



Product Range

Seamless Stainless Steel & Nickel-Based Alloy Tubing and Piping



Seamless stainless steel and nickel-based alloy tubes and pipes are our everyday passion and our history at Salzgitter Mannesmann Stainless Tubes.

Our group integrates the tradition of three seamless stainless steel worlds (Mannesmann, Dalmine and Vallourec). Resulting in “DMV Stainless” from this international merger in 1994, DMV became a part of Salzgitter group in 2003 and adjusted its name to Salzgitter Mannesmann Stainless Tubes in 2008.

With an international network of plants and offices, we are a global top player in our markets and a consistently reliable business partner, ensuring quick and customer focused answers to changing market requirements.

Our customers profit from one of the most comprehensive product ranges in our business:

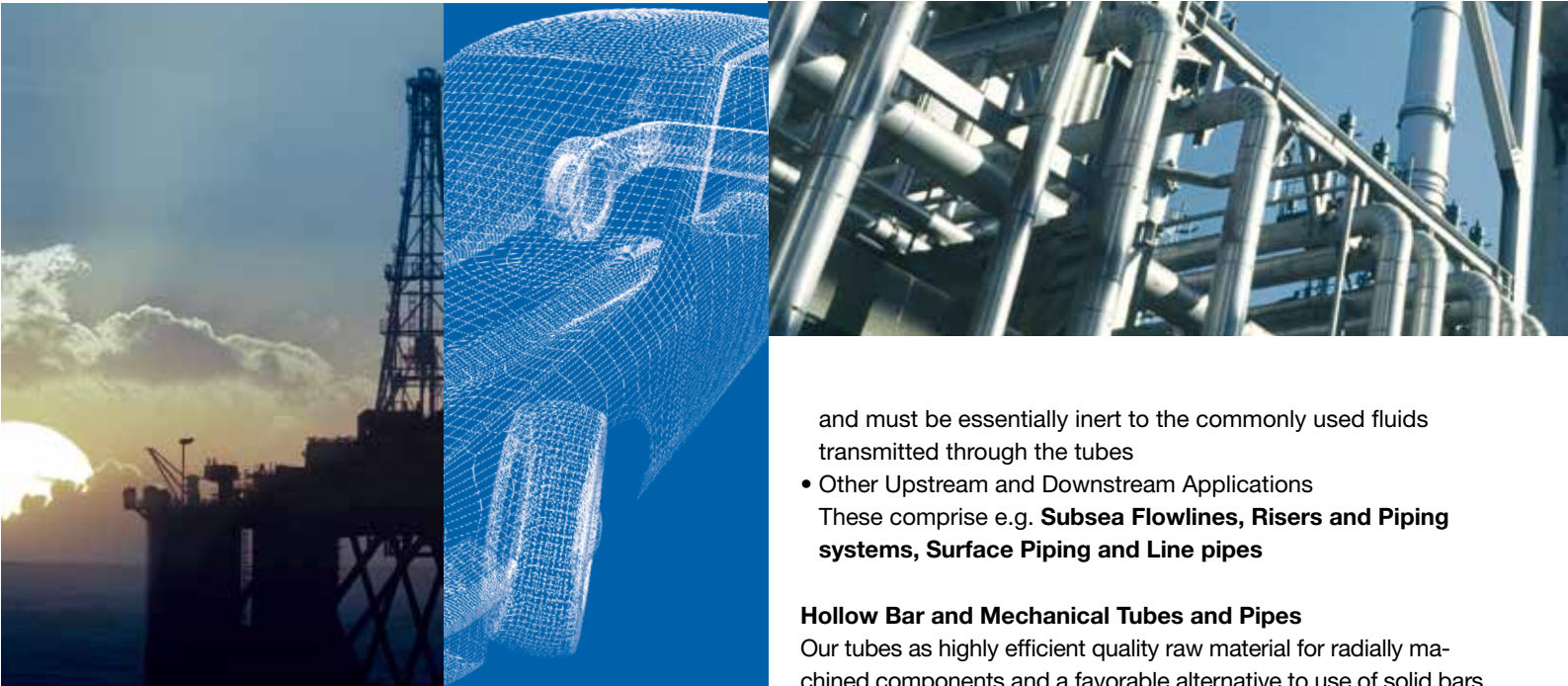
- from small instrumentation tubing to large pipe sizes with outside diameters from 6 to 273 mm (from 0.24 up to 10.752 inches) and with wall thicknesses from 0.5 up to 50 mm (from 0.02 up to 1.97 inches)
- in materials from standard austenitic stainless, duplex and super-duplex steels to highly sophisticated nickel-based alloys – this variety offers highest corrosion resistance, heat resistance and/or high-temperature, high-strength materials.

We combine high quality products for critical environments with efficient and reliable services: our customers thus enjoy a supportive personal account management.

Ongoing cycles of investment ensure that we work according to the latest technical standards. This gives us the trustworthiness to equip the so called “critical spots” of customers plants, products and processes with the special qualities of our tubes and pipes.

Typically, these “critical” service conditions are defined e.g. by

- high temperatures
- high pressure
- aggressive media (acids or basic)



Our tubes and pipes come into operation mainly in the following sectors:

Instrumentation Tubes

Used in several market segments (e.g. chemical, Oil & Gas, ...) for analyser systems, measurement instruments and hydraulic circuits

Boiler Tubes

In power generation plants in applications such as reheaters and superheaters

Nuclear Tubes (Power Gen, Waste treatment, Fuel fabrication)
NSSS piping, Heat exchanger tubes (U-bent & straight), In-core instrumentation tubes, Instrumentation tubes for quality class 1, 2, 3 of the nuclear power application

Furnace Tubes

Industrial furnaces and similar applications demand our heat-, high temperature- and corrosion resistant austenitic steel (usually with high carbon contents) and nickel-based alloys

Oil and Gas Tubes

• **OCTG (Oil Country Tubular Goods)**

Onshore and offshore oil and gas exploration and production need special tubular products to cope with high pressure and/or high temperature conditions as well as with highly aggressive substances

• **Umbilical Tubes**

Subsea applications have to withstand aggressive sea water

and must be essentially inert to the commonly used fluids transmitted through the tubes

- Other Upstream and Downstream Applications
These comprise e.g. **Subsea Flowlines, Risers and Piping systems, Surface Piping and Line pipes**

Hollow Bar and Mechanical Tubes and Pipes

Our tubes as highly efficient quality raw material for radially machined components and a favorable alternative to use of solid bars

Heat Exchanger Tubes

Serving e.g. refineries, (petro-)chemical and pharmaceutical industries as well as fertilizer production and food industries

General Tubes and Pipes

Apart from the above mentioned special applications, we also offer tubes for general use and different corrosion and heat resistant applications

Salzgitter Mannesmann Stainless Tubes products are exported worldwide to all continents for use within plants, products and processes, e.g. in:

- Onshore and offshore oil and gas industry
- Chemical and petrochemical industry
- Energy and power generation
- Mechanical- and plant engineering
- Machine tool manufacturing
- Automotive industry
- Environmental engineering
(water treatment and waste incineration)
- Nuclear industry
- Ship-yard industry
- Food processing industry
- Coal gasification
- Fertilizer production
- Environmental protection
- Aerospace industry
- Naval engineering
- Biotechnology
- Analytical and medical technology

You can find the following materials within the framework of our manufacturing programme:

STAINLESS STEELS

Corrosion resistant stainless steels

Our product range offers our customers two classes of stainless steels that have an excellent resistance to corrosion.

Austenitic-ferritic stainless steels (duplex and super duplex steels) are characterised by their excellent mechanical properties, particularly their high stress corrosion cracking resistance. They are especially well-suited for maritime applications and in the chemical industry. Their excellent resistance to corrosion enables them to withstand concentrated chloride medium, particularly under mechanical stress. This makes them superior to austenitic steels in many cases.

Austenitic corrosion resistant stainless steels primarily include materials with higher alloys (e.g. nickel, chrome and molybdenum). They are resistant to different types of corrosion caused by wet chemical influences, and are still able to maintain an austenitic face centred cubic matrix. This creates a range of highly versatile stainless steels.

High temperature stainless steels

These steels maintain their mechanical properties when exposed to elevated temperatures on either a short- or long-term basis.

Depending on the area of application these temperatures can rise e.g. to

- 500°C (932°F) in chemical processes
- 700°C (1,292°F) in power plant applications
- 1,000°C (1,832°F) for furnace engineering

With their increased concentration of chrome, silicon and aluminium they are especially resistant under the influence of hot gases as well as in salt and metal melting. However, the individual corrosion resistance is always dependent on the surrounding conditions, and can therefore not be precisely determined in a single testing.

Available upon special request are titanium tubes for heat exchangers and bimetallic tubes for strippers in urea application.

NICKEL-BASED ALLOYS

Corrosion resistant nickel-based alloys

Nickel's high degree of corrosion resistance is due to the fact that it is a relatively noble metal within the galvanic electrochemical series of metals.

Adding chrome, molybdenum, copper and other elements forms alloys with even higher resistance to oxidation and corrosion which makes it possible to use them in a wider range of applications. Seamless tubes and pipes made of corrosion resistant nickel-based alloys are the first choice for basic industry manufacturers due to their excellent resistance to various acids (sulphuric acid, hydrochloric acid, phosphoric acid) and alkaline solutions.

High temperature nickel-based alloys

Based on an austenitic structure, high temperature, high strength nickel-based alloys allow further increasing of specific alloying elements, such as chrome, molybdenum, tungsten, titanium, aluminium, niobium, etc. This leads to a very low iron concentration enabling the material to be employed within applications up to 1,100°C (2,012°F) in aggressive atmospheres.

Our production techniques are adapted to the high quality level required by our customers.

Hot Extrusion

... is a production process for manufacturing hot finished tubes, pipes, re-draw hollows and hollow bars in stainless steels and nickel-based alloys. Our range of dimensions includes

- outside diameters from 32 up to 273 mm (1.26 up to 10.752 inches) and
- wall thicknesses from 3.4 up to 50 mm (0.134 up to 1.97 inches)

Cold Pilgering

... is the preferred production process for seamless, cold-finished, high alloyed stainless steel and nickel-based alloy tubes and pipes. This technique provides a high forming rate, close tolerances and good productivity yields.

Our production range covers

- outside diameters from 6 up to 219.1 mm (0.24 up to 8.63 inches) and
- wall thicknesses from 0.5 up to 30 mm (0.02 up to 1.18 inches)

Cold Drawing

... is the ideal process for achieving very close tolerance ranges, especially for outside diameters. Additionally, the cold drawing process is the perfect choice when a low forming ratio is required.



ISO-Dimensions and Tolerances for seamless Tubes and Pipes

| | | | | | |
|-----------------------------|--|--|--|--|---------------------------------------|
| Outside Diameter | Hot Extruded | | Cold Finished | | |
| EN ISO 1127 tolerance class | D2 | | D2 | D3 | D4 |
| Permissible deviation | ± 1.0% (min. ± 0.5 mm (± 0.0197")) | | ± 1.0% (min. ± 0.5 mm (± 0.0197")) | ± 0.75% (min. ± 0.3 mm (± 0.0012")) | ± 0.5% (min. ± 0.1 mm (± 0.0039")) |
| Wall thickness | Hot Extruded ≤ 5 mm (0.1969") | | > 5 mm (0.1969") | | Cold Finished |
| EN ISO 1127 tolerance class | T1 | | T2 | T3 | |
| Permissible deviation | ± 15.0% (min. ± 0.6 mm (± 0.0236")) | | ± 12.5% (min. ± 0.4 mm (± 0.0157")) | ± 10% (min. ± 0.2 mm (± 0.0074")) | |

| Outside Diameter | Wall Thickness (hot extruded) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|
| | inch | 0.110 | 0.126 | 0.134 | 0.142 | 0.157 | 0.197 | 0.213 | 0.220 | 0.232 | 0.248 | 0.280 | 0.315 | 0.346 | 0.365 | 0.394 | 0.433 | 0.492 | 0.559 | 0.630 | 0.689 | 0.787 | 0.874 | 0.984 | 1.102 | 1.181 | 1.260 | 1.417 | 1.575 | 2.362 | |
| inch | mm | 2.8 | 3.2 | 3.4 | 3.6 | 4.0 | 5.0 | 5.4 | 5.6 | 5.9 | 6.3 | 7.1 | 8.0 | 8.8 | 9.3 | 10.0 | 11.0 | 12.5 | 14.2 | 16.0 | 17.5 | 20.0 | 22.2 | 25.0 | 28.0 | 30.0 | 32.0 | 36.0 | 40.0 | 60.0 | |
| 1.260 | 32.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.327 | 33.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.378 | 35.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.496 | 38.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.575 | 40.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.669 | 42.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.752 | 44.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.902 | 48.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.008 | 51.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.126 | 54.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.244 | 57.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.374 | 60.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.500 | 63.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.756 | 70.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.874 | 73.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.996 | 76.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.248 | 82.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.500 | 88.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.000 | 101.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.252 | 108.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.500 | 114.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.764 | 121.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.000 | 127.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.236 | 133.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.500 | 139.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.563 | 141.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6.039 | 153.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6.260 | 159.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6.626 | 168.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7.000 | 177.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7.626 | 193.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8.625 | 219.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9.626 | 244.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10.000 | 254.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10.079 | 256.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10.752 | 273.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11.024 | 280.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

“American Standard” Series

| Outside Diameter | | Schedule 5S | | Schedule 10S | | Schedule 40S | | Schedule 80S | | Schedule 120 | | Schedule 160 | | Schedule XXS | |
|------------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|--------------|---------------|--------------|---------------|--------------|---------------|--------------|---------------|
| | | WT | M | WT | M | WT | M | WT | M | WT | M | WT | M | WT | M |
| Nominal inches | inch | inch | lb/ft | inch | lb/ft | inch | lb/ft | inch | lb/ft | inch | lb/ft | inch | lb/ft | inch | lb/ft |
| | mm | mm | kg/m | mm | kg/m | mm | kg/m | mm | kg/m | mm | kg/m | mm | kg/m | mm | kg/m |
| 1/4 | 0.540 | | | 0.065 | 0.334 | 0.088 | 0.432 | 0.119 | 0.542 | | | | | | |
| | 13.7 | | | 1.65 | 0.498 | 2.24 | 0.643 | 3.02 | 0.808 | | | | | | |
| 3/8 | 0.675 | | | 0.065 | 0.429 | 0.091 | 0.574 | 0.126 | 0.748 | | | | | | |
| | 17.1 | | | 1.65 | 0.638 | 2.31 | 0.855 | 3.20 | 1.114 | | | | | | |
| 1/2 | 0.840 | 0.065 | 0.546 | 0.083 | 0.682 | 0.109 | 0.885 | 0.147 | 1.104 | | | 0.188 | 1.331 | 0.294 | 1.742 |
| | 21.34 | 1.65 | 0.814 | 2.11 | 1.016 | 2.77 | 1.288 | 3.73 | 1.645 | | | 4.78 | 1.982 | 7.47 | 2.594 |
| 3/4 | 1.050 | 0.065 | 0.695 | 0.086 | 0.872 | 0.113 | 1.150 | 0.154 | 1.488 | | | 0.219 | 1.976 | 0.308 | 2.482 |
| | 26.7 | 1.65 | 1.035 | 2.11 | 1.299 | 2.87 | 1.713 | 3.91 | 2.231 | | | 5.56 | 2.943 | 7.82 | 3.697 |
| 1 | 1.315 | 0.065 | 0.881 | 0.109 | 1.426 | 0.133 | 1.706 | 0.179 | 2.207 | | | 0.250 | 2.988 | 0.358 | 3.715 |
| | 33.4 | 1.65 | 1.312 | 2.77 | 2.125 | 3.38 | 2.541 | 4.55 | 3.287 | | | 6.35 | 4.301 | 9.09 | 5.533 |
| 1 1/4 | 1.660 | 0.065 | 1.125 | 0.109 | 1.836 | 0.140 | 2.312 | 0.191 | 3.045 | | | 0.250 | 3.827 | 0.382 | 5.300 |
| | 42.2 | 1.65 | 1.675 | 2.77 | 2.735 | 3.56 | 3.444 | 4.85 | 4.536 | | | 6.35 | 5.700 | 9.70 | 7.894 |
| 1 1/2 | 1.900 | 0.065 | 1.294 | 0.109 | 2.120 | 0.145 | 2.760 | 0.200 | 3.691 | | | 0.281 | 4.940 | 0.400 | 6.510 |
| | 48.3 | 1.65 | 1.927 | 2.77 | 3.158 | 3.68 | 4.112 | 5.08 | 5.498 | | | 7.14 | 7.359 | 10.15 | 9.696 |
| 2 | 2.375 | 0.065 | 1.627 | 0.109 | 2.679 | 0.154 | 3.707 | 0.218 | 5.100 | | | 0.344 | 7.576 | 0.436 | 9.162 |
| | 60.3 | 1.65 | 2.423 | 2.77 | 3.990 | 3.91 | 5.521 | 5.54 | 7.596 | | | 8.74 | 11.284 | 11.07 | 13.646 |
| 2 1/2 | 2.875 | 0.083 | 2.515 | 0.120 | 3.587 | 0.203 | 5.895 | 0.276 | 7.777 | | | 0.375 | 10.168 | 0.552 | 13.901 |
| | 73.0 | 2.11 | 3.745 | 3.05 | 5.342 | 5.16 | 8.765 | 7.01 | 11.583 | | | 9.53 | 15.146 | 14.02 | 20.706 |
| 3 | 3.500 | 0.083 | 3.079 | 0.120 | 4.402 | 0.216 | 7.698 | 0.300 | 10.412 | | | 0.438 | 14.551 | 0.600 | 18.872 |
| | 88.9 | 2.11 | 4.595 | 3.05 | 6.557 | 5.49 | 11.466 | 7.62 | 15.509 | | | 11.13 | 21.674 | 15.24 | 28.109 |
| 3 1/2 | 4.000 | 0.083 | 3.529 | 0.120 | 5.053 | 0.226 | 9.250 | 0.318 | 12.703 | | | | | | |
| | 101.6 | 2.11 | 5.256 | 3.05 | 7.526 | 5.74 | 13.778 | 8.08 | 18.921 | | | | | | |
| 4 | 4.500 | | | 0.120 | 5.704 | 0.237 | 10.958 | 0.337 | 15.216 | 0.438 | 19.304 | 0.531 | 22.862 | 0.674 | 27.969 |
| | 114.3 | | | 3.05 | 8.496 | 6.02 | 16.322 | 8.56 | 22.665 | 11.13 | 28.753 | 13.49 | 34.053 | 17.12 | 41.660 |
| 5 | 5.563 | | | 0.134 | 7.882 | 0.258 | 14.838 | 0.375 | 21.111 | 0.500 | 27.456 | 0.625 | 33.482 | 0.750 | 39.151 |
| | 141.3 | | | 3.40 | 11.740 | 6.55 | 22.101 | 9.53 | 31.444 | 12.70 | 40.896 | 15.88 | 49.871 | 19.05 | 58.315 |
| 6 | 6.625 | | | 0.134 | 9.425 | 0.280 | 19.266 | 0.432 | 29.014 | 0.562 | 36.951 | 0.719 | 46.058 | 0.864 | 54.003 |
| | 168.3 | | | 3.40 | 14.039 | 7.11 | 28.697 | 10.97 | 43.217 | 14.27 | 55.038 | 18.26 | 68.603 | 21.95 | 80.438 |
| 8 | 8.625 | | | | | 0.322 | 29.004 | 0.500 | 44.066 | 0.719 | 61.652 | 0.906 | 75.952 | 0.875 | 73.572 |
| | 219.1 | | | | | 8.18 | 43.202 | 12.70 | 65.637 | 18.26 | 91.830 | 23.01 | 112.901 | 22.23 | 109.586 |

Stainless steel pipe ANSI B 36-19 M up to and including Schedule 80 S. Above, ANSI B 36-10 M dimensions.

The conventional linear mass are those of austenitic stainless steel calculated from the formula:

$$M = \frac{(D-T)T}{K} \text{ (corresponding to a density of 7.97 with } K = 40)$$

The above values (weight / meter and feet) are those applicable to austenitic stainless steel.

M = mass (weight per length unit)

D = outside diameter

T = wall thickness

ASTM A 213 and A 269

| Outside Diameter | | Wall Thickness (cold finished) | | | | | | | | | | | | | | | | | | | | |
|------------------|-------|--------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | 0.035 | 0.039 | 0.047 | 0.049 | 0.059 | 0.063 | 0.065 | 0.071 | 0.079 | 0.083 | 0.095 | 0.098 | 0.102 | 0.109 | 0.114 | 0.120 | 0.126 | 0.134 | 0.142 | 0.148 | 0.157 |
| inch | mm | 0.89 | 1.0 | 1.2 | 1.24 | 1.5 | 1.6 | 1.65 | 1.8 | 2.0 | 2.11 | 2.41 | 2.5 | 2.6 | 2.77 | 2.9 | 3.05 | 3.2 | 3.4 | 3.6 | 3.76 | 4.0 |
| BWG | | 20 | | | 18 | | | 16 | | | 14 | 13 | | | 12 | | | 11 | 10 | | 9 | |
| inch | mm | | | | | | | | | | | | | | | | | | | | | |
| 0.500 | 12.70 | | | | | | | | | | | | | | | | | | | | | |
| 0.540 | 13.72 | | | | | | | | | | | | | | | | | | | | | |
| 0.551 | 14.00 | | | | | | | | | | | | | | | | | | | | | |
| 0.625 | 15.90 | | | | | | | | | | | | | | | | | | | | | |
| 0.675 | 17.20 | | | | | | | | | | | | | | | | | | | | | |
| 0.750 | 19.05 | | | | | | | | | | | | | | | | | | | | | |
| 0.787 | 20.00 | | | | | | | | | | | | | | | | | | | | | |
| 0.840 | 21.30 | | | | | | | | | | | | | | | | | | | | | |
| 0.984 | 25.00 | | | | | | | | | | | | | | | | | | | | | |
| 1.000 | 25.40 | | | | | | | | | | | | | | | | | | | | | |
| 1.050 | 26.90 | | | | | | | | | | | | | | | | | | | | | |
| 1.181 | 30.00 | | | | | | | | | | | | | | | | | | | | | |
| 1.250 | 31.80 | | | | | | | | | | | | | | | | | | | | | |
| 1.315 | 33.70 | | | | | | | | | | | | | | | | | | | | | |
| 1.500 | 38.10 | | | | | | | | | | | | | | | | | | | | | |
| 1.660 | 42.40 | | | | | | | | | | | | | | | | | | | | | |
| 1.750 | 44.50 | | | | | | | | | | | | | | | | | | | | | |
| 1.900 | 48.30 | | | | | | | | | | | | | | | | | | | | | |
| 2.000 | 50.80 | | | | | | | | | | | | | | | | | | | | | |
| 2.125 | 54.00 | | | | | | | | | | | | | | | | | | | | | |

Tolerances according to ASTM A 1016.
 Tube deliveries according to EN-DIN-AFNOR-UNI requirements as well as intermediate dimensions (diameters, wall thicknesses) on request.



Dimensions for Heat Exchangers



U-bending

| Outside Diameter | Wall Thickness | | | | | | | | | |
|------------------|----------------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| | 0.035 | 0.039 | 0.049 | 0.059 | 0.065 | 0.079 | 0.083 | 0.095 | 0.109 | |
| inch | 0.035 | 0.039 | 0.049 | 0.059 | 0.065 | 0.079 | 0.083 | 0.095 | 0.109 | |
| mm | 0.89 | 1.0 | 1.24 | 1.5 | 1.65 | 2.0 | 2.11 | 2.41 | 2.77 | |
| BWG | 20 | | 18 | | 16 | | 14 | 13 | 12 | |
| inch | mm | | | | | | | | | |
| 0.625 | 15.90 | 40.0 | 32.0 | 24.0 | 24.0 | 24.0 | 32.0 | | | |
| 0.630 | 16.00 | 40.0 | 32.0 | 24.0 | 24.0 | 24.0 | 32.0 | | | |
| 0.750 | 19.05 | | 38.0 | 28.5 | 28.5 | 28.5 | 28.5 | 38.0 | | |
| 0.787 | 20.00 | | 40.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.5 | 35.0 | |
| 0.839 | 21.30 | | | 42.5 | 32.0 | 32.0 | 32.0 | 32.0 | 32.0 | |
| 0.984 | 25.00 | | | | 50.0 | 38.0 | 38.0 | 38.0 | 38.0 | 50.0 |
| 1.000 | 25.40 | | | | 51.0 | 38.0 | 38.0 | 38.0 | 38.0 | 51.0 |
| 1.181 | 30.00 | | | | 60.0 | 45.0 | 45.0 | 45.0 | 45.0 | 60.0 |
| 1.252 | 31.80 | | | | 65.0 | 48.0 | 48.0 | 48.0 | 48.0 | 65.0 |

Minimum bending radius in mm

Gauge equivalents: exchanger tubes

| BWG / SWG | BWG (Birmingham Wire Gauge) | | SWG (Standard Wire Gauge) | |
|-----------|--------------------------------|--------|------------------------------|--------|
| | inches | mm | inches | mm |
| 30 | 0.012 | 0.305 | 0.0124 | 0.315 |
| 29 | 0.013 | 0.330 | 0.0136 | 0.345 |
| 28 | 0.014 | 0.356 | 0.0148 | 0.376 |
| 27 | 0.016 | 0.406 | 0.0164 | 0.417 |
| 26 | 0.018 | 0.457 | 0.018 | 0.457 |
| 25 | 0.020 | 0.508 | 0.020 | 0.508 |
| 24 | 0.022 | 0.559 | 0.022 | 0.559 |
| 23 | 0.025 | 0.635 | 0.024 | 0.609 |
| 22 | 0.028 | 0.711 | 0.028 | 0.711 |
| 21 | 0.032 | 0.812 | 0.032 | 0.812 |
| 20 | 0.035 | 0.889 | 0.036 | 0.914 |
| 19 | 0.042 | 1.066 | 0.040 | 1.016 |
| 18 | 0.049 | 1.244 | 0.048 | 1.218 |
| 17 | 0.058 | 1.472 | 0.056 | 1.421 |
| 16 | 0.065 | 1.650 | 0.064 | 1.625 |
| 15 | 0.072 | 1.828 | 0.072 | 1.828 |
| 14 | 0.083 | 2.108 | 0.080 | 2.032 |
| 13 | 0.095 | 2.412 | 0.092 | 2.336 |
| 12 | 0.109 | 2.768 | 0.104 | 2.641 |
| 11 | 0.120 | 3.047 | 0.116 | 2.946 |
| 10 | 0.134 | 3.403 | 0.128 | 3.251 |
| 9 | 0.148 | 3.759 | 0.144 | 3.657 |
| 8 | 0.165 | 4.191 | 0.160 | 4.064 |
| 7 | 0.180 | 4.571 | 0.176 | 4.470 |
| 6 | 0.203 | 5.156 | 0.192 | 4.876 |
| 5 | 0.220 | 5.588 | 0.212 | 5.384 |
| 4 | 0.238 | 6.045 | 0.232 | 5.892 |
| 3 | 0.259 | 6.578 | 0.252 | 6.400 |
| 2 | 0.284 | 7.213 | 0.276 | 7.010 |
| 1 | 0.300 | 7.620 | 0.300 | 7.620 |
| 0 | 0.340 | 8.635 | 0.324 | 8.229 |
| 00 | 0.380 | 9.651 | 0.348 | 8.839 |
| 000 | 0.425 | 10.794 | 0.372 | 9.448 |
| 0000 | 0.454 | 11.531 | 0.400 | 10.159 |
| 00000 | 0.500 | 12.700 | 0.432 | 10.972 |
| 000000 | — | — | 0.464 | 11.785 |
| 0000000 | — | — | 0.500 | 12.700 |

Initial length

Maximum lengths of 32 m can be supplied on request.

Bending radius

Maximum 1500 mm

Heat treatment of the bend

U-bends with a bending radius up to maximum of 750 mm can be heat treated on request.

The above sizes are those most frequently used, other sizes can be produced upon request.

The dimensions for heat exchanger tubes in special grades and nickel-based alloys may differ from the above, please contact your nearest Salzgitter Mannesmann Stainless Tubes office for further information.



At Salzgitter Mannesmann Stainless Tubes, quality management begins way ahead of any production step.

From the selection of raw material suppliers up to the final quality tests in our own laboratories we thoroughly evaluate, test and control our products and processes, aiming at continuous improvements.

For in-process and acceptance inspection, the quality departments at the individual manufacturing centers have state-of-the-art equipment at their disposal including mechanical workshops, tensile and impact testing machines, chemical laboratories for corrosion tests, equipment for hardness testing and metallographic inspection.

We also have extensive facilities for non-destructive testing, including ultrasonic, eddy current, hydrostatic, positive material identification and dye penetrant testing.

This list gives some examples of approvals & accreditations that Salzgitter Mannesmann Stainless Tubes has received:

- EN ISO 9001
- EN ISO 14001
- AD 2000 - W0 / TRD 100
- PED 2014/68/EU
(Material manufacturer Annex 1, Paragraph 4.3)
- API 5LC
- API 5CRA
- DNV OS F101
- ASME Section III
- RCC-M
- HAF 604 (from NNSA, China)
- KTA 1401
- NORSOK STANDARD M-650
- Framatome KTA 1401
- Germanischer Lloyd W 1201 HH 1
(For construction of ships or installations)

Stainless Steel Grades

| Austenitic Ferritic | | | | | | | | | | | | | | | |
|------------------------|-----------------------------|--------|-----|--|------|-----|-----|-----|-----------------------------|-------------------|--------------------|-----------------------------|----------------------------|-----|-----|
| SMST-Tubes Designation | Nearest equivalent standard | | | Typical chemical composition ¹⁾ | | | | | | Density | | Min. mechanical prop. at RT | | | |
| | UNS | EN | JIS | C _{max} | Cr | Ni | Mo | Cu | others | g/cm ³ | lb/in ³ | R _{p0.2} Yield St. | R _m Tensile St. | MPa | ksi |
| DMV 18.5 | S31500 | 1.4424 | | 0.03 | 18.5 | 4.8 | 2.7 | | Si 1.7; N 0.1 | 7.8 | 0.28 | 440 | 64 | 630 | 92 |
| DMV 22.5 | S31803 | 1.4462 | | 0.03 | 22.0 | 5.5 | 3.0 | | N 0.17 ²⁾ | 7.8 | 0.28 | 450 | 65 | 620 | 90 |
| DMV 25.7 | S31260 | | | 0.03 | 25.0 | 6.5 | 3.0 | 0.5 | N 0.20; W 0.5 | 7.8 | 0.28 | 450 | 65 | 690 | 100 |
| DMV 25.7 Cu | S32550 | 1.4507 | | 0.03 | 25.0 | 7.0 | 3.5 | 1.5 | N 0.22 ²⁾ | 7.8 | 0.28 | 550 | 80 | 760 | 110 |
| DMV 25.7 N | S32760 | 1.4501 | | 0.03 | 25.0 | 7.0 | 4.0 | 0.5 | N 0.25; W 0.5 ²⁾ | 7.8 | 0.28 | 550 | 80 | 750 | 109 |

¹⁾ All figures in weight percentage. In case of order, the limits of the order specification will apply.

²⁾ Min PRE value controlled.

| Austenitic | | | | | | | | | | | | | | | |
|-----------------------------|-----------------------------|--------|------------|--|------|------|------|-----|--------------------|-------------------|--------------------|-----------------------------|----------------------------|-----|-----|
| SMST-Tubes Designation | Nearest equivalent standard | | | Typical chemical composition ¹⁾ | | | | | | Density | | Min. mechanical prop. at RT | | | |
| | UNS | EN | JIS | C _{max} | Cr | Ni | Mo | Cu | others | g/cm ³ | lb/in ³ | R _{p0.2} Yield St. | R _m Tensile St. | MPa | ksi |
| <i>Corrosion resistant:</i> | | | | | | | | | | | | | | | |
| DMV 304 | S30400 | 1.4301 | SUS 304 | 0.06 | 18.5 | 9.5 | | | | 7.9 | 0.29 | 205 | 30 | 515 | 75 |
| DMV 304 L | S30403 | 1.4306 | SUS 304L | 0.03 | 18.0 | 11.0 | | | | 7.9 | 0.29 | 170 | 25 | 485 | 70 |
| DMV 304 LN | S30453 | 1.4311 | | 0.03 | 18.0 | 10.0 | | | | 7.9 | 0.29 | 205 | 30 | 515 | 75 |
| DMV 321 | S32100 | 1.4541 | SUS 321 | 0.08 | 18.5 | 10.5 | | | Ti > 5 x C < 0.6% | 7.9 | 0.29 | 170 | 25 | 485 | 70 |
| DMV 347 | S34700 | 1.4550 | SUS 347 | 0.08 | 18.5 | 11.0 | | | Nb > 10 x C < 1.0% | 7.9 | 0.29 | 205 | 30 | 515 | 75 |
| DMV 316 | S31600 | 1.4401 | SUS 316 | 0.06 | 17.0 | 11.5 | 2.25 | | | 8.0 | 0.29 | 205 | 30 | 515 | 75 |
| DMV 316 L | S31603 | 1.4404 | | 0.03 | 17.0 | 12.0 | 2.25 | | | 8.0 | 0.29 | 170 | 25 | 485 | 70 |
| DMV 316 LMoS | S31603 | 1.4435 | SUS 316L | 0.03 | 17.0 | 12.5 | 2.75 | | | 8.0 | 0.29 | 170 | 25 | 485 | 70 |
| DMV 316 LN | S31653 | 1.4429 | | 0.03 | 17.0 | 12.5 | 2.75 | | N > 0.06 < 0.08 | 8.0 | 0.29 | 205 | 30 | 515 | 75 |
| DMV 316 Ti | S31635 | 1.4571 | | 0.08 | 17.0 | 11.5 | 2.25 | | | 8.0 | 0.29 | 205 | 30 | 515 | 75 |
| DMV 317 L | S31703 | 1.4438 | SUS 317L | 0.03 | 18.0 | 14.5 | 3.5 | | | 8.0 | 0.29 | 205 | 30 | 515 | 75 |
| DMV 316 LUG | S31603 | 1.4435 | | 0.02 | 17.0 | 13.5 | 4.5 | | | 8.0 | 0.29 | 170 | 25 | 485 | 70 |
| DMV 309 | S30900 | 1.4828 | SUS 309 TB | 0.07 | 25.0 | 14.0 | | | | 7.9 | 0.29 | 205 | 30 | 515 | 75 |
| DMV 306 Si | S30600 | 1.4361 | | 0.015 | 18.0 | 15.0 | | | Si 4 | 7.9 | 0.29 | 240 | 35 | 540 | 78 |
| DMV 4439 | (S31726) | 1.4439 | | 0.03 | 17.5 | 13.5 | 4.5 | | N 0.16 | 8.0 | 0.29 | 240 | 35 | 550 | 80 |
| DMV 25.22.2 | S31050 | 1.4466 | | 0.02 | 25.0 | 22.0 | 2.0 | | N 0.12 | 7.9 | 0.29 | 255 | 37 | 540 | 78 |
| DMV 310 S | S31008 | 1.4335 | | 0.015 | 25.0 | 21.0 | | | | 7.9 | 0.29 | 205 | 30 | 515 | 75 |
| DMV 904 | N08904 | 1.4539 | | 0.02 | 20.5 | 25.5 | 4.5 | 1.5 | | 8.0 | 0.29 | 215 | 31 | 490 | 71 |
| DMV 926 | N08926 | 1.4529 | | 0.02 | 20.0 | 25.0 | 6.5 | 0.8 | N 0.20 | 8.0 | 0.29 | 295 | 43 | 650 | 94 |
| DMV 954 | S31254 | 1.4547 | | 0.02 | 20.0 | 18.0 | 6.2 | | N 0.20 | 8.0 | 0.29 | 310 | 45 | 655 | 95 |
| <i>Heat resistant:</i> | | | | | | | | | | | | | | | |
| DMV 304 H | S30409 | 1.4948 | | 0.08 ²⁾ | 18.5 | 9.5 | | | | 7.9 | 0.29 | 205 | 30 | 515 | 75 |
| DMV 304 HCu | S30432 | 1.4907 | | 0.13 ²⁾ | 18.5 | 9.5 | | 3.0 | N 0.10; Nb 0.5 | 7.9 | 0.29 | 235 | 34 | 590 | 85 |
| DMV 321 H | S32109 | 1.4940 | | 0.08 ²⁾ | 18.5 | 11.0 | | | Ti > 4 x C < 0.6 | 7.9 | 0.29 | 170 | 25 | 480 | 70 |
| DMV 347 H | S34709 | 1.4912 | | 0.08 ²⁾ | 18.5 | 11.0 | | | Nb > 8 x C < 1.0 | 7.9 | 0.29 | 205 | 30 | 515 | 75 |
| DMV 347 HFG | | 1.4908 | | 0.10 ²⁾ | 18.5 | 11.0 | | | Ti+Nb > 8xC < 1.0 | 7.9 | 0.29 | 205 | 30 | 550 | 80 |
| DMV 310 H | S31009 | 1.4845 | SUS 310 TB | 0.10 ²⁾ | 25.0 | 20.0 | | | | 8.0 | 0.29 | 205 | 30 | 515 | 75 |
| DMV 310 N | S31042 | 1.4952 | | 0.10 ²⁾ | 25.0 | 20.0 | | | N 0.20; Nb 0.40 | 8.0 | 0.29 | 295 | 43 | 655 | 95 |
| DMV 4841 | | 1.4841 | | 0.10 | 25.0 | 20.5 | | | Si 2.0 | 8.0 | 0.29 | 205 | 30 | 515 | 75 |

¹⁾ All figures in weight percentage. In case of order, the limits of the order specification will apply.

²⁾ Minimum level of carbon content is mandatory.

Nickel and Nickel-based alloys

| SMST-Tubes Designation | Nearest equivalent standard | | Typical chemical composition ¹⁾ | | | | | | | Density | | Min. mechanical prop. at RT | | | |
|-----------------------------|-----------------------------|--------|--|------|------|------|------|-----------------------|-------------------|--------------------|-----------------------|-----------------------------|--------------------|-----------------|--|
| | UNS | DIN | C _{max} | Cr | Ni | Mo | Cu | others | g/cm ³ | lb/in ³ | R _{p0.2} MPa | Yield St. ksi | R _m MPa | Tensile St. ksi | |
| <i>Corrosion resistant:</i> | | | | | | | | | | | | | | | |
| DMV 920 | N08020 | 2.4660 | 0.02 | 20.0 | 37.0 | 2.5 | 3.5 | Nb + Ta | 8.1 | 0.29 | 240 | 35 | 550 | 80 | |
| DMV 8020 | N08020 | | 0.02 | 20.0 | 34.0 | 2.5 | 3.5 | Nb + Ta | 8.1 | 0.29 | 240 | 35 | 550 | 80 | |
| DMV 928 | N08028 | 1.4563 | 0.02 | 27.0 | 31.0 | 3.5 | 1.2 | N 0.10 | 8.0 | 0.29 | 210 | 31 | 500 | 73 | |
| DMV 931 | N08031 | 1.4562 | 0.015 | 27.0 | 31.0 | 6.5 | 1.2 | N 0.20 | 8.1 | 0.29 | 280 | 41 | 650 | 94 | |
| DMV 800 L | (N08800) | 1.4558 | 0.025 | 21.0 | 32.0 | | | Ti 0.30; Al 0.30 | 8.0 | 0.29 | 180 | 26 | 450 | 65 | |
| DMV 800 | N08800 | 1.4876 | 0.08 | 21.0 | 32.0 | | | Ti < 0.40 | 8.0 | 0.29 | 210 | 31 | 500 | 73 | |
| DMV 825 | N08825 | 2.4858 | 0.03 | 22.0 | 42.0 | 3.0 | 2.0 | Ti 0.80; Al 0.10 | 8.1 | 0.29 | 180 | 26 | 530 | 75 | |
| DMV 600 L | N06600 | 2.4817 | 0.025 | 16.0 | 76.0 | | | Fe 8 | 8.4 | 0.30 | 180 | 26 | 550 | 80 | |
| DMV 690 | N06690 | 2.4642 | 0.02 | 29.0 | 60.0 | | | Fe 9 | 8.2 | 0.29 | 205 | 30 | 585 | 85 | |
| DMV 625 | N06625 Gr.1 | 2.4856 | 0.025 | 22.0 | 63.0 | 9.0 | | Nb 3.5 | 8.5 | 0.31 | 414 | 60 | 827 | 120 | |
| DMV 63 | N06985 | 2.4619 | 0.015 | 22.0 | 48.0 | 7.0 | 2.0 | Co, W | 8.3 | 0.30 | 205 | 30 | 585 | 85 | |
| DMV C 22 | N06022 | 2.4602 | 0.01 | 22.0 | 57.0 | 13.0 | | W | 8.7 | 0.31 | 310 | 45 | 690 | 100 | |
| DMV 59 | N06059 | 2.4605 | 0.01 | 23.0 | 59.0 | 16.0 | | Al | 8.6 | 0.31 | 340 | 50 | 690 | 100 | |
| DMV C 4 | N06455 | 2.4610 | 0.01 | 16.0 | 66.0 | 16.0 | | Ti | 8.6 | 0.31 | 280 | 41 | 700 | 102 | |
| DMV C 276 | N10276 | 2.4819 | 0.01 | 16.0 | 57.0 | 16.0 | | W | 8.4 | 0.30 | 350 | 51 | 750 | 109 | |
| <i>Heat resistant:</i> | | | | | | | | | | | | | | | |
| DMV 800 H | N08810 | 1.4958 | 0.10 ²⁾ | 21.0 | 32.0 | | | (Al, Ti) 0.15 - 0.60 | 8.0 | 0.29 | 170 | 25 | 500 | 73 | |
| DMV 811 | N08811 | 1.4959 | 0.10 ²⁾ | 21.0 | 32.0 | | | 0.85 < Ti + Al < 1.20 | 8.0 | 0.29 | 170 | 25 | 500 | 73 | |
| DMV AC 66 | S33224 | 1.4877 | 0.06 | 27.0 | 32.0 | | | Ce 0.07; Nb 0.8 | 8.0 | 0.29 | 185 | 27 | 500 | 73 | |
| DMV 600 H | N06600 | 2.4816 | 0.07 | 16.0 | 76.0 | | | Fe 8 | 8.4 | 0.30 | 240 | 35 | 550 | 80 | |
| DMV 625 | N06625 Gr.2 | 2.4856 | 0.025 | 22.0 | 63.0 | 9.0 | | Nb 3.5 | 8.4 | 0.30 | 276 | 40 | 690 | 100 | |
| DMV 601 | N06601 | 2.4851 | 0.08 | 23.0 | 62.0 | | | Al 1.2; Ti 0.3 | 8.1 | 0.29 | 240 | 35 | 600 | 87 | |
| DMV 617 | N06617 | 2.4663 | 0.08 | 22.0 | 55.0 | 9.0 | | Co 12; Al; Ti | 8.4 | 0.30 | 300 | 44 | 700 | 102 | |
| <i>Nickel-Copper:</i> | | | | | | | | | | | | | | | |
| DMV 400 | N04400 | 2.4360 | 0.15 | | 65.0 | | 30.0 | Fe 2; Mn 1.5 | 8.8 | 0.32 | 180 | 26 | 450 | 65 | |
| <i>Pure Nickel:</i> | | | | | | | | | | | | | | | |
| DMV 200 | N02200 | 2.4066 | 0.05 | | 99.4 | | | | 8.9 | 0.32 | 103 | 15 | 379 | 55 | |
| DMV 201 | N02201 | 2.4068 | 0.02 | | 99.4 | | | | 8.9 | 0.32 | 83 | 12 | 345 | 50 | |

¹⁾ All figures in weight percentage. In case of order, the limits of the order specification will apply.

²⁾ Minimum level of carbon content is mandatory.

Standards and delivery specifications

ASTM-Standards

Iron and Steel Products Steel - Piping, Tubing, Fittings

| | | |
|-------------------|----------------|---|
| ASTM Volume 01.01 | A 213 / A 213M | Seamless ferritic and austenitic alloy steel boiler, superheater and heat exchanger tubes |
| | A 269 / A 269M | Seamless and welded austenitic stainless steel tubing for general service |
| | A 312 / A 312M | Seamless and welded austenitic stainless steel pipes |
| | A 376 / A 376M | Seamless austenitic steel pipe for high-temperature service |
| | A 511 | Seamless stainless steel mechanical tubing |
| | A 789 / A 789M | Seamless and welded ferritic-austenitic stainless steel tubing for general service |
| | A 790 / A 790M | Seamless and welded ferritic-austenitic stainless steel pipe |

Nonferrous Metal Products - Nickel....

| | | |
|-------------------|---|---|
| ASTM Volume 02.04 | B 161 | Nickel seamless pipe and tube (UNS N02200; N02201) |
| | B 163 | Seamless nickel and nickel alloy condenser and heat exchanger tubes (e.g. UNS N02200; N04400; N06600; N08800) |
| | B 165 | Nickel-copper alloy (UNS N04400), seamless nickel pipe and tube |
| | B 167 | Nickel-chromium-iron alloys (UNS N06600, N06601 and N06690), seamless pipe and tube |
| | B 407 | Nickel-iron-chromium alloys (UNS N08800; N08810; N08811), seamless pipe and tube |
| | B 423 | Nickel-iron-chromium-molybdenum-copper alloys (UNS N08825), pipe and tube |
| | B 444 | Nickel-chromium-molybdenum-columbium alloys (UNS N06625), pipe and tube |
| | B 622 | Seamless nickel and nickel-cobalt alloy pipe and tube (e.g. UNS N06455; N06059; N10276, N06002) |
| | B 668 | Seamless tubes (UNS N08028) |
| B 677 | Seamless pipe and tube (UNS N08904; N08925; N08926) | |
| B 729 | Seamless pipe and tube (UNS N08020; N08026; N08024) | |

Nonferrous Metal Products - Titanium....

ASTM Volume 02.04

| | |
|-------|--|
| B 338 | Seamless and welded Titanium and Titanium alloy tubes for condensers and heat exchangers |
|-------|--|

ASME-Standards

ASME Boiler Pressure Code Section II Part A - Ferrous Material Specification

| | | |
|------|------------------|---|
| ASME | SA 213 / SA 213M | Seamless ferritic and austenitic alloy steel boiler, superheater and heat exchanger tubes |
| | SA 312 / SA 312M | Seamless and welded austenitic stainless steel pipes |
| | SA 376 / SA 376M | Seamless austenitic steel pipe for high-temperature central-station service |
| | SA 511 | Seamless stainless steel mechanical tubing |
| | SA 789 / SA 789M | Seamless and welded ferritic-austenitic stainless steel tubing for general service |
| | SA 790 / SA 790M | Seamless and welded ferritic-austenitic stainless steel pipe |

ASME Boiler Pressure Code Section II Part B - Non-Ferrous Material Specification

| | | |
|------|--------|---|
| ASME | SB 161 | Nickel seamless pipe and tube (UNS N02200; N02201) |
| | SB 163 | Seamless nickel and nickel-based alloy condenser and heat exchanger tubes (e.g. UNS N02200; N04400; N06600; N08800) |
| | SB 165 | Nickel-copper alloy (UNS N04400), seamless nickel pipe and tube |
| | SB 167 | Nickel-chromium-iron alloys (UNS N06600, N06601 and N06690), seamless pipe and tube |
| | SB 407 | Nickel-iron-chromium alloys (UNS N08800; N08810; N08811), seamless pipe and tube |
| | SB 423 | Nickel-iron-chromium-molybdenum-copper alloys (UNS N08825), pipe and tube |
| | SB 444 | Nickel-chromium-molybdenum-columbium alloys (UNS N06625), pipe and tube |
| | SB 622 | Seamless nickel and nickel-cobalt alloy pipe and tube (e.g. UNS N06455; N06059; N10276, N06002) |
| | SB 668 | Seamless tubes (UNS N08028) |
| | SB 677 | Seamless pipe and tube (UNS N08904; N08925; N08926) |
| | SB 729 | Seamless pipe and tube (UNS N08020; N08026; N08024) |

API-Standards

| | |
|----------|-------------------------------------|
| API 5CRA | Specification for Casing and Tubing |
| API 5LC | Specification for CRA Line Pipe |

EN-Standards

| | |
|------------|--|
| EN 10216-5 | Seamless steel tubes for pressure purposes |
| EN 10297-2 | Seamless steel tubes for mechanical and general engineering purposes incl. DIN, NFA,.....; VdTÜV data sheets on request |

ISO-Standards

| | |
|-----------|---|
| ISO 13680 | Petroleum and natural gas industries – Corrosion-Resistant alloy Seamless tubulars for use as casing, tubing and coupling stock – Technical delivery condition |
|-----------|---|

GOST Standards

Stainless Steels

| | |
|-------------|---|
| GOST 9940 | Seamless stainless steel tubes, hot finished |
| GOST 9941 | Seamless stainless steel tubes, cold and hot finished |
| on request: | in accordance with various TU 14-3 series |

BS-Standards

Stainless and high-strength high-temperature steels

| | |
|---------|-------------------------------------|
| BS 3059 | Steel boiler and superheater tubes. |
|---------|-------------------------------------|

JIS-Standards

| | |
|------------|---|
| JIS G 3446 | Stainless steel pipes |
| JIS G 3459 | Stainless steel pipes |
| JIS G 3463 | Stainless steel boiler and heat exchanger tubes |
| JIS G 3467 | Steel tubes for fired heater |

DNV-Standards

| | |
|---------|----------------------------|
| OS F101 | Submarine Pipeline Systems |
|---------|----------------------------|

RCC-M-Standards

| | |
|--------------|---|
| RCC-M M 3303 | Cold finished seamless austenitic stainless steel tubes for class 1, 2 and 3 heat exchangers |
| RCC-M M 3304 | Class 1, 2 and 3 austenitic stainless steel pipes and tubes (not intended for use in heat exchangers) |

Salzgitter Mannesmann Stainless Tubes GmbH

Wiesenstraße 36
45473 Mülheim an der Ruhr
Germany
Tel.: +49 (0) 208 458 01
Fax: +49 (0) 208 458 2640

dmv@smst-tubes.com
www.smst-tubes.com

Salzgitter Mannesmann Stainless Tubes Deutschland GmbH

Sales:
Wiesenstraße 36
45473 Mülheim an der Ruhr
Germany
Tel.: +49 (0) 208 458 2611
Fax: +49 (0) 208 458 2641
salesgermany@smst-tubes.com
Production:
Bahnstraße 61
42859 Remscheid
Germany

Salzgitter Mannesmann Stainless Tubes France SAS

Route de Semur
21500 Montbard
France
Tel.: +33 (0) 3 80 89 52 00
Fax: +33 (0) 3 80 89 52 26
salesfrance@smst-tubes.com

Salzgitter Mannesmann Stainless Tubes Italia S.r.l.

Via Piò 30
24062 Costa Volpino (BG)
Italy
Tel.: +39 035 - 975 744
Fax: +39 035 - 975 803
salesitaly@smst-tubes.com

Salzgitter Mannesmann Stainless Tubes USA, Inc.

12050 West Little York
Houston Texas 77041
USA
Tel.: +1 713 - 466.7278
Fax: +1 713 - 466.3769
salesusa@smst-tubes.com



MANNESMANN. Das Rohr.
www.mannesmann.de



A Member of the Salzgitter Group