

## Specification for Standard S

# EN 10217-1 : 2019 - Welded Steel Tubes for Pressure Pur

## Cold-Formed Circular Hollow Section Tubes (Round Tubes)

| Designation | Outside Diameter (mm) - Range & Tolerance                              |                        |
|-------------|--|------------------------|
| CF-CHS      | 13.50 -To-219.10 MM & 1 % of Size (OD)<br>With Minimum of $\pm 0.5$ MM | 1.80 -To-<br>1.80 -To- |

## Chemical and Mechanical Properties as per El

| Steel Name | Mechanical Properties |                          |                     |          |                            |          |
|------------|-----------------------|--------------------------|---------------------|----------|----------------------------|----------|
|            | Steel Number          | Yield Strength MPa (Min) | Elongation % (Min.) |          | Tensile Strength MPa (Min) | C % Max. |
|            |                       |                          | Long. %             | Trans. % |                            |          |
| P195TR1    | 1.0107                | 195                      | 27                  | 25       | 320-440                    | 0.130    |
| P235TR1    | 1.0257                | 235                      | 25                  | 23       | 360-500                    | 0.160    |
| P265TR1    | 1.0258                | 265                      | 21                  | 19       | 410-570                    | 0.200    |

|                  |                                 |
|------------------|---------------------------------|
| <b>1. Length</b> | -0/+50 MM or Mutual Agreement b |
|------------------|---------------------------------|

|                            |   |
|----------------------------|---|
| <b>2. Out-of-Roundness</b> | $\pm 2 \%$ for hollow sections having diameter to thickness ratio |
| <b>CHS</b>                 | and the p   |

|                        |                                   |
|------------------------|-----------------------------------|
| <b>7. Straightness</b> | Tube Length shall not exceed 0.00 |
|------------------------|-----------------------------------|

|                            |                 |
|----------------------------|-----------------|
| 8. Mass(m) per unit length | Apply Provision |
|----------------------------|-----------------|

## 9. Ends

|  |  |
|--|--|
|  | Plain end, Grooved end, Thread end, Bevel end.                       |
|  | Grooved end - as per Victaulic Specification -25.01                  |
|  | Thread end - as per BSP (British Standard Pipe)- Thread is 55 degree |

## 10. Flattening Test

for above NPS 2" - Welded tubes shall be flattened with the weld placed alternately at 0 deg. or to the direction of the the force .

for Weld Test- Flatten up to 75 % of original Dia of the tubes result no cracks apperance on weld

For Material other than weld - Flatten up to 60 % of original tube OD result no cracks appearance  
metal other than in the weld portion

## 11. Leak Tightness Test

a.- Online NDT (Eddy Current) or

b. - Hydro Testing at 70 bar Pressure and holding time Minimum 5 Second

**12 . Bend Test**

Bend Test is applicable for Specified Diameter (D) from 17.20 to 60.30 mm through correspondin

|                       |      |      |      |      |      |      |
|-----------------------|------|------|------|------|------|------|
| <b>D</b>              | 17.2 | 21.3 | 26.9 | 33.7 | 42.4 | 48.3 |
| <b>Bending Radius</b> | 50   | 65   | 85   | 100  | 150  | 170  |

**13. Surface Protction**

Bare Black Tube (Uncoated)

HDG - Galvanized As per EN ISO 1461 and EN 10240 -A1,A2,A3 & B1,B2,B3 Quality

Oil-Based Painted Tubes (OBPT)

Water-Base Painted Tube - Acid Removal (WBPTAR)

Water-Base Painted Tube - Non Acid Removal (WBPTNR)

**14.Packing**

Hexagonal Type or Customer Requirments

**15. Colour Coading**

For Light - Brown

For Medium - Blue

For Heavy - Red

**16. Mill Test Certificate**

We can issue a MTC, Certifying that the tubes supplied comply with this standard-EN 10217-I : 20

Documents as Per EN 10204 : 2004 ,Type 3.1

**izes**

**Purposes (Steel Quality TR1)**

### Wall Thickness (mm) - Range & Tolerance

0-6.30 MM &  $\pm 10\%$  of Wall Thickness for Thickness  $\leq 5.0$  mm

6.30 MM &  $\pm 8\%$  of Wall Thickness for Thickness  $5 < T \leq 40$  mm

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| Chemical Composition % |        |
|------------------------|--------|
| Carbon                 | 0.0001 |
| Manganese              | 0.0001 |
| Phosphorus             | 0.0001 |
| Sulfur                 | 0.0001 |
| Aluminum               | 0.0001 |
| Iron                   | 0.0001 |
| Copper                 | 0.0001 |
| Nickel                 | 0.0001 |
| Chromium               | 0.0001 |
| Molybdenum             | 0.0001 |
| Silicon                | 0.0001 |
| Titanium               | 0.0001 |
| Zinc                   | 0.0001 |
| Lead                   | 0.0001 |
| Antimony               | 0.0001 |
| Fluorine               | 0.0001 |
| Chlorine               | 0.0001 |
| Bromine                | 0.0001 |
| Iodine                 | 0.0001 |
| Barium                 | 0.0001 |
| Strontium              | 0.0001 |
| Calcium                | 0.0001 |
| Magnesium              | 0.0001 |
| Sodium                 | 0.0001 |
| Potassium              | 0.0001 |
| Lithium                | 0.0001 |
| Boron                  | 0.0001 |
| Vanadium               | 0.0001 |
| Niobium                | 0.0001 |
| Tungsten               | 0.0001 |
| Cobalt                 | 0.0001 |
| Nickel                 | 0.0001 |
| Copper                 | 0.0001 |
| Zinc                   | 0.0001 |
| Aluminum               | 0.0001 |
| Silicon                | 0.0001 |
| Iron                   | 0.0001 |
| Carbon                 | 0.0001 |
| Manganese              | 0.0001 |
| Phosphorus             | 0.0001 |
| Sulfur                 | 0.0001 |
| Chromium               | 0.0001 |
| Nickel                 | 0.0001 |
| Copper                 | 0.0001 |
| Zinc                   | 0.0001 |
| Aluminum               | 0.0001 |
| Silicon                | 0.0001 |
| Iron                   | 0.0001 |
| Carbon                 | 0.0001 |
| Manganese              | 0.0001 |
| Phosphorus             | 0.0001 |
| Sulfur                 | 0.0001 |
| Chromium               | 0.0001 |
| Nickel                 | 0.0001 |
| Copper                 | 0.0001 |
| Zinc                   | 0.0001 |
| Aluminum               | 0.0001 |
| Silicon                | 0.0001 |
| Iron                   | 0.0001 |
| Carbon                 | 0.0001 |
| Manganese              | 0.0001 |
| Phosphorus             | 0.0001 |
| Sulfur                 | 0.0001 |
| Chromium               | 0.0001 |
| Nickel                 | 0.0001 |
| Copper                 | 0.0001 |
| Zinc                   | 0.0001 |
| Aluminum               | 0.0001 |
| Silicon                | 0.0001 |
| Iron                   | 0.0001 |
| Carbon                 | 0.0001 |
| Manganese              | 0.0001 |
| Phosphorus             | 0.0001 |
| Sulfur                 | 0.0001 |
| Chromium               | 0.0001 |
| Nickel                 | 0.0001 |
| Copper                 | 0.0001 |
| Zinc                   | 0.0001 |
| Aluminum               | 0.0001 |
| Silicon                | 0.0001 |
| Iron                   | 0.0001 |
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| Manganese              | 0.0001 |
| Phosphorus             | 0.0001 |
| Sulfur                 | 0.0001 |
| Chromium               | 0.0001 |
| Nickel                 | 0.0001 |
| Copper                 | 0.0001 |
| Zinc                   | 0.0001 |
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| Manganese              | 0.0001 |
| Phosphorus             | 0.0001 |
| Sulfur                 | 0.0001 |
| Chromium               | 0.0001 |
| Nickel                 | 0.0001 |
| Copper                 | 0.0001 |
| Zinc                   | 0.0001 |
| Aluminum               | 0.0001 |
| Silicon                | 0.0001 |
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| Phosphorus             | 0.0001 |
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| Phosphorus             | 0.0001 |
| Sulfur                 | 0.0001 |
| Chromium               | 0.0001 |
| Nickel                 | 0.0001 |
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| Phosphorus             | 0.0001 |
| Sulfur                 | 0.0001 |
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| Silicon                | 0.0001 |
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| Manganese              | 0.0001 |
| Phosphorus             | 0.0001 |
| Sulfur                 | 0.0001 |
| Chromium               | 0.0001 |

| <b>Si<br/>Max</b> | <b>Mn<br/>%</b> | <b>P %<br/>Max</b> | <b>S %<br/>Max</b> | <b>Mo %<br/>Max</b> | <b>Cr+Cu+Mo+Ni<br/>Max. %</b> |
|-------------------|-----------------|--------------------|--------------------|---------------------|-------------------------------|
| 0.350             | 0.700           | 0.025              | 0.020              | 0.080               | 0.700                         |
| 0.350             | 1.200           | 0.025              | 0.020              | 0.080               | 0.700                         |
| 0.400             | 1.400           | 0.025              | 0.020              | 0.080               | 0.700                         |

between Manufacturer and Purchaser

not exceeding 100, otherwise shall be agree between APM  
urchaser

015L , Where L is Length of tube

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90 deg.

| Portion |
|---------|
|---------|

e in the

[illegible]