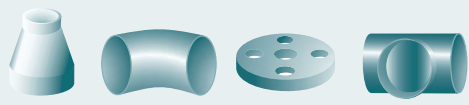


Specifications Alloy 75

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PHILIPCORNES

Tel: +44 (0) 1527 555000
Fax: +44 (0) 1527 547000

Alloy 75

Alloy 75 (UNS N06075) is a creep-resistant nickel-chromium-iron alloy with controlled carbon content and a small addition of titanium.

This alloy is characterised by:

- excellent resistance to oxidising atmospheres at temperatures up to 1100°C (2000°F)
- high scaling resistance up to 1000°C (1830°F)
- good mechanical properties at temperatures up to 1000°C (1830°F)
- good metallurgical stability

Designation and Standards

Country National Standards	Material Designation	Specification							
		Chem. composition	Tube and pipe seamless	pipe welded	Sheet and plate	Rod and bar	Strip	Wire	Forgings
France AFNOR	NC 20T								
Germany DIN VdTÜV	W.-Nr.2.4951 NiCr20Ti	17742	17751	17751	17750	17752	17750		17754
United Kingdom BS			HR 403		HR203	HR5 2HR504	HR203	2HR504	HR5
USA ASTM ASME AMS	UNS N06075								
ISO	NiCr20Ti	9722	6207		6208	9723	6208	9724	9725

Chemical Composition(%)

Alloy 75	Ni	Cr	Fe	C	Mn	Si	Cu	Al	Ti				
min	bal	19.0	-	0.08	-	0.3	-	-	0.2				
max		21.0	5.0	0.13	1.0	0.7	0.5	0.3	0.6				

Mechanical Properties

The following properties are applicable to Alloy 75 in the solution-treated condition and indicated size ranges. Specified properties of materials outside these size ranges are subject to special enquiry.

Form	Dimensions		Tensile strength		0.2% Yield Strength		1.0% Yield Strength		Elong A5 %	Brinell hardness HB
	mm	in	N/mm ²	ksi	N/mm ²	ksi	N/mm ²	ksi		
Plate	≤ 20	≤ 0.8	650	94.3	240	34.8	270	39.2	25	≤ 230
Sheet, strip	≤ 2.5	≤ 0.1								
Tube	wall ≤ 5	≤ 0.2								
Rod, bar	≤ 100	≤ 4								
Forgings (cross section)	≤ 8000mm ²	≤ 124 sq in					-	-		

Minimum mechanical properties at room temperature according to DIN 17750/51/52/54. Please Note: The figures quoted are intended for guidance only. For further information, please refer to the standards listed or contact our sales or QA Departments.

Metallurgical Structure

Alloy 75 has a face-centred cubic structure. Chromium carbides, nitrides and carbonitrides can occur in the matrix.

Corrosion Resistance

Alloy 75 shows excellent oxidation and scaling resistance up to 1100°C (2000°F). It forms an adherent oxide layer which protects the surface against progressive attack.

Applications

The high scaling resistance and good creep properties of Alloy 75 give it wide application in high temperature service up to 1100°C (2000°F).

Typical applications include:

- components for industrial and aircraft gas turbines (casings, combustion chambers, ducting)
- industrial furnace components
- high temperature fasteners, springs, dies and cores
- thermocouple sheathing

Stock Size Range

Alloy 75 - Bar, Tube, Pipe and Fittings

Bar mm dia	Tube mm o/d	Pipe nb	Seamless fittings nb
12.0 - 65.0	(1)	(1)	-

(1) Tube and pipe in this alloy are available by request.

Alloy 75 - Sheet and Plate

Size	2m x 1m	8' x 4'	2.5m x 1.25m	3m x 1.2m	3m x 1.5m
Thickness	1.6	3, 4, 5, 6mm	-	3, 5mm	3, 5, 6mm

Size	10' x 5'	4m x 2m	6m x 2m	6.096m x 2.438m
Thickness	6.35 - 9.53mm	-	-	-

The above tables represent our standard stock range.

Other sizes can be manufactured to order, often with short lead times.