.00 x 5.00 | 111.00 | 14.30 |
| 121.00 x 6.30 | 108.40 | 17.80 |
| 121.00 x 7.10 | 106.80 | 19.90 |
| 121.00 x 8.00 | 105.00 | 22.30 |
| 121.00 x 8.80 | 103.40 | 24.40 |
| 121.00 x 10.00 | 101.00 | 27.40 |
| 121.00 x 11.0 | 99.00 | 29.80 |
| 121.00 x 12.50 | 96.00 | 33.50 |
| 121.00 x 14.20 | 92.60 | 37.40 |
| 121.00 x 16.00 | 89.00 | 41.40 |
| 121.00 x 17.50 | 86.00 | 44.70 |
| 121.00 x 20.00 | 81.00 | 49.80 |
| 121.00 x 22.20 | 76.60 | 54.10 |
| 121.00 x 25.00 | 71.00 | 59.20 |
| 121.00 x 28.00 | 65.00 | 64.20 |
| 121.00 x 30.00 | 61.00 | 67.30 |
| 121.00 x 32.00 | 57.00 | 70.20 |
| 127.00 x 4.50 | 118.00 | 13.60 |
| 127.00 x 5.00 | 117.00 | 115.00 |
| 127.00 x 5.60 | 115.80 | 16.80 |
| 127.00 x 6.30 | 114.40 | 18.80 |
| 127.00 x 7.10 | 128.80 | 21.00 |
| 127.0 x 8.00 | 111.00 | 23.50 |
| 127.00 x 8.80 | 109.40 | 25.70 |
| 127.00 x 10.00 | 107.00 | 28.90 |
| 127.00 x 11.00 | 105.00 | 31.50 |
| 127.00 x 12.50 | 102.00 | 35.30 |
| 127.00 x 14.20 | 98.60 | 39.50 |
| 127.00 x 16.00 | 95.00 | 43.80 |
| 127.00 x 17.50 | 92.00 | 47.30 |

| Dimension OD x Wall | ID | Weight kg/m |
|------------------------|--------|----------------|
| 127.00 x 20.00 | 87.00 | 52.90 |
| 127.00 x 22.20 | 82.60 | 57.40 |
| 127.00 x 25.00 | 77.00 | 62.90 |
| 127.00 x 28.00 | 71.00 | 68.400 |
| 127.00 x 30.00 | 67.00 | 71.8 |
| 127.00 x 32.00 | 63.00 | 75.00 |
| 127.00 x 36.00 | 55.00 | 80.80 |
| 127.00 x 40.00 | 47.00 | 85.80 |
| 133.00 x 5.00 | 123.00 | 15.80 |
| 133.00 x 5.60 | 121.80 | 17.60 |
| 133.00 x 6.30 | 120.40 | 19.70 |
| 133.00 x 7.10 | 118.80 | 22.00 |
| 133.00 x 8.00 | 118.80 | 24.70 |
| 133.00 x 8.80 | 115.40 | 27.00 |
| 133.00 x 10.00 | 113.00 | 30.30 |
| 133.00 x 11.00 | 111.00 | 33.100 |
| 133.00 x 12.50 | 108.00 | 37.20 |
| 133.00 x 14.20 | 104.60 | 41.60 |
| 133.00 x 16.00 | 101.00 | 46.20 |
| 133.00 x 17.50 | 98.00 | 49.90 |
| 133.00 x 20.00 | 93.00 | 55.70 |
| 133.00 x 22.20 | 88.60 | 60.70 |
| 133.00 x 25.00 | 83.00 | 66.60 |
| 133.00 x 28.00 | 77.00 | 72.50 |
| 133.00 x 30.00 | 73.00 | 76.20 |
| 133.00 x 32.00 | 69.00 | 79.70 |
| 133.00 x 35.00 | 63.00 | 84.60 |
| 133.00 x 40.00 | 53.00 | 91.70 |
| 139.70 x 4.50 | 130.70 | 15.00 |
| 139.70 x 5.00 | 129.70 | 16.60 |
| 139.70 x 5.60 | 128.50 | 18.50 |
| 139.70 x 6.30 | 127.10 | 20.70 |
| 139.70 x 7.10 | 125.50 | 23.20 |
| 139.00 x 8.00 | 123.70 | 26.00 |
| 139.70 x 8.80 | 122.10 | 28.40 |
| 139.70 x 10.00 | 119.70 | 32.00 |
| 139.70 x 12.50 | 114.70 | 39.20 |
| 139.70 x 14.20 | 111.30 | 44.00 |
| 139.70 x 16.00 | 107.70 | 48.80 |
| 139.70 x 17.50 | 104.70 | 52.70 |
| 139.70 x 20.00 | 99.70 | 59.00 |
| 139.70 x 22.20 | 95.30 | 64.30 |
| 139.70 x 25.00 | 89.70 | 70.70 |
| 139.70 x 28.00 | 83.70 | 77.10 |
| 139.70 x 30.00 | 79.70 | 81.20 |
| 139.07 x 32.00 | 75.70 | 85.00 |
| 139.70 x 35.00 | 69.70 | 90.40 |
| 139.70 x 40.00 | 59.70 | 98.40 |

| Dimension OD x Wall | ID | Weight kg/m |
|------------------------|--------|----------------|
| 139.70 x 45.00 | 49.70 | 105.10 |
| 146.00 x 5.00 | 136.00 | 17.40 |
| 146.00 x 5.60 | 134.80 | 19.40 |
| 146.00 x 6.30 | 133.40 | 21.70 |
| 146.00 x 7.10 | 131.80 | 24.30 |
| 146.00 x 10.00 | 126.00 | 33.50 |
| 146.00 x 12.50 | 121.00 | 41.20 |
| 146.00 x 14.20 | 117.60 | 46.20 |
| 146.00 x 16.00 | 114.00 | 51.30 |
| 146.00 x 17.50 | 111.00 | 55.50 |
| 146.00 x 20.00 | 106.00 | 62.20 |
| 146.00 x 22.20 | 101.60 | 67.80 |
| 146.00 x 25.00 | 96.00 | 74.60 |
| 146.00 x 28.00 | 90.00 | 81.50 |
| 146.00 x 30.00 | 86.00 | 85.80 |
| 146.00 x 36.00 | 74.00 | 97.70 |
| 152.40 x 6.30 | 139.80 | 22.70 |
| 152.40 x 7.10 | 138.20 | 25.40 |
| 152.40 x 8.00 | 136.40 | 28.50 |
| 152.40 x 8.80 | 134.80 | 31.20 |
| 152.40 x 10.00 | 132.40 | 35.10 |
| 152.40 x 11.00 | 130.40 | 38.40 |
| 152.40 x 12.50 | 127.40 | 43.10 |
| 152.40 x 14.20 | 124.00 | 48.40 |
| 152.40 x 16.00 | 120.40 | 53.80 |
| 152.40 x 17.50 | 117.40 | 58.20 |
| 152.40 x 20.00 | 112.40 | 65.30 |
| 152.40 x 22.20 | 108.00 | 71.30 |
| 152.40 x 25.00 | 102.40 | 78.60 |
| 152.40 x 28.00 | 96.40 | 85.90 |
| 152.40 x 30.00 | 92.40 | 90.60 |
| 152.40 x 32.00 | 88.40 | 95.00 |
| 152.40 x 35.00 | 82.40 | 101.30 |
| 152.40 x 40.00 | 72.40 | 110.90 |
| 152.40 x 45.00 | 62.40 | 119.20 |
| 159.00 x 5.00 | 149.00 | 19.00 |
| 159.00 x 5.60 | 147.80 | 21.20 |
| 159.00 x 7.10 | 144.80 | 26.60 |
| 159.00 x 8.00 | 143.00 | 29.80 |
| 159.00 x 8.80 | 141.40 | 32.60 |
| 159.00 x 10.00 | 139.00 | 36.80 |
| 159.00 x 11.00 | 137.00 | 40.20 |
| 159.00 x 12.50 | 134.00 | 45.20 |
| 159.00 x 14.20 | 130.60 | 50.70 |
| 159.00 x 16.00 | 127.00 | 56.40 |
| 159.00 x 17.50 | 124.00 | 61.10 |
| 159.00 x 20.00 | 119.00 | 68.60 |
| 159.00 x 22.20 | 114.60 | 74.90 |

| Dimension OD x Wall | ID | Weight kg/m |
|------------------------|--------|----------------|
| 159.00 x 25.00 | 109.00 | 82.60 |
| 159.00 x 28.00 | 103.00 | 90.50 |
| 159.00 x 30.00 | 99.00 | 95.40 |
| 159.00 x 32.00 | 95.00 | 100.20 |
| 159.00 x 36.00 | 87.00 | 109.00 |
| 159.00 x 40.00 | 79.00 | 117.40 |
| 159.00 x 45.00 | 69.00 | 126.50 |
| 159.00 x 50.00 | 59.00 | 134.40 |
| 165.10 x 5.00 | 155.10 | 19.70 |
| 165.10 x 7.10 | 150.90 | 27.70 |
| 165.10 x 10.00 | 145.10 | 38.30 |
| 165.10 x 12.50 | 140.10 | 47.00 |
| 165.10 x 14.20 | 136.70 | 52.80 |
| 165.10 x 16.00 | 133.10 | 58.80 |
| 165.10 x 17.50 | 130.10 | 63.70 |
| 165.10 x 20.00 | 125.10 | 71.60 |
| 165.10 x 22.20 | 120.70 | 78.20 |
| 165.10 x 25.00 | 115.10 | 86.40 |
| 165.10 x 28.00 | 109.10 | 94.70 |
| 165.10 x 30.00 | 105.10 | 100.00 |
| 165.10 x 32.00 | 101.10 | 105.00 |
| 165.10 x 36.00 | 93.10 | 114.60 |
| 165.10 x 40.00 | 85.10 | 123.40 |
| 165.10 x 45.00 | 75.10 | 133.30 |
| 168.30 x 5.00 | 158.30 | 20.10 |
| 168.30 x 5.60 | 157.10 | 22.50 |
| 168.30 x 6.30 | 155.70 | 25.20 |
| 168.30 x 7.10 | 154.10 | 28.20 |
| 168.30 x 8.00 | 152.30 | 31.60 |
| 168.30 x 8.80 | 150.70 | 34.60 |
| 168.30 x 10.00 | 148.30 | 39.00 |
| 168.30 x 11.00 | 146.30 | 42.70 |
| 168.30 x 12.50 | 143.30 | 48.00 |
| 168.30 x 14.20 | 139.90 | 54.00 |
| 168.30 x 16.00 | 136.30 | 60.10 |
| 168.03 x 17.50 | 133.30 | 65.10 |
| 168.3 x 20.00 | 128.30 | 73.20 |
| 168.30 x 22.20 | 123.90 | 80.00 |
| 168.30 x 25.00 | 118.30 | 88.40 |
| 168.30 x 28.00 | 112.30 | 96.90 |
| 168.30 x 30.00 | 108.30 | 102.30 |
| 168.30 x 32.00 | 104.30 | 107.60 |
| 168.30 x 35.00 | 98.30 | 115.10 |
| 168.30 x 40.00 | 88.30 | 126.60 |
| 168.30 x 45.00 | 78.30 | 136.80 |
| 168.30 x 50.00 | 68.30 | 145.90 |
| 171.00 x 6.30 | 158.40 | 25.60 |
| 171.10 x 10.00 | 151.00 | 39.70 |

| Dimension OD x Wall | ID | Weight kg/m |
|------------------------|--------|----------------|
| 171.00 x 14.20 | 142.60 | 54.90 |
| 171.00 x 16.00 | 139.00 | 61.20 |
| 171.00 x 17.50 | 136.00 | 66.30 |
| 171.00 x 20.00 | 131.00 | 74.50 |
| 171. 00 x 22.20 | 126.60 | 81.50 |
| 171.00 x 25.00 | 121.00 | 90.00 |
| 171.00 x 30.00 | 111.00 | 104.30 |
| 171.00 x 36.00 | 99.00 | 119.90 |
| 171.00 x 40.00 | 91.00 | 129.20 |
| 171.00 x 45.00 | 81.00 | 139.80 |
| 177.80 x 5.60 | 166.60 | 23.80 |
| 177.80 x 7.10 | 163.60 | 29.90 |
| 177.80 x 8.00 | 161.80 | 33.50 |
| 177.80 x 8.80 | 160.20 | 36.70 |
| 177.80 x 10.00 | 157.80 | 41.40 |
| 177.80 x 11.00 | 155.80 | 45.30 |
| 177.80 x 12.50 | 152.80 | 51.00 |
| 177.80 x 14.20 | 149.40 | 57.30 |
| 177.80 x 16.00 | 145.80 | 63.80 |
| 177.80 x 17.50 | 142.80 | 69.20 |
| 177.80 x 20.00 | 137.80 | 77.80 |
| 177.80 x 22.20 | 133.40 | 85.20 |
| 177.80 x 25.00 | 127.80 | 94.20 |
| 177.80 x 28.00 | 121.80 | 103.40 |
| 177.80 x 30.00 | 117.80 | 109.40 |
| 177.80 x 32.00 | 113.80 | 115.10 |
| 177.80 x 35.00 | 107.80 | 123.30 |
| 177.80 x 40.00 | 97.80 | 135.90 |
| 177.80 x 45.00 | 87.80 | 147.40 |
| 177.80 x 50.00 | 77.80 | 157.60 |
| 177.80 x 55.00 | 67.80 | 166.60 |
| 191.00 x 10.00 | 171.00 | 44.60 |
| 191.00 x 12.50 | 166.00 | 55.00 |
| 191.00 x 14.20 | 162.60 | 61.90 |
| 191.00 x 16.00 | 159.00 | 69.10 |
| 191.00 x 17.50 | 156.00 | 74.90 |
| 191.00 x 20.00 | 151.00 | 84.30 |
| 191.00 x 22.00 | 146.60 | 92.40 |
| 191.00 x 25.00 | 141.00 | 102.40 |
| 191.00 x 30.00 | 131.00 | 119.10 |
| 191.00 x 36.00 | 119.00 | 137.60 |
| 191.00 x 40.00 | 111.00 | 149.00 |
| 191.00 x 45.00 | 101.00 | 162.00 |
| 193.70 x 5.60 | 182.50 | 26.00 |
| 193.70 x 6.30 | 181.10 | 29.10 |
| 193.70 x 7.10 | 179.50 | 32.70 |
| 193.70 x 8.00 | 177.70 | 36.60 |
| 193.70 x 8.80 | 176.10 | 40.10 |

| Dimension OD x Wall | ID | Weight kg/m |
|------------------------|--------|----------------|
| 193.70 x 10.00 | 173.70 | 45.30 |
| 193.70 x 11.00 | 171.70 | 49.60 |
| 193.70 x 12.50 | 168.70 | 55.90 |
| 193.70 x 14.20 | 165.30 | 62.90 |
| 193.70 x 16.00 | 161.70 | 70.10 |
| 193.70 x 17.50 | 158.70 | 76.00 |
| 193.70 x 20.00 | 153.70 | 85.70 |
| 193.70 x 22.20 | 149.30 | 93.90 |
| 193.70 x 25.00 | 143.70 | 104.00 |
| 193.70 x 28.00 | 137.70 | 114.40 |
| 193.70 x 30.00 | 133.70 | 121.10 |
| 193.70 x 32.00 | 129.70 | 127.60 |
| 193.70 x 35.00 | 123.70 | 137.00 |
| 193.70 x 40.00 | 113.70 | 151.60 |
| 193.70 x 45.00 | 103.70 | 165.00 |
| 193.70 x 50.00 | 93.70 | 117.20 |
| 193.70 x 55.00 | 83.70 | 188.10 |
| 203.00 x 6.30 | 190.40 | 30.60 |
| 203.00 x 8.00 | 187.00 | 38.50 |
| 203.00 x 10.00 | 183.00 | 47.60 |
| 203.00 x 12.50 | 178.00 | 58.70 |
| 203.00 x 14.20 | 174.60 | 66.10 |
| 203.00 x 16.00 | 171.00 | 73.80 |
| 203.00 x 17.50 | 168.00 | 80.10 |
| 203.00 x 20.00 | 163.00 | 90.30 |
| 203.00 x 22.20 | 158.60 | 99.00 |
| 203.00 x 25.00 | 153.00 | 109.70 |
| 203.00 x 28.00 | 147.00 | 120.80 |
| 203.00 x 30.00 | 143.00 | 128.00 |
| 203.00 x 32.00 | 139.00 | 135.00 |
| 203.00 x 35.00 | 133.00 | 145.00 |
| 203.00 x 40.00 | 123.00 | 160.80 |
| 203.00 x 45.00 | 113.00 | 175.30 |
| 203.00 x 50.00 | 103.00 | 188.70 |
| 203.00 x 55.00 | 93.00 | 200.70 |
| 216.00 x 8.00 | 200.00 | 41.00 |
| 216.00 x 10.00 | 196.00 | 50.80 |
| 216.00 x 12.50 | 191.00 | 62.70 |
| 216.00 x 14.20 | 187.60 | 70.70 |
| 216.00 x 16.00 | 184.00 | 78.90 |
| 216.00 x 17.50 | 181.00 | 85.70 |
| 216.00 x 20.00 | 176.00 | 96.70 |
| 216.00 x 22.20 | 171.60 | 106.10 |
| 216.00 x 25.00 | 166.00 | 117.80 |
| 216.00 x 28.00 | 160.00 | 129.80 |
| 216.00 x 30.00 | 156.00 | 137.60 |
| 216.00 x 32.00 | 152.00 | 145.20 |
| 216.00 x 36.00 | 144.00 | 159.80 |

| Dimension OD x Wall | ID | Weight kg/m |
|------------------------|--------|----------------|
| 216.00 x 40.00 | 136.00 | 173.60 |
| 216.00 x 45.00 | 126.00 | 189.80 |
| 216.00 x 50.00 | 116.00 | 204.70 |
| 219.10 x 6.30 | 206.50 | 33.10 |
| 219.10 x 7.10 | 204.90 | 37.10 |
| 219.10 x 8.00 | 203.10 | 41.70 |
| 219.10 x 8.80 | 201.50 | 45.60 |
| 219.10 x 10.00 | 199.10 | 51.60 |
| 219.10 x 11.00 | 197.10 | 56.50 |
| 219.10 x 12.50 | 194.10 | 63.70 |
| 219.10 x 14.20 | 190.70 | 71.80 |
| 219.10 x 16.00 | 187.10 | 80.10 |
| 219.10 x 17.50 | 184.10 | 87.00 |
| 219.10 x 20.00 | 179.10 | 98.20 |
| 219.10 x 22.20 | 174.70 | 107.80 |
| 219.10 x 25.00 | 169.10 | 119.70 |
| 219.10 x 28.00 | 163.10 | 132.00 |
| 219.10 x 30.00 | 159.10 | 139.90 |
| 219.10 x 32.00 | 155.10 | 147.70 |
| 219.10 x 35.00 | 149.10 | 158.90 |
| 219.10 x 40.000 | 139.10 | 176.70 |
| 219.10 x 45.00 | 129.10 | 193.20 |
| 219.10 x 50.00 | 119.10 | 208.50 |
| 219.10 x 55.00 | 109.10 | 222.60 |
| 219.10 x 60.00 | 99.10 | 235.40 |
| 229.00 x 10.00 | 209.00 | 54.00 |
| 229.00 x 12.50 | 204.00 | 66.70 |
| 229.00 x 14.20 | 200.60 | 75.20 |
| 229.00 x 16.00 | 197.00 | 84.10 |
| 229.00 x 17.50 | 194.00 | 91.30 |
| 229.00 x 20.00 | 189.00 | 103.10 |
| 229.00 x 22.20 | 184.60 | 113.20 |
| 229.00 x 25.00 | 179.00 | 125.80 |
| 229.00 x 28.00 | 173.00 | 138.80 |
| 229.00 x 30.00 | 169.00 | 147.20 |
| 229.00 x 32.00 | 165.00 | 155.50 |
| 229.00 x 35.00 | 159.00 | 167.50 |
| 229.00 x 40.00 | 149.00 | 186.40 |
| 229.00 x 45.00 | 139.00 | 204.20 |
| 229.00 x 48.00 | 133.00 | 214.30 |
| 229.00 x 50.00 | 129.00 | 220.70 |
| 229.00 x 60.00 | 109.00 | 250.10 |
| 241.00 x 7.10 | 226.80 | 41.00 |
| 241.00 x 11.00 | 219.00 | 62.40 |
| 241.00 x 17.50 | 206.00 | 96.50 |
| 241.00 x 22.20 | 196.60 | 119.80 |
| 241.00 x 25.00 | 191.00 | 133.20 |
| 241.00 x 28.00 | 185.00 | 147.10 |

| Dimension OD x Wall | ID | Weight kg/m |
|------------------------|--------|----------------|
| 241.00 x 30.00 | 181.00 | 156.10 |
| 241.00 x 36.00 | 169.00 | 182.00 |
| 241.00 x 40.00 | 161.00 | 198.30 |
| 241.00 x 45.00 | 151.00 | 217.50 |
| 241.00 x 50.00 | 141.00 | 235.50 |
| 241.00 x 55.00 | 131.00 | 252.30 |
| 244.50 x 6.30 | 231.90 | 37.00 |
| 244.50 x 7.10 | 230.30 | 41.60 |
| 244.50 x 8.00 | 228.50 | 46.70 |
| 244.50 x 10.00 | 224.50 | 57.80 |
| 244.50 x 11.00 | 222.50 | 63.30 |
| 244.50 x 12.50 | 219.50 | 71.50 |
| 244.50 x 16.00 | 212.50 | 90.20 |
| 244.50 x 17.50 | 209.50 | 102.10 |
| 244.50 x 20.00 | 204.50 | 110.70 |
| 244.50 x 22.20 | 200.10 | 121.70 |
| 244.50 x 25.00 | 194.50 | 135.30 |
| 244.50 x 28.00 | 188.50 | 149.50 |
| 244.50 x 30.00 | 184.50 | 158.70 |
| 244.50 x 32.00 | 180.50 | 167.70 |
| 244.50 x 35.00 | 174.50 | 180.80 |
| 244.05 x 40.00 | 164.50 | 201.70 |
| 244.50 x 45.00 | 154.50 | 221.40 |
| 244.50 x 50.00 | 144.50 | 239.80 |
| 244.50 x 55.00 | 134.50 | 257.00 |
| 244.50 x 60.00 | 124.50 | 273.00 |
| 244.50 x 70.00 | 104.50 | 301.20 |
| 254.00 x 6.30 | 241.40 | 38.50 |
| 254.00 x 10.00 | 234.00 | 60.20 |
| 254.00 x 12.50 | 229.00 | 74.50 |
| 254.00 x 14.20 | 225.60 | 84.00 |
| 254.00 x 16.00 | 222.00 | 93.90 |
| 254.00 x 17.50 | 219.00 | 102.10 |
| 254.00 x 20.00 | 214.00 | 115.40 |
| 254.00 x 22.20 | 209.60 | 126.90 |
| 254.00 x 25.00 | 204.00 | 141.20 |
| 254.00 x 28.00 | 198.00 | 156.10 |
| 254.00 x 30.00 | 194.00 | 165.70 |
| 254.00 x 32.00 | 190.00 | 175.20 |
| 254.00 x 35.00 | 184.00 | 189.00 |
| 254.00 x 40.00 | 174.00 | 211.10 |
| 254.00 x 45.00 | 164.00 | 231.90 |
| 254.00 x 50.00 | 154.00 | 251.60 |
| 254.00 x 55.00 | 144.00 | 269.90 |
| 254.00 x 60.00 | 134.00 | 287.10 |
| 267.00 x 7.10 | 252.80 | 45.50 |
| 267.00 x 8.00 | 251.00 | 51.10 |
| 267.00 x 8.80 | 249.40 | 56.00 |

| Dimension OD x Wall | ID | Weight kg/m |
|------------------------|--------|----------------|
| 267.00 x 10.00 | 247.00 | 63.40 |
| 267.00 x 12.50 | 242.00 | 78.50 |
| 267.00 x 14.20 | 238.60 | 88.50 |
| 267.00 x 16.00 | 235.00 | 99.00 |
| 267.00 x 17.50 | 232.00 | 107.70 |
| 267.00 x 20.00 | 227.00 | 121.80 |
| 267.00 x 22.20 | 222.60 | 134.00 |
| 267.00 x 25.00 | 217.00 | 149.20 |
| 267.00 x 28.00 | 211.00 | 165.00 |
| 267.00 x 30.00 | 207.00 | 175.30 |
| 267.00 x 32.00 | 203.00 | 185.50 |
| 267.00 x 35.00 | 197.00 | 200.20 |
| 267.00 x 40.00 | 187.00 | 223.90 |
| 267.00 x 45.00 | 177.00 | 246.40 |
| 267.00 x 50.00 | 167.00 | 267.60 |
| 267.00 x 55.00 | 157.00 | 287.60 |
| 267.00 x 60.00 | 147.00 | 306.30 |
| 267.00 x 65.00 | 137.00 | 323.80 |
| 267.00 x 70.00 | 127.00 | 340.10 |
| 267.00 x 75.00 | 117.00 | 355.10 |
| 267.00 x 80.00 | 107.00 | 368.90 |
| 273.00 x 7.10 | 258.80 | 46.60 |
| 273.00 x 8.00 | 257.00 | 52.30 |
| 273.00 x 8.80 | 255.40 | 57.30 |
| 273.00 x 10.00 | 253.00 | 64.90 |
| 273.00 x 11.00 | 251.00 | 71.10 |
| 273.00 x 12.50 | 248.00 | 80.30 |
| 273.00 x 14.20 | 244.60 | 90.60 |
| 273.00 x 16.00 | 241.00 | 101.40 |
| 273.00 x 17.50 | 238.00 | 110.30 |
| 273.00 x 20.00 | 233.00 | 124.80 |
| 273.00 x 22.20 | 228.60 | 137.30 |
| 273.00 x 25.00 | 223.00 | 152.90 |
| 273.00 x 28.00 | 217.00 | 169.20 |
| 273.00 x 30.00 | 213.00 | 179.80 |
| 273.00 x 32.00 | 209.00 | 190.20 |
| 273.00 x 35.00 | 203.00 | 205.40 |
| 273.00 x 40.00 | 193.00 | 229.90 |
| 273.00 x 45.00 | 183.00 | 253.00 |
| 273.00 x 50.00 | 173.00 | 275.00 |
| 273.00 x 60.00 | 153.00 | 315.20 |
| 273.00 x 75.00 | 123.00 | 366.20 |
| 273.00 x 80.00 | 113.00 | 380.80 |
| 279.00 x 7.10 | 264.80 | 47.60 |
| 279.00 x 8.00 | 263.00 | 53.50 |
| 279.00 x 10.00 | 259.00 | 66.30 |
| 279.00 x 12.50 | 254.00 | 82.20 |
| 279.00 x 14.20 | 250.60 | 92.70 |

| Dimension OD x Wall | ID | Weight kg/m |
|------------------------|--------|----------------|
| 279.00 x 16.00 | 247.00 | 103.80 |
| 279.00 x 17.50 | 244.00 | 112.90 |
| 279.00 x 20.00 | 239.00 | 127.80 |
| 279.00 x 22.20 | 234.60 | 140.60 |
| 279.00 x 25.00 | 229.00 | 156.60 |
| 279.00 x 30.00 | 219.00 | 184.20 |
| 279.00 x 32.00 | 215.00 | 194.90 |
| 279.00 x 35.00 | 209.00 | 210.60 |
| 279.00 x 40.00 | 199.00 | 235.80 |
| 279.00 x 45.00 | 189.00 | 259.70 |
| 279.00 x 50.00 | 179.00 | 282.40 |
| 292.00 x 17.50 | 257.00 | 118.50 |
| 292.00 x 20.00 | 252.00 | 134.20 |
| 292.00 x 25.00 | 242.00 | 164.60 |
| 292.00 x 28.00 | 236.00 | 182.30 |
| 292.00 x 30.00 | 232.00 | 193.80 |
| 292.00 x 32.00 | 228.00 | 205.20 |
| 292.00 x 36.00 | 220.00 | 227.30 |
| 292.00 x 40.00 | 212.00 | 248.60 |
| 292.00 x 45.00 | 202.00 | 274.10 |
| 292.00 x 50.00 | 192.00 | 298.40 |
| 292.00 x 55.00 | 182.00 | 321.50 |
| 298.50 x 7.10 | 284.30 | 51.00 |
| 298.00 x 8.00 | 282.50 | 57.30 |
| 298.50 x 8.80 | 280.90 | 62.90 |
| 298.50 x 10.00 | 278.50 | 71.20 |
| 298.50 x 12.50 | 273.50 | 88.20 |
| 298.50 x 14.20 | 270.10 | 99.60 |
| 298.50 x 16.00 | 266.50 | 111.50 |
| 298.50 x 17.50 | 263.50 | 121.30 |
| 298.50 x 20.00 | 258.50 | 137.40 |
| 298.50 x 22.20 | 254.10 | 151.30 |
| 298.50 x 25.00 | 248.50 | 168.60 |
| 298.50 x 28.00 | 242.50 | 186.80 |
| 298.50 x 30.00 | 238.50 | 198.70 |
| 298.50 x 32.00 | 234.50 | 210.30 |
| 298.50 x 35.00 | 228.50 | 227.40 |
| 298.50 x 40.00 | 218.50 | 255.00 |
| 298.50 x 45.00 | 208.50 | 281.30 |
| 298.50 x 50.00 | 198.50 | 306.40 |
| 298.50 x 55.00 | 188.50 | 330.30 |
| 298.50 x 60.00 | 178.50 | 352.90 |
| 298.50 x 75.00 | 148.50 | 413.40 |
| 298.50 x 90.00 | 118.50 | 462.80 |
| 305.00 x 8.00 | 289.00 | 58.60 |
| 305.00 x 10.00 | 285.00 | 72.80 |
| 305.00 x 12.50 | 280.00 | 90.20 |
| 305.00 x 16.00 | 273.00 | 114.00 |

| Dimension OD x Wall | ID | Weight kg/m |
|------------------------|--------|----------------|
| 305.00 x 17.50 | 270.00 | 124.10 |
| 305.00 x 20.00 | 265.00 | 140.60 |
| 305.00 x 25.00 | 255.00 | 172.60 |
| 305.00 x 30.00 | 245.00 | 203.50 |
| 305.00 x 32.00 | 241.00 | 215.40 |
| 305.0 0x 35.00 | 235.00 | 233.10 |
| 305.00 x 40.00 | 225.00 | 261.40 |
| 305.00 x 45.00 | 215.00 | 288.50 |
| 305.00 x 50.00 | 205.00 | 314.40 |
| 305.00 x 65.00 | 175.00 | 384.70 |
| 305.00 x 80.00 | 145.00 | 443.90 |
| 318.00 x 10.00 | 298.00 | 76.00 |
| 318.00 x 12.50 | 293.00 | 94.20 |
| 318.00 x 17.50 | 283.00 | 129.70 |
| 318.00 x 20.00 | 278.00 | 147.00 |
| 318.00 x 22.00 | 273.60 | 162.00 |
| 318.00 x 25.00 | 268.00 | 180.70 |
| 318.00 x 28.00 | 262.00 | 200.30 |
| 318.00 x 30.00 | 258.00 | 213.10 |
| 318.00 x 32.00 | 254.00 | 225.70 |
| 318.00 x 36.00 | 246.00 | 250.40 |
| 318.00 x 40.00 | 238.00 | 274.20 |
| 318.00 x 45.00 | 228.00 | 303.00 |
| 318.00 x 50.00 | 218.00 | 330.50 |
| 318.00 x 55.00 | 208.00 | 356.70 |
| 318.00 x 60.00 | 198.00 | 381.80 |
| 318.00 x 65.00 | 188.00 | 405.60 |
| 318.00 x 80.00 | 158.00 | 469.60 |
| 323.90 x 8.00 | 307.90 | 62.30 |
| 323.90 x 8.80 | 306.30 | 68.40 |
| 323.90 x 10.00 | 303.90 | 77.40 |
| 323.90 x 11.00 | 301.90 | 84.90 |
| 323.90 x 12.50 | 298.90 | 96.00 |
| 323.90 x 14.20 | 295.50 | 108.50 |
| 323.90 x 16.00 | 291.90 | 121.50 |
| 323.90 x 17.50 | 288.90 | 132.20 |
| 323.90 x 20.00 | 283.90 | 149.90 |
| 323.90 x 22.20 | 279.50 | 165.20 |
| 323.90 x 25.00 | 273.90 | 184.30 |
| 323.90 x 28.00 | 267.90 | 204.30 |
| 323.90 x 30.00 | 263.90 | 217.40 |
| 323.90 x 32.00 | 259.90 | 230.40 |
| 323.90 x 35.00 | 253.90 | 249.40 |
| 323.90 x 40.00 | 243.90 | 280.10 |
| 323.90 x 45.00 | 233.90 | 309.50 |
| 323.90 x 50.00 | 223.90 | 337.70 |
| 323.90 x 55.00 | 213.90 | 364.70 |
| 323.90 x 60.00 | 203.90 | 390.50 |

| Dimension OD x Wall | ID | Weight kg/m |
|------------------------|--------|----------------|
| 323.90 x 65.00 | 193.90 | 415.00 |
| 323.90 x 70.00 | 183.90 | 438.30 |
| 323.90 x 75.00 | 173.90 | 460.40 |
| 323.90 x 80.00 | 163.90 | 481.20 |
| 323.90 x 90.00 | 143.90 | 519.10 |
| 330.00 x 14.20 | 301.60 | 110.60 |
| 330.00 x 16.00 | 298.00 | 123.90 |
| 330.00 x 17.50 | 295.00 | 134.90 |
| 330.00 x 20.00 | 290.00 | 152.90 |
| 330.00 x 22.20 | 285.60 | 168.50 |
| 330.00 x 25.00 | 280.00 | 188.00 |
| 330.00 x 30.00 | 270.00 | 222.00 |
| 330.00 x 32.00 | 266.00 | 235.20 |
| 330.00 x 36.00 | 258.00 | 261.00 |
| 330.00 x 40.00 | 250.00 | 286.10 |
| 330.00 x 45.00 | 240.00 | 316.30 |
| 330.00 x 50.00 | 230.00 | 345.30 |
| 343.00 x 12.50 | 318.00 | 101.90 |
| 343.00 x 16.00 | 311.00 | 129.00 |
| 343.00 x 17.50 | 308.00 | 140.50 |
| 343.00 x 20.00 | 303.00 | 159.30 |
| 343.00 x 22.20 | 298.60 | 175.60 |
| 343.00 x 25.00 | 293.00 | 196.10 |
| 343.00 x 28.00 | 287.00 | 217.50 |
| 343.00 x 30.00 | 283.00 | 231.60 |
| 343.00 x 35.00 | 273.00 | 265.90 |
| 343.00 x 40.00 | 263.00 | 298.90 |
| 343.00 x 45.00 | 253.00 | 330.70 |
| 343.00 x 50.00 | 243.00 | 361.30 |
| 343.00 x 55.00 | 233.00 | 390.60 |
| 343.00 x 60.00 | 223.00 | 418.80 |
| 343.00 x 70.00 | 203.00 | 471.30 |
| 343.00 x 90.00 | 163.00 | 561.50 |
| 343.00 x 100.00 | 143.00 | 599.30 |
| 355.60 x 8.00 | 339.60 | 68.60 |
| 355.60 x 10.00 | 335.60 | 85.20 |
| 355.60 x 12.50 | 330.60 | 105.80 |
| 355.60 x 14.20 | 327.20 | 119.60 |
| 355.60 x 16.00 | 323.60 | 134.00 |
| 355.60 x 17.50 | 320.60 | 145.90 |
| 355.60 x 20.00 | 315.60 | 165.50 |
| 355.60 x 22.20 | 311.20 | 182.50 |
| 355.60 x 25.00 | 305.60 | 203.80 |
| 355.60 x 28.00 | 299.60 | 226.20 |
| 355.60 x 30.00 | 295.60 | 240.90 |
| 355.60 x 32.00 | 291.60 | 255.40 |
| 355.60 x 35.00 | 285.60 | 276.70 |
| 355.60 x 40.00 | 275.60 | 311.30 |

| Dimension OD x Wall | ID | Weight kg/m |
|------------------------|--------|----------------|
| 355.60 x 45.00 | 265.60 | 344.70 |
| 355.60 x 50.00 | 255.60 | 376.80 |
| 355.60 x 55.00 | 245.60 | 407.70 |
| 355.60 x 60.00 | 235.60 | 437.40 |
| 355.60 x 70.00 | 215.60 | 493.00 |
| 355.60 x 80.00 | 195.60 | 543.70 |
| 355.60 x 100.00 | 155.60 | 630.40 |
| 368.00 x 10.00 | 348.00 | 88.30 |
| 368.00 x 12.50 | 343.00 | 109.60 |
| 368.00 x 14.20 | 339.60 | 123.90 |
| 368.00 x 16.00 | 336.00 | 138.90 |
| 368.00 x 20.00 | 328.00 | 171.60 |
| 368.00 x 22.20 | 323.60 | 189.30 |
| 368.00 x 25.00 | 318.00 | 211.50 |
| 368.00 x 30.00 | 308.00 | 250.10 |
| 368.00 x 32.00 | 304.00 | 265.20 |
| 368.00 x 36.00 | 296.00 | 295.00 |
| 368.00 x 40.00 | 288.00 | 323.60 |
| 368.00 x 45.00 | 278.00 | 358.50 |
| 368.00 x 50.00 | 268.00 | 392.10 |
| *368.00 x 55.00 | 258.00 | 424.60 |
| 368.00 x 60.00 | 248.00 | 455.70 |
| 368.00 x 70.00 | 228.00 | 514.40 |
| 368.00 x 80.00 | 208.00 | 568.20 |
| 368.00 x 100.00 | 168.00 | 660.90 |
| 381.00 x 25.00 | 331.00 | 219.50 |
| 381.00 x 40.00 | 301.00 | 336.40 |
| 394.00 x 12.50 | 369.00 | 117.60 |
| 394.00 x 14.20 | 365.60 | 133.00 |
| 394.00 x 16.00 | 362.00 | 149.20 |
| 394.00 x 17.50 | 359.00 | 162.50 |
| 394.00 x 20.00 | 354.00 | 184.50 |
| 394.00 x 22.20 | 349.60 | 203.60 |
| 394.00 x 25.00 | 344.00 | 227.50 |
| 394.00 x 28.00 | 388.00 | 252.70 |
| 394.00 x 30.00 | 334.00 | 269.30 |
| 394.00 x 32.20 | 330.00 | 285.70 |
| 394.00 x 35.00 | 324.00 | 309.90 |
| 394.00 x 40.00 | 314.00 | 349.20 |
| 394.00 x 45.00 | 304.00 | 387.30 |
| 394.00 x 50.00 | 294.00 | 424.20 |
| 394.00 x 55.00 | 284.00 | 459.80 |
| 394.00 x 60.00 | 274.00 | 494.20 |
| 394.00 x 65.00 | 264.00 | 527.40 |
| 394.00 x 70.00 | 254.00 | 559.30 |
| 394.00 x 80.00 | 234.00 | 619.50 |
| 394.00 x 100.00 | 194.00 | 725.10 |
| 406.40 x 10.00 | 386.40 | 97.80 |

* 20MnV6

| Dimension OD x Wall | ID | Weight kg/m |
|------------------------|--------|----------------|
| 406.40 x 12.50 | 381.40 | 121.40 |
| 406.4 x 16.000 | 374.40 | 154.10 |
| 406.40 x 17.50 | 371.40 | 167.80 |
| 406.40 x 20.00 | 366.40 | 190.60 |
| 406.40 x 22.20 | 362.00 | 210.30 |
| 406.40 x 25.00 | 356.40 | 235.20 |
| 406.40 x 28.00 | 350.40 | 261.30 |
| 406.40 x 30.00 | 346.40 | 278.50 |
| 406.40 x 32.00 | 342.40 | 295.50 |
| 406.40 x 35.00 | 336.40 | 320.60 |
| 406.40 x 40.00 | 326.40 | 361.40 |
| 406.40 x 45.00 | 316.40 | 401.10 |
| 406.40 x 50.00 | 306.40 | 439.50 |
| 406.40 x 55.00 | 296.40 | 476.60 |
| 406.40 x 60.00 | 286.40 | 512.60 |
| 406.40 x 70.00 | 266.40 | 580.70 |
| 406.40 x 80.00 | 246.40 | 644.00 |
| 406.40 x 100.00 | 206.40 | 755.60 |
| 419.00 x 10.00 | 399.00 | 100.90 |
| 419.0 0x 11.00 | 397.00 | 110.70 |
| 419.00 x 12.50 | 394.00 | 125.30 |
| 419.00 x 14.20 | 390.60 | 141.80 |
| 419.00 x 16.00 | 387.00 | 159.00 |
| 419.00 x 17.50 | 384.00 | 176.30 |
| 419.00 x 20.00 | 379.00 | 196.80 |
| 419.00 x 22.20 | 374.60 | 217.20 |
| 419.00 x 25.00 | 369.00 | 242.90 |
| 419.00 x 28.00 | 363.00 | 270.00 |
| 419.00 x 30.00 | 359.00 | 287.80 |
| 419.00 x 32.00 | 355.00 | 305.40 |
| 419.00 x 35.00 | 349.00 | 331.50 |
| 419.00 x 40.00 | 339.00 | 373.90 |
| 419.00 x 45.00 | 329.00 | 415.10 |
| 419.00 x 50.00 | 319.00 | 455.00 |
| 419.00 x 55.00 | 309.00 | 493.70 |
| 419.00 x 60.00 | 299.00 | 531.20 |
| 419.00 x 70.00 | 279.00 | 602.50 |
| 419.00 x 75.00 | 269.00 | 636.30 |
| 419.00 x 80.00 | 259.00 | 668.80 |
| 419.00 x 100.00 | 219.00 | 786.70 |
| 432.00 x 50.00 | 332.00 | 471.00 |
| 445.00 x 12.50 | 420.00 | 133.00 |
| 445.00 x 20.00 | 405.00 | 209.60 |
| 445.00 x 25.00 | 395.00 | 259.00 |
| 445.00 x 30.00 | 385.00 | 307.00 |
| 445.00 x 32.00 | 381.00 | 325.90 |
| 445.00 x 36.00 | 373.00 | 363.10 |
| 445.00 x 40.00 | 365.00 | 399.50 |

| Dimension OD x Wall | ID | Weight kg/m |
|------------------------|--------|----------------|
| 445.00 x 50.00 | 345.00 | 487.10 |
| 445.00 x 55.00 | 335.00 | 529.00 |
| 445.00 x 60.00 | 325.00 | 569.70 |
| 445.00 x 65.00 | 315.00 | 609.10 |
| 445.00 x 70.00 | 305.00 | 647.40 |
| 445.00 x 80.00 | 285.00 | 720.10 |
| 445.00 x 90.00 | 265.00 | 787.90 |
| 445.00 x 100.00 | 245.00 | 850.80 |
| 457.00 x 10.00 | 437.00 | 110.20 |
| 457.00 x 12.50 | 432.00 | 137.00 |
| 457.00 x 16.00 | 425.00 | 174.00 |
| 457.00 x 17.50 | 422.00 | 189.70 |
| 457.00 x 20.00 | 417.00 | 215.50 |
| 457.00 x 22.20 | 412.60 | 238.10 |
| 457.00 x 25.00 | 407.00 | 266.30 |
| 457.00 x 28.00 | 401.00 | 296.20 |
| 457.00 x 30.00 | 397.00 | 315.90 |
| 457.00 x 35.00 | 387.00 | 364.30 |
| 457.00 x 40.00 | 377.00 | 411.40 |
| 457.00 x 45.00 | 367.00 | 457.20 |
| 457.00 x 50.00 | 357.00 | 501.90 |
| 457.00 x 55.00 | 347.00 | 545.30 |
| 457.00 x 60.00 | 337.00 | 587.40 |
| 457.00 x 65.00 | 327.00 | 628.00 |
| 457.00 x 70.00 | 317.00 | 668.10 |
| 457.00 x 75.00 | 307.00 | 706.60 |
| 457.00 x 80.00 | 297.00 | 743.80 |
| 457.00 x 100.00 | 257.00 | 880.40 |
| 470.00 x 12.50 | 445.00 | 141.00 |
| 470.00 x 16.00 | 438.00 | 179.10 |
| 470.00 x 20.00 | 430.00 | 222.00 |
| 470.00 x 22.20 | 425.60 | 245.20 |
| 470.00 x 25.00 | 420.00 | 274.40 |
| 470.00 x 30.00 | 410.00 | 325.50 |
| 470.00 x 36.00 | 398.00 | 385.30 |
| 470.00 x 40.00 | 390.00 | 424.20 |
| 470.00 x 50.00 | 370.00 | 517.90 |
| 470.00 x 55.00 | 360.00 | 562.90 |
| 470.00 x 60.00 | 350.00 | 606.70 |
| 470.00 x 65.00 | 340.00 | 649.20 |
| 470.00 x 70.00 | 330.00 | 690.50 |
| 470.00 x 75.00 | 320.00 | 730.60 |
| 470.00 x 100.00 | 270.00 | 912.50 |
| 495.00 x 12.50 | 470.00 | 148.70 |
| 495.00 x 16.00 | 463.00 | 189.00 |
| 495.00 x 20.00 | 455.00 | 234.30 |
| 495.00 x 25.00 | 445.00 | 289.80 |
| 495.00 x 30.00 | 435.00 | 344.00 |

| Dimension OD x Wall | ID | Weight kg/m |
|------------------------|--------|----------------|
| 495.00 x 36.00 | 423.00 | 407.50 |
| 495.00 x 40.00 | 415.00 | 448.80 |
| 495.00 x 50.00 | 395.00 | 548.70 |
| 495.00 x 55.00 | 385.00 | 596.80 |
| 495.00 x 60.00 | 375.00 | 643.70 |
| 495.00 x 70.00 | 355.00 | 733.70 |
| 495.00 x 75.00 | 345.00 | 776.80 |
| 495.00 x 100.00 | 295.00 | 974.10 |
| 508.00 x 12.50 | 483.00 | 152.80 |
| 508.00 x 14.20 | 479.60 | 172.90 |
| 508.00 x 16.00 | 476.00 | 194.10 |
| 508.00 x 17.50 | 473.00 | 211.70 |
| 508.00 x 20.00 | 468.00 | 240.70 |
| 508.00 x 22.20 | 463.60 | 266.00 |
| 508.00 x 25.00 | 458.00 | 297.80 |
| 508.00 x 28.00 | 452.00 | 331.50 |
| 508.00 x 30.00 | 448.00 | 353.70 |
| 508.00 x 32.00 | 444.00 | 375.60 |
| 508.00 x 36.00 | 436.00 | 419.00 |
| 508.00 x 40.00 | 428.00 | 461.70 |
| 508.00 x 45.00 | 418.00 | 513.80 |
| 508.00 x 50.00 | 408.00 | 564.80 |
| 508.00 x 55.00 | 398.00 | 614.40 |
| 508.00 x 60.00 | 388.00 | 662.90 |
| 508.00 x 65.00 | 378.00 | 710.10 |
| 508.00 x 70.00 | 368.00 | 756.10 |
| 508.00 x 75.00 | 358.00 | 800.90 |
| 508.00 x 80.00 | 348.00 | 844.40 |
| 508.00 x 85.00 | 338.00 | 886.70 |
| 508.00 x 90.00 | 328.00 | 927.80 |
| 508.00 x 100.00 | 308.00 | 1006.20 |
| 508.00 x 110.00 | 288.00 | 1079.70 |
| 521.00 x 14.20 | 492.60 | 177.50 |
| 521.00 x 16.00 | 489.00 | 199.30 |
| 521.00 x 20.00 | 481.00 | 247.10 |
| 521.00 x 22.20 | 476.60 | 273.10 |
| 521.00 x 25.00 | 471.00 | 305.80 |
| 521.00 x 30.00 | 461.00 | 363.30 |
| 521.00 x 36.00 | 449.00 | 430.60 |
| 521.00 x 40.00 | 441.00 | 474.50 |
| 521.00 x 45.00 | 431.00 | 528.30 |
| 521.00 x 50.00 | 421.00 | 580.80 |
| 521.00 x 60.00 | 401.00 | 682.10 |
| 521.00 x 70.00 | 381.00 | 778.60 |
| 521.00 x 100.00 | 321.00 | 1038.30 |
| 546.00 x 14.20 | 517.60 | 186.20 |
| 546.00 x 20.00 | 506.00 | 259.40 |
| 546.00 x 25.00 | 496.00 | 321.20 |

| Dimension OD x Wall | ID | Weight kg/m |
|------------------------|--------|----------------|
| 546.00 x 30.00 | 486.00 | 381.80 |
| 546.00 x 32.00 | 482.00 | 405.60 |
| 546.00 x 36.00 | 474.00 | 452.80 |
| 546.00 x 40.00 | 466.00 | 499.20 |
| 546.00 x 50.00 | 446.00 | 611.60 |
| 546.00 x 55.00 | 436.00 | 666.00 |
| 546.00 x 60.00 | 426.00 | 719.10 |
| 546.00 x 65.00 | 416.00 | 771.00 |
| 546.00 x 70.00 | 406.00 | 821.70 |
| 559.00 x 20.00 | 519.00 | 265.90 |
| 559.00 x 22.20 | 514.60 | 293.60 |
| 559.00 x 25.00 | 509.00 | 329.20 |
| 559.00 x 30.00 | 499.00 | 391.40 |
| 559.00 x 35.00 | 487.00 | 464.30 |
| 559.00 x 40.00 | 479.00 | 512.00 |
| 559.00 x 45.00 | 469.00 | 570.40 |
| 559.00 x 50.00 | 459.00 | 627.60 |
| 559.00 x 60.00 | 439.00 | 738.40 |
| 559.00 x 70.00 | 419.00 | 844.20 |
| 559.00 x 80.00 | 399.00 | 945.00 |
| 559.00 x 85.00 | 389.00 | 993.60 |
| 559.00 x 100.00 | 359.00 | 1132.00 |
| 572.00 x 14.20 | 543.60 | 195.30 |
| 572.00 x 20.00 | 532.00 | 272.30 |
| 572.00 x 25.00 | 522.00 | 337.30 |
| 572.00 x 30.00 | 512.00 | 401.00 |
| 572.00 x 40.00 | 492.00 | 524.80 |
| 572.00 x 45.00 | 472.00 | 643.70 |
| *572.00 x 50.00 | 472.00 | 643.70 |
| 572.00 x 60.00 | 452.00 | 757.60 |
| 572.00 x 70.00 | 432.00 | 866.60 |
| 572.00 x 75.00 | 422.00 | 919.30 |
| 572.00 x 85.00 | 402.00 | 1020.90 |
| 572.00 x 90.00 | 392.00 | 1069.80 |
| 572.00 x 100.00 | 372.00 | 1164.00 |
| 610.00 x 14.20 | 581.60 | 208.70 |
| 610.00 x 16.00 | 578.00 | 234.40 |
| 610.00 x 17.50 | 575.00 | 255.70 |
| 610.00 x 20.00 | 570.00 | 291.00 |
| 610.00 x 25.00 | 560.00 | 360.70 |
| 610.00 x 30.00 | 550.00 | 429.10 |
| 610.00 x 32.00 | 546.00 | 456.10 |
| 610.00 x 36.00 | 538.00 | 509.60 |
| 610.00 x 40.00 | 530.00 | 562.30 |
| 610.00 x 45.00 | 520.00 | 627.00 |
| 610.00 x 50.00 | 510.00 | 690.50 |
| 610.00 x 60.00 | 490.00 | 813.80 |
| 610.00 x 70.00 | 470.00 | 932.20 |

* 20MnV6/E355

| Dimension OD x Wall | ID | Weight kg/m |
|------------------------|--------|----------------|
| 610.00 x 75.00 | 460.00 | 989.50 |
| 610.00 x 80.00 | 450.00 | 1045.70 |
| 610.00 x 90.00 | 430.00 | 1154.20 |
| 610.00 x 100.00 | 410.00 | 1257.70 |
| 622.00 x 14.20 | 593.60 | 212.90 |
| 622.00 x 20.00 | 582.00 | 296.90 |
| 622.00 x 22.00 | 577.60 | 328.40 |
| 622.00 x 25.00 | 572.00 | 368.10 |
| 622.00 x 30.00 | 562.00 | 438.00 |
| 622.00 x 36.00 | 550.00 | 520.30 |
| 622.00 x 40.00 | 542.00 | 574.10 |
| 622.00 x 45.00 | 532.00 | 640.30 |
| 622.00 x 50.00 | 522.00 | 705.30 |
| 622.00 x 60.00 | 502.00 | 831.60 |

| Dimension OD x Wall | ID | Weight kg/m |
|------------------------|--------|----------------|
| 622.00 x 70.00 | 482.00 | 952.90 |
| 622.00 x 85.00 | 452.00 | 1125.70 |
| 660.00 x 20.00 | 620.00 | 315.50 |
| 660.00 x 25.00 | 610.00 | 391.50 |
| 660.00 x 30.00 | 600.00 | 466.10 |
| 660.00 x 36.00 | 588.00 | 554.00 |
| 660.00 x 40.00 | 580.00 | 611.60 |
| 660.00 x 45.00 | 570.00 | 682.50 |
| 660.00 x 50.00 | 560.00 | 752.20 |
| 660.00 x 55.00 | 550.00 | 820.60 |
| 660.00 x 60.00 | 450.00 | 887.80 |
| 660.00 x 70.00 | 520.00 | 1018.50 |
| 660.00 x 80.00 | 500.00 | 1144.30 |
| 660.00 x 100.00 | 460.00 | 1381.00 |

Technical information

Hot rolled tubes in grade S355J2H/E355+AR

| Characteristics | Hot-rolled steel tube | |
|-----------------|--|--|
| Outer diameter | +/- 1% with at least +/-0.5 mm and max +/- 10 mm | 1) The positive deviation is limited by the weight tolerance. |
| Wall | + 10% ^{1) 2)} | |
| Straightness | 0.2% of whole length | 2) Deviations larger than, but not exceeding 12.5% of the nominal wall thickness may occur in smooth transition areas over not more than 25% of the perimeter. |
| Weight | -6% and +8% on individual lengths | |

| Chemical composition | | | | | | |
|----------------------|-------|-------|--------|--------|-----------|--------|
| C% | Si% | Mn% | P% | S% | Al %(tot) | N% |
| ≤0.22 | ≤0.55 | ≤1.60 | ≤0.035 | ≤0.035 | ≤0.020 | ≤0.012 |

| Yield point MPa | | | | | Ultimate strength MPa | | Extension A ₅ min. % | | | | Impact strength | |
|--------------------|------------|------------|------------|-----|--------------------------|---------|------------------------------------|---------|--------|---------|-----------------|-------------------------------------|
| Wall i n mm | | | | | Wall in mm | | Along | | Across | | Test temp. | Min. average value ¹⁾ |
| | | | | | | | Wall in mm | | | | | |
| <16 | >16 ≤40 | >40 ≤65 | >65 ≤80 | >80 | <3 | ≥3 ≤65 | ≤40 | >40 ≤65 | <40 | >40 ≤65 | | |
| 355 | 345 | 335 | 315 | 295 | 510 - 680 | 490-630 | 22 | 22 | 20 | 20 | -20 | 27 |

1) Impact strength tested at -20° C to minimum 27 J for wall thickness from and including 6 mm. Wall thickness ≤ 10 mm reduced value.

Hollow bars

According to EN 10294-1

Hollow bars in grade E470 in accordance with EN 10294-1. Guaranteed clean turned size after machining with external chucking, applies to lengths up to 3xOD but maximum 200 mm. It should be noted that the delivered tube sizes may vary for a given clean turned size. This is due to factors in the manufacturing processes used by the producers. Tubes are stamped with heat number and certificate in accordance to EN 10204/3.1 can be supplied on request.

| Dimension | | | Weight kg/m |
|-----------|----|-------|----------------|
| YD | ID | Wall | |
| 30 | 15 | 9,80 | 5,33 |
| 30 | 20 | 7,10 | 4,33 |
| 35 | 20 | 9,70 | 6,40 |
| 35 | 25 | 7,00 | 5,07 |
| 40 | 20 | 12,30 | 8,52 |
| 40 | 25 | 9,60 | 7,33 |
| 40 | 30 | 6,90 | 5,63 |
| 45 | 25 | 12,10 | 10,09 |
| 45 | 30 | 9,60 | 8,53 |
| 45 | 35 | 6,90 | 6,56 |
| 50 | 25 | 14,30 | 12,95 |
| 50 | 30 | 12,30 | 11,70 |
| 50 | 35 | 9,60 | 9,83 |
| 50 | 40 | 6,90 | 7,52 |
| 55 | 30 | 15,50 | 15,93 |
| 55 | 35 | 12,70 | 13,21 |
| 55 | 40 | 10,00 | 11,01 |
| 55 | 45 | 7,30 | 8,37 |
| 60 | 35 | 15,10 | 17,20 |
| 60 | 40 | 12,30 | 14,85 |
| 60 | 45 | 9,60 | 12,21 |
| 65 | 35 | 17,80 | 21,40 |
| 65 | 40 | 15,10 | 19,15 |
| 65 | 45 | 12,40 | 16,54 |
| 70 | 35 | 20,50 | 25,68 |
| 70 | 40 | 17,80 | 23,48 |
| 70 | 45 | 15,10 | 20,93 |
| 70 | 50 | 12,30 | 17,88 |
| 70 | 55 | 9,60 | 14,57 |
| 75 | 40 | 20,50 | 28,21 |
| 75 | 45 | 17,80 | 25,71 |
| 75 | 50 | 15,10 | 22,80 |
| 75 | 55 | 12,30 | 19,40 |
| 75 | 60 | 9,60 | 15,75 |
| 75 | 65 | 6,90 | 11,73 |
| 80 | 40 | 22,30 | 32,52 |
| 80 | 45 | 19,60 | 29,95 |
| 80 | 50 | 17,20 | 27,25 |
| 80 | 55 | 14,50 | 23,98 |
| 80 | 60 | 11,90 | 20,37 |
| 80 | 65 | 9,60 | 17,02 |

| Dimension | | | Weight kg/m |
|-----------|----|-------|----------------|
| YD | ID | Wall | |
| 85 | 45 | 22,30 | 35,27 |
| 85 | 50 | 19,60 | 33,27 |
| 85 | 55 | 17,20 | 29,37 |
| 85 | 60 | 14,50 | 25,78 |
| 85 | 70 | 9,40 | 17,79 |
| 90 | 50 | 22,30 | 38,01 |
| 90 | 55 | 19,80 | 35,06 |
| 90 | 60 | 17,20 | 31,49 |
| 90 | 65 | 14,50 | 27,57 |
| 90 | 70 | 11,90 | 23,29 |
| 90 | 75 | 9,40 | 18,94 |
| 95 | 50 | 24,90 | 43,96 |
| 95 | 55 | 22,30 | 40,76 |
| 95 | 60 | 19,60 | 37,21 |
| 95 | 65 | 17,20 | 33,61 |
| 95 | 70 | 14,50 | 29,36 |
| 95 | 75 | 11,90 | 24,76 |
| 95 | 80 | 9,40 | 20,10 |
| 100 | 50 | 27,60 | 50,28 |
| 100 | 55 | 24,90 | 47,09 |
| 100 | 60 | 22,30 | 43,57 |
| 100 | 65 | 19,70 | 39,70 |
| 100 | 70 | 17,20 | 35,79 |
| 100 | 75 | 14,50 | 31,21 |
| 100 | 80 | 11,90 | 26,29 |
| 100 | 85 | 9,40 | 21,32 |
| 105 | 55 | 27,60 | 53,67 |
| 105 | 60 | 24,90 | 50,17 |
| 105 | 65 | 22,30 | 46,31 |
| 105 | 70 | 19,70 | 42,12 |
| 105 | 75 | 17,20 | 37,91 |
| 105 | 80 | 14,50 | 33,01 |
| 105 | 85 | 11,90 | 27,75 |
| 110 | 60 | 27,60 | 57,14 |
| 110 | 65 | 24,90 | 53,31 |
| 110 | 70 | 22,30 | 49,13 |
| 110 | 75 | 19,70 | 44,62 |
| 110 | 80 | 17,20 | 40,10 |
| 110 | 90 | 11,90 | 29,29 |
| 110 | 95 | 9,40 | 23,70 |
| 115 | 65 | 27,60 | 60,54 |

| Dimension | | | Weight kg/m |
|-----------|-----|-------|----------------|
| YD | ID | Wall | |
| 115 | 70 | 24,90 | 56,38 |
| 115 | 75 | 22,30 | 51,89 |
| 115 | 80 | 19,90 | 47,44 |
| 115 | 85 | 17,20 | 42,23 |
| 115 | 90 | 14,60 | 36,67 |
| 120 | 70 | 27,60 | 64,02 |
| 120 | 75 | 25,00 | 59,54 |
| 120 | 90 | 17,30 | 44,43 |
| 125 | 70 | 30,20 | 71,89 |
| 125 | 75 | 27,60 | 67,42 |
| 125 | 80 | 25,00 | 62,62 |
| 125 | 85 | 22,30 | 57,47 |
| 125 | 90 | 19,70 | 51,98 |
| 125 | 95 | 17,30 | 46,56 |
| 125 | 100 | 14,60 | 40,34 |
| 125 | 105 | 11,90 | 33,78 |
| 130 | 75 | 30,30 | 75,70 |
| 130 | 80 | 27,60 | 70,91 |
| 130 | 85 | 25,00 | 65,78 |
| 130 | 90 | 22,40 | 60,31 |
| 130 | 100 | 17,30 | 48,77 |
| 140 | 75 | 35,60 | 93,11 |
| 140 | 85 | 30,30 | 83,25 |
| 140 | 90 | 27,70 | 77,82 |
| 140 | 95 | 25,00 | 72,04 |
| 140 | 105 | 19,80 | 59,45 |
| 140 | 110 | 17,30 | 53,13 |
| 140 | 115 | 14,70 | 45,93 |
| 150 | 85 | 35,60 | 101,97 |
| 150 | 95 | 30,30 | 90,78 |
| 150 | 100 | 27,70 | 84,73 |
| 150 | 110 | 22,40 | 71,53 |
| 150 | 125 | 14,70 | 49,64 |
| 160 | 85 | 40,90 | 121,93 |
| 160 | 95 | 35,60 | 110,85 |
| 160 | 105 | 30,30 | 98,40 |
| 160 | 115 | 25,10 | 84,59 |
| 160 | 125 | 19,80 | 69,41 |
| 160 | 135 | 14,70 | 53,37 |
| 170 | 95 | 40,90 | 132,11 |
| 170 | 105 | 35,60 | 119,74 |
| 170 | 115 | 30,40 | 105,99 |
| 170 | 120 | 27,70 | 98,61 |
| 170 | 125 | 27,70 | 90,88 |
| 170 | 135 | 19,80 | 74,40 |
| 170 | 140 | 17,40 | 66,27 |

| Dimension | | | Weight kg/m |
|-----------|-----|-------|----------------|
| YD | ID | Wall | |
| 180 | 100 | 43,50 | 148,52 |
| 180 | 120 | 33,00 | 121,17 |
| 180 | 130 | 27,70 | 105,45 |
| 180 | 140 | 22,50 | 88,35 |
| 180 | 145 | 19,80 | 79,30 |
| 180 | 150 | 17,40 | 70,56 |
| 190 | 100 | 49,10 | 173,46 |
| 190 | 105 | 46,40 | 167,17 |
| 190 | 115 | 41,20 | 153,56 |
| 190 | 120 | 38,50 | 146,25 |
| 190 | 125 | 35,90 | 138,59 |
| 190 | 135 | 30,60 | 122,26 |
| 190 | 150 | 22,80 | 95,19 |
| 190 | 160 | 17,70 | 76,16 |
| 200 | 100 | 56,10 | 202,63 |
| 200 | 120 | 43,80 | 171,53 |
| 200 | 125 | 41,20 | 163,91 |
| 200 | 140 | 33,30 | 139,00 |
| 200 | 145 | 30,70 | 130,01 |
| 200 | 150 | 28,10 | 120,68 |
| 200 | 160 | 22,80 | 101,00 |
| 200 | 165 | 20,20 | 90,64 |
| 210 | 135 | 45,40 | 188,79 |
| 210 | 140 | 42,60 | 180,15 |
| 210 | 150 | 37,00 | 161,73 |
| 210 | 160 | 31,50 | 141,79 |
| 210 | 170 | 25,90 | 120,32 |
| 210 | 180 | 20,40 | 97,34 |
| 220 | 125 | 55,80 | 229,52 |
| 220 | 130 | 53,00 | 221,71 |
| 220 | 145 | 44,60 | 195,86 |
| 220 | 150 | 41,80 | 186,53 |
| 220 | 170 | 30,70 | 145,41 |
| 220 | 180 | 25,20 | 122,56 |
| 230 | 125 | 62,50 | 265,76 |
| 230 | 145 | 51,40 | 232,63 |
| 230 | 155 | 45,90 | 213,78 |
| 230 | 160 | 43,10 | 203,79 |
| 230 | 180 | 32,00 | 160,01 |
| 230 | 190 | 26,40 | 135,84 |
| 250 | 140 | 64,30 | 299,03 |
| 250 | 150 | 58,80 | 281,24 |
| 250 | 160 | 53,20 | 261,94 |
| 250 | 180 | 42,10 | 218,75 |
| 250 | 190 | 36,50 | 194,88 |
| 250 | 200 | 31,00 | 169,48 |

Technical information

Hollow bars in grade E470

| Yield strength MPa | | | | | Tensile strength MPa | | | | | Extension A _g % |
|-----------------------|--------------|--------------|--------------|--------------|-------------------------|--------------|--------------|--------------|--------------|-------------------------------|
| Wall in mm | | | | | Wall in mm | | | | | |
| ≤ 16 | > 16 ≤ 25 | > 25 ≤ 40 | > 40 ≤ 50 | > 50 ≤ 65 | ≤ 16 | > 16 ≤ 25 | > 25 ≤ 40 | > 40 ≤ 50 | > 50 ≤ 65 | min. 17% longitudinally |
| 470 | 460 | 430 | 430 | 400 | 650 | 620 | 600 | 550 | 520 | |

Chemical composition

| C% | Si% | Mn% | P% | S% | Al% | N% | V% |
|-----------|-----------|-----------|--------|-------------|-----------|--------|-----------|
| 0.16-0.22 | 0.10-0.50 | 1.30-1.70 | ≤0.030 | 0.015-0.050 | min 0.010 | ≤0.020 | 0.08-0.15 |

Tolerance of delivery size specified by the manufacturer

| OD ≤ 75 mm | ± 0.5 mm |
|---------------------|----------|
| 75 mm < OD ≤ 180 mm | ± 0.75% |
| OD > 180 mm | ± 1% |

| OD ≤180 mm | Tolerance | OD >180 mm | Tolerance |
|--------------|---|--------------|-----------|
| Wall ≤ 15 mm | +/- 12.5% or +/- 0.4 mm - whichever is greater | Wall ≤ 30 mm | ± 12.5% |
| Wall > 15 mm | ± 10% | Wall > 30 mm | ± 10% |

Bars

Our bar assortment is aimed primarily at the workshop industry where there is a high demand for measurement accuracy, good machinability and an even quality, so that behaviour during machining is constant, delivery after delivery.

We stock bar in several types of steel, and since bar is a relatively new product for Heléns, the range is under continuous development.



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Hot rolled bars

Heléns bar assortment includes steel types as rolled and peeled conditions.
All steel types can be delivered directly from our stores in
fabrication lengths or fixed lengths. Other steel types and variants can
be offered on request.

| Dimension | Weight | STEEL SORT | | | | | | | |
|-----------|--------|------------|--------|-------|------------------------------|--------------------------------|--------------------------------|----------------------|--------------------------|
| | | 520M | S355J2 | Hydax | 34CrNiMo6Q+T (SS 2541-03) | 42CrMo54Q+T (SS 2244-04/05) | 25CrMo54Q+T (SS 2225-03/05) | C45R (SS 1672-08) | 16NiCr54 (SS 2511-08) |
| 25 | 3.85 | X | | | | | | | |
| 30 | 5.55 | X | | | | | | | |
| 35 | 7.55 | X | | | | | | | |
| 40 | 9.86 | X | | | | | | X | |
| 41-S | 10.40 | | | | X | X | X | | X |
| 45 | 12.50 | X | | | X | X | X | X | |
| 46-S | 13.00 | | | | X | X | X | | X |
| 50 | 15.40 | X | | X | | | | X | |
| 51.2-S | 16.20 | | | | X | X | X | | X |
| 55 | 18.70 | X | | | | | | X | |
| 56 | 19.35 | | | X | | | | | |
| 56.2-S | 19.50 | | | | X | X | X | | X |
| 60 | 22.20 | X | | X | | | | X | |
| 61.2-S | 23.10 | | | | X | X | X | | X |
| 65 | 26.10 | X | | X | | | | X | |
| 66.2-S | 27.00 | | | | X | X | X | | X |
| 70 | 30.20 | X | | X | | | | X | |
| 71.4-S | 31.40 | | | | X | X | X | | X |
| 75 | 34.70 | X | | X | | | | X | |
| 76.4-S | 36.00 | | | | X | X | X | | X |
| 80 | 39.50 | X | | X | | | | X | |
| 81.4-S | 40.80 | | | | X | X | X | | X |
| 85 | 44.50 | X | | X | | | | X | |
| 86.4-S | 46.00 | | | | X | X | X | | X |
| 90 | 49.90 | X | X | X | | | | X | |
| 91.4-S | 51.50 | | | | X | X | X | | X |
| 92-S | 52.20 | X | | | | | | | |
| 95 | 55.60 | X | | X | | | | X | |
| 96.4-s | 57.30 | | | | X | X | X | | X |
| 100 | 61.70 | X | X | X | | | | X | |
| 102-S | 64.10 | | | | X | X | X | | X |
| 105 | 68.00 | X | | X | | | | X | |
| 110 | 74.60 | X | X | X | X | X | X | X | |
| 112-S | 77.30 | | | | X | | | | |
| 115 | 81.50 | X | | | | | | | |
| 120 | 88.90 | X | X | | X | X | X | X | |
| 122-S | 91.70 | | | | X | | | | |

| Dimension | Weight | STEEL GRADE | | | | | | | |
|-----------|--------|-------------|--------|-------|------------------------------|--------------------------------|--------------------------------|----------------------|--------------------------|
| | | 520M | S355J2 | Hydax | 34CrNiMo6Q+T (SS 2541-03) | 42CrMo54Q+T (SS 2244-04/05) | 25CrMo54Q+T (SS 2225-03/05) | C45R (SS 1672-08) | 16NiCr54 (SS 2511-08) |
| 125 | 96.30 | X | | | | | | | |
| 127-S | 99.40 | | | | X | | | | |
| 130 | 104.00 | X | X | | X | X | X | X | |
| 135 | 112.00 | X | | | | X | | | |
| 140 | 121.00 | X | X | | X | X | X | X | |
| 143-S | 126.00 | | | | X | | | | |
| 145 | 130.00 | X | | | | | | | |
| 150 | 139.00 | X | X | | X | X | X | X | |
| 160 | 158.00 | X | | | X | | | X | |
| 163-S | 164.00 | | | | X | | | | |
| 170 | 178.10 | X | | | X | | | X | |
| 173-S | 184.00 | | | | X | | | | |
| 180 | 200.00 | X | | | X | | | X | |
| 184-S | 209.00 | | | | X | | | | |
| 190 | 223.00 | X | | | X | | | X | |
| 194-S | 232.00 | | | | X | | | | |
| 200 | 247.00 | X | | | X | | | X | |
| 210 | 272.00 | | X | | | | | X | |
| 212-S | 277.10 | | | | X | | | | |
| 220 | 298.40 | | X | | X | | | X | |
| 230 | 326.00 | | X | | | | | X | |
| 240 | 355.10 | | X | | X | | | X | |
| 250 | 385.30 | | X | | | | | X | |
| 255 | 401.00 | | X | | | | | | |
| 260 | 417.00 | | X | | X | | | X | |
| 270 | 449.40 | | X | | | | | X | |
| 280 | 483.30 | | X | | X | | | X | |
| 290 | 518.50 | | X | | | | | X | |
| 300 | 555.00 | | X | | | | | X | |
| 310 | 592,50 | | X | | | | | | |

S = Peeled

Technical information

Steel grade 2142M/520M

Hot rolled bars in accordance with EN 10025-1 and 10025-2, Steel grade 2142M/520M with improved machinability. The bar is impact strength tested at -20°, min. 27 joule. Tolerances according to DIN 1013. Comparable standard SS 2142.

Chemical analysis

| | Si% | Mn% | P% | S% | V% | CEV% |
|------|------|-----|-------|------|------|------|
| Min. | | | | .020 | | |
| Max. | 0.55 | 1.6 | 0.035 | .040 | 0.09 | 0.45 |

$$CEV = \frac{C}{6} + \frac{Mn}{5} + \frac{Cr}{15} + \frac{Mo}{5} + \frac{V}{15} + \frac{Ni}{15} + \frac{Cu}{15} \%$$

Mechanical characteristics

| Condition | Diam. mm | R _{eh} N/mm² | R _m N/mm² | A ₅ % min. | Impact strength tested min. | Temp | HB |
|-----------|----------|-----------------------|----------------------|-----------------------|-----------------------------|------|---------|
| Rolled | -70 | 380 | 490 - 630 | 22 | 27 | - 20 | 150-200 |
| | 70 - 200 | 350 | 490 - 630 | 20 | 27 | - 20 | |

Steel grade S355J2

Hot rolled bars in accordance with EN 10025-1 and 10025-2, Steel grade S355J2. The bars are impact strength tested at -20°, min. 27 joule. Tolerances according to DIN 1013. Comparable standard SS 2172.

Chemical analysis

| | C% | Si% | Mn% | P% | S% | CEV% |
|------|------|------|-----|-------|------|------|
| Min. | | | | | .020 | |
| Max. | 0.22 | 0.55 | 1.6 | 0.035 | .040 | 0.49 |

$$CEV = \frac{C}{6} + \frac{Mn}{5} + \frac{Cr}{15} + \frac{Mo}{5} + \frac{V}{15} + \frac{Ni}{15} + \frac{Cu}{15} \%$$

Mechanical characteristics

| Condition | Diam mm | R _{eh} N/mm² | R _m N/mm² | A ₅ % min. | Impact strength tested min. | Temp | HB |
|---------------------|---------|-----------------------|----------------------|-----------------------|-----------------------------|------|---------|
| Rolled / Normalised | 200-250 | 300 | 470-630 | 21 | 27 | -20 | 140-200 |
| | 251-290 | 290 | 470-630 | 20 | 27 | -20 | 140-200 |

Steel grade HYDAX 15

Hot rolled bars in accordance with EN 10025-1 and 10025-2, Steel grade Hydax 15, that is Si/Ca treated and with increased sulphur content for improved machinability.

The steel grade is weldable. Tolerances according to DIN 1013. Mechanical characteristics as S355 (SS 2172).

Chemical analysis

| | C% | Si% | Mn% | P% | S% | V% | CEV% |
|------|-----|------|-----|-------|------|------|------|
| Min. | | | | | 0.08 | | |
| Max. | 0.2 | 0.55 | 1.6 | 0.035 | 0.12 | 0.09 | 0.47 |

$$CEV = \frac{C}{6} + \frac{Mn}{5} + \frac{Cr}{15} + \frac{Mo}{5} + \frac{V}{15} + \frac{Ni}{15} + \frac{Cu}{15} \%$$

Mechanical characteristics

| Condition | Diam mm | REH N/mm² min | R _m N/mm² | A ₅ % min. | Impact strength tested min. | Temp | HB |
|-----------|---------|---------------|----------------------|-----------------------|-----------------------------|------|---------|
| Rolled | 40-80 | 355 | 490-630 | 20 | 27 | -20 | 160-200 |
| | 81-90 | 345 | 490-630 | 20 | 27 | -20 | |
| | 91-200 | 335 | 490-630 | 20 | 27 | 0 | |

Steel grade 25CrMoS4 Q+T/SS 2225-03/05

Hot rolled toughened bars in accordance with EN 10083-1 and 10083-3, Steel grade 25CrMoS4 Q+T with improved cutability, mechanical values in accordance with SS 2225-03/05. Tested ultrasonically, structure and grain tested for fineness, verification of non-metallic inclusions. Tolerances in accordance with DIN 1013.

Stocked both as hot rolled and peeled variants. Toughness tested -20°, min 27 joule. Hardness 190 - 325 HB. Comparable with Swedish standard SS 2225-03/05.

Chemical analysis

| % | C% | Si% | Mn% | P% | S% | Cr% | Mo% |
|------|------|------|------|-------|------|-----|------|
| Min. | 0.22 | 0.10 | 0.60 | | .020 | 0.9 | 0.15 |
| Max. | 0.29 | 0.40 | 0.90 | 0.025 | .040 | 1.2 | 0.30 |

Mechanical characteristics

| Condition | Diam mm | Rp 0.2 N/mm² min | R _m N/mm² | A ₅ % min. | Impact strength tested min. | Temp | HB |
|-----------|-----------|------------------|----------------------|-----------------------|-----------------------------|------|---------|
| + QT | - 40 | 700 | 900 - 1050 | 13 | 27 | -20 | 270-325 |
| + QT | 41 - 100 | 500 | 700 - 850 | 17 | 27 | -20 | 205-250 |
| + QT | 101 - 160 | 410 | 650 - 820 | 16 | 27 | -20 | 190-240 |

Technical information

Steel grade 42CrMoS4 Q+T/SS 2244-04/05

Hot rolled toughened bars in accordance with EN 10083-1 and 10083-3, steel grade 242CrMoS4 Q+T with improved machinability, mechanical values in accordance with SS 2244-04/05. Tested ultrasonically, structure and grain tested for fineness, verification of non-metallic inclusions. Tolerances in accordance with DIN 1013.

Stocked both as hot rolled and peeled variants. Toughness tested -20°, min. 27 joule. Hardness: 270 - 310 HB. Comparable with Swedish standard SS 2244-04/05.

Chemical analysis

| % | C% | Si% | Mn% | P% | S% | Cr% | Mo% |
|------|------|------|------|-------|-------|-----|------|
| Min. | 0.38 | 0.10 | 0.60 | | 0.020 | 0.9 | 0.15 |
| Max. | 0.45 | 0.40 | 0.90 | 0.025 | 0.040 | 1.2 | 0.30 |

Mechanical characteristics

| Condi- tion | Diam mm | Rp 0.2 N/mm² min | R _m N/mm² | A ₅ % min. | Impact strength tested min. | Temp | HB |
|-------------|---------|------------------|----------------------|-----------------------|-----------------------------|------|---------|
| + QT | -105 | 690 | 900-1050 | 12 | 27 | -20 | 270-310 |
| + QT | 106-160 | 600 | 800- 950 | 14 | 27 | -20 | 235-285 |

Steel grade 34CrNiMo6 Q+T/SS 2541-03

Hot rolled toughened bars in accordance with EN 10083-1 and 10083-3, Steel grade 34CrNiMo6 Q+T with improved machinability, mechanical values in accordance with SS 2541-03. Tested ultrasonically, structure and grain tested for fineness, verification of non-metallic inclusions. Tolerances in accordance with DIN 1013.

Stocked both as hot rolled and peeled variants. Toughness tested -20°, min. 27 joule. Hardness: 270 - 325 HB. Comparable with Swedish standard SS 2541-03.

Chemical analysis

| % | C% | Si% | Mn% | P% | S% | Cr% | Ni% | Mo% |
|------|------|------|------|-------|------|------|------|------|
| Min. | 0.30 | 0.10 | 0.50 | | .020 | 1.30 | 1.30 | 0.15 |
| Max. | 0.38 | 0.40 | 0.80 | 0.025 | .035 | 1.70 | 1.70 | 0.30 |

Mechanical characteristics

| Condi- tion | Diam mm | Rp 0.2 N/mm² min | R _m N/mm² | A ₅ % min. | Impact strength tested min. | Temp | HB |
|-------------|---------|------------------|----------------------|-----------------------|-----------------------------|------|---------|
| + QT | - 280 | 700 | 900-1050 | 12 | 27 | -20 | 270-325 |

Steel grade C45R / SS 1672-08

Hot rolled bars in accordance with EN 10083-1 and 10083-3, Steel grade C45+H with improved machinability. Tested ultrasonically, structure and grain tested for fineness, verification of non-metallic inclusions.

Tolerances in accordance with DIN 1013. Hardenability demands (+H) on bar. Hardness: 165 - 220 HB. Comparable with Swedish standard SS 1672-08.

Chemical analysis

| % | C% | Si% | Mn% | P% | S% | Cr% | Mo% | Ni% | CR+Mo+Ni% |
|------|------|-----|-----|------|------|-----|-----|-----|-----------|
| Min. | 0.42 | | 0.5 | | 0.02 | | | | |
| Max. | 0.5 | 0.4 | 0.8 | 0.03 | 0.04 | 0.4 | 0.1 | 0.4 | 0.63 |

Mechanical characteristics

| Condition | Diam mm | Rp 0.2 N/mm² min | R _m N/mm² | A ₅ % min. | HB |
|-------------------|---------|------------------|----------------------|-----------------------|---------|
| Rolled. Untreated | (16)-40 | 310 | 590-740 | 14 | 165-220 |
| | (40)-63 | 300 | 590-740 | 14 | 165-220 |
| | > 63 | 280 | 590-740 | 14 | 165-220 |

Steel grade 16NiCrS4 + HL/SS 2511-08

Hot rolled bars in accordance with EN 10084, Steel grade 16NiCrS4+ HL with improved machinability. Ultrasonivally tested, structure and grain tested for fineness, verification of non-metallic inclusions. Tolerances in accordance with DIN 1013. The bar is only available as peeled variant. Hardenability demands (+HL) on bar. Hardness: Max. 217 HB. Comparable with Swedish standard SS 2511-08.

Chemical analysis

| % | C% | Si% | Mn% | P% | S% | Cr% | Ni% | HB max |
|------|------|-----|-----|-------|------|-----|-----|--------|
| Min. | 0.13 | | 0.7 | | 0.02 | 0.6 | 0.8 | |
| Max. | 0.19 | 0.4 | 1 | 0.035 | 0.04 | 1 | 1.1 | 217 |

Ground bars

We are committed to tolerance accuracy and high surface finish, which is why we stock ground bar with ISO h8 tolerance. We can offer two sorts of steel depending on the application; 20MnV6 (corresponding to SS 2142) and C45, (corresponding to SS 1672).

| Ø mm | kg/m | corresp. to SS 1672 | corresp. to SS 2142 |
|------|-------|---------------------|---------------------|
| 8 | 0.39 | X | |
| 10 | 0.62 | X | |
| 12 | 0.89 | X | |
| 15 | 1.39 | X | |
| 16 | 1.58 | X | |
| 17 | 1.78 | X | |
| 18 | 2.00 | X | |
| 20 | 2.47 | X | |
| 20 | 2.47 | | X |
| 22 | 2.98 | X | |
| 25 | 3.85 | X | |
| 25 | 3.86 | | X |
| 30 | 5.55 | X | |
| 30 | 5.55 | | X |
| 35 | 7.55 | X | |
| 35 | 7.55 | | X |
| 40 | 9.87 | X | |
| 40 | 9.86 | | X |
| 45 | 12.48 | X | |

| Ø mm | kg/m | corresp. to SS1672 | corresp. to SS2142 |
|------|-------|--------------------|--------------------|
| 45 | 12.48 | | X |
| 50 | 15.41 | X | |
| 50 | 15.41 | | X |
| 55 | 18.65 | X | |
| 55 | 18.65 | | X |
| 60 | 22.20 | X | |
| 60 | 22.20 | | X |
| 65 | 26.05 | X | |
| 70 | 30.21 | X | |
| 70 | 30.21 | | X |
| 75 | 34.68 | X | |
| 80 | 39.46 | X | |
| 80 | 39.50 | | X |
| 90 | 49.94 | X | |
| 90 | 49.90 | | X |
| 100 | 61.65 | X | |
| 100 | 61.60 | | X |
| 110 | 74.60 | X | |
| 120 | 88.78 | X | |

Technical information

Ground bars

| MECHANICAL CHARACTERISTICS | | | | | | | |
|----------------------------|---------------------|-----------|-----------|-----------|------------|------------|-----------|
| Steel quality | | C% | Mn% | Si% | P% | S% | V% |
| 20MnV6 | corresp. to SS 2142 | 0.16-0.22 | 1.30-1.70 | 0.10-0.50 | max. 0.035 | max. 0.035 | 0.10-0.20 |
| C45 | corresp. to SS1672 | 0.42-0.50 | 0.50-0.80 | max. 0.40 | max. 0.035 | max. 0.035 | |

| MECHANICAL CHARACTERISTICS | | | | | | | | |
|----------------------------|----------|-----------------------------|-------------------------------|----------------|-----------|---------------------------|--------------|--------------------------|
| Yield point MPa | | Ultimate strength MPa | Extension A ₅ % | Hardness HB | Tolerance | Surface fineness Ra | Straightness | Fabrication length mm |
| 20MnV6 | min. 450 | min. 600 | min. 18 | 180 - 200 | ISO h8 | max. 0.5 my | 0.5:1000 mm | approx. 6000 |
| C45 | min. 350 | min. 620 | min. 17 | | ISO h8 | max. 0.5 my | 0.5:1000 mm | approx. 6000 |

Colour marking of bar quality

| Bar qualities | Colour |
|------------------------|--------------|
| S355 J2 | Black |
| Hydax | Black/yellow |
| 520M / 2142 M | Yellow-green |
| 25CrMoS4 (SS 2225) | Olive green |
| 42CrMoS4 (SS 2244) | Brown |
| 34CrNiMo6 (SS 2541-03) | Ruby red |
| C45R (SS 1672-08) | Green |
| 16NiCrS4 (SS 2511-08) | Grey-blue |

The various material qualities are marked on the end with a colour code, as illustrated.

Hollow sections & Welded line pipes

Our hollow sections can be supplied cold formed from stock. Hot formed hollow sections can be delivered direct from the manufacturer or from one of our partners in Europe.

Our welded tube is characterized by high concentricity and very good measurement accuracy.



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Hollow sections

Cold formed hollow sections made in accordance with EN 10219 in quality S355J2H. Hollow sections are delivered in fabrication lengths of 6, 7,5, 10 or 12 m.

| Dimension | Weight kg/m | Length |
|----------------------|----------------|--------|
| 25.00 x 25.00 x 3.00 | 1.89 | 6000 |
| 30.00 x 30.00 x 3.00 | 2.36 | 6000 |
| 35.00 x 35.00 x 3.00 | 2.83 | 6000 |
| 40.00 x 40.00 x 3.00 | 2.36 | 6000 |
| 40.00 x 30.00 x 3.00 | 2.83 | 6000 |
| 40.00 x 40.00 x 3.00 | 3.30 | 6000 |
| 40.00 x 40.00 x 4.00 | 4.20 | 6000 |
| 50.00 x 25.00 x 3.00 | 3.10 | 6100 |
| 50.00 x 30.00 x 4.00 | 3.30 | 6000 |
| 50.00 x 30.00 x 4.00 | 4.20 | 6000 |
| 50.00 x 50.00 x 3.00 | 4.25 | 6000 |
| 50.00 x 50.00 x 4.00 | 5.45 | 6000 |
| 50.00 x 50.00 x 4.00 | 5.45 | 7500 |
| 50.00 x 50.00 x 5.00 | 6.56 | 6000 |
| 50.00 x 50.00 x 5.00 | 6.56 | 7500 |
| 60.00 x 30.00 x 3.00 | 3.77 | 6000 |
| 60.00 x 30.00 x 4.00 | 4.88 | 6000 |
| 60.00 x 40.00 x 3.00 | 4.25 | 6000 |
| 60.00 x 40.00 x 4.00 | 5.45 | 6000 |
| 60.00 x 40.00 x 5.00 | 6.56 | 6000 |
| 60.00 x 60.00 x 3.00 | 5.19 | 6000 |
| 60.00 x 60.00 x 4.00 | 6.71 | 6000 |
| 60.00 x 60.00 x 5.00 | 8.13 | 6000 |
| 60.00 x 60.00 x 5.00 | 8.13 | 10000 |
| 70.00 x 40.00 x 3.00 | 4.75 | 6000 |
| 70.00 x 40.00 x 4.00 | 6.14 | 6000 |
| 70.00 x 50.00 x 3.00 | 5.19 | 6000 |
| 70.00 x 50.00 x 4.00 | 6.71 | 6000 |
| 70.00 x 50.00 x 5.00 | 8.13 | 6000 |
| 70.00 x 70.00 x 3.00 | 6.13 | 6000 |
| 70.00 x 70.00 x 3.00 | 6.13 | 12000 |
| 70.00 x 70.00 x 4.00 | 7.97 | 12000 |
| 70.00 x 70.00 x 5.00 | 9.70 | 7500 |
| 70.00 x 70.00 x 5.00 | 9.70 | 12000 |
| 80.00 x 40.00 x 3.00 | 5.19 | 6000 |
| 80.00 x 40.00 x 4.00 | 6.71 | 6000 |
| 80.00 x 40.00 x 5.00 | 8.13 | 6000 |
| 80.00 x 50.00 x 4.00 | 7.34 | 6000 |

| Dimension | Weight kg/m | Length |
|------------------------|----------------|--------|
| 80.00 x 60.00 x 3.00 | 6.13 | 6000 |
| 80.00 x 50.00 x 5.00 | 8.91 | 6000 |
| 80.00 x 60.00 x 4.00 | 7.97 | 6000 |
| 80.00 x 60.00 x 5.00 | 9.70 | 10000 |
| 80.00 x 80.00 x 3.00 | 7.07 | 12000 |
| 80.00 x 80.00 x 4.00 | 9.22 | 12000 |
| 80.00 x 80.00 x 5.00 | 11.30 | 6000 |
| 80.00 x 80.00 x 5.00 | 11.30 | 12000 |
| 80.00 x 80.00 x 6.30 | 13.50 | 12000 |
| 90.00 x 50.00 x 3.00 | 6.13 | 12000 |
| 90.00 x 50.00 x 4.00 | 7.97 | 6000 |
| 90.00 x 50.00 x 4.00 | 7.97 | 12000 |
| 90.00 x 50.00 x 5.00 | 9.70 | 7500 |
| 90.00 x 90.00 x 3.00 | 8.01 | 7500 |
| 90.00 x 90.00 x 4.00 | 10.50 | 12000 |
| 90.00 x 90.00 x 5.00 | 12.80 | 12000 |
| 90.00 x 90.00 x 6.30 | 15.50 | 6000 |
| 90.00 x 90.00 x 6.30 | 15.50 | 12000 |
| 100.00 x 40.00 x 3.00 | 6.13 | 6000 |
| 100.00 x 40.00 x 4.00 | 7.97 | 6000 |
| 100.00 x 40.00 x 5.00 | 9.70 | 6000 |
| 100.00 x 50.00 x 3.00 | 6.60 | 6000 |
| 100.00 x 50.00 x 3.00 | 6.60 | 12000 |
| 100.00 x 50.00 x 4.00 | 8.59 | 12000 |
| 100.00 x 50.00 x 5.00 | 10.50 | 7500 |
| 100.00 x 50.00 x 5.00 | 10.50 | 12000 |
| 100.00 x 50.00 x 6.30 | 12.50 | 12000 |
| 100.00 x 60.00 x 3.00 | 7.07 | 6000 |
| 100.00 x 60.00 x 3.00 | 7.07 | 12000 |
| 100.00 x 60.00 x 4.00 | 9.22 | 12000 |
| 100.00 x 60.00 x 5.00 | 11.30 | 12000 |
| 100.00 x 60.00 x 6.30 | 13.50 | 12000 |
| 100.00 x 80.00 x 3.00 | 8.01 | 12000 |
| 100.00 x 80.00 x 4.00 | 10.50 | 10000 |
| 100.00 x 80.00 x 5.00 | 12.80 | 10000 |
| 100.00 x 80.00 x 5.00 | 12.80 | 12000 |
| 100.00 x 80.00 x 6.30 | 15.50 | 12000 |
| 100.00 x 100.00 x 3.00 | 8.96 | 10000 |
| 100.00 x 100.00 x 3.00 | 8.96 | 10000 |
| 100.00 x 100.00 x 4.00 | 11.70 | 10000 |

| Dimension | Weight kg/m | Length |
|-------------------------|----------------|--------|
| 100.00 x 100.00 x 4.00 | 11.70 | 12000 |
| 100.00 x 100.00 x 5.00 | 14.40 | 10000 |
| 100.00 x 100.00 x 5.00 | 14.40 | 12000 |
| 100.00 x 100.00 x 6.30 | 17.50 | 6000 |
| 100.00 x 100.00 x 6.30 | 17.50 | 10000 |
| 100.00 x 100.00 x 6.30 | 17.50 | 12000 |
| 100.00 x 100.00 x 8.00 | 21.40 | 10000 |
| 100.00 x 100.00 x 8.00 | 21.40 | 12000 |
| 100.00 x 100.00 x 10.00 | 25.56 | 12000 |
| 110.00 x 110.00 x 4.00 | 13.00 | 12000 |
| 110.00 x 110.00 x 5.00 | 16.00 | 12000 |
| 110.00 x 110.00 x 6.30 | 19.40 | 12000 |
| 120.00 x 40.00 x 3.00 | 7.07 | 6000 |
| 120.00 x 40.00 x 4.00 | 9.22 | 6000 |
| 120.00 x 60.00 x 3.00 | 8.01 | 6000 |
| 120.00 x 60.00 x 4.00 | 10.50 | 12000 |
| 120.00 x 60.00 x 5.00 | 12.80 | 10000 |
| 120.00 x 60.00 x 5.00 | 12.80 | 12000 |
| 120.00 x 60.00 x 6.30 | 15.50 | 10000 |
| 120.00 x 60.00 x 6.30 | 15.50 | 12000 |
| 120.00 x 80.00 x 3.00 | 8.96 | 12000 |
| 120.00 x 80.00 x 4.00 | 11.70 | 12000 |
| 120.00 x 80.00 x 5.00 | 14.40 | 10000 |
| 120.00 x 80.00 x 5.00 | 14.40 | 12000 |
| 120.00 x 80.00 x 6.30 | 17.50 | 10000 |
| 120.00 x 80.00 x 6.30 | 17.50 | 12000 |
| 120.00 x 80.00 x 8.00 | 21.40 | 12000 |
| 120.00 x 120.00 x 4.00 | 14.30 | 12000 |
| 120.00 x 120.00 x 5.00 | 17.60 | 10000 |
| 120.00 x 120.00 x 5.00 | 17.60 | 12000 |
| 120.00 x 120.00 x 6.30 | 21.40 | 10000 |
| 120.00 x 120.00 x 6.30 | 21.40 | 12000 |
| 120.00 x 120.00 x 8.00 | 26.40 | 12000 |
| 120.00 x 120.00 x 10.00 | 31.80 | 12000 |
| 140.00 x 70.00 x 4.00 | 12.40 | 12000 |
| 140.00 x 70.00 x 5.00 | 15.20 | 12000 |
| 140.00 x 70.00 x 6.30 | 18.50 | 12000 |
| 140.00 x 80.00 x 4.00 | 13.00 | 12000 |
| 140.00 x 80.00 x 5.00 | 16.00 | 12000 |
| 140.00 x 80.00 x 6.30 | 19.40 | 12000 |
| 140.00 x 140.00 x 5.00 | 20.70 | 12000 |
| 140.00 x 140.00 x 6.30 | 25.40 | 12000 |
| 140.00 x 140.00 x 8.00 | 31.40 | 12000 |
| 140.00 x 140.00 x 10.00 | 38.10 | 12000 |
| 150.00 x 50.00 x 5.00 | 14.40 | 12000 |
| 150.00 x 75.00 x 5.00 | 16.37 | 12000 |
| 150.00 x 100.00 x 4.00 | 14.90 | 12000 |
| 150.00 x 100.00 x 5.00 | 18.30 | 10000 |
| 150.00 x 100.00 x 5.00 | 18.30 | 12000 |
| 150.00 x 100.00 x 6.30 | 22.40 | 12000 |
| 150.00 x 100.00 x 8.00 | 27.70 | 12000 |

| Dimension | Weight kg/m | Length |
|-------------------------|----------------|--------|
| 150.00 x 100.00 x 10.00 | 33.40 | 12000 |
| 150.00 x 150.00 x 5.00 | 22.30 | 12000 |
| 150.00 x 150.00 x 6.30 | 27.40 | 12000 |
| 150.00 x 150.00 x 8.00 | 34.00 | 12000 |
| 150.00 x 150.00 x 10.00 | 41.30 | 12000 |
| 160.00 x 80.00 x 4.00 | 14.30 | 12000 |
| 160.00 x 80.00 x 5.00 | 17.60 | 12000 |
| 160.00 x 80.00 x 6.30 | 21.40 | 12000 |
| 160.00 x 80.00 x 8.00 | 26.40 | 12000 |
| 160.00 x 80.00 x 10.00 | 31.84 | 12000 |
| 160.00 x 160.00 x 6.30 | 29.30 | 12000 |
| 160.00 x 160.00 x 8.00 | 36.50 | 12000 |
| 160.00 x 160.00 x 10.00 | 44.40 | 12000 |
| 180.00 x 80.00 x 6.00 | 22.63 | 12000 |
| 180.00 x 100.00 x 6.30 | 25.40 | 12000 |
| 180.00 x 100.00 x 8.00 | 31.40 | 12000 |
| 180.00 x 100.00 x 10.00 | 38.10 | 12000 |
| 180.00 x 180.00 x 6.30 | 33.30 | 12000 |
| 180.00 x 180.00 x 8.00 | 41.50 | 12000 |
| 180.00 x 180.00 x 10.00 | 50.70 | 12000 |
| 200.00 x 100.00 x 5.00 | 22.30 | 12000 |
| 200.00 x 100.00 x 6.30 | 27.40 | 12000 |
| 200.00 x 100.00 x 8.00 | 34.00 | 12000 |
| 200.00 x 100.00 x 10.00 | 41.30 | 12000 |
| 200.00 x 120.00 x 6.30 | 29.30 | 12000 |
| 200.00 x 120.00 x 8.00 | 36.50 | 12000 |
| 200.00 x 120.00 x 10.00 | 44.40 | 12000 |
| 200.00 x 200.00 x 6.30 | 37.30 | 12000 |
| 200.00 x 200.00 x 8.00 | 46.50 | 12000 |
| 200.00 x 200.00 x 10.00 | 57.00 | 12000 |
| 200.00 x 200.00 x 12.50 | 68.30 | 12000 |
| 220.00 x 120.00 x 6.30 | 31.30 | 12000 |
| 220.00 x 120.00 x 8.00 | 39.00 | 12000 |
| 220.00 x 120.00 x 1.00 | 47.50 | 12000 |
| 250.00 x 150.00 x 6.30 | 37.30 | 10000 |
| 250.00 x 150.00 x 6.30 | 37.30 | 12000 |
| 250.00 x 150.00 x 8.00 | 46.50 | 12000 |
| 250.00 x 150.00 x 10.00 | 57.00 | 12000 |
| 250.00 x 150.00 x 12.50 | 68.30 | 12000 |
| 250.00 x 250.00 x 6.30 | 47.10 | 12000 |
| 250.00 x 250.00 x 8.00 | 59.10 | 12000 |
| 250.00 x 250.00 x 10.00 | 72.70 | 12000 |
| 250.00 x 250.00 x 12.50 | 88.00 | 12000 |
| 260.00 x 140.00 x 6.30 | 37.30 | 12000 |
| 260.00 x 140.00 x 10.00 | 57.00 | 12000 |
| 300.00 x 200.00 x 6.30 | 47.10 | 12000 |
| 300.00 x 200.00 x 8.00 | 59.10 | 12000 |
| 300.00 x 200.00 x 10.00 | 72.70 | 12000 |
| 300.00 x 200.00 x 12.50 | 88.00 | 12000 |
| 300.00 x 300.00 x 10.00 | 88.40 | 12000 |
| 400.00 x 200.00 x 10.00 | 88.40 | 12000 |

Technical information

Standard stock KKR, EN 10219, S355J2H

Chemical composition/charge analysis

| Steel grade | C % max. | Si ¹⁾ % max. | Mn % max. | P % max. | S % max. | Al tot % min. | CEV ²⁾ T ≤ 16 max. |
|--|----------------|-------------------------------|-----------------|----------------|----------------|---------------------|-------------------------------------|
| S355J2H | 0.22 | 0.55 | 1.60 | 0.035 | 0.035 | 0.020 | 0.45 |
| 1) Normal delivery value is approx 0.15 – 0.25% 2) Normal delivery value is approx 0.40 | | | | | | | |

Strength

| | | |
|--|------------|-----------------------------|
| Steel grade | | S355J2H |
| Yield point ReH min | T ≤ 16 | 355 N/mm ² |
| Tensile strength Rm min | T < 3 | 510–680 N/mm ² |
| | 3 ≤ T ≤ 16 | 490–630 N/mm ² |
| Elongation A5 min | | 20% |
| Impact strength at -20°C | | min. 27 Joule ¹⁾ |
| 1) We can supply impact strength min. 34 Joule at -40 °C on special request. | | |

Tolerances

| Characteristics | Tolerance |
|---|---|
| Outer dimension (w, h) w, h < 100 100 ≤ w, h ≤ 200 w, h > 200 | +1% with at least +0.5 mm ±0.8% ±0.6% |
| Thickness (T) ²⁾ | T ≤ 5 mm: ±10% T > 5 mm: ±0.50 mm |
| Concavity / convexity ¹⁾ (t ₁ , t ₂) Fig 2 | Max. 0.8% of side with at least 0.5 mm |
| Side right-angularity (v) Fig 3 | 90° ±1° |
| Outer edge radius (R) Fig 5 | See below! |
| Twisting (W) Fig 4 | 2 mm + 0.5 mm/m length |
| Straightness (f) Fig 1 | 0.15% of whole length |
| Weight (g) | +6% on individual length |
| Length tolerance: Fabrication length | -0/+50 mm |
| Fixed length | After agreement when ordering |
| 1) Tolerance of convexity and concavity is independent of the tolerance of the outer dimensions 2) On special request, we can deliver tolerance of -5% + 10% with min +0,2 mm and max +0,5 mm. | |

Outer edge radius fig 5

| Wall thickness | Outer edge radius |
|----------------|-------------------|
| T ≤ 6 | 1.6T to 2.4T |
| 6 < T ≤ 10 | 2.0T to 3.0T |
| 10 < T | 2.4T to 3.6T |

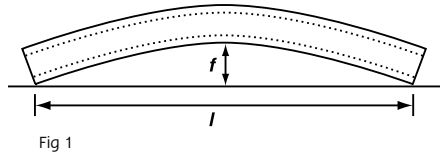


Fig 1

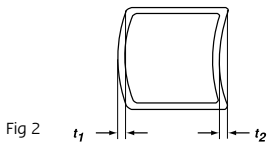


Fig 2

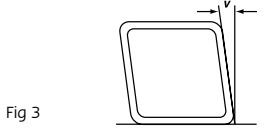


Fig 3

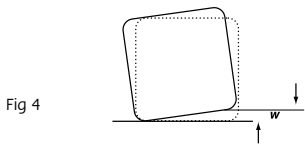


Fig 4

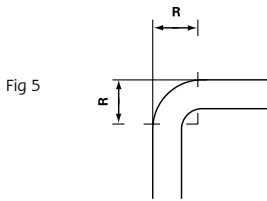


Fig 5

Technical information

Delivery from mill, EN 10210, S355J2H

Chemical properties/charge analysis

| Steel grade | C % max. | Si ¹⁾ % max. | Mn % max. | P % max. | S % max. | Al tot % min. | CEV ²⁾ T ≤ 16 max. |
|--|----------------|-------------------------------|-----------------|----------------|----------------|---------------------|-------------------------------------|
| S355J2H | 0.22 | 0.55 | 1.60 | 0.035 | 0.035 | 0.020 | 0.45 |
| 1) Normal delivery value is approx 0.15 – 0.25% 2) Normal delivery value is approx 0.40 | | | | | | | |

Strength

| | | |
|--------------------------|------------|---------------------------|
| Steel grade | | S355J2H |
| Yield strength ReH min | T ≤ 16 | 355 N/mm ² |
| Tensile strength Rm min | T < 3 | 510–680 N/mm ² |
| | 3 ≤ T ≤ 16 | 490–630 N/mm ² |
| Extension A5 min. | | 22% |
| Impact strength at -20°C | | min. 27 Joule |

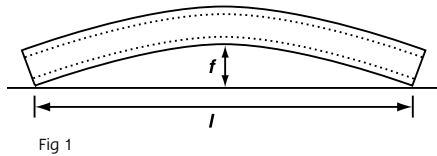


Fig 1

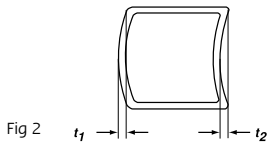


Fig 2

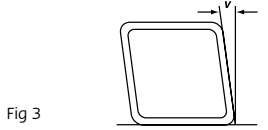


Fig 3

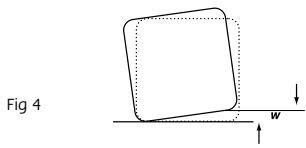


Fig 4

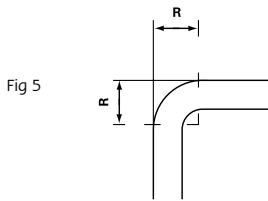


Fig 5

| Characteristics | Tolerance |
|---|---|
| Outer dimensions (w,h) | ±1% with at least ±0.5 mm |
| Wall thickness (T) 3) | -10% (Seamless -12.5%) |
| Concavity / convexity 1) (t ₁ , t ₂) Fig 2 | 1% |
| Side right-angularity (v) Fig 3 | 90° ±1° |
| Outer edge radius (R) 2) Fig 5 | Max. 3 t |
| Twisting (w) Fig 4 | 2 mm + 0.5 mm/m length |
| Straightness (f) Fig 1 | 0.20% of whole length |
| Weight (g) | ±6% on individual length (Seamless -6/+8%) |
| Length tolerance: Fabrication length | -0/+300 mm |
| Fixed length | After agreement when ordering. |
| 1) Tolerance of convexity and concavity is dependant on the tolerance of the outer dimensions. 2) Normal delivery is approx 2t. 3) The positive deviation is limited by the weight tolerance. | |

Welded – Construction tubes

Welded, cold formed circular construction tube manufactured in accordance with EN 10219-1 in quality S235JRH.

| Dimension OD x Wall | Weight kg/m | Length |
|------------------------|----------------|--------|
| 26.90 x 2.60 | 1.56 | 6000 |
| 33.70 x 2.60 | 1.99 | 6000 |
| 33.70 x 3.20 | 2.41 | 6000 |
| 33.70 x 4.00 | 2.93 | 6000 |
| 42.40 x 2.60 | 2.55 | 6000 |
| 42.40 x 3.20 | 3.09 | 6000 |
| 42.40 x 4.00 | 3.79 | 6000 |
| 48.30 x 2.60 | 2.93 | 6000 |
| 48.30 x 2.90 | 3.25 | 6000 |
| 48.30 x 3.20 | 3.56 | 6000 |
| 57.00 x 2.90 | 3.87 | 6000 |
| 60.30 x 2.90 | 4.11 | 6000 |
| 60.30 x 3.60 | 5.03 | 6000 |
| 63.50 x 2.90 | 4.33 | 6000 |
| 70.00 x 2.90 | 4.80 | 6000 |
| 70.00 x 4.00 | 6.51 | 6000 |
| 76.10 x 2.90 | 5.24 | 6000 |
| 76.10 x 3.60 | 6.44 | 6000 |
| 76.10 x 4.00 | 7.11 | 6000 |
| 76.10 x 5.00 | 8.77 | 6000 |
| 82.50 x 3.20 | 6.26 | 6000 |
| 88.90 x 3.20 | 6.76 | 6000 |
| 88.90 x 5.00 | 10.30 | 6000 |
| 88.90 x 6.30 | 12.80 | 6000 |
| 101.60 x 3.60 | 8.70 | 6000 |
| 114.30 x 3.60 | 9.83 | 6000 |
| 139.70 x 4.00 | 13.40 | 6000 |
| 168.30 x 4.50 | 18.20 | 6000 |
| 193.70 x 4.00 | 18.70 | 12000 |
| 193.70 x 5.60 | 26.00 | 12000 |
| 219.10 x 6.30 | 33.10 | 12000 |
| 244.50 x 6.30 | 37.00 | 12000 |
| 273.00 x 6.30 | 41.40 | 12000 |
| 323.90 x 7.10 | 55.50 | 12000 |

Technical information

Norm SS EN 10219-1, steel grade S235JRH

Chemical properties

The table below applies to material with wall thickness ≤ 40 mm

| Steel grade | Chemical composition in percentage weight, max. | | | | | |
|-------------|---|------|-----|-------|------|-------|
| | C% | Si% | Mn% | P% | S% | N% |
| S235JRH | 0.17 | 0.04 | 1.4 | 0.045 | 0.45 | 0.009 |

* The tube is suitable for hot dip galvanizing

Mechanical characteristics

The table below is for information only. For a complete presentation, refer to the standard

| Steel grade | Yield strength MPa Wall mm | | Tensile strength MPa Wall mm | | Extension % | Impact strength J | |
|-------------|-------------------------------|-----------|---------------------------------|----------|-------------|-------------------|--------|
| | ≤ 16 | > 16 ≤ 40 | < 3 | ≥ 3 ≤ 40 | ≤ 40 | Test temp. | Energy |
| S235JRH | 235 | 225 | 360-510 | 340-470 | 24 | 20 | 27 |

Measurement deviations

| Characteristics | Circular construction tube |
|--|---|
| Outer dimension (D) | ± 1% with min. ± 0.5 mm and max. ± 10 mm |
| Wall thickness (T) | For D ≤ 406.4 T ≤ 5 mm ± 10% T > 5 mm ± 10% For D > 406.4 mm 10% but max. 2 mm |
| Roundness (O) | 2% for construction tubes with diameter in relation to thickness, not exceeding 100 ¹⁾ |
| Straightness | 0.2% of whole length |
| Weight | + 6 % on individual lengths |
| 1) when the diameter in relation to the thickness exceeds 199, the tolerance for deviation from roundness must be agreed upon. | |

Welded – Pipeline tubes

Welded steel tubes for pressure purposes, manufactured according to EN 10217-1 in quality P235TR1 or according to DIN 2458/1626 in quality St 37.
For further information refer to the original norm.

| Dimension OD x Wall | Weight kg/m | Length |
|-------------------------|----------------|--------|
| 26.9 x 2.6 | 1.56 | 6000 |
| 33.7 x 2.6 | 1.99 | 6000 |
| 42.4 x 2.6 | 2.55 | 6000 |
| 48.3 x 2.6 | 2.93 | 6000 |
| 60.3 x 2.9 | 4.11 | 6000 |
| 76.1 x 2.9 | 5.24 | 6000 |
| 88.9 x 3.2 | 6.76 | 6000 |
| 101.6 x 3.6 | 8.70 | 6000 |
| 101.6 x 5.0 | 11.90 | 6000 |
| 108.0 x 3.6 | 9.27 | 6000 |
| 114.3 x 3.6 | 9.83 | 6000 |
| 121.0 x 4.0 | 11.50 | 6000 |
| 127.0 x 4.0 | 12.10 | 6000 |
| 133.0 x 4.0 | 12.70 | 6000 |
| 139.7 x 4.0 | 13.40 | 6000 |
| 152.4 x 4.5 | 16.40 | 6000 |
| 159.0 x 4.5 | 17.10 | 6000 |
| 168.3 x 4.0 Dist. heat* | 16.20 | 12000 |
| 168.3 x 4.5 | 18.20 | 6000 |
| 219.1 x 4.5 Dist. heat* | 23.80 | 12000 |
| 273.0 x 5.0 Dist. heat* | 33.00 | 12000 |
| 323.9 x 5.6 Dist. heat* | 44.00 | 12000 |
| 323.9 x 7.1 | 55.50 | 12000 |
| 355.6 x 7.1 | 61.00 | 12000 |
| 406.4 x 8.8 | 86.30 | 12000 |
| 508.0 x 10.0 | 123.00 | 12000 |

* Fulfils demands for district heating tube

Technical information

Welded tubes - Pipelines
EN 10217-1, P235TR1

Chemical properties
Welded pressure tube is divided into 2 classes, TR1 and TR2.
TR1: The tube analysis does not state aluminium content. Impact strength not tested.
Quality certificate in accordance with EN 10204/-2.2. (Stocked)
TR2: The tube analysis states aluminium content. Impact strength is verified. Test certificate in accordance with SS-EN 10204-3.1. (Not stocked)

| Steel grade | Chemical composition in percentage weight, max. (Al = min.) | | | | | | | | | | | | | |
|-------------|---|------|------|-------|-------|--------|------|------|------|-------|------|------|------|---------------------|
| | C% | Si% | Mn% | P% | S% | Al tot | Cr% | Cu% | Mo% | Nb% | Ni% | Ti% | V% | Other ¹⁾ |
| P235TR1 | 0.16 | 0.35 | 1.20 | 0.025 | 0.020 | - | 0.30 | 0.30 | 0.08 | 0.010 | 0.30 | 0.04 | 0.02 | 0.70 |

¹⁾ Cr + Cu + Mo + Ni

| Steel grade | Tensile strength | | | | | | Impact strength | | |
|-------------|---|---------|-----|------------------------------------|------------------------------------|--------|--------------------------|--------|-----|
| | Upper yield strength min. R _{eh} for T mm | | | Tensile strength R _m | Elongation A ₅ min.% | | KV at a temperature of J | | |
| | T<16 | 16<T<40 | >40 | MPa | Along | Across | Along | Across | 0°C |
| | MPa | MPa | MPa | | Along | Across | 0°C | -10°C | |
| P235TR1 | 235 | 225 | - | 360-500 | 25 | 23 | - | - | - |

Measurement deviations
Tolerance for external diameter (D) and wall thickness (T)

| External diameter D | Tolerance for D | Tolerance for T | |
|------------------------|---|---|--|
| D ≤ 219.1 | ± 1% or ± 0.5 mm Greatest value applies | T ≤ 5 | 5 < T ≤ 40 |
| D > 219.1 | ± 0.75% or ± 6 mm Greatest value applies | ± 10% or ± 0.5 mm Greatest value applies | ± 8% or ± 2 mm Greatest value applies |

Straightness
Straightness deviation shall not exceed 0.0015L (where L=delivery length).
Locally, straightness deviation shall not exceed 3 mm per meter.

Surface condition
The tube shall be free from external faults that can be detected visually. The surface may be repaired.
However, nominal size may not be reduced.

Cold formed profiles - standard & special

Cold formed profiles

The development of cold formed profiles during the last few years has allowed them to often replace hot rolled profiles. Many have discovered that cold formed L and U profiles are a better, simpler and cheaper alternative, since they guarantee an optimum ratio of weight per meter and bending resistance.

Special profiles

In addition to standard profiles, we can also supply profiles in accordance with your wishes; special profiles. Heléns adapt special profiles according to your needs. Our possibilities are almost limitless and you do not need to adapt to suit a standard. You can have a product that is so fully processed that it can be put straight into production.



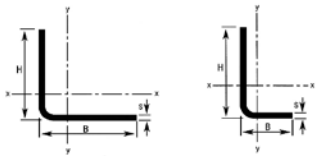
Cold formed profiles page 118 - 120

Cold formed profiles / Special profiles page 121 - 123



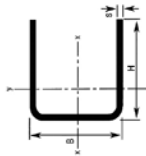
Cold formed profiles

The profiles are manufactured according to EN 10162 in quality S235J2G3C from unpickled strip. Additional dimensions and special designs can be offered on request.



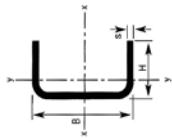
L-profile

| Dimension H x B x S | Vikt kg/m | I _x cm ⁴ | W _x cm ³ | I _y cm ⁴ | W _y cm ³ |
|------------------------|--------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| 15 x 15 x 2,0 | 0,42 | 0,11 | 0,11 | 0,11 | 0,11 |
| 20 x 20 x 2,0 | 0,58 | 0,28 | 0,20 | 0,28 | 0,20 |
| 25 x 25 x 2,0 | 0,74 | 0,57 | 0,32 | 0,57 | 0,32 |
| 30 x 30 x 2,0 | 0,89 | 1,01 | 0,47 | 1,01 | 0,47 |
| 30 x 30 x 3,0 | 1,30 | 1,43 | 0,68 | 1,43 | 0,68 |
| 40 x 40 x 2,0 | 1,20 | 2,45 | 0,84 | 2,45 | 0,84 |
| 40 x 40 x 3,0 | 1,77 | 3,54 | 1,23 | 3,54 | 1,23 |
| 40 x 40 x 4,0 | 2,31 | 4,52 | 1,60 | 4,52 | 1,60 |
| 45 x 45 x 4,0 | 2,63 | 6,56 | 2,05 | 6,56 | 2,05 |
| 50 x 50 x 3,0 | 2,24 | 7,08 | 1,96 | 7,08 | 1,96 |
| 50 x 50 x 4,0 | 2,94 | 9,13 | 2,55 | 9,13 | 2,55 |
| 60 x 60 x 3,0 | 2,72 | 12,44 | 2,85 | 12,44 | 2,85 |
| 70 x 70 x 5,0 | 5,15 | 31,62 | 6,32 | 31,62 | 6,32 |
| 75 x 75 x 4,0 | 4,50 | 32,10 | 5,92 | 32,10 | 5,92 |
| 80 x 80 x 5,0 | 5,90 | 47,93 | 8,34 | 47,93 | 8,34 |
| 30 x 20 x 2,0 | 0,74 | 0,87 | 0,44 | 0,32 | 0,21 |
| 40 x 20 x 2,0 | 0,89 | 1,92 | 0,75 | 0,35 | 0,22 |
| 50 x 30 x 3,0 | 1,77 | 5,93 | 1,80 | 1,67 | 0,72 |
| 60 x 30 x 3,0 | 2,01 | 9,78 | 2,54 | 1,72 | 0,72 |
| 60 x 40 x 3,0 | 2,22 | 10,78 | 2,68 | 3,98 | 1,30 |
| 100 x 50 x 4,0 | 4,50 | 61,19 | 9,53 | 11,09 | 2,78 |
| 125 x 65 x 5,0 | 7,10 | 151,55 | 18,74 | 30,31 | 5,87 |
| 150 x 50 x 5,0 | 7,60 | 224,00 | 24,96 | 14,50 | 3,52 |



U-profile

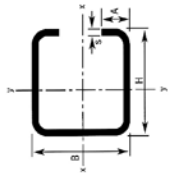
| Dimension H x B x S x s | Weight kg/m | I _x cm ⁴ | W _x cm ³ | I _y cm ⁴ | W _y cm ³ |
|----------------------------|----------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| 16 x 16 x 16 x 2.0 | 0.63 | 0.32 | 0.39 | 0.21 | 0.22 |
| 20 x 20 x 20 x 2.0 | 0.84 | 0.68 | 0.68 | 0.43 | 0.35 |
| 25 x 25 x 25 x 2.0 | 1.10 | 1.42 | 1.13 | 0.88 | 0.56 |
| 30 x 30 x 30 x 2.0 | 1.34 | 2.56 | 1.71 | 1.57 | 0.83 |
| 30 x 30 x 30 x 3.0 | 1.90 | 3.40 | 2.27 | 2.16 | 1.19 |
| 35 x 35 x 35 x 2.0 | 1.57 | 4.19 | 2.39 | 2.54 | 1.14 |
| 35 x 35 x 35 x 3.0 | 2.25 | 5.78 | 3.24 | 3.61 | 1.65 |
| 40 x 40 x 40 x 2.0 | 1.81 | 6.40 | 3.20 | 3.83 | 1.50 |
| 40 x 40 x 40 x 3.0 | 2.59 | 8.93 | 4.46 | 5.51 | 2.19 |
| 50 x 50 x 50 x 3.0 | 3.31 | 18.26 | 7.31 | 11.09 | 3.48 |
| 50 x 50 x 50 x 4.0 | 4.31 | 22.79 | 9.12 | 14.14 | 4.52 |
| 60 x 60 x 60 x 3.0 | 4.02 | 32.20 | 10.73 | 19.56 | 5.10 |



Unequal U-profile

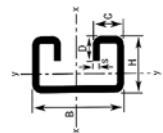
| Dimension H x B x S x s | Vikt kg/m | I _x cm ⁴ | W _x cm ³ | I _y cm ⁴ | W _y cm ³ |
|----------------------------|--------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| 20 x 30 x 20 x 2,0 | 1,02 | 1,77 | 1,18 | 0,51 | 0,38 |
| 20 x 40 x 20 x 2,0 | 1,13 | 3,47 | 1,74 | 0,56 | 0,40 |
| 20 x 50 x 20 x 3,0 | 1,85 | 8,08 | 3,23 | 0,84 | 0,59 |
| 30 x 40 x 30 x 3,0 | 2,12 | 6,72 | 3,36 | 2,47 | 1,26 |
| 70 x 40 x 70 x 3,0 | 4,00 | 15,70 | 7,55 | 25,76 | 6,26 |
| 20 x 50 x 20 x 3,0 | 1,85 | 8,08 | 3,23 | 0,84 | 0,59 |
| 20 x 50 x 20 x 4,0 | 2,35 | 9,31 | 3,72 | 1,00 | 0,74 |
| 25 x 50 x 25 x 3,0 | 2,12 | 9,73 | 3,89 | 1,61 | 0,92 |
| 30 x 50 x 30 x 2,5 | 2,00 | 9,88 | 3,95 | 2,29 | 1,11 |
| 35 x 50 x 35 x 3,0 | 2,55 | 13,06 | 5,22 | 4,09 | 1,77 |
| 40 x 50 x 40 x 3,0 | 2,82 | 14,95 | 5,98 | 6,00 | 2,28 |
| 30 x 60 x 30 x 3,0 | 2,60 | 17,91 | 5,97 | 2,87 | 1,35 |
| 30 x 60 x 30 x 4,0 | 3,40 | 21,78 | 7,26 | 3,61 | 1,74 |
| 40 x 60 x 40 x 3,0 | 3,08 | 22,79 | 7,60 | 6,41 | 2,36 |
| 40 x 70 x 40 x 3,0 | 3,26 | 32,14 | 9,18 | 6,72 | 2,42 |
| 50 x 70 x 50 x 4,0 | 4,93 | 49,73 | 14,22 | 16,10 | 4,81 |
| 40 x 80 x 40 x 3,0 | 3,55 | 44,53 | 11,13 | 7,08 | 2,47 |
| 40 x 80 x 40 x 5,0 | 5,59 | 65,76 | 16,44 | 10,74 | 3,91 |
| 30 x 100 x 30 x 3,0 | 3,50 | 6030 | 12,06 | 3,33 | 1,45 |

| Dimension H x B x S x s | Vikt kg/m | I _x cm ⁴ | W _x cm ³ | I _y cm ⁴ | W _y cm ³ |
|----------------------------|--------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| 50 x 100 x 50 x 3,0 | 4,49 | 89,48 | 17,90 | 14,17 | 3,91 |
| 50 x 100 x 50 x 4,0 | 5,88 | 110,14 | 22,03 | 18,25 | 5,11 |
| 50 x 100 x 50 x 5,0 | 7,21 | 132,85 | 26,57 | 21,64 | 6,26 |
| 40 x 120 x 40 x 4,0 | 5,97 | 147,29 | 24,55 | 10,37 | 3,40 |
| 60 x 120 x 60 x 4,0 | 7,15 | 201,14 | 33,52 | 32,60 | 7,48 |
| 60 x 120 x 60 x 6,0 | 10,38 | 275,47 | 45,91 | 44,87 | 10,68 |
| 60 x 140 x 60 x 4,0 | 7,80 | 298,60 | 42,66 | 34,18 | 7,64 |
| 60 x 140 x 60 x 5,0 | 9,57 | 344,40 | 49,20 | 41,27 | 9,37 |
| 60 x 140 x 60 x 6,0 | 11,32 | 409,96 | 58,14 | 47,78 | 10,99 |
| 70 x 140 x 70 x 4,0 | 8,30 | 325,84 | 46,55 | 51,85 | 10,27 |
| 70 x 140 x 70 x 5,0 | 10,40 | 390,35 | 56,48 | 63,23 | 12,65 |
| 60 x 160 x 60 x 5,0 | 10,40 | 481,09 | 60,14 | 42,76 | 9,55 |
| 60 x 160 x 60 x 6,0 | 12,26 | 561,17 | 70,15 | 49,80 | 11,18 |
| 70 x 160 x 70 x 6,0 | 13,10 | 631,70 | 78,96 | 77,38 | 15,29 |
| 70 x 180 x 70 x 6,0 | 14,00 | 839,69 | 92,97 | 80,27 | 15,45 |
| 60 x 200 x 60 x 6,0 | 14,00 | 964,77 | 96,48 | 53,28 | 11,58 |
| 70 x 200 x 70 x 6,0 | 14,90 | 1077,72 | 107,77 | 82,84 | 15,69 |
| 80 x 200 x 80 x 6,0 | 15,90 | 1173,50 | 117,35 | 120,07 | 20,22 |
| 75 x 250 x 75 x 6,0 | 17,80 | 1943,00 | 155,44 | 107,27 | 18,43 |



C-profile

| Dimension A x H x B x H x A x s | Weight kg/m | I _x cm ⁴ | W _x cm ³ | I _y cm ⁴ | W _y cm ³ |
|---|----------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| HR 41-10 8.0 x 15 x 28 x 15 x 8.0 x 2.0 | 0.97 | 1.44 | 1.03 | 0.40 | 0.46 |
| HR 41-15 8.5 x 19 x 34 x 19 x 8.5 x 2.0 | 1.18 | 2.75 | 1.63 | 0.77 | 0.67 |
| HR 41-19 7.0 x 25 x 25 x 25 x 7.0 x 2.0 | 1.19 | 1.61 | 1.29 | 1.30 | 0.93 |
| HR 41-24 10.0 x 30 x 30 x 30 x 10.0 x 2.0 | 1.54 | 2.92 | 1.95 | 2.50 | 1.52 |
| HR 41-25 14.0 x 30 x 50 x 30 x 14.0 x 3.0 | 2.76 | 9.02 | 3.61 | 2.78 | 1.50 |
| HR 41-42 10.0 x 40 x 50 x 40 x 10.0 x 3.0 | 3.04 | 16.86 | 6.74 | 8.50 | 3.54 |
| HR 41-45 15.0 x 50 x 100 x 50 x 15.0 x 3.0 | 4.95 | 103.54 | 20.71 | 22.11 | 6.79 |



Anchor profile

| Dimension D x C x H x B x H x C x D x s | Weight kg/m | I _x cm ⁴ | W _x cm ³ | I _y cm ⁴ | W _y cm ³ |
|---|----------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| HR 46 -30 6 x 11 x 22 x 40 x 22 x 11 x 6 x 2 | 1.57 | 4.82 | 2.41 | 1.31 | 1.02 |
| HR 46 -32 6 x 13 x 26 x 48 x 26 x 13 x 6 x 2 | 1.86 | 1.86 | 3.50 | 2.40 | 1.60 |
| HR 46 -35 8 x 14 x 30 x 50 x 30 x 14 x 8 x 3 | 2.99 | 2.99 | 5.73 | 5.10 | 3.07 |

Mechanical characteristics

| Steel quality in accordance with EN | Yield strength R _{eH} MPa min. mm ² | Tensile strength R _m MPa | Extension A ₅ min. % |
|--|--|--|---------------------------------|
| S235J2G3C | 235 | 360-440 | 25 |

Cold-formed profiles or hot-rolled UNP beam?

The table below compares three UNP beams with alternative cold formed U-profiles. As can be seen in the table, a considerable saving in weight can be achieved by replacing UNP beams with cold-formed U-profiles.

| Dimension | Weight kg/m | I _x cm ⁴ | W _x cm ³ | I _y cm ⁴ | W _y cm ³ |
|------------------------------|----------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| UNP 3 33 x 30 x 33 x 5.7 | 4.27 | 6.39 | 4.26 | 5.33 | 2.68 |
| U-profile 45 x 45 x 45 x 3 | 2.94 | 13.41 | 5.96 | 8.16 | 2.83 |
| UNP 5 38 x 50 x 38 x 5-7 | 5.59 | 26.40 | 10.60 | 9.12 | 3.75 |
| U-profile 50 x 70 x 50 x 3 | 3.76 | 40.24 | 11.50 | 12.74 | 3.73 |
| UNP 10 50 x 100 x 50 x 6-8.5 | 10.60 | 206.00 | 41.20 | 29.30 | 8.49 |
| U-profile 60 x 120 x 60 x 5 | 8.83 | 253.96 | 42.33 | 39.85 | 9.23 |

Cold formed profiles

Special profiles

In addition to standard profiles, we can also supply profiles in accordance with your wishes; special profiles. Heléns adapts special profiles according to your needs. Our possibilities are almost limitless and you do not need to adapt to suit a standard. You can have a product that is so fully processed that it can be put straight into production.

Examples of materials used for profile manufacture

- Hot rolled strip
- Cold rolled strip
- Hot dip galvanized
- Electro-galvanized
- Painted
- Foil coated
- Stainless
- Aluminium

Heléns can supply profiles in the majority of qualities available on the market. We are even experienced in supplying ultra-high tensile steel with an upper yield point of up to 1200 N/mm2.

Examples of additional processing of special profiles

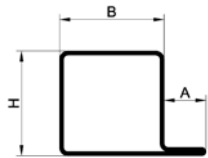
- Laser cutting
- Bending (also 3D)
- Piercing/Punching
- Embossing
- Hot dip galvanizing
- Laser welding

| Special profiles | Open profiles | Welded profiles |
|------------------|---------------------|---------------------|
| Profile height | max. approx. 300 mm | max. approx. 200 mm |
| Wall thickness | 0.3 - 12.5 mm | 1.0 - 7.0 mm |
| Max. length | 24000 mm | 24000 mm |
| Min. quantity | approx. 3000 m | approx. 5000 m |

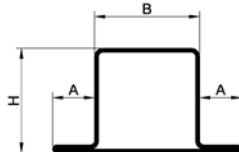
RP-profiles

RP-Rohr® is a registered trademark, included in the Welser-group. RP profiles are well known for their high quality and accuracy, which matches our ambition to supply high quality products. Heléns has exclusive marketing rights for RP profiles in Sweden and the Baltic states. RP-Technik's wide assortment suits the requirements of our innovative customers.

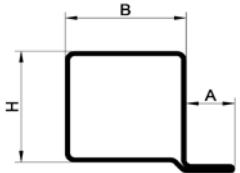
RP-profiles can be found in many different branches, e.g. automotive, machine construction, furniture, material handling, etc. The profiles are made from pickled hot strip in quality S235JRG2 in lengths of 6000 mm +50/-0 mm. Most dimensions can also be obtained in galvanized or stainless (W. 1.4301). Other special materials, surface finish, odd length requirements, fixed lengths, can be accommodated.



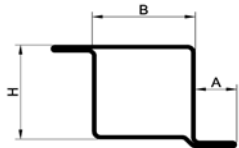
| Prod. id | H | B | A | t |
|----------|----|-----|----|-----|
| 144 | 34 | 20 | 15 | 2.0 |
| 106 | 34 | 35 | 15 | 2.0 |
| 1191 | 34 | 50 | 15 | 2.0 |
| 104 | 34 | 55 | 15 | 2.0 |
| 1092 | 34 | 100 | 15 | 2.0 |
| 1114 | 40 | 20 | 15 | 2.0 |
| 1008 | 40 | 40 | 15 | 2.0 |
| 1049 | 40 | 60 | 15 | 2.0 |
| 1087 | 40 | 70 | 15 | 2.0 |
| 116 | 40 | 80 | 15 | 2.0 |
| 1692 | 40 | 20 | 20 | 2.0 |
| 1672 | 40 | 30 | 20 | 1.8 |
| 1683 | 40 | 40 | 20 | 2.0 |
| 1673 | 40 | 60 | 20 | 1.8 |
| 1679 | 40 | 70 | 20 | 2.0 |
| 197 | 50 | 20 | 20 | 2.0 |
| 1072 | 50 | 40 | 20 | 2.0 |
| 1810 | 50 | 50 | 20 | 2.0 |
| 1688 | 50 | 90 | 20 | 2.0 |
| 1647 | 60 | 20 | 20 | 2.0 |
| 1592 | 60 | 40 | 20 | 2.0 |
| 1645 | 60 | 50 | 20 | 2.0 |
| 1593 | 80 | 60 | 20 | 2.5 |



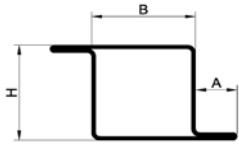
| Prod. id | H | B | A | t |
|----------|----|-----|----|-----|
| 143 | 34 | 20 | 15 | 2.0 |
| 105 | 34 | 35 | 15 | 2.0 |
| 1050 | 34 | 40 | 15 | 2.0 |
| 103 | 34 | 50 | 15 | 2.0 |
| 150 | 34 | 55 | 15 | 2.0 |
| 1266 | 34 | 100 | 15 | 2.0 |
| 185 | 40 | 20 | 15 | 2.0 |
| 152 | 40 | 40 | 15 | 2.0 |
| 1693 | 40 | 20 | 20 | 2.0 |
| 1684 | 40 | 40 | 20 | 2.0 |
| 1690 | 40 | 70 | 20 | 2.0 |
| 193 | 50 | 20 | 20 | 2.0 |
| 1070 | 50 | 40 | 20 | 2.0 |
| 1811 | 50 | 50 | 20 | 2.0 |
| 1689 | 50 | 90 | 20 | 2.0 |
| 1596 | 60 | 40 | 20 | 2.0 |
| 1646 | 60 | 50 | 20 | 2.0 |
| 1597 | 80 | 60 | 20 | 2.5 |



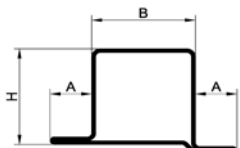
| Prod. id | H | B | A | t |
|----------|----|----|------|-----|
| 133 | 34 | 35 | 15 | 2.0 |
| 114 | 34 | 55 | 15 | 2.0 |
| 1640 | 40 | 40 | 20 | 2.0 |
| 1628 | 40 | 50 | 20 | 2.0 |
| 1613 | 40 | 40 | 17.5 | 2.0 |
| 1348 | 40 | 70 | 17.5 | 2.0 |



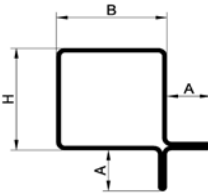
| Prod. id | H | B | A | t |
|----------|----|----|----|-----|
| 169 | 34 | 20 | 15 | 2.0 |
| 139 | 34 | 35 | 15 | 2.0 |
| 111 | 34 | 50 | 15 | 2.0 |
| 112 | 34 | 50 | 15 | 2.0 |
| 138 | 34 | 35 | 15 | 2.0 |
| 1163 | 40 | 20 | 15 | 2.0 |
| 1162 | 40 | 40 | 15 | 2.0 |
| 1685 | 40 | 40 | 20 | 2.0 |
| 1680 | 40 | 40 | 20 | 2.0 |
| 195 | 50 | 20 | 20 | 2.0 |
| 1071 | 50 | 40 | 20 | 2.0 |
| 1812 | 50 | 50 | 20 | 2.0 |
| 1594 | 60 | 40 | 20 | 2.0 |
| 1595 | 80 | 60 | 20 | 2.0 |



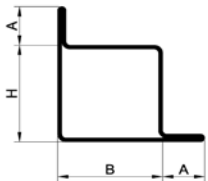
| Prod. id | H | B | A | t |
|----------|----|----|------|-----|
| 112 | 34 | 50 | 15 | 2.0 |
| 138 | 35 | 34 | 15 | 2.0 |
| 1680 | 40 | 40 | 20 | 2.0 |
| 1614 | 40 | 40 | 17.5 | 2.0 |
| 1094 | 40 | 70 | 17.5 | 2.0 |
| 1681 | 50 | 40 | 20 | 2.0 |
| 1601 | 60 | 40 | 20 | 2.0 |
| 1602 | 80 | 60 | 20 | 2.5 |



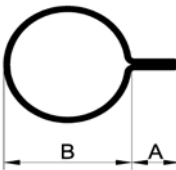
| Prod. id | H | B | A | t |
|----------|----|----|------|-----|
| 140 | 34 | 35 | 15 | 2.0 |
| 113 | 34 | 50 | 15 | 2.0 |
| 1639 | 40 | 40 | 20 | 2.0 |
| 1615 | 40 | 40 | 17.5 | 2.0 |
| 1093 | 40 | 70 | 17.5 | 2.0 |
| 1682 | 50 | 40 | 20 | 2.0 |
| 1598 | 60 | 40 | 20 | 2.0 |
| 1600 | 80 | 60 | 20 | 2.5 |



| Prod. id | H | B | A | t |
|----------|----|----|----|-----|
| 141 | 34 | 34 | 15 | 2.0 |



| Prod. id | H | B | A | t |
|----------|----|----|----|-----|
| 142 | 34 | 34 | 15 | 2.0 |



| Prod. id | H | B | A | t |
|----------|----|----|-----|---|
| 202 | 32 | 15 | 1.5 | |

Welded precision steel tubes

Heléns' welded precision steel tube has properties that give the tube excellent formability, weldability, strength, accuracy, surface quality and coatability. Together, these properties give great freedom in dimensioning and design, and thereby the possibility to create styleful and assemblies constructions.



Round steel tubes EN 10305-3 (DIN 2394) . . . page 126 - 127

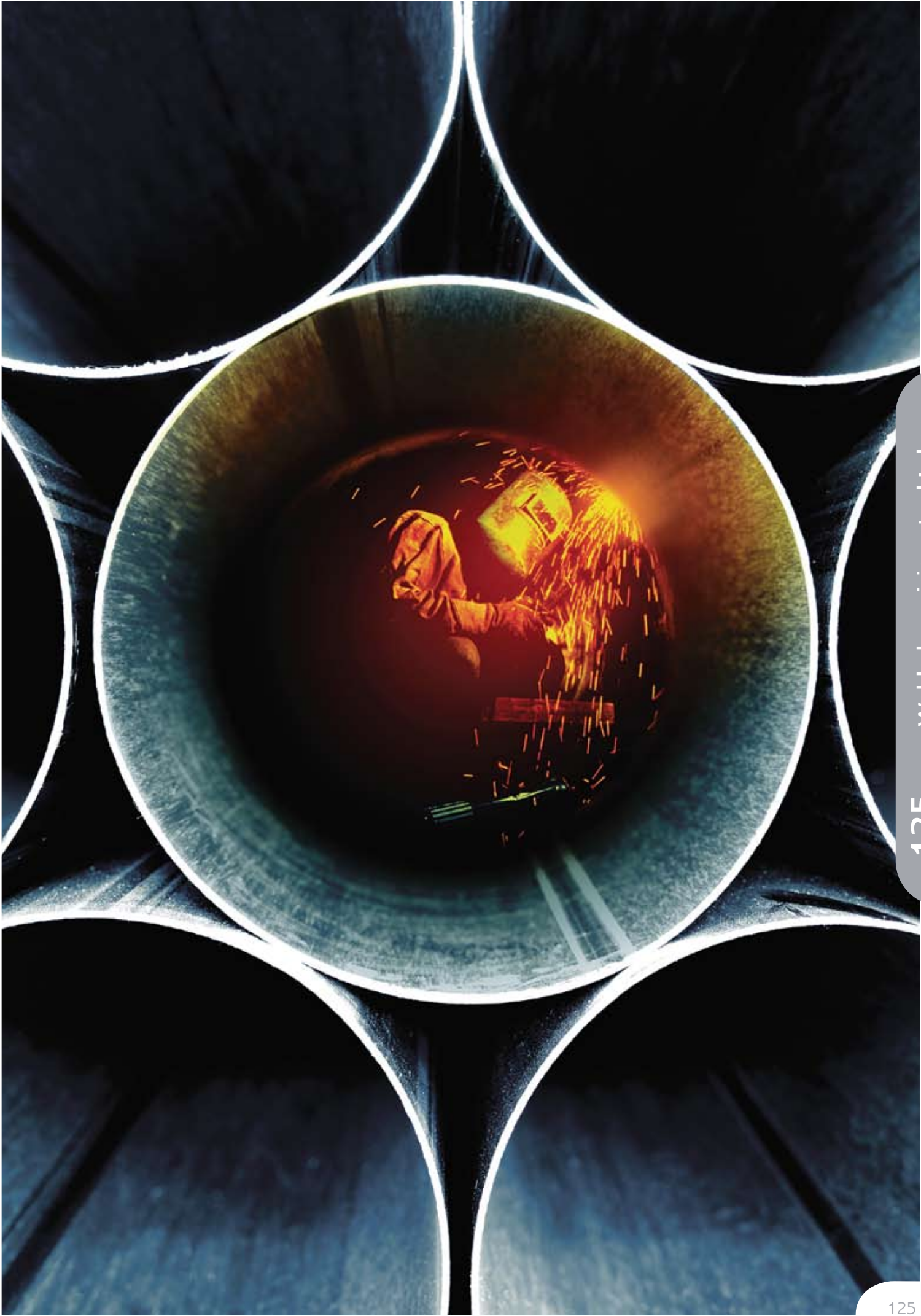
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Welded square tubes EN 10305-5 (DIN 2395) . page 130

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Welded precision steel tubes

Round steel tube manufactured according to EN 10305-3 (DIN 2394)

Our stock is manufactured from tube made from cold rolled strip; E220 + CR2, S3 or pickled hot rolled strip; E220 + CR2, S2. The tube is stocked in fabrication lengths of 6100 mm and is lightly oiled.

| Dimension | Weight | Type | |
|--------------|--------|---------|-------------|
| | kg/m | Pickled | Cold rolled |
| 8.00 x 1.00 | 0.173 | | X |
| 9.50 x 1.00 | 0.210 | | X |
| 10.00 x 1.00 | 0.222 | | X |
| 10.00 x 1.50 | 0.314 | | X |
| 10.00 x 2.00 | 0.394 | | X |
| 12.00 x 1.00 | 0.271 | | X |
| 12.00 x 1.50 | 0.388 | | X |
| 12.70 x 1.00 | 0.289 | | X |
| 12.70 x 1.25 | 0.353 | | X |
| 12.70 x 1.50 | 0.414 | | X |
| 13.00 x 1.50 | 0.425 | | X |
| 14.00 x 1.00 | 0.321 | | X |
| 14.00 x 1.50 | 0.462 | | X |
| 14.00 x 2.00 | 0.592 | | X |
| 15.00 x 1.00 | 0.345 | | X |
| 15.00 x 1.50 | 0.499 | | X |
| 15.00 x 2.00 | 0.640 | | X |
| 16.00 x 1.00 | 0.370 | | X |
| 16.00 x 1.50 | 0.536 | | X |
| 16.00 x 2.00 | 0.691 | | X |
| 18.00 x 1.00 | 0.419 | | X |
| 18.00 x 1.50 | 0.610 | | X |
| 18.00 x 2.00 | 0.789 | | X |
| 19.00 x 1.00 | 0.444 | | X |
| 19.00 x 1.25 | 0.547 | | X |
| 19.00 x 1.50 | 0.647 | | X |
| 19.00 x 2.00 | 0.838 | | X |
| 20.00 x 1.00 | 0.469 | | X |
| 20.00 x 1.25 | 0.578 | | X |

| Dimension | Weight | Type | |
|--------------|--------|---------|-------------|
| | kg/m | Pickled | Cold rolled |
| 20.00 x 1.50 | 0.684 | | X |
| 20.00 x 2.00 | 0.888 | | X |
| 20.00 x 2.50 | 1.080 | | X |
| 20.00 x 3.00 | 1.258 | | X |
| 21.00 x 1.50 | 0.721 | | X |
| 22.00 x 1.00 | 0.518 | | X |
| 22.00 x 1.25 | 0.640 | | X |
| 22.00 x 1.50 | 0.758 | | X |
| 22.00 x 2.00 | 0.986 | | X |
| 22.00 x 2.50 | 1.200 | | X |
| 22.00 x 3.00 | 1.405 | | X |
| 25.00 x 1.00 | 0.592 | | X |
| 25.00 x 1.25 | 0.732 | | X |
| 25.00 x 1.50 | 0.869 | | X |
| 25.00 x 2.00 | 1.130 | X | X |
| 25.00 x 2.50 | 1.390 | | X |
| 25.00 x 3.00 | 1.628 | | X |
| 25.40 x 1.25 | 0.744 | | X |
| 25.40 x 1.50 | 0.884 | | X |
| 27.00 x 2.00 | 1.230 | X | |
| 28.00 x 1.00 | 0.666 | | X |
| 28.00 x 1.25 | 0.825 | | X |
| 28.00 x 1.50 | 0.980 | | X |
| 28.00 x 2.00 | 1.280 | | X |
| 28.00 x 2.50 | 1.570 | | X |
| 28.60 x 1.50 | 1.000 | | X |
| 30.00 x 1.50 | 1.381 | | X |
| 30.00 x 2.00 | 1.381 | | X |
| 30.00 x 2.50 | 1.700 | | X |

| Dimension | Weight | Type | |
|--------------|--------|---------|-------------|
| | kg/m | Pickled | Cold rolled |
| 30.00 x 3.00 | 2.000 | | X |
| 32.00 x 1.50 | 1.130 | | X |
| 32.00 x 2.00 | 1.480 | | X |
| 32.00 x 2.50 | 1.820 | | X |
| 32.00 x 3.00 | 2.145 | X | |
| 35.00 x 1.00 | 0.838 | | X |
| 35.00 x 1.50 | 1.240 | | X |
| 35.00 x 2.00 | 1.630 | X | |
| 35.00 x 2.50 | 2.000 | X | |
| 35.00 x 3.00 | 2.368 | | X |
| 38.00 x 1.00 | 0.912 | | X |
| 38.00 x 1.50 | 1.350 | | X |
| 38.00 x 2.00 | 1.780 | | X |
| 38.00 x 2.50 | 2.190 | | X |
| 38.00 x 3.00 | 2.589 | | X |
| 40.00 x 1.50 | 1.420 | | X |
| 40.00 x 2.00 | 1.870 | | X |
| 40.00 x 2.50 | 2.310 | X | |
| 40.00 x 3.00 | 2.737 | | X |
| 42.00 x 2.00 | 1.970 | | X |
| 44.50 x 1.50 | 1.590 | | X |
| 44.50 x 2.00 | 1.720 | | X |
| 44.50 x 2.50 | 2.590 | X | |
| 45.00 x 1.50 | 1.610 | X | |
| 45.00 x 2.00 | 2.120 | X | |
| 45.00 x 3.00 | 3.107 | | X |
| 48.00 x 1.50 | 1.720 | | X |
| 48.00 x 2.00 | 2.270 | | X |
| 48.00 x 2.00 | 2.270 | | X |
| 48.00 x 3.00 | 3.329 | | X |
| 50.00 x 1.50 | 1.790 | | X |

| Dimension | Weight | Type | |
|---------------|--------|---------|-------------|
| | kg/m | Pickled | Cold rolled |
| 50.00 x 2.00 | 2.370 | X | |
| 50.80 X 1.25 | 1.530 | | x |
| 50.80 X 1.50 | 1.820 | | X |
| 50.80 x 2.00 | 2.410 | X | |
| 50.80 x 2.50 | 2.980 | X | |
| 50.80 x 3.00 | 3.536 | X | |
| 54.00 x 1.50 | 1.940 | X | |
| 54.00 x 2.00 | 2.570 | X | |
| 57.00 x 1.50 | 2.050 | | X |
| 57.00 x 2.00 | 2.710 | | X |
| 60.00 x 1.50 | 2.160 | | X |
| 60.00 x 2.00 | 2.860 | | X |
| 60.00 x 2.50 | 3.550 | | X |
| 60.00 x 3.00 | 4.220 | X | |
| 63.50 x 1.50 | 2.290 | | X |
| 63.50 x 2.00 | 3.030 | X | |
| 70.00 x 1.50 | 2.534 | X | |
| 70.00 x 2.00 | 3.354 | X | |
| 76.00 x 1.50 | 2.756 | | X |
| 76.00 x 2.00 | 3.660 | | X |
| 80.00 x 1.50 | 2.900 | X | |
| 80.00 x 2.00 | 3.847 | X | |
| 89.00 x 1.50 | 3.240 | | X |
| 89.00 x 2.00 | 4.290 | | X |
| 102.00 x 1.50 | 3.717 | | X |
| 102.00 x 2.00 | 4.933 | | X |
| 108.00 x 2.00 | 5.228 | | X |
| 114.00 x 1.50 | 4.172 | | X |
| 114.00 x 2.00 | 5.520 | | X |
| 127.00 x 2.00 | 6.165 | | X |
| 133.00 x 2.00 | 6.460 | | X |

Flat oval tube

| Dimension | Weight | Type | |
|----------------------|--------|---------|-------------|
| | kg/m | Pickled | Cold rolled |
| 36.00 x 16.00 x 1.50 | 1.050 | | X |
| 38.00 x 20.00 x 1.50 | 1.108 | | X |
| 40.00 x 20.00 x 1.50 | 1.160 | | X |
| 40.00 x 20.00 x 2.00 | 1.520 | | X |
| 45.00 x 17.00 x 1.50 | 1.233 | | X |
| 50.00 x 20.00 x 2.00 | 1.830 | | X |
| 60.00 x 30.00 x 2.00 | 2.320 | X | |

Technical information

Welded round precision tube according to EN 10305-3 (DIN 2394)

Delivery condition

| | Designation | Designation according to EN 10305-3 | Description |
|-----------------------|-------------|-------------------------------------|---|
| Welded and cold sized | + CR1 | BKM | Not normally heat treated, but intended for final annealing |
| Welded and cold sized | + CR2 | BKM | Not intended for heat treatment |
| Annealed | + A | GBK | Annealed in a controlled atmosphere |
| Normalised | + N | NBK | Normalised in a controlled atmosphere |

We mainly stock tubes in accordance with +CR2.
Tube in accordance with +CR 1 may be available in certain dimensions in the outer areas.
Tube in accordance with +A and +N can be offered on request.

Surface characteristic

The tube has, with regard to the manufacturing method, a high surface fineness. Small surface faults, such as ridges and depressions, scratches, etc. due to the manufacturing method, can occur.

| | Designation | Surface fineness Ra value* | Use |
|-----------------------|-------------|----------------------------|---|
| Unpickled hot strip | S1 | - | |
| Pickled hot strip | S2 | 2.0 my | Painting, electro-galvanizing, suitable for hot galvanizing |
| Cold rolled strip | S3 | 0.6 my | Painting, electro-galvanizing, suitable for hot galvanizing |
| Surface treated strip | S4 | - | For demanding corrosion conditions |

* The Ra values given in the table do not apply to the weld seam area.

Galvanized tube

| Designation | Surface pattern | Zinc coating mass | Zinc coating thickness |
|-------------|-----------------|---------------------|------------------------|
| Z275 | M | 275g/m ² | 20 my |

Galvanized tubes can be delivered in other thicknesses depending on your needs, 100-350 g/m2

Mechanical characteristics

| Material | Delivery condition | Strength | | Elongation A ₅ % | Former designation DIN 2395 |
|--------------------|--------------------|---------------------|--------------------|-----------------------------|-----------------------------|
| | | R _{eH} MPa | R _m MPa | | |
| E220 ¹⁾ | +CR2 | 220 | 310 | 23 | Fe P01 |
| E235 | +CR1 | - | 390 | 7 | R St 37-2 |
| E370 | +CR2 | 370 | 450 | 15 | St 44 |
| E355 | +CR1 | - | 540 | 5 | St 52-3 |

The mechanical values apply to completed tubes. The designation of the steel gives the nominal yield strength for complet tube.

1) Standard material

Tolerances

For tube of type +CR1 and +CR2, the diametrical deviation in the table below applies. Permitted diametrical deviation includes any ovality.

Heléns comment: For heat treated tube, e.g. annealed (+A) or normalised (+N), the diametrical tolerance dependant on the dimension can be larger.

Tolerances, wall thickness according to EN 10305-3

Tolerance for wall thickness (T) is at T less than or equal to 1.5 mm +/- 0,15 mm and with T greater than 1.5 mm +/- 10% of nominal size – but at the most, 0.35 mm. The stated size deviations do not apply to the weld zone.

Heléns comment: Inner diameter not given.

| Tolerances, OD according to EN 10305-3 | |
|--|---------------------|
| Nominal size mm | Permitted deviation |
| 6-19 mm | +/- 0.12 mm |
| 20-30 mm | +/- 0.15 mm |
| 32-42.4 mm | +/- 0.20 mm |
| 44-51 mm | +/- 0.25 mm |
| 55-63.5 mm | +/- 0.30 mm |
| 70-76 mm | +/- 0.35 mm |
| 80-90 mm | +/- 0.40 mm |

Tolerance for height of internal weld bead according to Heléns' standard specification

The tolerance for the height of the internal weld bead for material with wall thickness (T) up to 1.5 mm, is max. 0.6 mm. For material with T between 1.5 mm to 4.0 mm, the maximum height of the internal weld seam is 0.4 x T.

Straightness

Straightness deviation may be 0.20% of the total length for tubes with OD greater than 15 mm. The straightness tolerance shall never exceed 3 mm per meter. This tolerance is measured between the tube and a straight line that connects any two points at a distance of 1000 mm. With fixed lengths up to max. 1000 mm, the straightness deviation may be up to 0.3% of any tube length. Tubes that have an outer diameter that is less than 15 mm, are delivered commercially straightened.

Heléns comment: Demands in excess of the above measuring method, straightness tolerance, etc. shall be the subject of an agreement.

Tube ends

Tubes are cut wherever possible at right angles to the axis of the tube. Tubes can be delivered with the ends produced by the cutting method usually used. Depending on the cutting method, diametrical changes outside the normal tolerances can occur. For fixed lengths, the characteristics of the ends shall be the subject of agreement.

Tolerance of delivered quantities

With fixed lengths, delivery of quantities less than ordered is not allowed. Delivery of excess quantities is permitted in accordance with the ordered quantity as below:

| | |
|----------------------|--------------------------|
| Up to 500 m, | permitted deviation +20% |
| 500-2000 m, | permitted deviation +15% |
| greater than 2000 m, | permitted deviation +10% |

Welded precision steel tubes

Welded square tubes according to EN 10305-5 (DIN 2395)

Our stock is manufactured from tubes made from cold rolled strip; E220 + CR2, S3 or pickled hot rolled strip; E220 + CR2, S2. The tube is stocked in fabrication lengths of 6100 mm and is lightly oiled.

| Dimension | Weight kg/m | Type | |
|----------------------|----------------|----------------|---------|
| | | Cold rolled | Pickled |
| 12.00 x 12.00 x 1.00 | 0.345 | X | |
| 15.00 x 15.00 x 1.50 | 0.632 | X | |
| 15.00 x 15.00 x 2.00 | 0.810 | | X |
| 16.00 x 16.00 x 1.50 | 0.679 | X | |
| 19.00 x 19.00 x 1.50 | 0.820 | X | |
| 20.00 x 10.00 x 1.00 | 0.438 | X | |
| 20.00 x 10.00 x 1.50 | 0.632 | X | |
| 20.00 x 15.00 x 1.50 | 0.750 | X | |
| 20.00 x 20.00 x 1.00 | 0.595 | X | |
| 20.00 x 20.00 x 1.25 | 0.733 | X | |
| 20.00 x 20.00 x 1.50 | 0.868 | X | |
| 20.00 x 20.00 x 2.00 | 1.120 | X | |
| 22.00 x 22.00 x 1.50 | 0.962 | X | |
| 22.00 x 22.00 x 2.00 | 1.250 | | X |
| 25.00 x 10.00 x 2.00 | 0.970 | X | |
| 25.00 x 15.00 x 2.00 | 1.120 | X | |
| 25.00 x 20.00 x 2.00 | 1.260 | | X |
| 25.00 x 25.00 x 1.25 | 0.930 | X | |
| 25.00 x 25.00 x 1.50 | 1.092 | X | |
| 25.00 x 25.00 x 2.00 | 1.440 | | X |
| 30.00 x 10.00 x 1.50 | 0.880 | X | |
| 30.00 x 15.00 x 1.50 | 0.985 | X | |
| 30.00 x 15.00 x 2.00 | 1.280 | | X |
| 30.00 x 20.00 x 1.25 | 0.932 | X | |
| 30.00 x 20.00 x 1.50 | 1.100 | | X |
| 30.00 x 20.00 x 2.00 | 1.440 | | X |
| 30.00 x 30.00 x 1.50 | 1.340 | | X |
| 30.00 x 30.00 x 2.00 | 1.750 | | X |
| 30.00 x 30.00 x 2.50 | 2.160 | | X |
| 32.00 x 32.00 x 2.50 | 2.316 | | X |
| 35.00 x 15.00 x 1.50 | 1.110 | X | |
| 35.00 x 15.00 x 2.00 | 1.440 | | X |
| 35.00 x 20.00 x 1.50 | 1.220 | | X |
| 35.00 x 20.00 x 2.00 | 1.590 | | X |
| 35.00 x 25.00 x 2.00 | 1.758 | | X |

| Dimension | Weight kg/m | Type | |
|----------------------|----------------|----------------|---------|
| | | Cold rolled | Pickled |
| 35.00 x 35.00 x 1.50 | 1.570 | | X |
| 35.00 x 35.00 x 2.00 | 2.070 | | X |
| 40.00 x 20.00 x 1.50 | 1.340 | | X |
| 40.00 x 20.00 x 2.00 | 1.730 | | X |
| 40.00 x 20.00 x 1.50 | 1.460 | | X |
| 40.00 x 25.00 x 2.00 | 1.910 | | X |
| 40.00 x 30.00 x 1.50 | 1.570 | | X |
| 40.00 x 30.00 x 2.00 | 2.070 | | X |
| 40.00 x 40.00 x 1.50 | 1.810 | | X |
| 40.00 x 40.00 x 2.00 | 2.380 | | X |
| 40.00 x 40.00 x 2.50 | 2.930 | | X |
| 40.00 x 40.00 x 3.00 | 3.330 | | X |
| 45.00 x 15.00 x 1.50 | 1.342 | | X |
| 45.00 x 15.00 x 2.00 | 1.750 | | X |
| 45.00 x 25.00 x 2.00 | 2.050 | | X |
| 45.00 x 45.00 x 2.00 | 2.690 | | X |
| 50.00 x 20.00 x 1.50 | 1.570 | | X |
| 50.00 x 20.00 x 2.00 | 2.070 | | X |
| 50.00 x 25.00 x 1.50 | 1.690 | | X |
| 50.00 x 30.00 x 2.00 | 2.380 | | X |
| 50.00 x 30.00 x 2.50 | 2.930 | | X |
| 50.00 x 50.00 x 1.50 | 2.280 | | X |
| 50.00 x 50.00 x 2.00 | 3.010 | | X |
| 50.00 x 50.00 x 2.50 | 3.720 | | X |
| 50.00 x 50.00 x 3.00 | 4.250 | | X |
| 55.00 x 34.00 x 2.00 | 2.669 | | X |
| 60.00 x 20.00 x 2.00 | 2.390 | | X |
| 60.00 x 30.00 x 2.00 | 2.690 | | X |
| 60.00 x 40.00 x 1.50 | 2.280 | | X |
| 60.00 x 40.00 x 2.00 | 3.010 | | X |
| 60.00 x 60.00 x 2.00 | 3.640 | | X |
| 70.00 x 20.00 x 2.00 | 2.700 | | X |
| 70.00 x 30.00 x 2.50 | 3.720 | | X |
| 80.00 x 40.00 x 2.00 | 3.640 | | X |
| 80.00 x 40.00 x 2.50 | 4.510 | | X |

Forging tube

Welded square tube, DIN 2395

Quality S235JR is a low-cost alternative that is perfectly suited for simpler types of construction with lower demands on the surface finish. Max Si content is 0.03% and it is suitable for hot dip galvanizing. The tube is unpickled and dry. Length of all forging tubes is 6000 mm -0/+50 mm.

| Dimension | Weight kg/m | Unpickled |
|----------------------|----------------|-----------|
| 30.00 x 30.00 x 2.00 | 1.750 | X |
| 40.00 x 40.00 x 2.00 | 2.380 | X |
| 50.00 x 30.00 x 2.00 | 2.380 | X |
| 50.00 x 50.00 x 2.00 | 3.010 | X |
| 50.00 x 50.00 x 3.00 | 4.250 | X |
| 60.00 x 30.00 x 3.00 | 3.800 | X |
| 60.00 x 40.00 x 2.00 | 3.010 | X |
| 60.00 x 60.00 x 3.00 | 5.220 | X |

Technical information

Welded square tube according to EN 10305-5 (DIN 2395)

Delivery condition

| | Designation | Designation according to EN 10305-5 | Description |
|-----------------------|-------------|-------------------------------------|---|
| Welded and cold sized | + CR1 | BKM | Not normally heat treated, but intended for final annealing |
| Welded and cold sized | + CR2 | BKM | Not intended for heat treatment |
| Annealed | + A | GBK | Annealed in a controlled atmosphere |
| Normalised | + N | NBK | Normalised in a controlled atmosphere |

We mainly stock tubes in accordance with +CR2.
Tubes in accordance with +CR 1 may occur in certain dimensions.
Tubes in accordance with +A and +N can be offered on request.

Surface characteristic

| | Designation | Surface fineness Ra value* | Use |
|-----------------------|-------------|----------------------------|---|
| Unpickled hot strip | S1 | - | |
| Pickled hot strip | S2 | 2.0 my | Painting, electro-galvanizing, suitable for hot galvanizing |
| Cold-rolled strip | S3 | 0.6 my | Painting, electro-galvanizing, suitable for hot galvanizing |
| Surface treated strip | S4 | - | For demanding corrosion conditions |

* The Ra values given in the table do not apply to the weld seam area.

Galvanized tubes

| Designation | Surface pattern | Zinc coating mass | Zinc coating thickness |
|-------------|-----------------|---------------------|------------------------|
| Z275 | M | 275g/m ² | 20 my |

Galvanized tubes can be delivered in other thicknesses depending on your needs, 100-350 g/m2

Mechanical characteristics

| Material | Delivery condition | Strength | | Extension A ₅ % | Former designation DIN 2395 |
|--------------------|--------------------|---------------------|--------------------|----------------------------|-----------------------------|
| | | R _{eH} MPa | R _m MPa | | |
| E220 ¹⁾ | +CR2 | 220 | 310 | 23 | Fe PO1 |
| E235 | +CR1 | - | 390 | 7 | R St 37-2 |
| E370 | +CR2 | 370 | 450 | 15 | St 44 |
| E355 | +CR1 | - | 540 | 5 | St 52-3 |

The mechanical values apply to completed tubes. The designation of the steel states the nominal minimum yield strength in completed tubes.
1) Standard material

Tolerances

For tube of type +CR1 and +CR2, the diametrical deviation in the table applies. Permitted diametrical deviation includes any ovality.
Heléns comment: For heat treated tube, e.g. annealed (+A) or normalised (+N), the diametrical tolerance dependant on the dimension can be larger.

Tolerances, wall thickness according to EN 10305-5

Tolerance for wall thickness (T) is at T less than or equal to 1.5 mm +/- 0,15 mm and with T greater than 1.5 mm +/- 10% of nominal size – but at the most, 0.35 mm. The stated size deviations do not apply to the weld zone.
Heléns comment: Inner diameter not given.

Tolerance for height of weld seam according to Heléns' standard specification

The tolerance for the height of the weld seam for material with wall thickness (T) up to 1.5 mm, is max. 0.6 mm. For material with T between 1.5 mm to 4.0 mm, the maximum height of the weld seam is 0.4 x T.

Curvature

Within the permitted height and width, the side surfaces may be dished inwards or outwards.

Right-angularity

Right-angle deviation may be 1°/meter.

Twisting

Twisting may be 1°/meter.

Straightness

Straightness deviation may be 0.25% of the total length for tubes with sides less than or equal to 30 mm and 0.15% on tubes with sides* larger than 30 mm. The straightness tolerance shall never exceed 3 mm per meter. This tolerance is measured between the tube and a straight line that connects any two points at a distance of 1000 mm. With fixed lengths up to max. 1000 mm, the straightness deviation may be up to 0.3% of any tube length.

* The shortest side if it is a question of a rectangular tube.
Heléns comment: Demands in excess of the above measuring method, straightness tolerance, etc. shall be the subject of an agreement.

Tube ends

Tubes are cut wherever possible at right angles to the axis of the tube. Tubes can be delivered with the ends produced by the cutting method usually used. This may cause diametrical changes outside the normal tolerances to occur. For fixed lengths, the characteristics of the ends shall be the subject of agreement.

Tolerance of delivered quantities

With fixed lengths, delivery of quantities less than ordered is not allowed. Delivery of excess quantities is permitted in accordance with the ordered quantity as below:

| | |
|----------------------|--------------------------|
| Up to 500 m, | permitted deviation +20% |
| 500–2000 m, | permitted deviation +15% |
| greater than 2000 m, | permitted deviation +10% |

| Tolerances, OD according to EN 10305-5 | | |
|---|---|---------------------|
| Outer diameter H Nom. measurement mm. | Outer diameter W Nom. measurement mm. | Permitted deviation |
| 15-20 | 15-20 | +/- 0.20 mm |
| 25-35 | 15-35 | +/- 0.25 mm |
| 40-50 | 20-50 | +/- 0.30 mm |
| 60 | 20-60 | +/- 0.35 mm |
| 70 | 40-70 | +/- 0.40 mm |
| 80 | 20-80 | +/- 0.50 mm |
| 90 | 90 | +/- 0.60 mm |
| 100 | 40-100 | +/- 0.65 mm |
| 120 | 40-60 | +/- 0.70 mm |

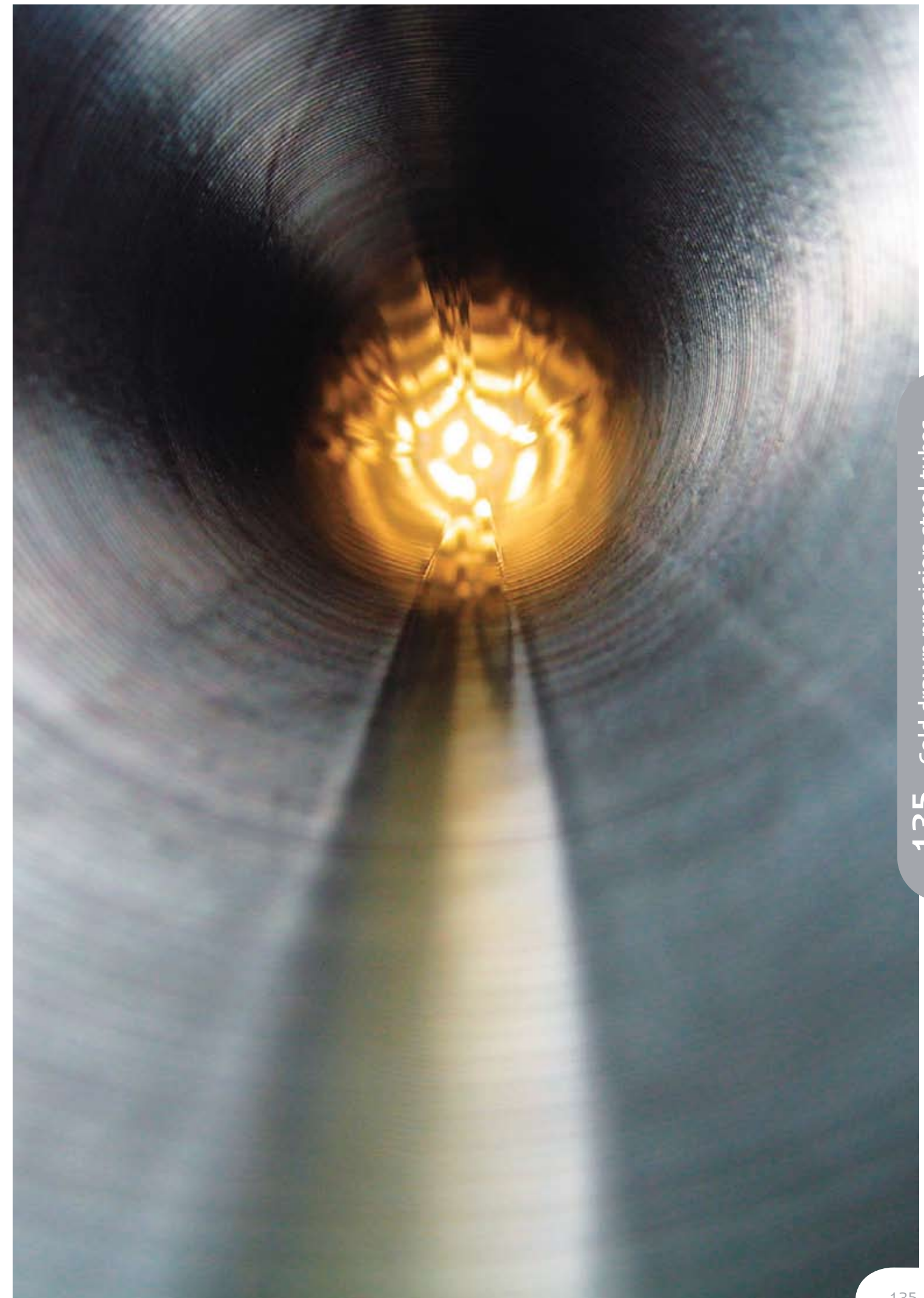
Cold drawn precision steel tubes

Heléns stock seamless, welded cold drawn or specially welded tube in normalized or cold drawn / hard delivery qualities.

The heat treated tubes are used in constructions where there is a demand on formability. In parts where the machinability is the most important thing the cold draw / hard tubes are used. The seamless and special tubes is also stocked in zinc coated condition and are then used in applications where corrosion resistance is important.



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Welded cold drawn precision steel tubes. . . . page 139-140
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Special welded steel tubes. page 148
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Seamless cold drawn precision steel tubes

Seamless cold drawn precision steel tubes manufactured according to EN 10305-1 (DIN 2391). Cold drawn / hard + C

We stock a wide dimension range from Europe’s leading suppliers. Seamless precision tubes to EN 10305-1 have strict dimensional tolerance, good surface finish and special mechanical properties.

The material E235, is a carbon steel which is both easy to weld and to cut. In accordance with the norm, delivery lengths are permitted to vary between 4-7 m. However the majority of tubes in stock are in 5-7 m lengths.

| Dimension OD x Wall | Weight kg/m | Condition +C |
|------------------------|----------------|-----------------|
| 4.00 x 1.00 | 0.070 | X |
| 5.00 x 1.00 | 0.100 | X |
| 6.00 x 0.75 | 0.100 | X |
| 6.00 x 1.00 | 0.123 | X |
| 6.00 x 1.25 | 0.150 | X |
| 6.00 x 1.50 | 0.170 | X |
| 7.00 x 1.00 | 0.150 | X |
| 8.00 x 0.75 | 0.130 | X |
| 8.00 x 1.00 | 0.170 | X |
| 8.00 x 1.50 | 0.240 | X |
| 8.00 x 2.00 | 0.300 | X |
| 8.00 x 2.50 | 0.340 | X |
| 9.00 x 1.00 | 0.200 | X |
| 10.00 x 0.50 | 0.120 | X |
| 10.00 x 0.75 | 0.170 | X |
| 10.00 x 1.00 | 0.220 | X |
| 10.00 x 1.50 | 0.310 | X |
| 10.00 x 1.75 | 0.360 | X |
| 10.00 x 2.00 | 0.400 | X |
| 10.00 x 2.50 | 0.460 | X |
| 10.00 x 3.00 | 0.520 | X |
| 10.00 x 3.50 | 0.560 | X |
| 11.00 x 1.50 | 0.350 | X |
| 11.00 x 2.00 | 0.440 | X |
| 12.00 x 0.50 | 0.140 | X |
| 12.00 x 0.75 | 0.210 | X |
| 12.00 x 1.00 | 0.270 | X |
| 12.00 x 1.50 | 0.390 | X |
| 12.00 x 1.75 | 0.440 | X |
| 12.00 x 2.50 | 0.590 | X |
| 12.00 x 3.00 | 0.670 | X |
| 12.00 x 3.50 | 0.730 | X |
| 13.00 x 1.00 | 0.300 | X |
| 13.00 x 1.25 | 0.360 | X |

| Dimension OD x Wall | Weight kg/m | Condition +C |
|------------------------|----------------|-----------------|
| 13.00 x 2.00 | 0.540 | X |
| 13.00 x 2.50 | 0.650 | X |
| 13.00 x 3.00 | 0.740 | X |
| 14.00 x 0.50 | 0.170 | X |
| 14.00 x 1.00 | 0.320 | X |
| 14.00 x 1.50 | 0.460 | X |
| 14.00 x 1.75 | 0.530 | X |
| 14.00 x 2.00 | 0.590 | X |
| 14.00 x 2.50 | 0.710 | X |
| 14.00 x 2.75 | 0.763 | X |
| 14.00 x 3.00 | 0.810 | X |
| 14.00 x 4.00 | 0.990 | X |
| 15.00 x 1.00 | 0.350 | X |
| 15.00 x 1.50 | 0.500 | X |
| 15.00 x 2.00 | 0.640 | X |
| 15.00 x 3.00 | 0.890 | X |
| 16.00 x 1.00 | 0.370 | X |
| 16.00 x 1.50 | 0.540 | X |
| 16.00 x 1.75 | 0.620 | X |
| 16.00 x 2.00 | 0.690 | X |
| 16.00 x 2.50 | 0.830 | X |
| 16.00 x 3.00 | 0.960 | X |
| 16.00 x 3.50 | 1.080 | X |
| 16.00 x 4.00 | 1.180 | X |
| 17.00 x 2.00 | 0.740 | X |
| 17.00 x 3.00 | 1.040 | X |
| 17.00 x 3.50 | 1.170 | X |
| 18.00 x 1.50 | 0.610 | X |
| 18.00 x 2.00 | 0.790 | X |
| 18.00 x 3.50 | 1.250 | X |
| 18.00 x 4.00 | 1.380 | X |
| 18.00 x 4.50 | 1.498 | X |
| 18.00 x 5.00 | 1.600 | X |
| 19.00 x 1.00 | 0.440 | X |

| Dimension OD x Wall | Weight kg/m | Condition +C |
|------------------------|----------------|-----------------|
| 19.00 x 1.50 | 0.650 | X |
| 19.00 x 2.00 | 0.840 | X |
| 19.00 x 3.00 | 1.180 | X |
| 20.00 x 1.00 | 0.470 | X |
| 20.00 x 1.50 | 0.680 | X |
| 20.00 x 2.00 | 0.890 | X |
| 20.00 x 2.50 | 1.080 | X |
| 20.00 x 3.00 | 1.250 | X |
| 20.00 x 3.50 | 1.420 | X |
| 20.00 x 4.00 | 1.580 | X |
| 20.00 x 4.50 | 1.720 | X |
| 20.00 x 5.00 | 1.850 | X |
| 20.00 x 6.00 | 2.070 | X |
| 21.00 x 2.50 | 1.140 | X |
| 21.00 x 3.00 | 1.330 | X |
| 22.00 x 1.00 | 0.520 | X |
| 22.00 x 1.50 | 0.760 | X |
| 22.00 x 2.50 | 1.200 | X |
| 22.00 x 3.00 | 1.410 | X |
| 22.00 x 3.50 | 1.600 | X |
| 22.00 x 4.00 | 1.780 | X |
| 22.00 x 4.50 | 1.940 | X |
| 22.00 x 5.00 | 2.100 | X |
| 23.00 x 1.50 | 0.800 | X |
| 23.00 x 2.00 | 1.040 | X |
| 23.00 x 3.00 | 1.479 | X |
| 23.00 x 4.00 | 1.870 | X |
| 24.00 x 1.50 | 0.830 | X |
| 24.00 x 2.00 | 1.090 | X |
| 24.00 x 3.50 | 1.770 | X |
| 24.00 x 4.00 | 1.970 | X |
| 24.00 x 5.00 | 2.343 | X |
| 25.00 x 1.50 | 0.870 | X |
| 25.00 x 2.00 | 1.130 | X |
| 25.00 x 2.50 | 1.390 | X |
| 25.00 x 3.00 | 1.630 | X |
| 25.00 x 3.50 | 1.860 | X |
| 25.00 x 4.00 | 2.070 | X |
| 25.00 x 4.50 | 2.280 | X |
| 25.00 x 5.00 | 2.470 | X |
| 25.00 x 5.50 | 2.645 | X |
| 25.00 x 6.00 | 2.810 | X |
| 26.00 x 1.50 | 0.910 | X |
| 26.00 x 2.00 | 1.180 | X |
| 26.00 x 3.00 | 1.700 | X |
| 26.00 x 5.00 | 2.590 | X |
| 27.00 x 2.00 | 1.230 | X |
| 27.00 x 3.00 | 1.780 | X |
| 27.00 x 3.50 | 2.030 | X |

| Dimension OD x Wall | Weight kg/m | Condition +C |
|------------------------|----------------|-----------------|
| 27.00 x 5.00 | 2.710 | X |
| 28.00 x 2.00 | 1.280 | X |
| 28.00 x 2.50 | 1.570 | X |
| 28.00 x 3.00 | 1.850 | X |
| 28.00 x 3.50 | 2.120 | X |
| 28.00 x 4.00 | 2.370 | X |
| 28.00 x 4.50 | 2.608 | X |
| 28.00 x 5.00 | 2.840 | X |
| 30.00 x 1.50 | 1.050 | X |
| 30.00 x 2.00 | 1.380 | X |
| 30.00 x 2.50 | 1.700 | X |
| 30.00 x 3.00 | 2.000 | X |
| 30.00 x 3.50 | 2.290 | X |
| 30.00 x 4.00 | 2.570 | X |
| 30.00 x 4.50 | 2.830 | X |
| 30.00 x 5.00 | 3.080 | X |
| 30.00 x 6.00 | 3.550 | X |
| 30.00 x 8.00 | 4.341 | X |
| 32.00 x 1.50 | 1.130 | X |
| 32.00 x 2.00 | 1.480 | X |
| 32.00 x 2.50 | 1.820 | X |
| 32.00 x 3.00 | 2.150 | X |
| 32.00 x 4.00 | 2.760 | X |
| 32.00 x 5.00 | 3.330 | X |
| 32.00 x 6.00 | 3.847 | X |
| 33.00 x 3.00 | 2.220 | X |
| 34.00 x 2.00 | 1.580 | X |
| 34.00 x 3.00 | 2.290 | X |
| 34.00 x 4.00 | 2.960 | X |
| 35.00 x 1.50 | 1.240 | X |
| 35.00 x 2.00 | 1.630 | X |
| 35.00 x 2.50 | 2.000 | X |
| 35.00 x 3.00 | 2.370 | X |
| 35.00 x 3.50 | 2.720 | X |
| 35.00 x 4.00 | 3.060 | X |
| 35.00 x 4.50 | 3.390 | X |
| 35.00 x 5.00 | 3.700 | X |
| 35.00 x 6.00 | 4.290 | X |
| 36.00 x 2.00 | 1.680 | X |
| 36.00 x 3.00 | 2.440 | X |
| 36.00 x 5.00 | 3.820 | X |
| 38.00 x 2.50 | 2.190 | X |
| 38.00 x 3.00 | 2.590 | X |
| 38.00 x 4.00 | 3.350 | X |
| 38.00 x 5.00 | 4.070 | X |
| 40.00 x 1.50 | 1.420 | X |
| 40.00 x 2.00 | 1.870 | X |
| 40.00 x 2.50 | 2.310 | X |
| 40.00 x 3.00 | 2.740 | X |

| Dimension OD x Wall | Weight kg/m | Condition +C |
|------------------------|----------------|-----------------|
| 40.00 x 3.50 | 3.150 | X |
| 40.00 x 4.00 | 3.550 | X |
| 40.00 x 4.50 | 3.940 | X |
| 40.00 x 5.00 | 4.320 | X |
| 40.00 x 6.00 | 5.030 | X |
| 40.00 x 7.00 | 5.696 | X |
| 42.00 x 1.50 | 1.500 | X |
| 42.00 x 2.00 | 1.970 | X |
| 42.00 x 3.00 | 2.890 | X |
| 42.00 x 5.00 | 4.560 | X |
| 42.00 x 6.00 | 5.330 | X |
| 45.00 x 1.50 | 1.610 | X |
| 45.00 x 2.00 | 2.120 | X |
| 45.00 x 2.50 | 2.620 | X |
| 45.00 x 2.50 | 2.620 | E355+N |
| 45.00 x 3.00 | 3.110 | X |
| 45.00 x 4.00 | 4.040 | X |
| 45.00 x 5.00 | 4.930 | X |
| 46.00 x 2.00 | 2.170 | X |
| 48.00 x 1.50 | 1.720 | X |
| 48.00 x 4.00 | 4.340 | X |
| 50.00 x 1.50 | 1.790 | X |
| 50.00 x 2.00 | 2.370 | X |
| 50.00 x 2.50 | 2.930 | X |
| 50.00 x 3.00 | 3.480 | X |
| 50.00 x 3.50 | 4.010 | X |
| 50.00 x 4.00 | 4.540 | X |
| 50.00 x 5.00 | 5.550 | X |
| 50.00 x 6.00 | 6.510 | X |
| 51.00 x 3.00 | 3.550 | X |
| 52.00 x 2.00 | 2.470 | X |
| 52.00 x 4.00 | 4.740 | X |
| 54.00 x 2.00 | 2.570 | X |
| 55.00 x 1.50 | 1.980 | X |
| 55.00 x 2.00 | 2.610 | X |
| 55.00 x 2.50 | 3.240 | X |
| 55.00 x 3.00 | 3.850 | X |
| 55.00 x 5.00 | 6.170 | X |

| Dimension OD x Wall | Weight kg/m | Condition +C |
|------------------------|----------------|-----------------|
| 56.00 x 3.00 | 3.920 | X |
| 57.00 x 3.00 | 4.000 | X |
| 60.00 x 1.50 | 2.160 | X |
| 60.00 x 2.00 | 2.861 | X |
| 60.00 x 4.00 | 5.520 | X |
| 60.00 x 4.50 | 6.159 | X |
| 60.00 x 5.00 | 6.780 | X |
| 60.00 x 6.00 | 7.990 | X |
| 62.00 x 2.00 | 2.960 | X |
| 65.00 x 1.50 | 2.350 | X |
| 65.00 x 2.00 | 3.110 | X |
| 65.00 x 3.00 | 4.590 | X |
| 65.00 x 4.00 | 6.020 | X |
| 65.00 x 5.00 | 7.400 | X |
| 68.00 x 4.00 | 6.310 | X |
| 70.00 x 1.50 | 2.530 | X |
| 70.00 x 2.00 | 3.350 | X |
| 70.00 x 3.00 | 4.960 | X |
| 70.00 x 4.00 | 6.510 | X |
| 70.00 x 5.00 | 8.020 | X |
| 75.00 x 2.00 | 3.600 | X |
| 75.00 x 3.00 | 5.330 | X |
| 75.00 x 5.00 | 8.630 | X |
| 80.00 x 1.50 | 2.900 | X |
| 80.00 x 2.00 | 3.850 | X |
| 80.00 x 3.00 | 5.700 | X |
| 80.00 x 4.00 | 7.500 | X |
| 80.00 x 5.00 | 9.250 | X |
| 85.00 x 2.50 | 5.090 | X |
| 85.00 x 5.00 | 9.870 | X |
| 90.00 x 5.00 | 10.480 | X |
| 95.00 x 5.00 | 11.100 | X |
| 100.00 x 2.00 | 4.830 | X |
| 100.00 x 5.00 | 11.710 | X |
| 110.00 x 2.50 | 6.630 | X |
| 120.00 x 5.00 | 14.180 | X |
| 125.00 x 2.00 | 6.100 | X |
| 170.00 x 5.00 | 20.350 | X |

Welded cold drawn precision steel tubes

Welded cold drawn precision steel tubes manufactured according to EN 10305-2 (DIN 2393)

We stock tubes in cold drawn hard +C and normalized +N variants. The most common steel quality in our stock is E235 but E195 i also available in some dimensions. The tubes are cold drawn over a mandril. Thanks to this method of production, the tubes have very good concentricity and tight tolerances for both outside diameter and wall thickness.

In accordance with EN 10305-2, delivery lengths are permitted to vary between 4-7 m, but majority of tubes in stock are however in 5-7 m lengths.

| Dimension OD x Wall | Weight kg/m | Condition | |
|------------------------|----------------|-----------|----|
| | | +C | +N |
| 8.00 x 1.50 | 0.240 | X | |
| 12.00 x 1.75 | 0.442 | X | |
| 12.00 x 2.00 | 0.493 | X | |
| 13.00 x 2.00 | 0.540 | X | |
| 14.00 x 1.75 | 0.528 | X | |
| 14.00 x 2.00 | 0.592 | X | |
| 15.00 x 1.50 | 0.500 | X | |
| 15.00 x 2.00 | 0.640 | X | |
| 15.00 x 2.50 | 0.770 | X | |
| 16.00 x 1.50 | 0.540 | X | |
| 16.00 x 2.00 | 0.690 | X | |
| 16.00 x 2.50 | 0.830 | X | |
| 16.00 x 3.00 | 0.960 | X | |
| 16.00 x 3.75 | 1.133 | X | |
| 18.00 x 2.00 | 0.790 | X | |
| 18.00 x 2.50 | 0.960 | X | |
| 18.00 x 3.00 | 1.110 | X | |
| 19.00 x 1.50 | 0.647 | X | |
| 20.00 x 1.50 | 0.680 | | X |
| 20.00 x 2.00 | 0.890 | X | |
| 20.00 x 2.50 | 1.079 | X | |
| 20.00 x 3.00 | 1.250 | X | |
| 20.00 x 3.00 | 1.250 | | X |
| 20.00 x 4.00 | 1.580 | X | |
| 20.00 x 5.00 | 1.850 | X | |
| 22.00 x 1.00 | 0.520 | | X |
| 22.00 x 1.50 | 0.758 | | X |
| 22.00 x 2.00 | 0.990 | X | |
| 22.00 x 3.00 | 1.400 | X | |
| 22.00 x 5.00 | 2.096 | | X |
| 24.00 x 3.50 | 1.769 | X | |
| 25.00 x 1.50 | 0.870 | X | |

| Dimension OD x Wall | Weight kg/m | Condition | |
|------------------------|----------------|-----------|----|
| | | +C | +N |
| 25.00 x 2.00 | 1.130 | X | |
| 25.00 x 2.50 | 1.390 | X | |
| 25.00 x 3.00 | 1.630 | X | |
| 25.00 x 4.00 | 2.070 | X | |
| 25.00 x 5.00 | 2.470 | X | |
| 26.00 x 1.00 | 0.616 | | X |
| 26.00 x 5.00 | 2.589 | | X |
| 28.00 x 1.50 | 0.980 | X | |
| 28.00 x 1.50 | 0.980 | | X |
| 28.00 x 4.00 | 2.368 | X | |
| 30.00 x 1.00 | 0.720 | | X |
| 30.00 x 1.80 | 1.250 | X | |
| 30.00 x 2.00 | 1.380 | X | |
| 30.00 x 2.50 | 1.700 | X | |
| 30.00 x 3.00 | 2.000 | X | |
| 30.00 x 4.00 | 2.565 | X | |
| 30.00 x 5.00 | 3.080 | X | |
| 32.00 x 1.50 | 1.128 | X | |
| 32.00 x 1.50 | 1.130 | | X |
| 32.00 x 3.00 | 2.150 | X | |
| 32.00 x 3.50 | 2.460 | X | |
| 34.00 x 1.50 | 1.200 | X | |
| 34.00 x 2.00 | 1.580 | X | |
| 35.00 x 3.50 | 2.720 | X | |
| 35.00 x 4.00 | 3.060 | X | |
| 35.00 x 5.00 | 3.700 | X | |
| 38.00 x 1.50 | 1.350 | X | |
| 38.00 x 3.00 | 2.590 | | X |
| 38.00 x 5.00 | 4.070 | X | |
| 40.00 x 2.00 | 1.870 | X | |
| 40.00 x 2.00 | 1.870 | | X |
| 40.00 x 3.00 | 2.740 | X | |

| Dimension OD x Wall | Weight kg/m | Condition | |
|------------------------|----------------|-----------|----|
| | | +C | +N |
| 40.00 x 4.00 | 3.550 | X | |
| 40.00 x 5.00 | 4.320 | X | |
| 42.00 x 2.00 | 1.972 | X | |
| 42.00 x 3.00 | 2.890 | X | |
| 42.00 x 5.00 | 4.562 | X | |
| 45.00 x 2.00 | 2.120 | X | |
| 45.00 x 3.00 | 3.110 | X | |
| 45.00 x 4.00 | 4.040 | X | |
| 48.00 x 2.50 | 2.805 | | X |
| 50.00 x 1.50 | 1.790 | X | |
| 50.00 x 2.00 | 2.368 | | X |
| 50.00 x 3.00 | 3.480 | X | |
| 50.00 x 4.00 | 4.540 | X | |
| 50.00 x 5.00 | 5.550 | X | |
| 50.00 x 6.00 | 6.510 | X | |
| 55.00 x 2.50 | 3.240 | X | |
| 55.00 x 3.00 | 3.847 | | X |

| Dimension OD x Wall | Weight kg/m | Condition | |
|------------------------|----------------|-----------|----|
| | | +C | +N |
| 55.00 x 4.00 | 5.030 | X | |
| 55.00 x 5.00 | 6.165 | X | |
| 55.00 x 6.00 | 7.250 | X | |
| 56.00 x 3.00 | 3.920 | X | |
| 60.00 x 2.00 | 2.860 | | X |
| 60.00 x 2.50 | 3.550 | X | |
| 60.00 x 3.00 | 4.217 | | X |
| 60.00 x 4.00 | 5.520 | X | |
| 60.00 x 5.00 | 6.780 | X | |
| 62.00 x 2.00 | 2.959 | | X |
| 70.00 x 2.50 | 4.162 | | X |
| 70.00 x 3.00 | 4.960 | X | |
| 70.00 x 5.00 | 8.020 | X | |
| 85.00 x 2.00 | 4.090 | | X |
| 100.00 x 5.00 | 11.714 | X | |
| 102.00 x 3.50 | 8.502 | | X |
| 110.00 x 2.00 | 5.327 | | X |

Seamless hydraulic tubes

Seamless cold drawn hydraulic tubes manufactured according to EN 10305-4 (DIN 2391/C)

These tubes are used in hydraulic and pneumatic applications. We stock these tubes in E235 quality as standards, but E355 can be offered in a few dimensions, but only in phosphated finish. Both phosphated and non-phosphated tubes are tested for leakage using eddy current testing.

The tubes are stocked in fabrication lengths of 6000 mm. A certificate according to EN 10204/3.1 can be obtained at an extra charge.

| Dimension OD x Wall | Weight kg/m | Phosphated E235 | Phosphated E355 | Non-phosphated E235 |
|------------------------|----------------|--------------------|--------------------|------------------------|
| 4.00 x 0.50 | 0.043 | | | X |
| 4.00 x 1.00 | 0.070 | | | X |
| 5.00 x 1.00 | 0.100 | | | X |
| 6.00 x 0.75 | 0.100 | | | X |
| 6.00 x 1.00 | 0.120 | | | X |
| 6.00 x 1.50 | 0.166 | | | X |
| 6.00 x 2.00 | 0.190 | | | X |
| 7.00 x 1.00 | 0.148 | | | X |
| 8.00 x 1.00 | 0.170 | | | X |
| 8.00 x 1.00 | 0.173 | X | | |
| 8.00 x 1.50 | 0.240 | | | X |
| 8.00 x 2.00 | 0.296 | | | X |
| 9.53 x 1.00 | 0.210 | | | X |
| 10.00 x 1.00 | 0.220 | | | X |
| 10.00 x 1.00 | 0.220 | X | | |
| 10.00 x 1.50 | 0.310 | | | X |
| 10.00 x 1.50 | 0.310 | X | | |
| 10.00 x 2.00 | 0.395 | | | X |
| 10.00 x 2.00 | 0.400 | X | | |
| 10.00 x 2.50 | 0.460 | | | X |
| 12.00 x 1.00 | 0.270 | | | X |
| 12.00 x 1.00 | 0.270 | X | | |
| 12.00 x 1.50 | 0.388 | | | X |
| 12.00 x 1.50 | 0.390 | X | | |
| 12.00 x 2.00 | 0.490 | | | X |
| 12.00 x 2.00 | 0.490 | X | | |
| 12.00 x 2.50 | 0.590 | X | | |
| 12.70 x 0.90 | 0.262 | | | X |
| 13.00 x 1.00 | 0.321 | | | X |
| 13.00 x 1.50 | 0.430 | | | X |
| 14.00 x 1.00 | 0.321 | | | X |

| Dimension OD x Wall | Weight kg/m | Phosphated E235 | Phosphated E355 | Non-phosphated E235 |
|------------------------|----------------|--------------------|--------------------|------------------------|
| 14.00 x 1.50 | 0.460 | X | | X |
| 14.00 x 2.00 | 0.590 | | | X |
| 14.00 x 2.00 | 0.590 | | | |
| 15.00 x 1.00 | 0.350 | | | X |
| 15.00 x 1.50 | 0.500 | | | X |
| 15.00 x 2.00 | 0.640 | X | | X |
| 15.00 x 2.00 | 0.640 | | | |
| 15.00 x 2.50 | 0.770 | | | X |
| 15.00 x 3.50 | 0.990 | | | X |
| 16.00 x 1.00 | 0.370 | | | X |
| 16.00 x 1.50 | 0.540 | X | | X |
| 16.00 x 1.50 | 0.540 | | | |
| 16.00 x 2.00 | 0.691 | | | X |
| 16.00 x 2.00 | 0.690 | | | |
| 16.00 x 2.50 | 0.830 | | | X |
| 16.00 x 2.50 | 0.830 | X | | X |
| 16.00 x 3.00 | 0.960 | | | |
| 16.00 x 3.00 | 0.960 | | | |
| 18.00 x 1.00 | 0.419 | | | X |
| 18.00 x 1.50 | 0.610 | | | X |
| 18.00 x 1.50 | 0.610 | X | | X |
| 18.00 x 2.00 | 0.790 | | | |
| 18.00 x 2.00 | 0.790 | | | |
| 18.00 x 3.00 | 1.110 | | | X |
| 19.00 x 1.50 | 0.650 | | | X |
| 19.00 x 1.50 | 0.650 | X | | X |
| 20.00 x 1.00 | 0.470 | | | |
| 20.00 x 1.50 | 0.684 | | | X |
| 20.00 x 1.50 | 0.684 | | | |
| 20.00 x 2.00 | 0.888 | | | X |
| 20.00 x 2.00 | 0.890 | X | | X |
| 20.00 x 2.50 | 1.080 | | | |
| 20.00 x 2.50 | 1.080 | | | |
| 20.00 x 3.00 | 1.250 | | | X |
| 20.00 x 3.00 | 1.250 | | | |
| 22.00 x 1.00 | 0.518 | X | | X |
| 22.00 x 1.50 | 0.758 | | | X |
| 22.00 x 1.50 | 0.760 | | | |
| 22.00 x 2.00 | 0.990 | | | X |
| 22.00 x 2.00 | 0.990 | | | |
| 22.00 x 2.50 | 1.202 | X | | X |
| 22.00 x 2.50 | 1.200 | | | |
| 22.00 x 3.00 | 1.410 | | | X |
| 22.00 x 3.00 | 1.410 | | | |
| 22.00 x 3.50 | 1.597 | | | |
| 22.00 x 4.00 | 1.780 | | | X |
| 25.00 x 1.00 | 0.590 | | | X |
| 25.00 x 1.50 | 0.870 | | | X |

| Dimension OD x Wall | Weight kg/m | Phosphated E235 | Phosphated E355 | Non-phosphated E235 |
|------------------------|----------------|--------------------|--------------------|------------------------|
| 25.00 x 2.00 | 1.134 | X | | X |
| 25.00 x 2.00 | 1.130 | | | |
| 25.00 x 2.50 | 1.390 | | | X |
| 25.00 x 2.50 | 1.390 | | | |
| 25.00 x 2.50 | 1.387 | | | |
| 25.00 x 3.00 | 1.628 | X | X | X |
| 25.00 x 3.00 | 1.630 | | | |
| 25.00 x 3.00 | 1.628 | | | |
| 25.00 x 4.00 | 2.070 | | | X |
| 25.00 x 4.00 | 2.071 | | | |
| 26.00 x 1.50 | 0.910 | X | | X |
| 28.00 x 1.50 | 0.980 | | | X |
| 28.00 x 1.50 | 0.980 | | | |
| 28.00 x 2.00 | 1.282 | | | X |
| 28.00 x 2.00 | 1.280 | | | |
| 28.00 x 2.50 | 1.572 | | | X |
| 28.00 x 3.00 | 1.850 | | | X |
| 30.00 x 1.00 | 0.720 | | | X |
| 30.00 x 1.50 | 1.050 | | | X |
| 30.00 x 2.00 | 1.380 | | | X |
| 30.00 x 2.00 | 1.380 | X | | X |
| 30.00 x 2.50 | 1.700 | | | |
| 30.00 x 3.00 | 2.000 | | | |
| 30.00 x 3.00 | 2.000 | | | |
| 30.00 x 3.00 | 2.000 | | | |
| 30.00 x 4.00 | 2.570 | X | X | X |
| 30.00 x 4.00 | 2.570 | | | |
| 30.00 x 4.00 | 2.565 | | | |
| 32.00 x 1.50 | 1.130 | | | X |
| 32.00 x 1.50 | 1.130 | | | |
| 32.00 x 1.50 | 1.130 | X | | X |
| 32.00 x 2.00 | 1.480 | | | |
| 32.00 x 2.00 | 1.480 | | | |
| 32.00 x 3.00 | 2.150 | | | X |
| 32.00 x 4.00 | 2.760 | | | X |
| 35.00 x 1.50 | 1.240 | X | | X |
| 35.00 x 2.00 | 1.628 | | | X |
| 35.00 x 2.00 | 1.630 | | | |
| 35.00 x 3.00 | 2.370 | | | X |
| 35.00 x 3.00 | 2.370 | | | |
| 35.00 x 5.00 | 3.699 | X | | X |
| 38.00 x 1.50 | 1.350 | | | X |
| 38.00 x 2.00 | 1.776 | | | X |
| 38.00 x 2.50 | 2.188 | | | |
| 38.00 x 4.00 | 3.354 | | | X |
| 38.00 x 4.00 | 3.350 | X | X | X |
| 38.00 x 4.00 | 3.354 | | | |
| 38.00 x 5.00 | 4.069 | | | |

| Dimension OD x Wall | Weight kg/m | Phosphated E235 | Phosphated E355 | Non-phosphated E235 |
|------------------------|----------------|--------------------|--------------------|------------------------|
| 38.00 x 5.00 | 4.069 | X | | |
| 38.00 x 5.00 | 4.069 | | X | |
| 40.00 x 1.50 | 1.420 | | | X |
| 42.00 x 2.00 | 1.970 | X | | |
| 42.00 x 3.00 | 2.890 | | | X |
| 42.00 x 3.00 | 2.890 | X | | |
| 42.00 x 3.00 | 2.885 | | X | |
| 42.00 x 4.00 | 3.750 | X | | |
| 45.00 x 1.50 | 1.610 | | | X |
| 48.00 x 4.00 | 4.340 | | | X |
| 50.00 x 1.50 | 1.790 | | | X |
| 50.00 x 2.00 | 2.370 | | | X |
| 50.00 x 3.00 | 3.480 | | | X |
| 50.00 x 5.00 | 5.549 | | X | |
| 50.00 x 6.00 | 6.510 | | | X |
| 50.00 x 6.00 | 6.510 | X | | |
| 50.00 x 6.00 | 6.510 | | X | |
| 60.00 x 3.00 | 4.220 | | | X |
| 60.00 x 4.00 | 5.524 | | | X |
| 60.00 x 5.00 | 6.780 | X | | |
| 60.00 x 5.00 | 6.782 | | X | |
| 63.00 x 3.00 | 4.439 | | | X |
| 65.00 x 8.00 | 11.245 | | | X |
| 70.00 x 1.50 | 2.534 | | | X |
| 75.00 x 3.00 | 5.327 | | | X |
| 90.00 x 4.00 | 8.480 | | | X |

Seamless zinc coated hydraulic tubes

Seamless zinc coated cold drawn hydraulic tubes manufactured according to EN 10305-4 (DIN 2391/C).

The zinc coated hydraulic tubes are used in hydraulic and pneumatic applications. We stock these tubes in E235 and E355 qualities. The zinc layer can be offered in two thickness variants, min 12 my or min 25 my which is then either yellow chromated or CR + VI free thicklayer passivated.

In the near future the yellow chromated surface treatment be substituted with CR + VI free thicklayer passivation due to increased environmental demands

All variants are tested for leakage using eddy current testing.
The tubes are stocked in fabrication lengths of 6000 mm.
A certificate to EN 10204/3.1 can be obtained at an extra charge.

| Dimension OD x Wall | Weight kg/m | Type E235 | | | | E355 Yellow chr. 12 my |
|------------------------|----------------|-------------|-------------|--------------|--------------|------------------------------|
| | | Yellow chr. | Yellow chr. | Cr + VI free | Cr + VI free | |
| | | 12 my | 25 my | 12 my | 25 my | |
| 4.00 x 0.50 | 0.043 | X | | | | |
| 4.00 x 1.00 | 0.074 | | | X | | |
| 4.00 x 1.00 | 0.074 | X | | | | |
| 6.00 x 0.80 | 0.103 | | | | X | |
| 6.00 x 1.00 | 0.123 | | | X | | |
| 6.00 x 1.00 | 0.123 | X | | | X | |
| 6.00 x 1.00 | 0.123 | | X | | | |
| 6.00 x 1.50 | 0.170 | | | X | | |
| 6.00 x 1.50 | 0.166 | | | | X | |
| 6.00 x 1.50 | 0.166 | X | | | | |
| 6.00 x 1.50 | 0.166 | | X | | | |
| 6.35 x 0.70 | 0.100 | | | | X | |
| 8.00 x 0.80 | 0.142 | | | | X | |
| 8.00 x 1.00 | 0.173 | | | X | | |
| 8.00 x 1.00 | 0.173 | X | | | X | |
| 8.00 x 1.50 | 0.240 | | | X | | |
| 8.00 x 1.50 | 0.240 | X | | | | |
| 8.00 x 1.50 | 0.241 | | X | | | |
| 8.00 x 2.00 | 0.296 | X | | | | |
| 9.53 x 1.00 | 0.210 | | | | X | |
| 10.00 x 1.00 | 0.222 | | | X | | |
| 10.00 x 1.00 | 0.220 | | | | X | |
| 10.00 x 1.00 | 0.222 | X | | | | |
| 10.00 x 1.00 | 0.222 | | | | | X |
| 10.00 x 1.00 | 0.220 | | X | | | |
| 10.00 x 1.50 | 0.314 | | | X | | |
| 10.00 x 1.50 | 0.314 | X | | | | |
| 10.00 x 1.50 | 0.314 | | X | | | |
| 12.00 x 1.00 | 0.271 | X | | | | |
| 12.00 x 1.20 | 0.320 | | | | X | |

| Dimension OD x Wall | Weight kg/m | Type E235 | | | | E355 Yellow chr. 12 my |
|------------------------|----------------|-------------|-------------|--------------|--------------|------------------------------|
| | | Yellow chr. | Yellow chr. | Cr + VI free | Cr + VI free | |
| | | 12 my | 25 my | 12 my | 25 my | |
| 12.00 x 1.50 | 0.388 | | | X | | |
| 12.00 x 1.50 | 0.388 | | | | X | |
| 12.00 x 1.50 | 0.388 | X | | | | |
| 12.00 x 1.50 | 0.388 | | X | | | |
| 12.00 x 2.00 | 0.493 | | | X | | |
| 12.00 x 2.00 | 0.493 | X | | | | |
| 12.00 x 2.00 | 0.493 | | X | | | |
| 14.00 x 1.00 | 0.321 | X | | | | |
| 14.00 x 1.50 | 0.462 | X | | | | |
| 14.00 x 2.00 | 0.592 | | | X | | |
| 14.00 x 2.00 | 0.592 | X | | | | |
| 15.00 x 1.00 | 0.345 | | | X | | |
| 15.00 x 1.50 | 0.499 | | | X | | |
| 15.00 x 1.50 | 0.499 | | | | X | |
| 15.00 x 1.50 | 0.499 | X | | | | |
| 15.00 x 2.00 | 0.640 | | | X | | |
| 15.00 x 2.00 | 0.641 | X | | | | |
| 15.00 x 2.00 | 0.641 | | | | | X |
| 15.00 x 3.00 | 0.888 | X | | | | |
| 15.88 x 1.50 | 0.530 | | | | X | |
| 16.00 x 1.50 | 0.540 | | | X | | |
| 16.00 x 1.50 | 0.536 | | | | X | |
| 16.00 x 1.50 | 0.536 | X | | | | |
| 16.00 x 2.00 | 0.691 | | | X | | |
| 16.00 x 2.00 | 0.691 | X | | | | |
| 16.00 x 2.00 | 0.691 | | | | | X |
| 16.00 x 2.00 | 0.691 | | X | | | |
| 16.00 x 2.50 | 0.832 | X | | | | |
| 16.00 x 2.50 | 0.832 | | X | | | |
| 16.00 x 3.00 | 0.962 | X | | | | |
| 18.00 x 1.50 | 0.610 | | | X | | |
| 18.00 x 1.50 | 0.610 | X | | | | |
| 18.00 x 2.00 | 0.790 | | | X | | |
| 18.00 x 2.00 | 0.789 | X | | | | |
| 18.00 x 3.00 | 1.110 | X | | | | |
| 20.00 x 1.50 | 0.684 | | | X | | |
| 20.00 x 1.50 | 0.684 | | | | X | |
| 20.00 x 2.00 | 0.888 | | | X | | |
| 20.00 x 2.00 | 0.888 | X | | | | |
| 20.00 x 2.00 | 0.888 | | | | | X |
| 20.00 x 2.00 | 0.888 | | X | | | |
| 20.00 x 2.50 | 1.079 | | | X | | |
| 20.00 x 2.50 | 1.079 | | X | | | |
| 20.00 x 3.00 | 1.258 | X | | | | |
| 22.00 x 1.50 | 0.758 | | | | X | |
| 22.00 x 1.50 | 0.758 | X | | | | |
| 22.00 x 2.00 | 0.986 | | | X | | |

| Dimension OD x Wall | Weight kg/m | Type E235 | | | | Material E355 Yellow chr. min 12 my |
|------------------------|----------------|-------------|-------------|--------------|--------------|--|
| | | Yellow chr. | Yellow chr. | Cr + VI free | Cr + VI free | |
| | | 12 my | 25my | 12 my | 25 my | |
| 22.00 x 2.00 | 0.986 | X | | | | |
| 22.00 x 2.50 | 1.200 | | | X | | |
| 22.00 x 2.50 | 1.202 | X | | | | |
| 25.00 x 2.00 | 1.134 | | | X | | |
| 25.00 x 2.00 | 1.134 | X | | | | |
| 25.00 x 2.00 | 1.134 | | X | | | |
| 25.00 x 2.50 | 1.387 | | | X | | |
| 25.00 x 2.50 | 1.387 | X | | | | |
| 25.00 x 2.50 | 1.387 | | | | | X |
| 25.00 x 3.00 | 1.630 | | | X | | |
| 25.00 x 3.00 | 1.628 | X | | | | |
| 25.00 x 3.00 | 1.628 | | X | | | X |
| 25.00 x 3.00 | 1.628 | | | | | |
| 25.00 x 4.00 | 2.072 | X | | | | |
| 28.00 x 1.50 | 0.980 | | | X | | |
| 28.00 x 1.50 | 0.980 | X | | | | |
| 28.00 x 2.00 | 1.280 | | | X | | |
| 28.00 x 2.00 | 1.282 | X | | | | |
| 28.00 x 2.50 | 1.280 | | | X | | |
| 28.00 x 2.50 | 1.572 | X | | | | |
| 28.00 x 3.00 | 1.850 | X | | | | |
| 30.00 x 2.50 | 1.695 | X | | | | |
| 30.00 x 2.50 | 1.695 | | | | | X |
| 30.00 x 3.00 | 2.000 | | | X | | |
| 30.00 x 3.00 | 1.998 | X | | | | |
| 30.00 x 3.00 | 1.998 | | | | | X |
| 30.00 x 3.00 | 1.998 | | X | | | |
| 30.00 x 4.00 | 2.565 | X | | | | |
| 35.00 x 2.00 | 1.628 | X | | | | |
| 35.00 x 3.00 | 2.368 | X | | | | |
| 38.00 x 2.50 | 2.168 | X | | | | |
| 38.00 x 3.00 | 2.589 | X | | | | |
| 38.00 x 3.00 | 2.589 | | | | | X |
| 38.00 x 4.00 | 3.350 | | | X | | |
| 38.00 x 4.00 | 3.354 | X | | | | |
| 38.00 x 5.00 | 4.069 | X | | | | |
| 38.00 x 5.00 | 4.069 | | | | | X |
| 42.00 x 2.00 | 1.973 | X | | | | |
| 42.00 x 3.00 | 2.885 | X | | | | |

Special welded steel tubes

Special 07

Special welded precision tubes, in material E195 and normalized conditions, are suitable for fluid transfer applications, for instance oil pipes and water inlet pipes. Outside diameter tolerances according to EN 10305-2, wall thickness tolerances according to EN 10305-3. Inside welding seam max 0,3 mm. OD 5 - 12 mm are leak tested with helium at 35 bar pressure. OD > 12 mm are eddy current tested. The material is cold rolled and delivered from stock in lengths of normally 6000 mm.

Zista 07

Zista 07 are manufactured in the same way as Special 07 but are zinc coated and used in applications where there is a demand for corrosion resistance. The zinc layer can be offered in two thickness variants, min 12 my or min 25 my which is CR + VI free thicklayer passivated.

| Dimension OD x Wall | Weight kg/m | Special 07 | Zista 07 Cr + VI free 12 my | Zista 07 Cr + VI free 25 my |
|------------------------|----------------|------------|-----------------------------------|-----------------------------------|
| 5.00 x 1.00 | 0.099 | X | | |
| 6.00 x 1.00 | 0.123 | | X | |
| 6.35 x 0.70 | 0.097 | | X | |
| 8.00 x 1.00 | 0.173 | X | | |
| 8.00 x 1.00 | 0.173 | | | X |
| 9.53 x 1.00 | 0.210 | | X | |
| 10.00 x 1.00 | 0.222 | X | | |
| 10.00 x 1.50 | 0.314 | | | X |
| 12.00 x 1.00 | 0.271 | X | | |
| 12.00 x 1.00 | 0.271 | | X | |
| 12.00 x 1.50 | 0.388 | X | | |
| 12.00 x 1.50 | 0.388 | | | X |
| 12.70 x 1.00 | 0.289 | | X | |
| 15.00 x 1.50 | 0.499 | X | | |
| 15.00 x 1.50 | 0.499 | | | X |
| 16.00 x 1.00 | 0.370 | X | | |
| 16.00 x 1.00 | 0.370 | | X | |
| 16.00 x 1.50 | 0.538 | X | | |
| 16.00 x 1.50 | 0.536 | | | X |
| 18.00 x 1.00 | 0.419 | X | | |
| 18.00 x 1.00 | 0.419 | | X | |
| 19.00 x 1.00 | 0.444 | X | | |
| 20.00 x 1.50 | 0.684 | X | | |
| 20.00 x 1.50 | 0.684 | | | X |
| 22.00 x 1.00 | 0.518 | | | X |
| 22.00 x 1.00 | 0.518 | X | | |
| 22.00 x 1.50 | 0.758 | X | | |
| 25.00 x 1.50 | 0.869 | X | | |
| 28.00 x 1.50 | 0.980 | X | | |
| 32.00 x 1.50 | 1.128 | X | | |

Technical information

Cold drawn precision steel tubes according to EN 10305-1 (DIN 2391)

Seamless cold drawn precision steel tubes according to EN 10305-4 (DIN 2391/C)

Welded cold drawn precision steel tubes according to EN 10305-2 (DIN 2393)

Surface

In accordance with the manufacturing method, the tubes shall have a smooth outer and inner surface. Due to the manufacturing method surface defects such as depressions, pores and longitudinal scratches are permitted

Measurement deviations

For cold drawn / hard tubes +C does the tolerances with regard to deformation due to heat treatment greater as shown in the table alongside

| Wall thickness (T) Outer diameter (D) | Values according to the measurement table |
|--|--|
| ≥ 0.05 | 1 x the value in the measurement table |
| 0.05 > T/D ≥ 0.025 | 1.5 x the value in the measurement table |
| < 0.025 | 2 x the value in the measurement table |

Measurement tables EN 10305-1 and -4 -, refer to the end of this chapter.

Measurement tables EN 10305-2 -, refer to the end of this chapter.

Straightness

Straightness deviation may in general be 0.15% of the length, for tubes with outside diameter greater than 15 mm. Tubes with outside diameter up to an including 15 mm are delivered straightened in the best possible way.

Tube ends

Tubes are cut wherever possible perpendicular to tube axle. However, diametrical changes as well as local wall thickness deformation can occur when cutting. This does not apply to fixed lengths. Special machining of ends can be arranged after agreement.

Tolerance of delivered quantities

Delivery of quantities less than or exceeding the ordered quantity is dependant on the ordered number of meters per dimension and is permitted according to the table alongside.

| Ordered quantity (m) | Permitted deviation % |
|----------------------|-----------------------|
| ≤ 500 | +/- 15% |
| > 500 | +/- 10% |

With fixed lengths, delivery of quantities less than ordered is not allowed.

Delivery of quantities greater than ordered is allowed according to the table alongside.

| Ordered quantity (Pieces) | Permitted deviation % |
|---------------------------|-----------------------|
| ≤ 500 | + 20% |
| > 500 ≤ 2000 | + 15% |
| > 2000 | + 10% |

Technical information

Special welded tubes (SPECIAL 07/ZISTA 07)

Delivery condition

| Designation | EN 10305 -1, 2, 4 | Explanation | Earlier designation |
|--------------------------|-------------------|--|---------------------|
| Cold drawn / hard | +C | No heat treatment after last cold drawing process. The tubes therefore only have low formability. | BK |
| Cold drawn / soft | + LC | After the last heat treatment there is a light cold drawing. With proper subsequent processing, the tube could be bent, expanded within certain limits. | BKW |
| Stress-relieved annealed | +SR | After the final cold drawing process the tubes are heat treated. The reduction of inherent stress allows the tube, with proper subsequent processing, to be swarfless formed or machined within certain limits | BKS |
| Annealed | + A | After the final cold drawing processes the tubes are annealed in a controlled atmosphere or under vacuum. | GBK |
| Normalised | + N | The tubes are annealed above the upper transformation point in a controlled atmosphere or under vacuum. | NBK |

| Steel qual | Type | Delivery condition | Chemical composition | | | | | Mechanical Properties | | |
|------------|--------|--------------------|----------------------|--------------|--------------|----------------|----------------|------------------------|-------------------------|---------------------|
| | | | C max. % | Si max. % | Mn max. % | P max. % | S max. % | Yield strength ReH MPa | Tensile strength Rm MPa | Extension A5 min. % |
| E195 | welded | +C +N | 0.15 0.15 | 0.30 0.30 | 0.60 0.60 | 0.025 0.025 | 0.025 0.025 | - 205 | min. 460 310-410 | 6 28 |

Areas of use

Refrigerator industry

- Refrigerators
- Freezers

Automotive industry

- Purging systems
- Tubes for oil and water
- Lubrication system
- Dip sticks

Material in accordance with EN 10305

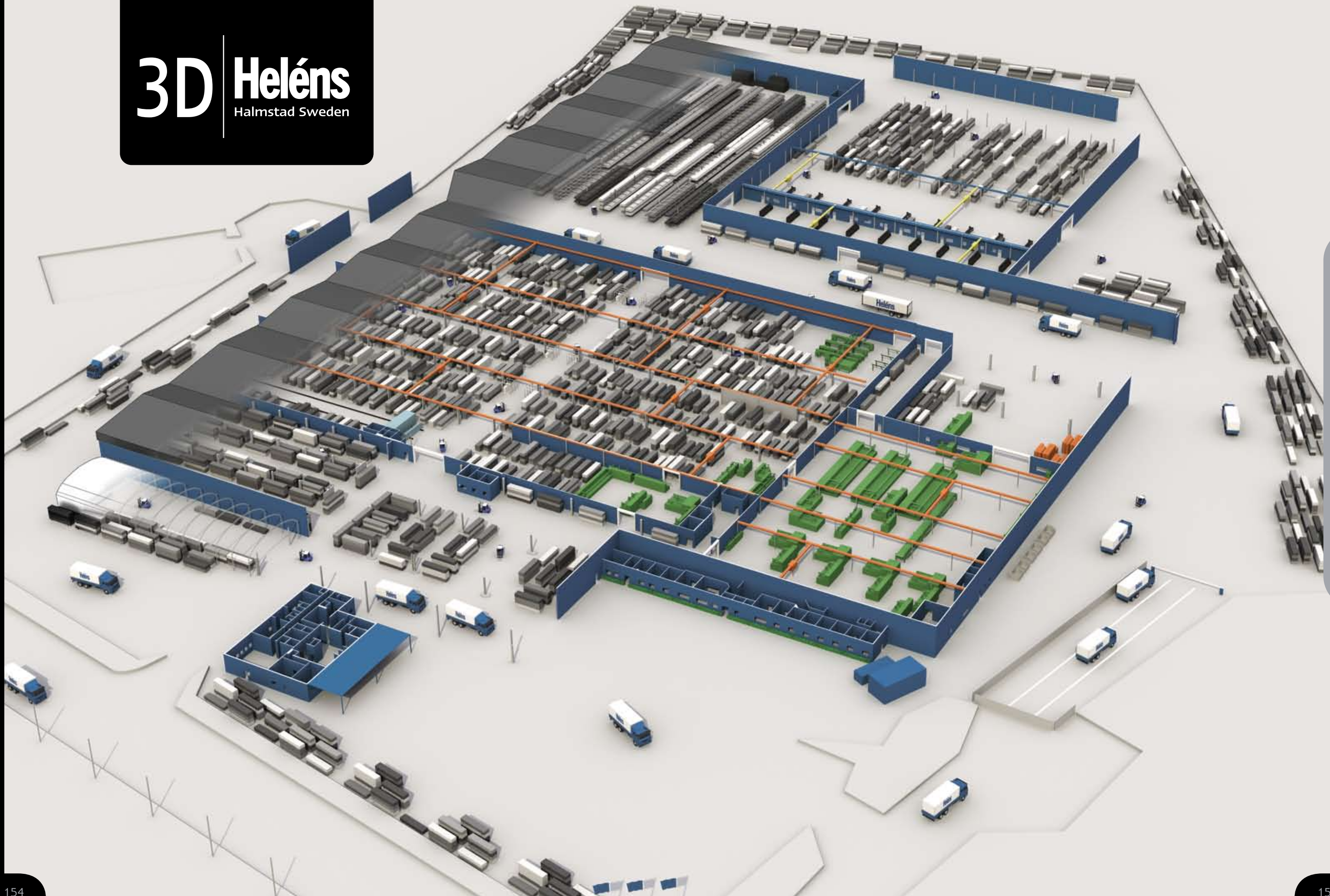
| EN 10305 | | | | | | | | | | | | |
|------------|------------|-------------------|--------------------|----------------------|--------------|------------|----------------|----------------|------------------------|-------------------------|---------------------|--------------------|
| Steel qual | Norm | Type | Delivery condition | Chemical composition | | | | | Mechanical Properties | | | |
| | | | | C max. % | Si max. % | Mn max. % | P max. % | S max. % | Yield strength ReH MPa | Tensile strength Rm MPa | Extension A5 min. % | Former Designation |
| E195 | EN 10305-2 | Welded cold drawn | +C +N | 0.15 0.15 | 0.35 0.35 | 0.7 0.7 | 0.025 0.025 | 0.025 0.025 | - 195 | 420 300-440 | 6 28 | St 34-2 |
| E235 | EN 10305-1 | Seamless | +C +N | 0.17 0.17 | 0.35 0.35 | 1.2 1.2 | 0.025 0.025 | 0.025 0.025 | - 235 | 480 340-480 | 6 25 | St 35 |
| E235 | EN 10305-2 | Welded cold drawn | +C +N | 0.17 0.17 | 0.35 0.35 | 1.2 1.2 | 0.025 0.025 | 0.025 0.025 | - 235 | 490 340-480 | 6 25 | St 37-2 |
| E235 | EN 10305-4 | Seamless | +N | 0.17 | 0.35 | 1.2 | 0.025 | 0.015 | 235 | 340-480 | 25 | St 37.4 |
| E355 | EN 10305-1 | Seamless | +C +N | 0.22 0.22 | 0.55 0.55 | 1.6 1.6 | 0.025 0.025 | 0.025 0.025 | - 355 | 640 490-630 | 4 22 | St 52 |
| E355 | EN 10305-2 | Welded cold drawn | +C +N | 0.22 0.22 | 0.55 0.55 | 1.6 1.6 | 0.025 0.025 | 0.025 0.025 | - 355 | 640 490-630 | 4 22 | St 52-3 |
| E355 | EN 10305-4 | Seamless | +N | 0.22 | 0.55 | 1.6 | 0.025 | 0.015 | 355 | 490-630 | 22 | St 52.4 |

| MEASUREMENT TABLE 10305-1 AND EN 10305-4 Wall thickness (T) | | | | | | | | | | | | |
|---|--|-------------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Spec. outside diameter D and tolerances | Specified internal diameter and tolerances | | | | | | | | | | | |
| | 0.5 | 0.8 | 1 | 1.5 | 2 | 2.5 | 3 | 3.5 | 4 | 4.5 | 5 | 5.5 |
| 4 | 3+/-0.15 | 2.4+/-0.15 | | | | | | | | | | |
| 5 | 4+/-0.15 | 3.4+/-0.15 | 3+/-0.15 | | | | | | | | | |
| 6 | 5+/-0.15 | 4.4+/-0.15 | 4+/-0.15 | 3+/-0.15 | | | | | | | | |
| 7 | 6+/-0.15 | 5.4+/-0.15 | 5+/-0.15 | 4+/-0.15 | 3+/-0.15 | | | | | | | |
| 8 | 7+/-0.15 | 6.4+/-0.15 | 6+/-0.15 | 5+/-0.15 | 4+/-0.15 | 3+/-0.25 | | | | | | |
| 9 | 8+/-0.15 | 7.4+/-0.15 | 7+/-0.15 | 6+/-0.15 | 5+/-0.15 | 4+/-0.25 | | | | | | |
| 10 | 9+/-0.15 | 8.4+/-0.15 | 8+/-0.15 | 7+/-0.15 | 6+/-0.15 | 5+/-0.15 | 4+/-0.25 | | | | | |
| 12 | 11+/-0.15 | 10.4+/-0.15 | 10+/-0.15 | 9+/-0.15 | 8+/-0.15 | 7+/-0.15 | 6+/-0.25 | 5+/-0.25 | 4+/-0.25 | | | |
| 14 | 13+/-0.08 | 12.4+/-0.08 | 12+/-0.15 | 11+/-0.15 | 10+/-0.15 | 9+/-0.15 | 8+/-0.15 | 7+/-0.15 | 6+/-0.25 | 5+/-0.25 | | |
| 15 | 14+/-0.08 | 13.4+/-0.08 | 13+/-0.08 | 12+/-0.15 | 11+/-0.15 | 10+/-0.15 | 9+/-0.15 | 8+/-0.15 | 7+/-0.15 | 6+/-0.25 | 5+/-0.25 | |
| 16 | 15+/-0.08 | 14.4+/-0.08 | 14+/-0.08 | 13+/-0.08 | 12+/-0.15 | 11+/-0.15 | 10+/-0.15 | 9+/-0.15 | 8+/-0.15 | 7+/-0.15 | 6+/-0.25 | 5+/-0.25 |
| 18 | 17+/-0.08 | 16.4+/-0.08 | 16+/-0.08 | 15+/-0.08 | 14+/-0.08 | 13+/-0.15 | 12+/-0.15 | 11+/-0.15 | 10+/-0.15 | 9+/-0.15 | 8+/-0.15 | 7+/-0.15 |
| 20 | 19+/-0.08 | 18.4+/-0.08 | 18+/-0.08 | 17+/-0.08 | 16+/-0.08 | 15+/-0.15 | 14+/-0.15 | 13+/-0.15 | 12+/-0.15 | 11+/-0.15 | 10+/-0.15 | 9+/-0.15 |
| 22 | 21+/-0.08 | 20.4+/-0.08 | 20+/-0.08 | 19+/-0.08 | 18+/-0.08 | 17+/-0.15 | 16+/-0.15 | 15+/-0.15 | 14+/-0.15 | 13+/-0.15 | 12+/-0.15 | 11+/-0.15 |
| 25 | 24+/-0.08 | 23.4+/-0.08 | 23+/-0.08 | 22+/-0.08 | 21+/-0.08 | 20+/-0.15 | 19+/-0.15 | 18+/-0.15 | 17+/-0.15 | 16+/-0.15 | 15+/-0.15 | 14+/-0.15 |
| 26 | 25+/-0.08 | 24.4+/-0.08 | 24+/-0.08 | 23+/-0.08 | 22+/-0.08 | 21+/-0.15 | 20+/-0.15 | 19+/-0.15 | 18+/-0.15 | 17+/-0.15 | 16+/-0.15 | 15+/-0.15 |
| 28 | 27+/-0.08 | 26.4+/-0.08 | 26+/-0.08 | 25+/-0.08 | 24+/-0.08 | 23+/-0.08 | 22+/-0.15 | 21+/-0.15 | 20+/-0.15 | 19+/-0.15 | 18+/-0.15 | 17+/-0.15 |
| 30 | 29+/-0.08 | 28.4+/-0.08 | 28+/-0.08 | 27+/-0.08 | 26+/-0.08 | 25+/-0.08 | 24+/-0.15 | 23+/-0.15 | 22+/-0.15 | 21+/-0.15 | 20+/-0.15 | 19+/-0.15 |
| 32 | 31+/-0.15 | 30.4+/-0.15 | 30+/-0.15 | 29+/-0.15 | 28+/-0.15 | 27+/-0.15 | 26+/-0.15 | 25+/-0.15 | 24+/-0.15 | 23+/-0.15 | 22+/-0.15 | 21+/-0.15 |
| 35 | 34+/-0.15 | 33.4+/-0.15 | 33+/-0.15 | 32+/-0.15 | 31+/-0.15 | 30+/-0.15 | 29+/-0.15 | 28+/-0.15 | 27+/-0.15 | 26+/-0.15 | 25+/-0.15 | 24+/-0.15 |
| 38 | 37+/-0.15 | 36.4+/-0.15 | 36+/-0.15 | 35+/-0.15 | 34+/-0.15 | 33+/-0.15 | 32+/-0.15 | 31+/-0.15 | 30+/-0.15 | 29+/-0.15 | 28+/-0.15 | 27+/-0.15 |
| 40 | 39+/-0.15 | 38.4+/-0.15 | 38+/-0.15 | 37+/-0.15 | 36+/-0.15 | 35+/-0.15 | 34+/-0.15 | 33+/-0.15 | 32+/-0.15 | 31+/-0.15 | 30+/-0.15 | 29+/-0.15 |
| 42 | | | 40+/-0.20 | 39+/-0.20 | 38+/-0.20 | 37+/-0.20 | 36+/-0.20 | 35+/-0.20 | 34+/-0.20 | 33+/-0.20 | 32+/-0.20 | 31+/-0.20 |
| 45 | | | 43+/-0.20 | 42+/-0.20 | 41+/-0.20 | 40+/-0.20 | 39+/-0.20 | 38+/-0.20 | 37+/-0.20 | 36+/-0.20 | 35+/-0.20 | 34+/-0.20 |
| 48 | | 46+/-0.20 | 45+/-0.20 | 44+/-0.20 | 43+/-0.20 | 42+/-0.20 | 41+/-0.20 | 40+/-0.20 | 39+/-0.20 | 38+/-0.20 | 37+/-0.20 | 36+/-0.20 |
| 50 | | 48+/-0.20 | 47+/-0.20 | 46+/-0.20 | 45+/-0.20 | 44+/-0.20 | 43+/-0.20 | 42+/-0.20 | 41+/-0.20 | 40+/-0.20 | 39+/-0.20 | 38+/-0.20 |
| 55 | | 53+/-0.25 | 52+/-0.25 | 51+/-0.25 | 50+/-0.25 | 49+/-0.25 | 48+/-0.25 | 47+/-0.25 | 46+/-0.25 | 45+/-0.25 | 44+/-0.25 | 43+/-0.25 |
| 60 | | 58+/-0.25 | 57+/-0.25 | 56+/-0.25 | 55+/-0.25 | 54+/-0.25 | 53+/-0.25 | 52+/-0.25 | 51+/-0.25 | 50+/-0.25 | 49+/-0.25 | 48+/-0.25 |
| 65 | | 63+/-0.30 | 62+/-0.30 | 61+/-0.30 | 60+/-0.30 | 59+/-0.30 | 58+/-0.30 | 57+/-0.30 | 56+/-0.30 | 55+/-0.30 | 54+/-0.30 | 53+/-0.30 |
| 70 | | 68+/-0.30 | 67+/-0.30 | 66+/-0.30 | 65+/-0.30 | 64+/-0.30 | 63+/-0.30 | 62+/-0.30 | 61+/-0.30 | 60+/-0.30 | 59+/-0.30 | 58+/-0.30 |
| 75 | | 73+/-0.35 | 72+/-0.35 | 71+/-0.35 | 70+/-0.35 | 69+/-0.35 | 68+/-0.35 | 67+/-0.35 | 66+/-0.35 | 65+/-0.35 | 64+/-0.35 | 63+/-0.35 |
| 80 | | 78+/-0.35 | 77+/-0.35 | 76+/-0.35 | 75+/-0.35 | 74+/-0.35 | 73+/-0.35 | 72+/-0.35 | 71+/-0.35 | 70+/-0.35 | 69+/-0.35 | 68+/-0.35 |
| 85 | | | 82+/-0.40 | 81+/-0.40 | 80+/-0.40 | 79+/-0.40 | 78+/-0.40 | 77+/-0.40 | 76+/-0.40 | 75+/-0.40 | 74+/-0.40 | 73+/-0.40 |
| 90 | | | 87+/-0.40 | 86+/-0.40 | 85+/-0.40 | 84+/-0.40 | 83+/-0.40 | 82+/-0.40 | 81+/-0.40 | 80+/-0.40 | 79+/-0.40 | 78+/-0.40 |
| 95 | | | | 91+/-0.45 | 90+/-0.45 | 89+/-0.45 | 88+/-0.45 | 87+/-0.45 | 86+/-0.45 | 85+/-0.45 | 84+/-0.45 | 83+/-0.45 |
| 100 | | | | 96+/-0.45 | 95+/-0.45 | 94+/-0.45 | 93+/-0.45 | 92+/-0.45 | 91+/-0.45 | 90+/-0.45 | 89+/-0.45 | 88+/-0.45 |
| 110 | | | | 106+/-0.50 | 105+/-0.50 | 104+/-0.50 | 103+/-0.50 | 102+/-0.50 | 101+/-0.50 | 100+/-0.50 | 99+/-0.50 | 98+/-0.50 |
| 120 | | | | 116+/-0.50 | 115+/-0.50 | 114+/-0.50 | 113+/-0.50 | 112+/-0.50 | 111+/-0.50 | 110+/-0.50 | 109+/-0.50 | 108+/-0.50 |
| 130 | | | | | 125+/-0.70 | 124+/-0.70 | 123+/-0.70 | 122+/-0.70 | 121+/-0.70 | 120+/-0.70 | 119+/-0.70 | 118+/-0.70 |
| 140 | | | | | 135+/-0.70 | 134+/-0.70 | 133+/-0.70 | 132+/-0.70 | 131+/-0.70 | 130+/-0.70 | 129+/-0.70 | 128+/-0.70 |
| 150 | | | | | | 144+/-0.80 | 143+/-0.80 | 142+/-0.80 | 141+/-0.80 | 140+/-0.80 | 139+/-0.80 | 138+/-0.80 |
| 160 | | | | | | 154+/-0.80 | 153+/-0.80 | 152+/-0.80 | 151+/-0.80 | 150+/-0.80 | 149+/-0.80 | 148+/-0.80 |
| 170 | | | | | | 164+/-0.90 | 163+/-0.90 | 162+/-0.90 | 161+/-0.90 | 160+/-0.90 | 159+/-0.90 | 158+/-0.90 |
| 180 | | | | | | | 173+/-0.90 | 172+/-0.90 | 171+/-0.90 | 170+/-0.90 | 169+/-0.90 | 168+/-0.90 |
| 190 | | | | | | | 183+/-1.0 | 182+/-1.0 | 181+/-1.0 | 180+/-1.0 | 179+/-1.0 | 178+/-1.0 |
| 200 | | | | | | | 193+/-1.0 | 192+/-1.0 | 191+/-1.0 | 190+/-1.0 | 189+/-1.0 | 188+/-1.0 |
| 220 | | | | | | | | 210+/-1.2 | 209+/-1.2 | 208+/-1.2 | 207+/-1.2 | 206+/-1.2 |
| 240 | | | | | | | | 230+/-1.2 | 229+/-1.2 | 228+/-1.2 | 227+/-1.2 | 226+/-1.2 |
| 260 | | | | | | | | 250+/-1.3 | 249+/-1.3 | 248+/-1.3 | 247+/-1.3 | 246+/-1.3 |

| MEASUREMENT TABLE EN 10305-2 Wall thickness (T) | | | | | | | | | | | | | | | | | |
|---|--|-------------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Spec. outside diameter D and tolerances | Specified internal diameter and tolerances | | | | | | | | | | | | | | | | |
| | 0.5 | 0.8 | 1 | 1.5 | 2 | 2.5 | 3 | 3.5 | 4 | 4.5 | 5 | 5.5 | 6 | 7 | 8 | 9 | 10 |
| 4 | 3+/-0.15 | 2.4+/-0.15 | 2+/-0.15 | | | | | | | | | | | | | | |
| 5 | 4+/-0.15 | 3.4+/-0.15 | 3+/-0.15 | | | | | | | | | | | | | | |
| 6 | 5+/-0.15 | 4.4+/-0.15 | 4+/-0.15 | 3+/-0.15 | 2+/-0.15 | | | | | | | | | | | | |
| 7 | 6+/-0.15 | 5.4+/-0.15 | 5+/-0.15 | 4+/-0.15 | 3+/-0.15 | | | | | | | | | | | | |
| 8 | 7+/-0.15 | 6.4+/-0.15 | 6+/-0.15 | 5+/-0.15 | 4+/-0.15 | 3+/-0.25 | | | | | | | | | | | |
| 9 | 8+/-0.15 | 7.4+/-0.15 | 7+/-0.15 | 6+/-0.15 | 5+/-0.15 | 4+/-0.25 | | | | | | | | | | | |
| 10 | 9+/-0.15 | 8.4+/-0.15 | 8+/-0.15 | 7+/-0.15 | 6+/-0.15 | 5+/-0.15 | 4+/-0.25 | | | | | | | | | | |
| 12 | 11+/-0.15 | 10.4+/-0.15 | 10+/-0.15 | 9+/-0.15 | 8+/-0.15 | 7+/-0.15 | 6+/-0.25 | 5+/-0.25 | 4+/-0.25 | | | | | | | | |
| 14 | 13+/-0.08 | 12.4+/-0.08 | 12+/-0.15 | 11+/-0.15 | 10+/-0.15 | 9+/-0.15 | 8+/-0.15 | 7+/-0.15 | 6+/-0.25 | 5+/-0.25 | | | | | | | |
| 15 | 14+/-0.08 | 13.4+/-0.08 | 13+/-0.08 | 12+/-0.15 | 11+/-0.15 | 10+/-0.15 | 9+/-0.15 | 8+/-0.15 | 7+/-0.15 | 6+/-0.25 | 5+/-0.25 | | | | | | |
| 16 | 15+/-0.08 | 14.4+/-0.08 | 14+/-0.08 | 13+/-0.08 | 12+/-0.15 | 11+/-0.15 | 10+/-0.15 | 9+/-0.15 | 8+/-0.15 | 7+/-0.15 | 6+/-0.25 | 5+/-0.25 | 4+/-0.25 | | | | |
| 18 | 17+/-0.08 | 16.4+/-0.08 | 16+/-0.08 | 15+/-0.08 | 14+/-0.08 | 13+/-0.15 | 12+/-0.15 | 11+/-0.15 | 10+/-0.15 | 9+/-0.15 | 8+/-0.25 | 6+/-0.25 | 6+/-0.25 | | | | |
| 20 | 19+/-0.08 | 18.4+/-0.08 | 18+/-0.08 | 17+/-0.08 | 16+/-0.08 | 15+/-0.15 | 14+/-0.15 | 13+/-0.15 | 12+/-0.15 | 11+/-0.15 | 10+/-0.15 | 9+/-0.15 | 8+/-0.25 | 6+/-0.25 | | | |
| 22 | 21+/-0.08 | 20.4+/-0.08 | 20+/-0.08 | 19+/-0.08 | 18+/-0.08 | 17+/-0.15 | 16+/-0.15 | 15+/-0.15 | 14+/-0.15 | 13+/-0.15 | 12+/-0.15 | 11+/-0.15 | 10+/-0.15 | 8+/-0.25 | | | |
| 25 | 24+/-0.08 | 23.4+/-0.08 | 23+/-0.08 | 22+/-0.08 | 21+/-0.08 | 20+/-0.08 | 19+/-0.15 | 18+/-0.15 | 17+/-0.15 | 16+/-0.15 | 15+/-0.15 | 14+/-0.15 | 13+/-0.15 | 11+/-0.15 | 9+/-0.25 | | |
| 26 | 25+/-0.08 | 24.4+/-0.08 | 24+/-0.08 | 23+/-0.08 | 22+/-0.08 | 21+/-0.08 | 20+/-0.15 | 19+/-0.15 | 18+/-0.15 | 17+/-0.15 | 16+/-0.15 | 15+/-0.15 | 14+/-0.15 | 12+/-0.15 | 10+/-0.25 | | |
| 28 | 27+/-0.08 | 26.4+/-0.08 | 26+/-0.08 | 25+/-0.08 | 24+/-0.08 | 23+/-0.08 | 22+/-0.15 | 21+/-0.15 | 20+/-0.15 | 19+/-0.15 | 18+/-0.15 | 17+/-0.15 | 16+/-0.15 | 14+/-0.15 | 12+/-0.15 | | |
| 30 | 29+/-0.08 | 28.4+/-0.08 | 28+/-0.08 | 27+/-0.08 | 26+/-0.08 | 25+/-0.08 | 24+/-0.15 | 23+/-0.15 | 22+/-0.15 | 21+/-0.15 | 20+/-0.15 | 19+/-0.15 | 18+/-0.15 | 16+/-0.15 | 14+/-0.15 | 12+/-0.15 | 10+/-0.25 |
| 32 | 31+/-0.15 | 30.4+/-0.15 | 30+/-0.15 | 29+/-0.15 | 28+/-0.15 | 27+/-0.15 | 26+/-0.15 | 25+/-0.15 | 24+/-0.15 | 23+/-0.15 | 22+/-0.15 | 21+/-0.15 | 20+/-0.15 | 18+/-0.15 | 16+/-0.15 | 14+/-0.15 | 12+/-0.25 |
| 35 | 34+/-0.15 | 33.4+/-0.15 | 33+/-0.15 | 32+/-0.15 | 31+/-0.15 | 30+/-0.15 | 29+/-0.15 | 28+/-0.15 | 27+/-0.15 | 26+/-0.15 | 25+/-0.15 | 24+/-0.15 | 23+/-0.15 | 21+/-0.15 | 19+/-0.15 | 17+/-0.15 | 15+/-0.15 |
| 38 | 37+/-0.15 | 36.4+/-0.15 | 36+/-0.15 | 35+/-0.15 | 34+/-0.15 | 33+/-0.15 | 32+/-0.15 | 31+/-0.15 | 30+/-0.15 | 29+/-0.15 | 28+/-0.15 | 27+/-0.15 | 26+/-0.15 | 24+/-0.15 | 22+/-0.15 | 20+/-0.15 | 18+/-0.15 |
| 40 | 39+/-0.15 | 38.4+/-0.15 | | 38+/-0.15 | 37+/-0.15 | 36+/-0.15 | 35+/-0.15 | 34+/-0.15 | 33+/-0.15 | 32+/-0.15 | 31+/-0.15 | 30+/-0.15 | 29+/-0.15 | 28+/-0.15 | 26+/-0.15 | 24+/-0.15 | 22+/-0.15 |
| 42 | | | 40+/-0.20 | 39+/-0.20 | 38+/-0.20 | 37+/-0.20 | 36+/-0.20 | 35+/-0.20 | 34+/-0.20 | 33+/-0.20 | 32+/-0.20 | 31+/-0.20 | 30+/-0.20 | 28+/-0.20 | 26+/-0.20 | 24+/-0.20 | 22+/-0.20 |
| 45 | | | | 43+/-0.20 | 42+/-0.20 | 41+/-0.20 | 40+/-0.20 | 39+/-0.20 | 38+/-0.20 | 37+/-0.20 | 36+/-0.20 | 35+/-0.20 | 34+/-0.20 | 33+/-0.20 | 31+/-0.20 | 29+/-0.20 | 27+/-0.20 |
| 48 | | | | 46+/-0.20 | 45+/-0.20 | 44+/-0.20 | 43+/-0.20 | 42+/-0.20 | 41+/-0.20 | 40+/-0.20 | 39+/-0.20 | 38+/-0.20 | 37+/-0.20 | 36+/-0.20 | 34+/-0.20 | 32+/-0.20 | 30+/-0.20 |
| 50 | | | | 48+/-0.20 | 47+/-0.20 | 46+/-0.20 | 45+/-0.20 | 44+/-0.20 | 43+/-0.20 | 42+/-0.20 | 41+/-0.20 | 40+/-0.20 | 39+/-0.20 | 38+/-0.20 | 36+/-0.20 | 34+/-0.20 | 32+/-0.20 |
| 55 | | | | 53+/-0.25 | 52+/-0.25 | 51+/-0.25 | 50+/-0.25 | 49+/-0.25 | 48+/-0.25 | 47+/-0.25 | 46+/-0.25 | 45+/-0.25 | 44+/-0.25 | 43+/-0.25 | 41+/-0.25 | 39+/-0.25 | 37+/-0.25 |
| 60 | | | | 58+/-0.25 | 57+/-0.25 | 56+/-0.25 | 55+/-0.25 | 54+/-0.25 | 53+/-0.25 | 52+/-0.25 | 51+/-0.25 | 50+/-0.25 | 49+/-0.25 | 48+/-0.25 | 46+/-0.25 | 44+/-0.25 | 42+/-0.25 |
| 65 | | | | 63+/-0.30 | 62+/-0.30 | 61+/-0.30 | 60+/-0.30 | 59+/-0.30 | 58+/-0.30 | 57+/-0.30 | 56+/-0.30 | 55+/-0.30 | 54+/-0.30 | 53+/-0.30 | 51+/-0.30 | 49+/-0.30 | 47+/-0.30 |
| 70 | | | | 68+/-0.30 | 67+/-0.30 | 66+/-0.30 | 65+/-0.30 | 64+/-0.30 | 63+/-0.30 | 62+/-0.30 | 61+/-0.30 | 60+/-0.30 | 59+/-0.30 | 58+/-0.30 | 56+/-0.30 | 54+/-0.30 | 52+/-0.30 |
| 75 | | | | 73+/-0.35 | 72+/-0.35 | 71+/-0.35 | 70+/-0.35 | 69+/-0.35 | 68+/-0.35 | 67+/-0.35 | 66+/-0.35 | 65+/-0.35 | 64+/-0.35 | 63+/-0.35 | 61+/-0.35 | 59+/-0.35 | 57+/-0.35 |
| 80 | | | | 78+/-0.35 | 77+/-0.35 | 76+/-0.35 | 75+/-0.35 | 74+/-0.35 | 73+/-0.35 | 72+/-0.35 | 71+/-0.35 | 70+/-0.35 | 69+/-0.35 | 68+/-0.35 | 66+/-0.35 | 64+/-0.35 | 62+/-0.35 |
| 85 | | | | | 82+/-0.40 | 81+/-0.40 | 80+/-0.40 | 79+/-0.40 | 78+/-0.40 | 77+/-0.40 | 76+/-0.40 | 75+/-0.40 | 74+/-0.40 | 73+/-0.40 | 71+/-0.40 | 69+/-0.40 | 67+/-0.40 |
| 90 | | | | | 87+/-0.40 | 86+/-0.40 | 85+/-0.40 | 84+/-0.40 | 83+/-0.40 | 82+/-0.40 | 81+/-0.40 | 80+/-0.40 | 79+/-0.40 | 78+/-0.40 | 76+/-0.40 | 74+/-0.40 | 72+/-0.40 |
| 95 | | | | | | 91+/-0.45 | 90+/-0.45 | 89+/-0.45 | 88+/-0.45 | 87+/-0.45 | 86+/-0.45 | 85+/-0.45 | 84+/-0.45 | 83+/-0.45 | 81+/-0.45 | 79+/-0.45 | 77+/-0.45 |
| 100 | | | | | | 96+/-0.45 | 95+/-0.45 | 94+/-0.45 | 93+/-0.45 | 92+/-0.45 | 91+/-0.45 | 90+/-0.45 | 89+/-0.45 | 88+/-0.45 | 86+/-0.45 | 84+/-0.45 | 82+/-0.45 |
| 110 | | | | | | 106+/-0.50 | 105+/-0.50 | 104+/-0.50 | 103+/-0.50 | 102+/-0.50 | 101+/-0.50 | 100+/-0.50 | 99+/-0.50 | 98+/-0.50 | 96+/-0.50 | 94+/-0.50 | 92+/-0.50 |
| 120 | | | | | | 115+/-0.50 | 114+/-0.50 | 114+/-0.50 | 113+/-0.50 | 112+/-0.50 | 111+/-0.50 | 110+/-0.50 | 109+/-0.50 | 108+/-0.50 | 106+/-0.50 | 104+/-0.50 | 102+/-0.50 |
| 130 | | | | | | 125+/-0.70 | 124+/-0.70 | 124+/-0.70 | 123+/-0.70 | 122+/-0.70 | 121+/-0.70 | 120+/-0.70 | 119+/-0.70 | 118+/-0.70 | 116+/-0.70 | 114+/-0.70 | 112+/-0.70 |
| 140 | | | | | | 135+/-0.70 | 134+/-0.70 | 134+/-0.70 | 133+/-0.70 | 132+/-0.70 | 131+/-0.70 | 130+/-0.70 | 129+/-0.70 | 128+/-0.70 | 126+/-0.70 | 124+/-0.70 | 122+/-0.70 |
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3D | Heléns

Halmstad Sweden



Heléns - Processing

We can certainly help you to become better at that which you are best at. But first let us think through this in a couple of natural stages.

Processing in our machines

You start by letting us relieve a few simple stages of your production process – cutting, deburring, blasting, etc. The reasons can be many. You may be using your own machines inefficiently, you're not satisfied with the quality, you need more personnel further on in the production chain.

Our machines always operate at high capacity. Which guarantees cost effectiveness. Depending on your production structure, the next stage could be letting us take care of parts of your cutting processes, end forming or advanced laser cutting.

Transfer production to us

The natural time to take this stage is when you are about to make a replacement investment. It can also be smart to regularly think through the entire production chain, from raw material reception to final product delivery, and evaluate where each of the process stages should be performed in an unbiased manner. Capacity or quality need to be increased. A machine needs to be replaced or upgraded. Maybe you need to supplement with several machines. We are prepared to discuss different solutions. Let our production technicians and your production technicians talk about material flow and optimum production. It could be stimulating for both parties.

Expanding operations

All expansion doesn't necessarily have to take place on your premises. Sometimes it can be more profitable having production outsourced. Maybe you don't have all that much space over and don't want to tie up capital in new plant? Our maybe you're in a critical situation and need to get production running faster than you can manage yourselves?

We want you to see us as an integrated part of your production.



The logical arrangement

Added-value is generated by the interaction between ourselves and yourselves. This long-term business dialogue opens the way for new arrangements, new methods and new possibilities, without any real limitations.

Four typical requirement situations

Your company is unique – and has the whole future ahead of it. Your company is also in a unique competitive situation, with unique strategies, unique products, unique resources and unique customers.

We have therefore rationalised the experience we have of all of our unique customers, divided up our world into four typical requirement situations and then linked these with four simplified arrangements where we can be of assistance.

1. The basic arrangement
2. The logistic arrangement
3. The industrial arrangement
4. The innovative arrangement



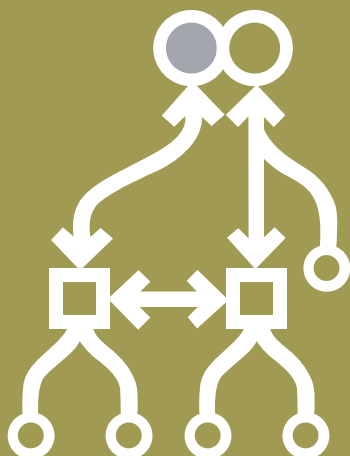
The basic arrangement
You know what you want.
We have it in stock. You order
and we deliver.



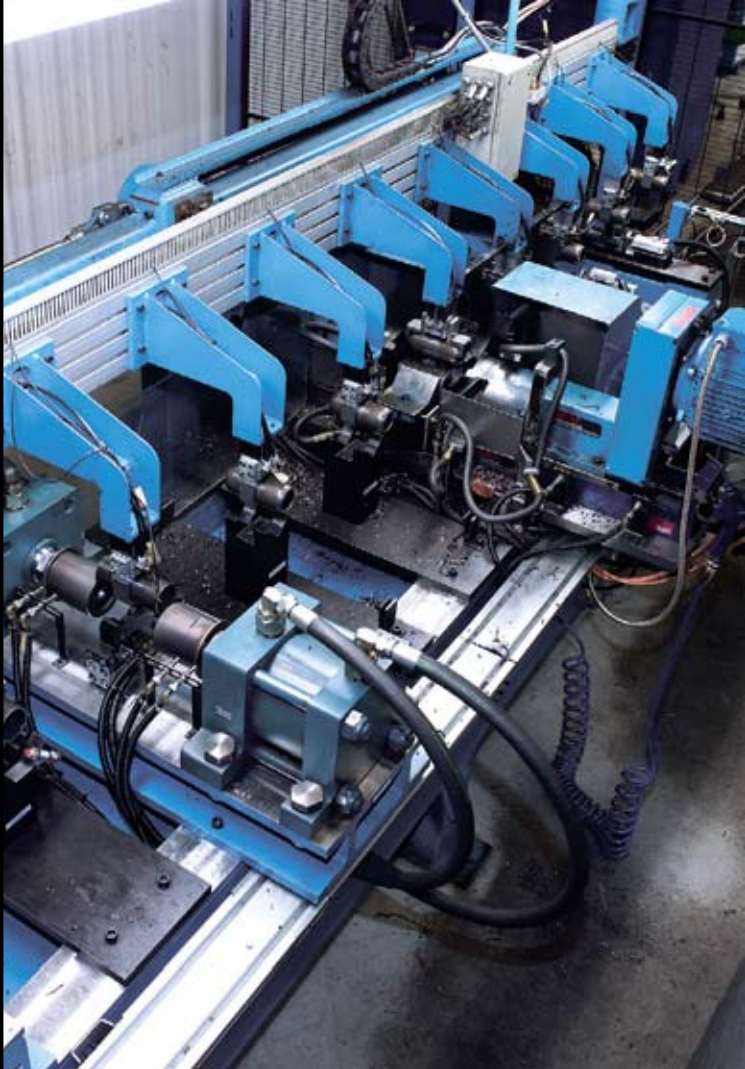
The logistic arrangement
You know what you want. We
make sure you get it and deliver
just-in-time.



The industrial arrangement
You know what you need. We
tell you what you should have.
We make sure you get it and
deliver just-in-time.



The innovative arrangement
You don't know what you need.
We develop a solution together. We
make sure you get what you need.

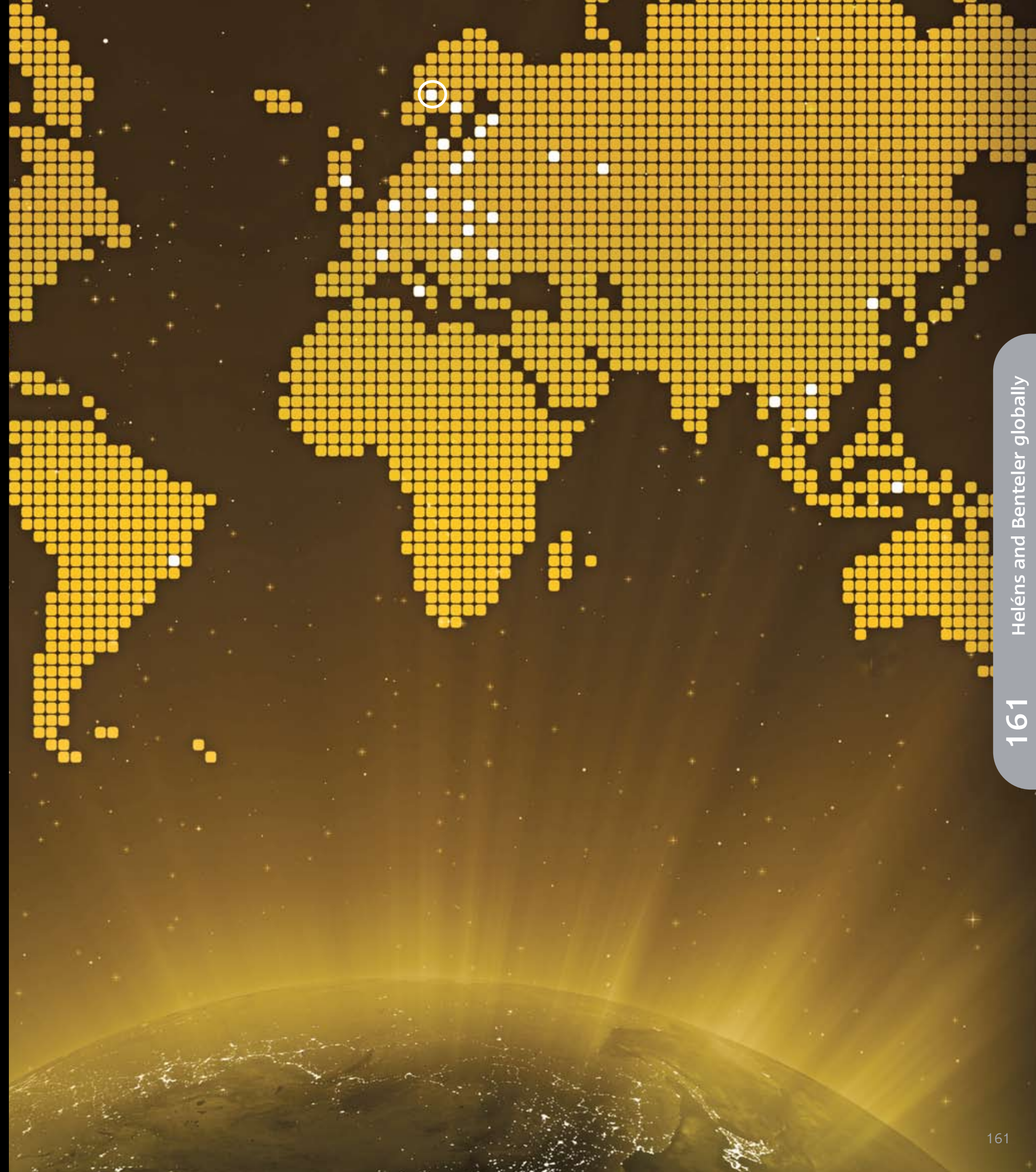


Heléns from an international perspective

"Customized solutions worldwide by Benteler Distribution"

Even though our home markets are Scandinavia and the Baltic countries, we still have many internationally-established customers with products in the global marketplace. To meet global competition, production is moved from country to country on an almost daily basis. In our experience, our customers are interested in maintaining good cooperation with us if it is at all possible.

At Heléns, we know that this is in our interest to and our access to Benteler Distribution's international network is the key that allows us to continue to act as an active partner despite these rapid movements. Using this network, which covers almost the whole of Europe, we can ensure that our customers get the best price and the right delivery time for their purchases. Due to our inclusion in Benteler Distribution, our customers always have access to strong international support. And they need it – our customers compete by moving their production to reduce production costs and to come closer to end users.



Notes

[illegible]

Notes

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

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