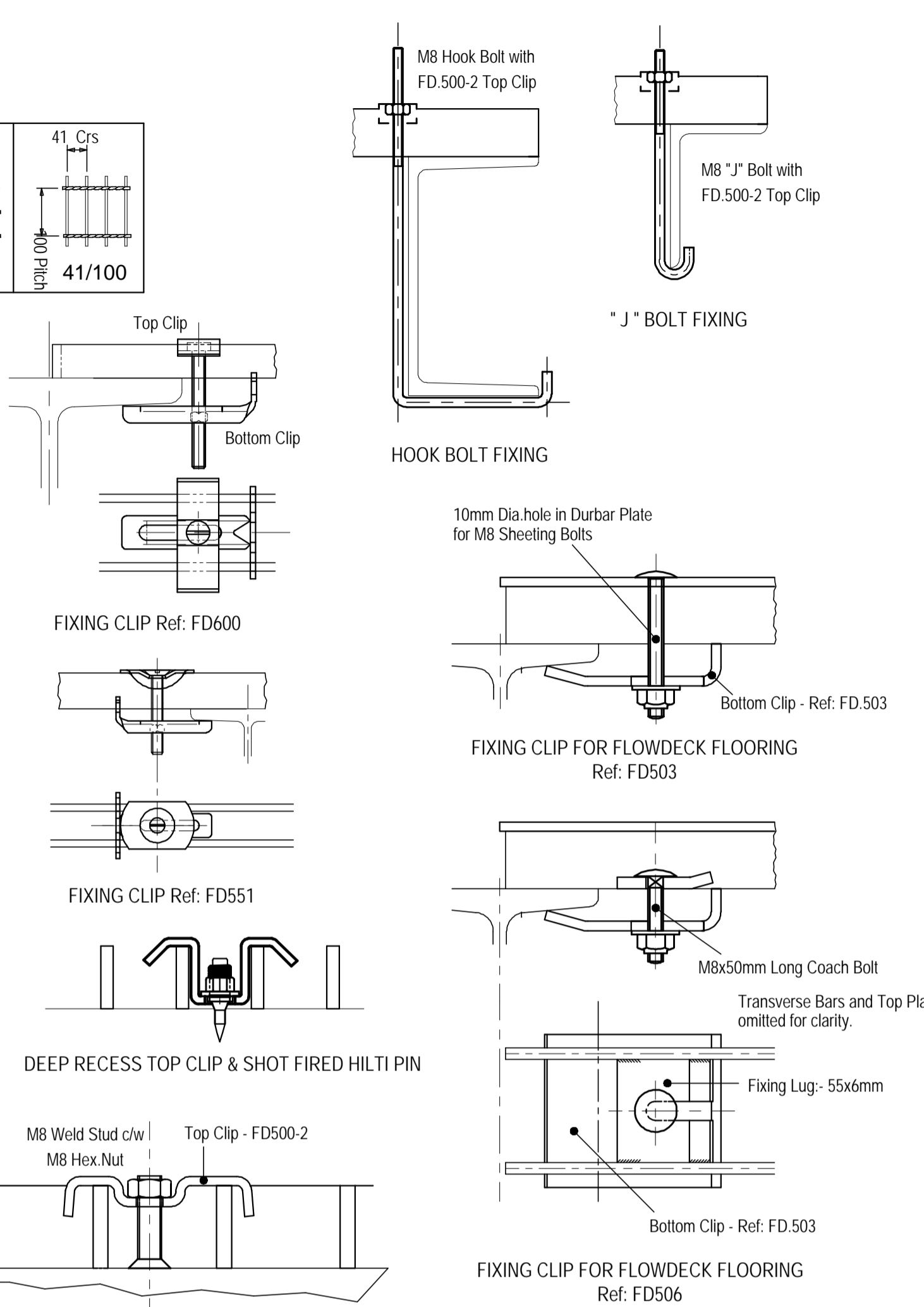


Tolerances are +0mm -5mm on Width
Panel Width sizes are in millimeters

No. of Bars	30mm Pitch		30mm Pitch	
	3mm Bar	5mm Bar	3mm Bar	5mm Bar
2	33	35	33	35
3	63	65	85	87
4	93	95	127	129
5	123	125	168	170
6	153	155	209	211
7	183	185	250	252
8	213	215	292	294
9	243	245	333	335
10	273	275	374	376
11	303	305	415	417
12	333	335	457	459
13	363	365	498	500
14	393	395	539	541
15	423	425	580	582
16	453	455	622	624
17	483	485	663	665
18	513	515	704	706
19	543	545	745	747
20	573	575	787	789
21	603	605	828	830
22	633	635	869	871
23	663	665	910	912
24	693	695	952	954
25	723	725	993	995
26	753	755		
27	783	785		
28	813	815		
29	843	845		
30	873	875		
31	903	905		
32	933	935		
33	963	965		
34	993	995		



SOLID FORGED HANDRAIL STANDARDS
Constructed to BS.4114

Base Plates to be Fully welded to Shanks

SHANK DIA	BALL DIA	HANDRAIL	GRUB SCREW
32mm	64mm	25mm N.B TUBE	M8 x 16
38mm	72mm	25mm N.B TUBE	M8 x 20
38mm	72mm	32mm N.B TUBE	M8 x 16

STANDARD BALL CENTRES	
450mm	500mm 533mm 550mm

TUBULAR HANDRAIL STANDARDS
Shanks from Tube to BS.4360
Grade 43C

Base Plates and Balls fully welded to Shanks

BALL DIA	HANDRAIL	GRUB SCREW
65mm	25mm N.B TUBE	M8 x 16mm
75mm	25mm N.B TUBE	M8 x 22.5mm
80mm	32mm N.B TUBE	M8 x 25mm
94mm	40mm N.B TUBE	M8 x 25mm
90mm	50mm N.B TUBE	M8 x 16mm

SHANK TUBE TYPE	N.B. (O/DIA)	WALL THICKNESS
25mm N.Bore	33.7mm	3.0mm
32mm N.Bore	42.4mm	3.0mm
40mm N.Bore	48.3mm	3mm or 5mm
50mm N.Bore	60.3mm	3.0mm

HANDRAILING LOAD TABLES

Handrailing	Maximum Centres of 1100mm high standards fixed to Steelwork (two hole flat base) at 550mm centres			
Item	Size	Material Grade	Loading 0.36kN/m	Loading 0.74kN/m
Tubular Std	33.7 o/d x 3.0 thk.	25mm N.B.	S355	1040mm
Tubular Std	42.4 o/d x 3.0 thk.	32mm N.B.	S355	1720mm
Tubular Std	48.3 o/d x 3.0 thk.	40mm N.B.	S355	2000mm
Tubular Std	48.3 o/d x 5.0 thk.	40mm N.B.	S355	2000mm
Solid Std	32mm dia.Solid		S275	1400mm
Solid Std	38mm dia.Solid		S275	1950mm
Solid Std	45mm dia.Solid		S275	2000mm

Handrailing	Maximum Centres of 1200mm high standards fixed to Steelwork (two hole flat base) at 550mm centres			
Item	Size	Material Grade	Loading 0.36kN/m	Loading 0.74kN/m
Tubular Std	33.7 o/d x 3.0 thk.	25mm N.B.	S355	820mm
Tubular Std	42.4 o/d x 3.0 thk.	32mm N.B.	S355	1500mm
Tubular Std	42.4 o/d x 4.0 thk.	32mm N.B.	S355	1720mm
Tubular Std	48.3 o/d x 3.0 thk.	40mm N.B.	S355	1840mm
Tubular Std	48.3 o/d x 5.0 thk.	40mm N.B.	S355	2000mm
Solid Std	32mm dia.Solid		S275	1180mm
Solid Std	38mm dia.Solid		S275	1800mm
Solid Std	45mm dia.Solid		S275	2000mm

Open Grid Flooring 3 kN/m ² Uniform Load			
For Serrated bars, the net depth for calculating CSA is reduced by 2mm	Uniform Load	Patch Load	Contact Area
41 - 100	3 kN/m ²	1.0 kN	300x300
Load Bar Sizes	Weight kN/m ²	Max Span Plain Bars	Max Span Serrated
20 x 3	0.148	890	760
20 x 5	0.228	1150	980
25 x 3	0.178	1240	1100
25 x 5	0.275	1540	1410
30 x 3	0.208	1560	1460
30 x 5	0.325	1810	1700
35 x 3	0.235	1780	1690
35 x 5	0.373	2080	1990
40 x 3	0.265	2020	1930
40 x 5	0.423	2310	2210
45 x 5	0.473	2550	2450
50 x 5	0.520	2790	2690
55 x 5	0.570	3010	2910
60 x 5	0.620	3260	3170

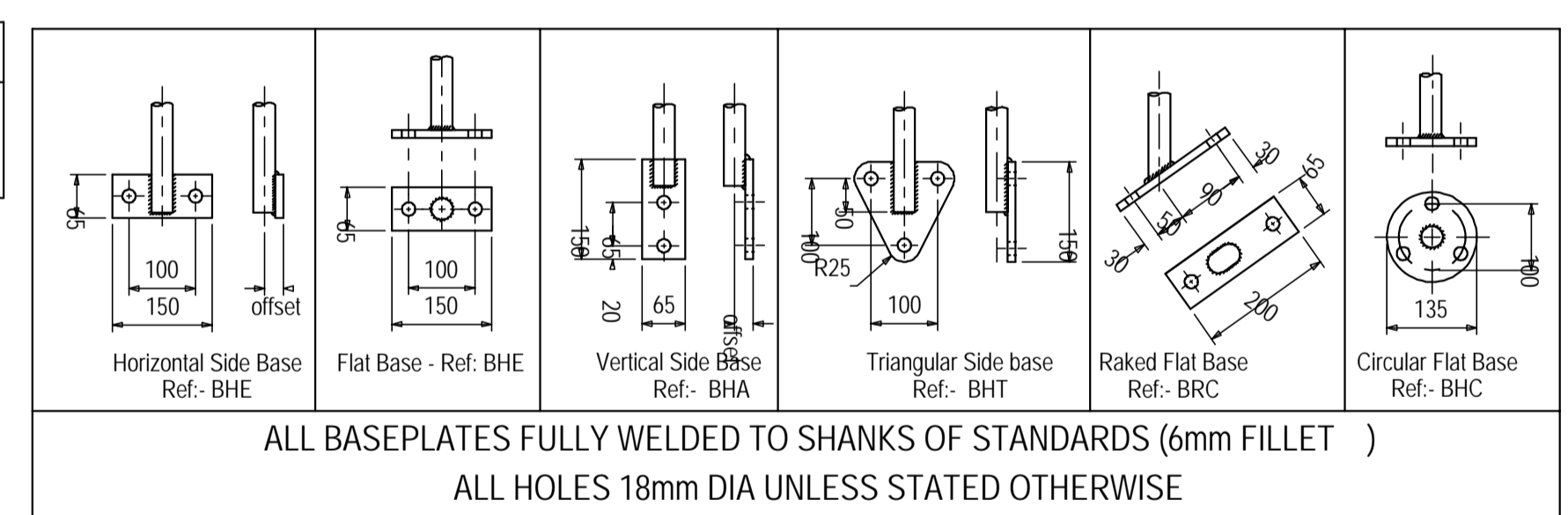
Open Grid Flooring 5 kN/m ² Uniform Load			
Uniform loading of 5 kN/m ² is more onerous than single or multiple patch loads	Uniform Load	Patch Load	Contact Area
For Serrated bars, the net depth for calculating CSA is reduced by 2mm	Uniform Load	Patch Load	Contact Area
41 - 100	5 kN/m ²	1.0 kN	300x300
Load Bar Sizes	Weight kN/m ²	Max Span Plain Bars	Max Span Serrated
20 x 3	0.148	920	830
20 x 5	0.228	1090	980
25 x 3	0.178	1150	1060
25 x 5	0.275	1360	1255
30 x 3	0.208	1385	1290
30 x 5	0.325	1640	1530
35 x 3	0.235	1615	1520
35 x 5	0.373	1915	1800
40 x 3	0.265	1845	1750
40 x 5	0.423	2140	2055
45 x 5	0.473	2335	2260
50 x 5	0.520	2530	2450
55 x 5	0.570	2715	2640
60 x 5	0.620	2900	2820

Open Grid Flooring 7.5 kN/m ² Uniform Load			
Uniform loading of 7.5 kN/m ² is more onerous than single or multiple patch loads	Uniform Load	Patch Load	Contact Area
For Serrated bars, the net depth for calculating CSA is reduced by 2mm	Uniform Load	Patch Load	Contact Area
41 - 100	7.5 kN/m ²	1.0 kN	300x300
Load Bar Sizes	Weight kN/m ²	Max Span Plain Bars	Max Span Serrated
20 x 3	0.148	800	720
20 x 5	0.228	950	860
25 x 3	0.178	1000	920
25 x 5	0.275	1190	1090
30 x 3	0.208	1200	1120
30 x 5	0.325	1430	1330
35 x 3	0.235	1410	1320
35 x 5	0.373	1670	1570
40 x 3	0.265	1610	1530
40 x 5	0.423	1910	1810
45 x 5	0.473	2110	2040
50 x 5	0.520	2280	2210
55 x 5	0.570	2450	2380
60 x 5	0.620	2620	2550

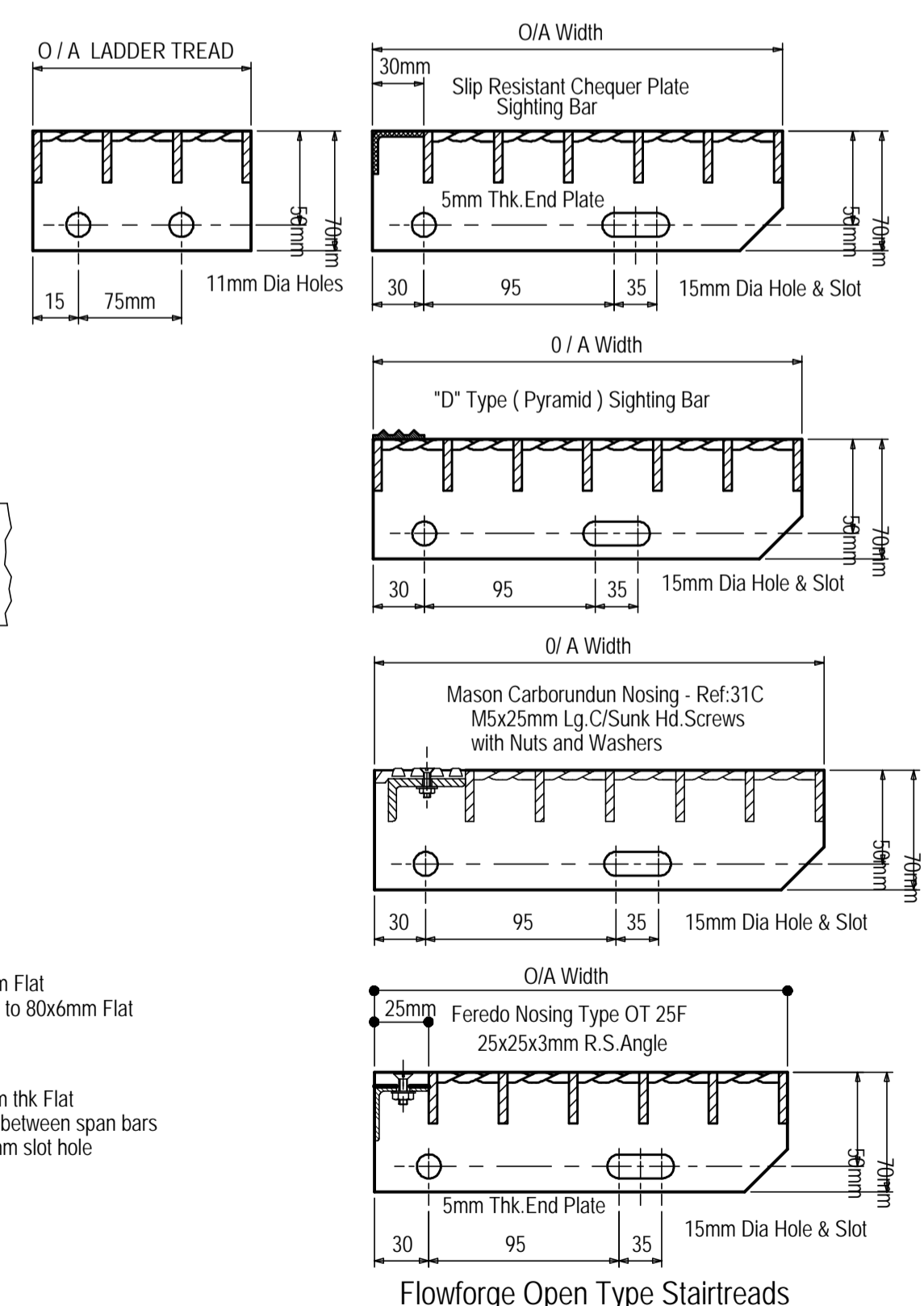
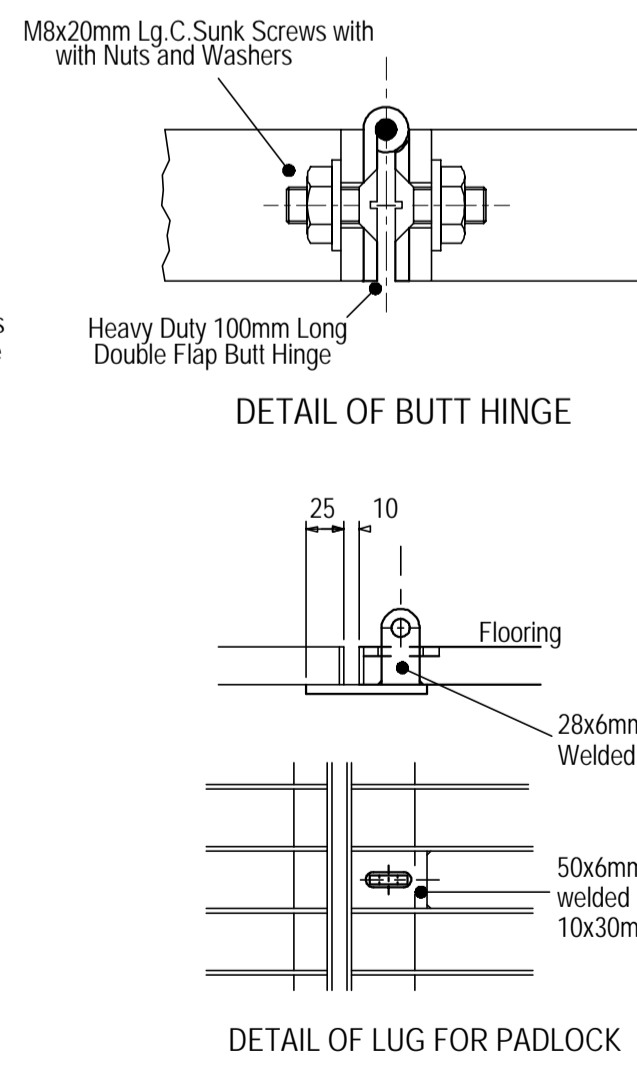
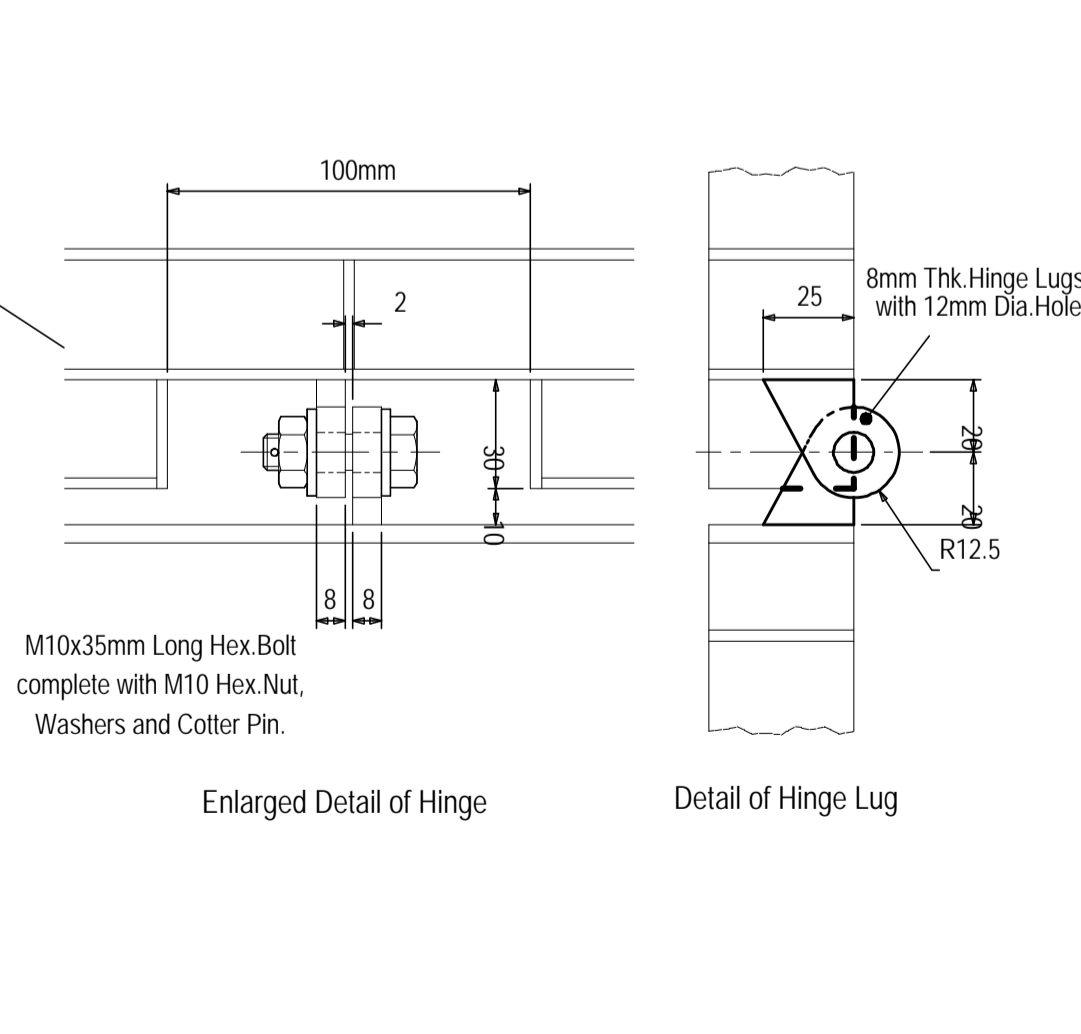
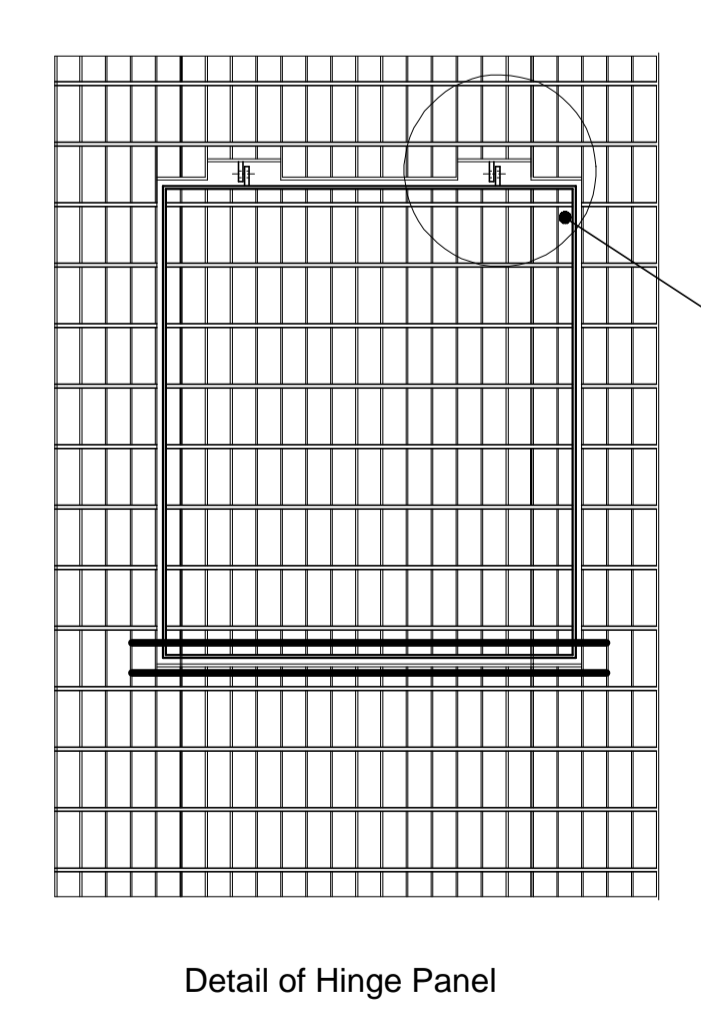
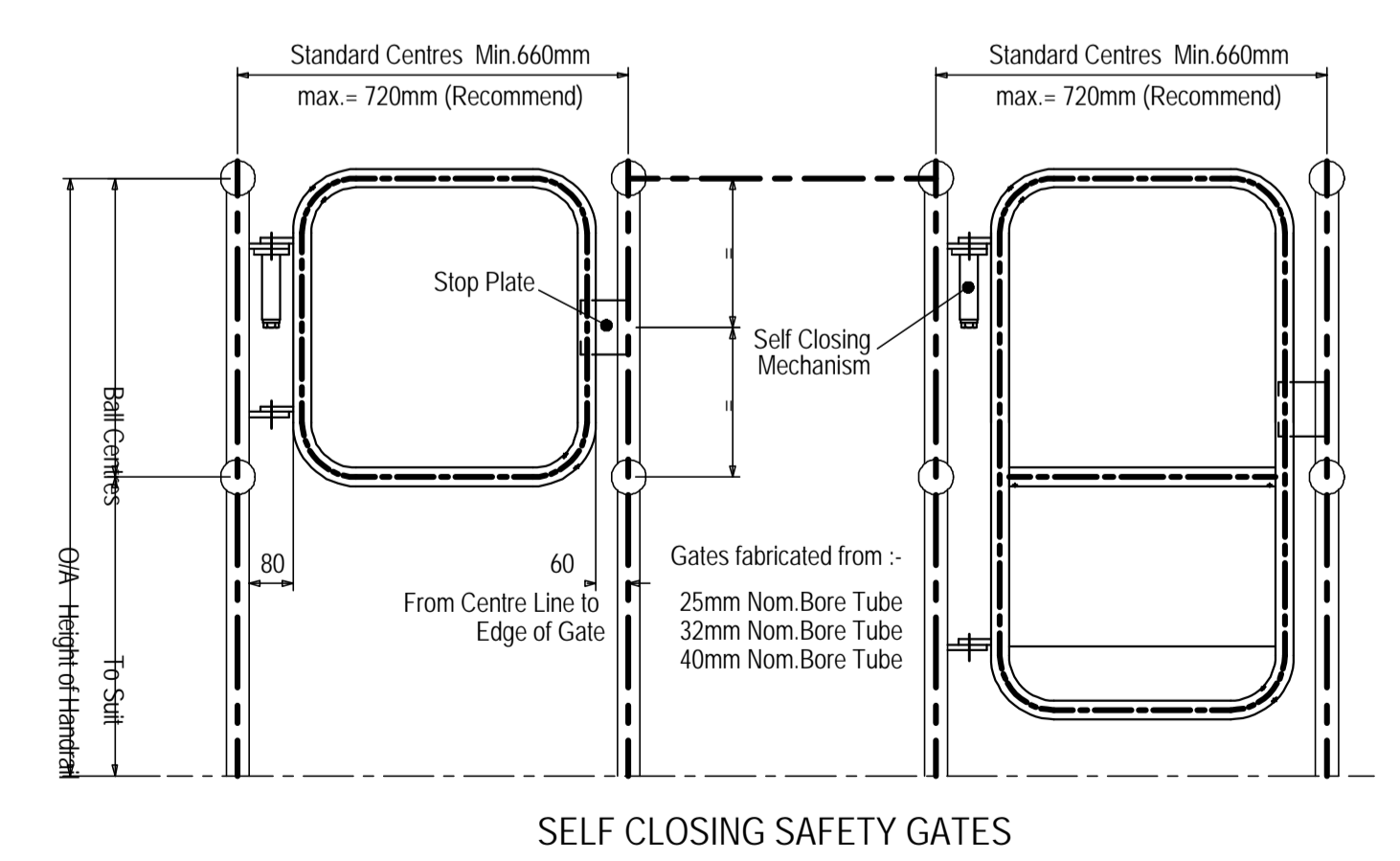
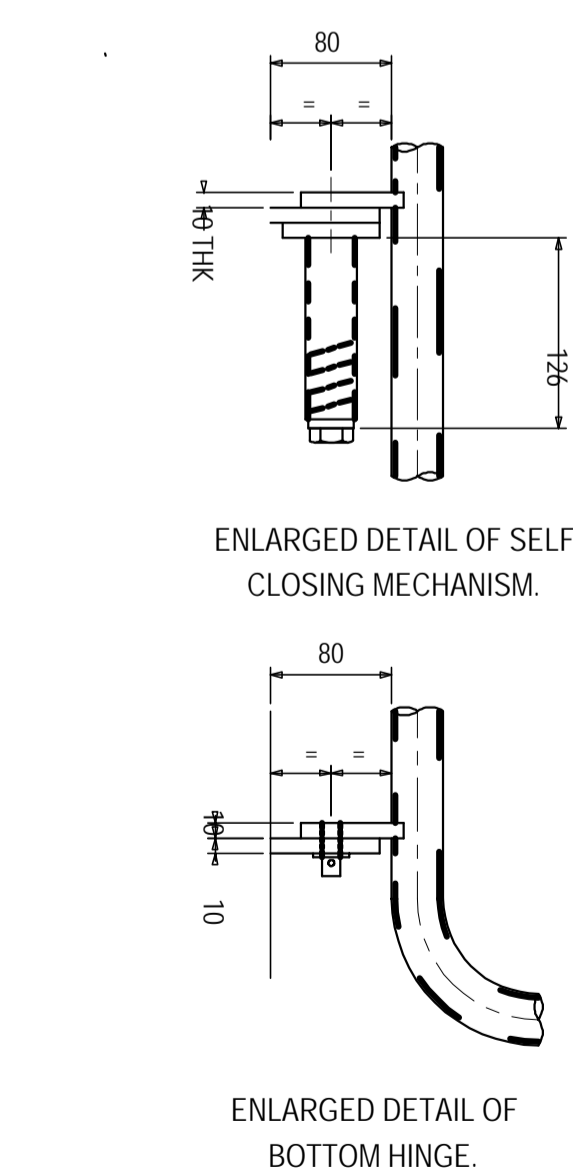
Open Grid Flooring 3 kN/m ² Uniform Load			
For Serrated bars, the net depth for calculating CSA is reduced by 2mm	Uniform Load	Patch Load	Contact Area
30 - 100	3 kN/m ²	1.0 kN	300x300
Load Bar Sizes	Weight kN/m ²	Max Span Plain Bars	Max Span Serrated
20 x 3	0.190	1040	890
20 x 5	0.299	1340	1140
25 x 3	0.231	1450	1280
25 x 5	0.363	1690	1570
30 x 3	0.271	1700	1710
30 x 5	0.431	2000	1870
35 x 3	0.309	1970	1860
35 x 5	0.496	2260	2150
40 x 3	0.350	2190	2110
40 x 5	0.564	2520	2420
45 x 5	0.632	2790	2680
50 x 5	0.696	3050	2920
55 x 5	0.764	3330	3220
60 x 5	0.832	3550	3460

Open Grid Flooring 5 kN/m ² Uniform Load			
For Serrated bars, the net depth for calculating CSA is reduced by 2mm	Uniform Load	Patch Load	Contact Area
30 - 100	5 kN/m ²	1.0 kN	300x300
Load Bar Sizes	Weight kN/m ²	Max Span Plain Bars	Max Span Serrated
20 x 3	0.190	1020	920
20 x 5	0.299	1210	1090
25 x 3	0.231	1275	1175
25 x 5	0.363	1510	1390
30 x 3	0.271	1535	1430
30 x 5	0.431	1815	1690
35 x 3	0.309	1790	1690
35 x 5	0.496	2090	2000
40 x 3	0.350	2030	1940
40 x 5	0.564	2310	2220
45 x 5	0.632	2525	2440
50 x 5	0.696	2730	2650
55 x 5	0.764	2930	2850
60 x 5	0.832	3130	3050

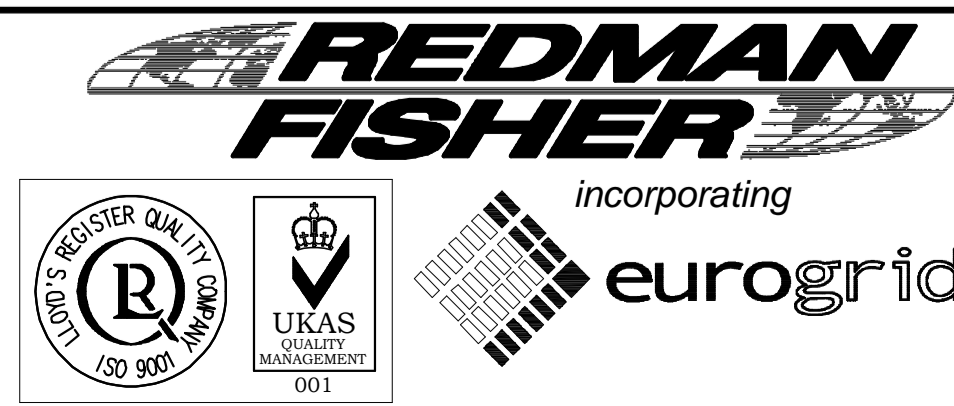
Open Grid Flooring 7.5 kN/m ² Uniform Load			
For Serrated bars, the net depth for calculating CSA is reduced by 2mm	Uniform Load	Patch Load	Contact Area
30 - 100	7.5 kN/m ²	1.0 kN	300x300
Load Bar Sizes	Weight kN/m ²	Max Span Plain Bars	Max Span Serrated
20 x 3	0.190	890	800
20 x 5	0.299	1050	950
25 x 3	0.231	1110	1020
25 x 5	0.363	1320	1210
30 x 3	0.271	1340	1250
30 x 5	0.431	1580	1480
35 x 3	0.309	1560	1470
35 x 5	0.496	1850	1740
40 x 3	0.350	1780	1690
40 x 5	0.564	2080	2000
45 x 5	0.632	2280	2200
50 x 5	0.696	2460	2390
55 x 5	0.764	2650	2570
60 x 5	0.832	2830	2750



ALL BASEPLATES FULLY WELDED TO SHANKS OF STANDARDS (6mm FILLET)
ALL HOLES 18mm DIA UNLESS STATED OTHERWISE



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