GEMO

Heat Exchanger Service Tube(ASTM A-249)

Standard Dimension

Outside Diameter		Wall Thickness(mm)				
NF A 49-249	ASTM A-249	1.2	1.50	1.60	1.65	2.0
25	19.05	●	●		⊙	
25.40	25.40	●	●		⊙	
28	31.80	●	●		⊙	
38	35	●	●			
40	36	●	●			
51	38.10	●	●		⊙	
52	41.30	●	●			
53	44.45	●	●			
63.50	50.80		●	●	●	
70	63.50		●	●	●	●
76.10	76.20		●	●	●	●
85			●	●	●	●
101.60	101.60		●	●	●	●
104			●	●	●	●
4.00	101.60		●	●	●	●

⊙ =Made to order   ● =Usual production

Note:Other sizes required upon request

Chemical Composition

Elements		304 (wt%)	304L (wt%)	316L (wt%)
(C)	Carbon, Max.	0.080	0.035	0.035
(Mn)	Manganese, Max.	2.00	2.00	2.00
(P)	Phosphorus, Max.	0.040	0.040	0.040
(S)	Sulfur, Max.	0.030	0.030	0.030**
(Si)	Silicon, Max.	0.75	0.75	0.75
(Ni)	Nickel	8.0–11.0	8.0–13.0	10.0–15.0
(Cr)	Chromium	18.0–20.0	18.0–20.0	16.0–18.0
(Mo)	Molybdenum	N/A	N/A	2.0–3.0
(Fe)	Iron	Bal.	Bal.	Bal.
(Cu)	Copper	N/A	N/A	N/A
(N)	Nitrogen	N/A	N/A	N/A

Surface Condition

The tubes, after final heat treatment, shall be chemically descaled or pickled free of scale. When bright annealing is used, pickling or chemical descaling is not necessary.

Product Marking

In addition to the marking prescribed in Specification A 1016/A 1016M, the marking for Grades TP304H, TP309H, TP309HCb, TP310H, TP310HCb, TP316H, TP321H, TP347H, and TP348H shall also include the heat number and the heat-treatment lot identification.

Ordering Information

It is the responsibility of the purchaser to specify all requirements that are necessary for material ordered under this specification. Such requirements may include, but are not limited to, the following:

• Quantity (feet, metres, or number of lengths)

• Name of material welded tubes (WLD) or heavily cold worked tubes (HCW)

• Grade

• Size (outside diameter and nominal wall thickness)

• Length (specific or random)

• Optional requirements

• Test report required (Specification A 1016/A 1016M)

• Specification designation

• Special requirements and any supplementary requirements selected

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