



AFT

Arc Short Cycle Flanged Threaded studs

Stud Material :

- Mild Steel 4.8
- Stainless Steel 304, 316.

Dimensions of threaded studs (AFT)

d_1	l_1	$d_2 (\pm 0.2)$	Max h_5	h_1	$\alpha \pm 1^\circ$
M3	6	4.0	0.6	0.7 to 1.4	7°
	8				
	10				
	12				
	16				
	20				
	25				
	30				
M4	6	5.0	0.6	0.7 to 1.4	7°
	8				
	10				
	12				
	16				
	20				
	25				
	30				
M5	6	6.0	1.0	0.7 to 1.4	7°
	8				
	10				
	12				
	16				
	20				
	25				
	30				
	35				
	40				
M6	8	7.0	1.0	0.7 to 1.4	7°
	10				
	12				
	16				
	20				
	25				
	30				
	35				
	40				
	45				
M8	10	9.0	1.5	0.8 to 1.4	7°
	12				
	16				
	20				
	25				
	30				
	35				
	40				
	45				
	50				

Dimensions in mm. We can supply other lengths, dimensions or material (brass, aluminum, etc) upon request

THOMAS

Welding systems

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Basic engineering specifications, which cover all of the studs listed in this publication regardless of size or shape, are detailed below.

1. Stud material

- **Non-alloyed steel**
All THOMAS low carbon steel studs are 4.8 steel (weldable) made to our specifications. This type of steel offers excellent welding quality. The mechanical properties conforms to ISO 898-1 (4.8 property class). The raw material specifications mentioned conform with EN ISO 13918 and EN ISO 14555.
- **Stainless steel 1.4301/1.4303, 1.4571, 1.4401**
THOMAS studs are manufactured from material conforming to EN ISO 3506-1. The raw material specifications mentioned conform with EN ISO 13918 and EN ISO 14555.
- Upon request, for all stud material, certificates of chemical analysis and mechanical properties can be supplied. This conforms to EN 10204.

The mechanical properties for threaded studs depend on the type of treatment applied to the material, with the following values guaranteed as minimums:

CFT / AFT	Maximum Fastening Torque (in Ncm)			
Stud Material	Mild steel 4.8	Stainless steel A2-50	Brass Ms 63	Aluminum Almg3
M 3	80	50	60	40
M 4	180	110	130	90
M 5	360	230	270	190
M 6	610	380	450	310
M 8	1500	950	1100	750

Tensile force limit according to ISO 18800-1 (without deformation)

Code	Material	Standard	Mechanical properties	
	4.8 * ₁	EN 20898-1 EN 20898-1 EN 20898-1	R _m > 420 ReH > 340 N/mm ² A ₅ > 14%	N _{R,d} = ASP x fu,b,k/(1.25 xy _m) fu,b,k = Rm
AFT	A2-50 * ₂	EN ISO 3506-3 EN ISO 3506-3 EN ISO 3506-3	R _m > 500 R _{p0.2} > 340 N/mm ² A ₁ > 0.6 d	These specifications are only guide values, as the torque and minimum failing load depend on the thickness and strength of the base material.
	CuZn37	ISO 426-1 ISO 1638	R _m > 370 N/mm ²	
	EN AW-AlMg3	EN 573-3	R _m > 180 N/mm ²	

*₁ Plain steel studs are suitable for welding, if the hardness increase is low (C < 0.18%).

Free-cutting steel studs are not suitable for welding.

*₂ As a rule, stainless steel studs are suitable for welding, but free-cutting steel studs are not.

2. Stud dimensions

Stud dimensions as given in the dimensional sheet meet the EN ISO 13918 specifications. The length dimension l_2 is the overall length of the stud AFTER WELD. i.e. THOMAS studs are always longer than the nominal length ordered. Our studs comply with product grade A as specified in ISO 4759-1.

3. Threads

All threads are cold rolled. (Therefore the flow-line of material is not interrupted.) The surface quality is considerably improved, and its strength is doubled. The thread is less subject to wear and offers more resistance to corrosion. All THOMAS studs are fitted with threads in accordance with DIN 13, Sheet 20, 6g

4. Plating Available

Unless otherwise specified in the order, all THOMAS low carbon steel studs will be supplied in tensile class 4.8 electrolytically copper coated (C2E, ISO 4042).

Upon request, other types of surface protection can be supplied: but a minimum order quantity applies.

5. Ordering information

The following specifications are required when ordering :

- Type of stud
- Stud diameter "d"
- Stud length "l"
- Material
- Surface protection

Ordering example: AFT M6 x 16 mm in coppered steel.