

## TECHNICAL SHEET ST14

Rev.:21/10/2013

### WELDED COLD SIZED CARBON STEEL TUBES, IN LINE OUTSIDE THERMALLY ZINC COATED, FOR CONNECTING LINES IN PRESSFITTING SYSTEM

Classification: Carbon steel grade E195 n. 1.0034 or E190 n. 1.0031 or other grades of equivalent functional validity, according to EN 10305-3.

Applications: Heating  
Compressed air  
Inert gas  
Solar (without steam)

*N.B. They can absolutely not be used for combustible gas systems and for the uses provided for by EN 10224 (systems for transport / disposal / storage of water not destined to human consumption)*

*Besides, we strongly advise not using them for cooling systems, since it is not possible to guarantee a completely reliable insulation. Should you not follow this recommendation, you must be responsible for obtaining perfect insulation to avoid external corrosion.*

Chemical composition:

C max.	Si max.	Mn max.	P max.	S max.
0,15 %	0,35%	0,70%	0,025%	0,025%

Mechanical properties:

Tensile strength Rm	[MPa]	≥ 270
Yield strength	[MPa]	≥ 190
Elongation after fracture A	[%]	≥ 8

Dimensions and tolerances:

DN	External diameter x thickness d x t [mm.]	Diameter tolerance [mm.]	Thickness tolerance [mm.]
10	12,0 x 1,2	± 0,12	± 0,15
12	15,0 x 1,2	± 0,12	± 0,15
15	18,0 x 1,2	± 0,12	± 0,15
20	22,0 x 1,5	± 0,15	± 0,15
25	28,0 x 1,5	± 0,15	± 0,15
32	35,0 x 1,5	± 0,20	± 0,15
40	42,0 x 1,5	± 0,20	± 0,15
50	54,0 x 1,5	± 0,30	± 0,15
65	76,1 x 2,0	± 0,35	± 0,20
* 80	88,9 x 2,0	± 0,40	± 0,20
* 100	108,0 x 2,0	± 0,60	± 0,20

\* At present time, for these dimensions, tubes are available in the version “outside zinc coated, by electroplated treatment”.

Bending radius  $r: \geq 3,5 d$

Manufacturing Process:

Tubes are made by steel strips without zinc coating, which are progressively bent in the transverse direction and welded lengthwise by HF (High Frequency) method; successively they are in line outside thermally coated by immersion in a hot bath, as well as adequately straightened.

Process control: 100% electromagnetic verification of hydraulic leak-tightness.

Minimum thickness of outside thermally zinc coating: 8  $\mu\text{m}$ .

Length: 4.000 or 5.000 or 6.000 mm.

Surface finish: smooth and without defects, which could damage the o-ring seal.

Packing: strapped bundles and, eventually stacked on different levels, separated by wooden spacers.

Marking: if requested, it shows the following data:

- Eurotubi Europa
- Tube diameter and thickness
- Manufacturing date (day, hour and minute)

*N.B. Also it is possible to request a personalized marking.*

### **Advantages of the thermally zinc coating**

The thermally zinc coating is one of the more common method for the environmental protection of steel tubes and is made by immersion of the tube in a hot zinc bath at about 450 °C temperature.

In this phase, the zinc welds with the surface layer of the tube, by producing an alloy with the steel and forming a tough, resisting and long lasting treatment.

Great values, which the thermally zinc coat can boast in comparison with many other coating types:

- It is competitive in the price, thanks to the highly automated process.
- It forms an alloy with the steel and it is not a simple deposit.
- It lasts very long, as proved by years of experience.
- It sets up an electrochemical coverage: if the zinc coat is scratched, the difference in the potential, created by the connection by contact between zinc and steel, protects the steel structure at expense of the zinc, which corrodes, by “sacrificing itself”.
- It has an excellent abrasion resistance, since it produces a hard and resistant coat.
- It has an excellent damage resistance, since the zinc is rather malleable and absorbs small blows.