

Stainless Steel Reinforcing Bar & Dowel Bars



Stainless steel reinforcing bar supplied to BS 6744 and cut and bent to BS 8666, with all reinforcing bar supplied CARES approved in accordance with UK reinforcement requirements.

Stainless steel dowel bars manufactured from stainless steel bar to BS EN 10088-3.

Benefits

- Supplied in lengths to suit your project
- Can be bent or threaded to order
- Excellent corrosion resistance
- High ductility and strength
- Resistant to seismic loading
- Low magnetic permeability

Applications

- Concrete reinforcement
- Precast concrete elements
- Bridge decks and structures
- Marine and coastal structures
- Water-retaining structures
- Holding down bolts and fixings

Selecting the correct Rebar & Dowel bar grades

Grades for Stainless Steel Ribbed Bar BS 6744

Austenitic grades 1.4301 (304), 1.4436 (316) and ferritic-austenitic 1.4362 (duplex) are commonly used for stainless reinforcement. These grades provide a balance of strength, ductility and corrosion resistance suitable for a wide range of structural and environmental conditions, in line with BS 6744 guidance.

Guidance on the use of stainless steel reinforcement for different service conditions

Grades of Rebar and Dowel Bar readily available within BS 6744							
Grades in accordance with BS EN 10088-1	Rebar	Dowel bar	For structures or components with either a long design life, or which are inaccessible for future maintenance	For structures or components exposed to chloride contamination with no relaxation in durability design (e.g. concrete cover or water proofing treatment requirements)	Reinforcement bridging joints, or penetrating the concrete surface and also subject to chloride contamination (e.g dowel bars or holding down bolts)	Structures subject to chloride contamination where reductions in normal durability requirements are proposed (e.g. reduced cover, concrete quality or omission of water proofing treatment)	Key: 1 Appropriate choice for corrosion resistance and cost 2 Over specification of corrosion resistance for the application 3 May be suitable in some instances: specialist advice should be obtained 4 Grades suitable for specialist applications which should only be specified after consultation with corrosion specialists 5 Unsuitable for the application
	Readily Available						
1.4301 (304)	✓	✓	1	1	5	3	
1.4162			1	1	5	3	
1.4436 (316)	✓		2	2	1	1	
1.4429			2	2	1	1	
1.4362	✓		2	2	1	1	
1.4462 F51			2	2	1	1	
1.4529			4	4	4	4	
1.4501 F55			4	4	4	4	
Grades used for Dowel Bar which are not listed in BS6744 but commonly used							
1.4307 (304L)		✓	1	1	5	3	
1.4401 (316)		✓	2	2	1	1	
1.4404 (316L)		✓	2	2	1	1	

Rebar

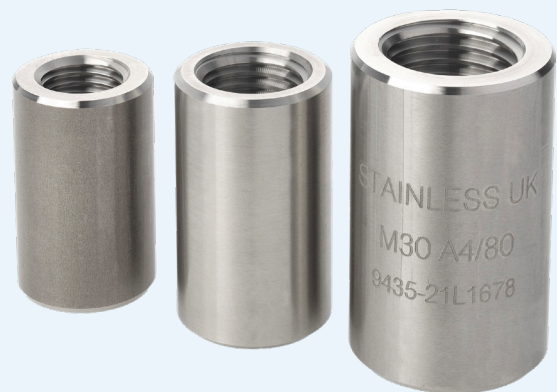
Rebar is generally used for the reinforcement of concrete, it can be supplied cut and bent to BS8666 and threaded to BS3643.

Dowel Bars

Dowel bars are cast or drilled into concrete and used to transfer loads across joints. In applications where movement is expected, the dowel bar is debonded on one side of the joint. Stainless steel dowel bars can be supplied in strength grades 250, 500 and 650, min 0.2% N/mm² Proof load.

Threaded Ends

Stainless UK can also supply bar with threaded ends for fixing applications to suit customer requirements. The ends are threaded with ISO metric threads to BS 3643.



Rebar Couplers

Bar			Coupler	
Bar Dia. (mm)	Thread Size	Thread Length (mm)	Dia. (mm)	Length (mm)
12	M 12	17	18	31
16	M 16	21	22	43
20	M 20	25	27	51
24	M 24	30	33	61
32	M 30	37.5	40	73
40	M 39	50	55	93

Sizes & Strengths

Rebar is generally supplied with a minimum 0.2% proof of 500N/mm², a UTS of 550 N/mm² and Elongation of 14%. 650 N/mm² proof can be produced to order or see Grip Rib/Grip Bar Data Sheet for equivalents.

Dowel bar is generally supplied with a 0.2% proof of 250 N/mm² and a UTS of 500N/mm². Higher proof strength of 500 N/mm² and 650 N/mm² are available.

Rebar 500 proof 550 UTS							
Unthreaded					Threaded		
Ref	Kg/m	Cross Section Area (mm ²)	Ultimate tensile load kN	Proof load 0.2% N/mm kN	Metric threaded size	Ultimate tensile load kN	Proof load 0.2% N/mm kN
RB 5	0.155	19.6	10	9			
RB 6	0.224	28.3	15	14	M6	12	10.1
RB 8	0.304	50.3	27	25	M8	21	18.3
RB 10	0.397	78.5	43	39	M10	34	29
RB 12	0.62	113.1	62	56	M12	50	42.1
RB 16	1.589	201.1	110	100	M16	91	78.3
RB 20	2.484	314.2	172	157	M20	143	122.4
RB 25	3.878	490.9	269	245	M24	207	176.3
RB 32	6.353	804.2	442	402	M30	327	280.3
RB 40	9.927	1256.6	691	628	M39	570	487.9
RB 50	15.512	1963.5	1079	981	M48	859	736.6

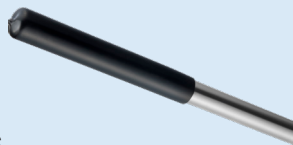
Dowel bar 250 proof 500 UTS			
Unthreaded			
Ref	Kg/m	Ultimate tensile load kN	Proof load 0.2% N/mm kN
DB 5	0.154	9.5	4.7
DB 6	0.222	14	7
DB 8	0.395	25	12
DB 10	0.617	39	19
DB 12	0.888	56	28
DB 16	1.578	100	50
DB 20	2.466	157	78
DB 25	3.853	245	122
DB 32	6.313	402	201
DB 40	9.865	618	314
DB 50	15.41	981	490

System Accessories

Bar is available with full strength couplers, load nuts, lock nuts, and standard plates, however plates and end connections can be manufactured to meet individual contract requirements.

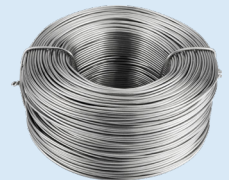
Dowel Bar Sleeves

Plastic debonding sleeves for use in dowelled movement joints.



Tying Wire

Stainless steel tying wire. 1.2 mm diameter supplied in 1 kg or 20 kg coils.



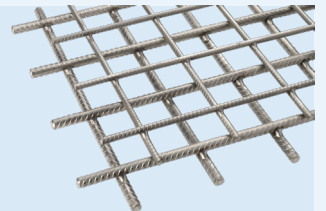
Dowel Bar Expansion Cap

Rigid PVC caps with compressable filter to allow for expansion.



Mesh

Reinforcement mesh. See Mesh data sheet.



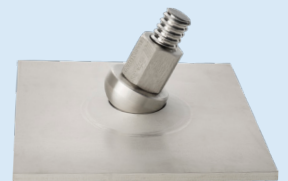
Safety End Caps

Plastic protection caps for exposed bar ends.



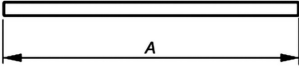
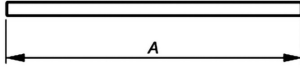
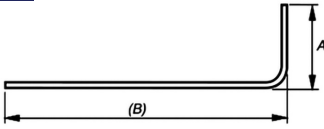
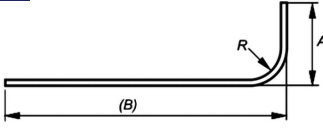
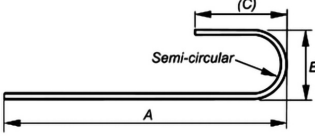
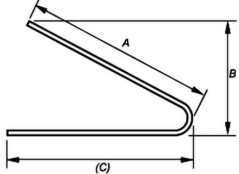
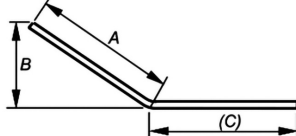
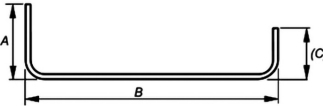
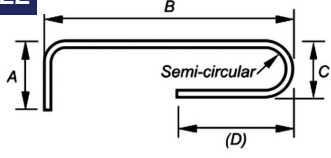
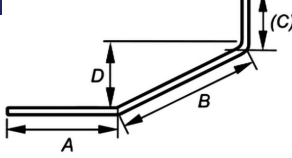
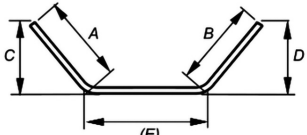
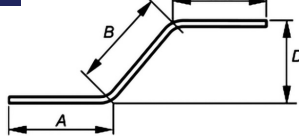
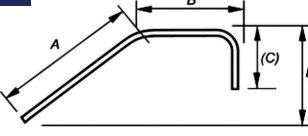
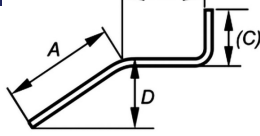
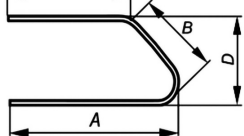
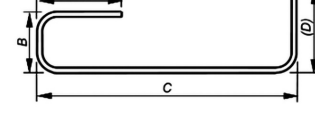
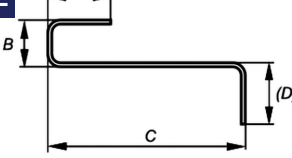
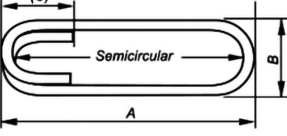
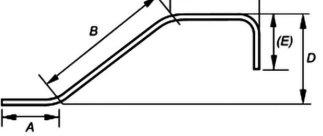
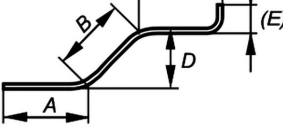
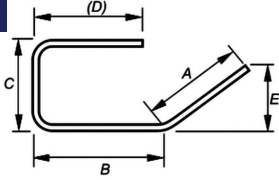
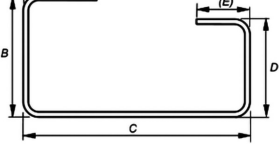
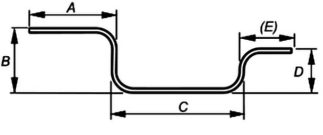
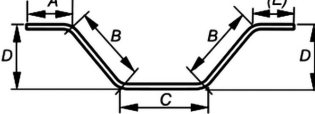
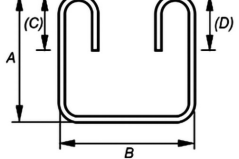
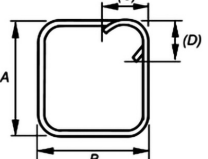
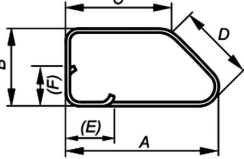
Plate Washers

Available flat or dished to suit misalignment of the bar.



Shape Codes

The following table shows the shape codes for the current standard: BS8666
Shape and total length of bar (L) measured along centre line.

00  $L=A$	01  $L=A$	11  $L=A + (B) - 0.5r - d$	12  $L=A + (B) - 0.43r - 1.2d$
13  $L=A + 0.57B + (C) - 1.6d$	14  $L=A + (C) - 4d$	15  $L=A + (C)$	21  $L=A + B + (C) - r - 2d$
22  $L=A + B + 0.57C + (D) - 0.5r - 2.6d$	23  $L=A + B + (C) - r - 2d$	24  $L=A + B + (C)$	25  $L=A + B + (E)$
26  $L=A + B + (C)$	27  $L=A + B + (C) - 0.5r - d$	28  $L=A + B + (C) - 0.5r - d$	29  $L=A + B + (C)$
31  $L=A + B + C + (D) - 1.5r - 3d$	32  $L=A + B + C + (D) - 1.5r - 3d$	33  $L=2A + 1.7B + 2(C) - 4d$	34  $L=A + B + C + (E) - 0.5r - d$
35  $L=A + B + C + (E) - 0.5r - d$	36  $L=A + B + C + (D) - r - 2d$	41  $L=A + B + C + D + (E) - 2r - 4d$	44  $L=A + B + C + D + (E) - 2r - 4d$
46  $L=A + 2B + C + (E)$	47  $L=2A + B + 2(C) + 2q - 3r - 6d$	51  $L=2(A + B + (C)) - 2.5r - 5d$	56  $L=A + B + C + D + 2(E) - 1.5r - 3d$

Continued overleaf...

Shape Codes

The following table shows the shape codes for the current standard: BS8666
Shape and total length of bar (L) measured along centre line.

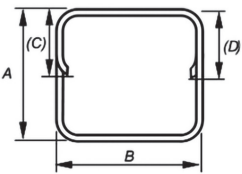
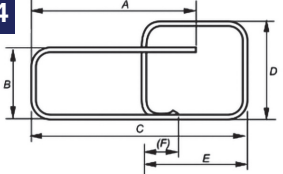
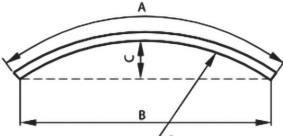
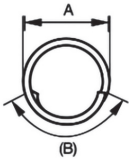
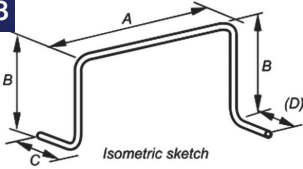
63  $L = 2A + 3B + 2(C) - 3r - 6d$	64  $L = A + B + C + 2D + E + (F) - 3r - 6d$	67  $L = A$	75  B is the overlap $L = \pi (A - d) + B + 25$
77  C = number of turns $L = C\pi (A - d)$	98  Isometric sketch $L = A + 2B + C + (D) - 2r - 4d$	99 All shapes where standard shapes cannot be used are Shape Code 99 and require fully dimensioned sketches. Total length to be calculated.	

Table of Minimum Dimensions

Nominal Size	Minimum radius for scheduling	Minimum diameter for bending former	Minimum End Projection	
			General (min. 5d straight)	Links where bend <150° (min. 10d straight)
6	12	24	110	110
8	16	32	115	115
10	20	40	120	130
12	24	48	125	160
16	32	64	130	210
20	70	140	190	290
25	87	175	240	365
32	112	224	305	465
40	140	280	380	580
50	175	350	475	725

