

# 7175 Aluminium

## Technical Datasheet



### Commercial Aluminium Alloy

Service. Quality. Value.

#### Applications

- Aircraft structural parts
- Rivets
- Bolts
- Ordnance

#### Key features:

- High mechanical strength
- Heavily utilised by the aerospace industry
- High fracture toughness
- Good resistance to stress corrosion cracking (SCC)

#### Product Description

7175 aluminium alloy is typically utilised in applications where improved formability and toughness are required. Used extensively in the aerospace industry, the combination of high mechanical strength, fracture toughness and stress corrosion cracking resistance, makes this alloy suitable for structural aircraft applications. The T-73 temper eliminates the development of stress corrosion cracking (SCC).

#### Weldability

Poor

#### Availability

Bar, sheet, plate

#### Chemical Composition (weight %)

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Al	Others
min.			1.20		2.10	0.18	5.10		Rem	0.05
max.	0.15	0.20	2.00	0.10	2.90	0.28	6.10	0.10	Rem	0.15

#### Typical Physical Properties

Characteristic		English	Metric
Nominal Density (68 °F/20 °C)		0.101 lbs./in. <sup>3</sup>	2.80 Mg/m <sup>3</sup>
Melting Range		990 °F - 1175 °F	532 °C - 635 °C
Specific Heat (212 °F/100 °C)		0.207 BTU/lb. - °F	865 J/kg - °K
Coefficient of Thermal Expansion	Linear 68 °F-212 °F 20 °C-100 °C	13.0 micro in./in.-°F	23.4 micro m/m -°K
	Volumetric 68 °F/20 °C	3.78 x 10 <sup>-5</sup> in. <sup>3</sup> /in. <sup>3</sup> -°F	68 x 10 <sup>-6</sup> m <sup>3</sup> /m <sup>3</sup> -°K
Thermal Conductivity (68 °F/20 °C)	T651	82 BTU/ft. - hr. - °F	142 W/m - °K
	T7351	94 BTU/ft. - hr. - °F	163 W/m - °K
Electrical Conductivity (68 °F/20 °C)	Equal Volume	T651	36% IACS
	Equal Volume	T7351	42% IACS
		T651	107% IACS

#### Technical Assistance

Our knowledgeable staff backed up by our resident team of qualified metallurgists and engineers, will be pleased to assist further on any technical topic.

#### UK Service Centres

#### Quality Testing

Smiths Belfast	02895 908 897	Smiths Leeds	0113 307 5167
Smiths Biggleswade	01767 604 704	Smiths Manchester	0161 794 8650
Smiths Birmingham	0121 728 4940	Smiths Norwich	01603 789 878
Smiths Bristol	0117 971 2800	Smiths Nottingham	0115 925 4801
Smiths Chelmsford	01245 466 664	Smiths Redruth	01209 315 512
Smiths Gateshead	0191 469 5428	Smiths Verwood	01202 824 347
Smiths Horsham	01403 261 981	Main Office	0845 527 3331

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