

Chemical Compositions Of Stainless Steel

	A1 303/S31	A2 304/S15	A4 316/S31	C1 410/S21	C3 431/S29
Carbon (max)	0.12	0.06	0.07	0.09-0.15	0.12-0.20
Silicon	0.20-1.00	0.20-1.00	0.20-1.00	0.80	0.80
Magnesium	1.00-2.00	0.50-2.00	0.50-2.00	1.00	1.00
Nickel	8.00-10.00	8.00-11.00	10.00-13.00	1.00	2.00-3.00
Chromium	17.00-19.00	17.50-19.00	16.50-18.50	11.50-13.50	15.00-18.00
Molybdenum	-	-	2.25-3.00	-	0.60
Sulphur (max)	0.15-0.30	0.30 Max	0.30	0.030	0.15-0.30
Phosphorous (max)	0.045	0.045	0.045	0.040	0.040

Comparison Code Table

	Britain	Germany	Italy	Sweden	Japan
A1	303S31	WI.4305		SIS2346	SUS303
A2	304S15	WI.4301	X8CN1910	SIS2333	SUS304
A4	316S31	WI.4436	X8CND1712	SIS2343	SUS316JI
C1	410S21	WI.4006	X15C13	SIS2302	SUS410JI
C3	431S29	WI.4057	X20CN16	SIS2321	SUS431

Mechanical Strengths

Strength Class	Tensile N/mm	Yield N/mm	Ductility Elongation	Proof Load Stress N/mm	Size
50	500	210	0.6d	500	>M39
70	700	450	0.4d	700	>M20
80	800	600	0.3d	800	>M20

All values are on finished fasteners (nuts, bolts, screws etc) not machined test pieces.

Tensile values are valid on the thread area and tested to a 'mean' value.

Yields are calculated to a 0.2% strain.

Elongation is the total after fastener failure above tensile loading and based on the diameter of the thread.

All N/mm are squared Newton millimetres, ton/in can be given if required.

All figures are given as reference and not to be relied on solely in critical fastening applications.