

Rebar Tables BS 8666:2005: User Guide

BS 8110 Ultimate anchorage bond lengths and lap lengths C20-30										
	Bar size									
	8	10	12	16	20	25	32	40	50	
Concrete strength class C20/25										
Lap lengths or tension anchorage	360	440	530	710	880	1100	1410	1760	2200	
1.4 _ tension lap	500	620	750	1000	1240	1550	1990	2480	3100	
2.0 _ tension lap	710	880	1060	1410	1760	2200	2820	3520	4400	
Compression anchorage length	280	350	420	560	700	880	1120	1400	1750	
Concrete strength class C25/30										
Lap lengths or tension anchorage	320	400	480	640	800	1000	1280	1600	2000	
1.4 _ tension lap	450	560	680	900	1120	1400	1800	2240	2800	
2.0 _ tension lap	640	800	960	1280	1600	2000	2560	3200	4000	
Compression anchorage length	260	320	390	520	640	800	1030	1280	1600	

BS 8110 Ultimate anchorage bond lengths and lap lengths C28-40										
	Bar size									
	8	10	12	16	20	25	32	40	50	
Concrete strength class C28/35										
Lap lengths or tension anchorage	310	380	460	610	760	950	1220	1520	1900	
1.4 _ tension lap	420	520	630	840	1040	1300	1670	2080	2600	
2.0 _ tension lap	600	750	900	1200	1500	1880	2400	3000	3750	
Compression anchorage length	240	300	360	480	600	750	960	1200	1500	
Concrete strength class C32/40										
Lap lengths or tension anchorage	280	350	420	560	700	880	1120	1400	1750	
1.4 _ tension lap	400	490	590	790	980	1230	1570	1960	2450	
2.0 _ tension lap	560	700	840	1120	1400	1750	2240	2800	3500	
Compression anchorage length	230	280	340	450	560	700	900	1120	1400	

EC2 Ultimate anchorage bond lengths and lap lengths

	Bond condition	Reinforcement in tension, bar diameter, ϕ (mm)										Reinforcement in compression
		8	10	12	16	20	25	32	40	50		
Anchorage length, l_{bd}	Straight bars only	Good	230	320	410	600	780	1010	1300	1760	2020	40
		Poor	330	450	580	850	1120	1450	1850	2510	2890	58
Lap length, l_o	Other bars	Good	320	410	490	650	810	1010	1300	1760	2020	40
		Poor	460	580	700	930	1160	1450	1850	2510	2890	58
	Half the bars lapped in one location	Good	320	440	570	830	1090	1420	1810	2460	2830	57
		Poor	460	630	820	1190	1560	2020	2590	3520	4040	81
	Third of the bars lapped in one location	Good	270	360	470	690	900	1170	1490	2020	2330	66
		Poor	380	520	670	980	1280	1660	2130	2890	3320	46

NOTES

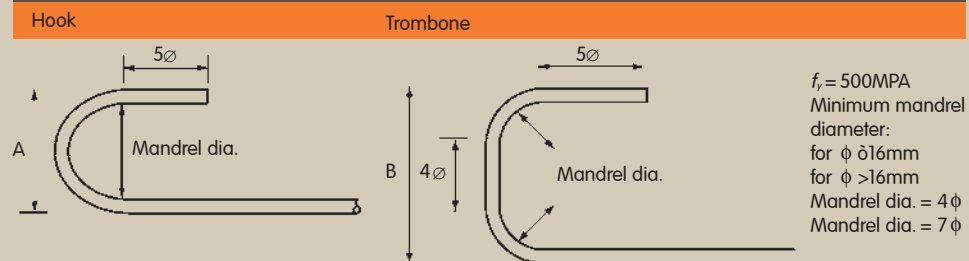
- Cover to all sides and distance between bars 25ϕ mm (i.e. $\alpha_2 < 1$)
- $\alpha_1 = \alpha_3 = \alpha_4 = \alpha_5 = 1.0$
- Design stress has been taken as 435 MPa. Where the design stress in the bar at the position from the where the anchorage is measured, σ_{sd} , is less than 435 the figures in this table can be factored by $\sigma_{sd}/435$
- The anchorage and lap lengths have been rounded up to the nearest 10 mm
- Where all the bars are lapped in one location, increase the lap lengths for 6/8/10/12/16/20/25/32/40/50mm bars lapped in one location by a factor of 1.07
- The figures in this table have been prepared for concrete class C25/30; the following factors may be used for other concrete classes

Concrete class	C20/25	C28/35	C30/37	C32/40
Factor	1.16	0.93	0.89	0.85
Concrete class	C35/45	C40/50	C45/50	C50/60
Factor	0.80	0.73	0.68	0.63

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British Standard Reference	Longitudinal wires			Cross Wires			Mass	
	size mm	pitch mm	area mm ² /m	size mm	pitch mm	area mm ² /m	kg/m ²	kg/sheet
Square Mesh Fabric								
A 393	10	200	393	10	200	393	6.16	70.96
A 252	8	200	252	8	200	252	3.95	45.50
A 193	7	200	193	7	200	193	3.02	34.79
A 142	6	200	142	6	200	142	2.22	25.57
Structural Fabric								
B1131	12	100	1131	8	200	252	10.9	125.57
B 785	10	100	785	8	200	252	8.14	93.77
B 503	8	100	503	8	200	252	5.93	68.31
B 385	7	100	385	7	200	193	4.53	52.19
B 283	6	100	283	7	200	193	3.73	42.97
Long Mesh Fabric								
C 785	10	100	785	6	400	70.8	6.72	77.41
C 636	9	100	636	6	400	70.8	5.55	63.94
C 503	8	100	503	6	400	70.8	4.51	50.00
C 385	7	100	385	6	400	70.8	3.58	39.28
C 283	6	100	283	6	400	70.8	2.78	30.07
Wrapping Mesh Fabric								
D 98	5	200	98	5	200	98	1.54	17.74
D 49	2.5	100	49	2.5	100	49	0.77	8.87

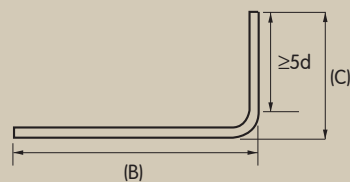
Fabric to BS 4483 Preferred meshes in stock size sheets 4.8m long 2.4m wide



Bar Size	6	8	10	12	16	20	25	32	40	50
Hook A	40	50	60	75	100	180	225	290	360	450
Trombone B	60	80	100	120	160	260	325	420	520	650

Minimum L bar dimensions

Bar Size (mm)	6	8	10	12	16	20	25	32	40	50
Minimum radius for scheduling (mm)	12	16	20	24	32	70	87	112	140	175
Minimum end projection [C] (mm)	110	115	120	125	130	190	240	305	380	475



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Mass of groups of bars (kg per metre run)										
Bar Size (mm)	Number of Bars									
	1	2	3	4	5	6	7	8	9	10
6*	0.222	0.444	0.666	0.888	1.110	1.332	1.554	1.776	1.998	2.220
8	0.395	0.790	1.185	1.580	1.975	2.370	2.765	3.160	3.555	3.950
10	0.616	1.232	1.848	2.464	3.080	3.696	4.312	4.928	5.544	6.160
12	0.888	1.776	2.664	3.552	4.440	5.328	6.216	7.104	7.992	8.880
16	1.579	3.158	4.737	6.316	7.895	9.474	11.053	12.632	14.211	15.790
20	2.466	4.932	7.398	9.864	12.330	14.796	17.262	19.728	22.194	24.660
25	3.854	7.708	11.562	15.416	19.270	23.124	26.978	30.832	34.686	38.540
32	6.313	12.626	18.939	25.252	31.565	37.878	44.191	50.504	56.817	63.130
40	9.864	19.728	29.592	39.456	49.320	59.184	69.048	78.912	88.776	98.640
50	15.413	30.826	46.239	61.652	77.065	92.478	107.891	123.304	138.717	154.130

NOTE : The weights in the Table for groups of bars are the B.S.I. exact values. *Denotes non-preferred sizes.

Mass in kg per sq metre for various spacings										
Bar Size (mm)	Spacing of Bars (millimetres)									
	75	100	125	150	175	200	225	250	275	300
6*	2.960	2.220	1.776	1.480	1.269	1.110	0.987	0.888	0.807	0.740
8	5.267	3.950	3.160	2.633	2.257	1.975	1.756	1.580	1.436	1.317
10	8.213	6.160	4.928	4.107	3.520	3.080	2.738	2.464	2.240	2.053
12	11.840	8.880	7.104	5.920	5.074	4.440	3.947	3.552	3.229	2.960
16	21.053	15.790	12.632	10.527	9.023	7.895	7.018	6.316	5.742	5.263
20	32.880	24.660	19.728	16.440	14.091	12.330	10.960	9.864	8.967	8.220
25	51.387	38.540	30.832	25.693	22.023	19.270	17.129	15.416	14.015	12.647
32	84.173	63.130	50.504	42.087	36.074	31.565	28.058	25.252	22.956	21.043
40	131.520	98.640	78.912	65.760	56.366	49.320	43.840	39.456	35.869	32.880
50	205.507	154.130	123.304	102.753	88.074	77.065	68.502	61.652	56.047	51.377