

TECHNICAL GUIDE

303S31 / 1.4305

Steel Description



303S31 / 1.4305 is a popular free cutting stainless steel and is the most machinable of all the austenitic grades. This is due to the presence of sulphur and manganese which, when combined to form manganese sulphide inclusions, results in improved & consistent machinability, good tool life and surface finish. This does however, have the effect of decreasing the corrosion resistance and a slight lowering of toughness. 303S31 / 1.4305 is typically used for nuts & bolts, gears, bushes, spindles & shafts.

EN 10088-3	BS970: 1991	COLOUR CODE	DESCRIPTION
1.4305	303S31		Austenitic freecutting stainless steel

CHEMICAL ANALYSIS	
Car	0.120 max
Sil	1.00 max
Mang	2.00 max
Phos	0.060 max
Sul	0.15 / 0.35
Chr	17.0 / 19.0
Moly	1.00 max
Nick	8.0 / 10.0

INTERNATIONAL SPECIFICATION COMPARISON	
BRITISH BS 970:1991	303S31
BRITISH BS 970:1955	
GERMAN DIN	
FRENCH AFNOR	
SWEDISH SS	2346
AMERICAN SAE	
EUROPEAN STEEL NO.	1.4305
EUROPEAN STEEL NAME	X10CrNiS18-9
EUROPEAN STANDARD	EN10088-3

QUICK VIEW SYSTEM	
MACHINEABILITY	85
WELDABILITY	Mild corroding conditions only
HARDENABILITY	Not applicable
SELECTION GUIDE AND USAGE EXAMPLES	General purpose freecutting stainless steel

SIZE RANGE SUMMARY			
	Rounds	IMP	3/16" - 8" dia
		MM	3mm - 60mm dia
	Hexagons	IMP	.187" - .875" a/f hex
		MM	7mm - 12mm a/f hex

SEE STOCK RANGE FOR SPECIFIC SIZES.