



Core Products

PRODUCT MANUAL





EXPERTS IN THE DESIGN, FABRICATION AND INSTALLATION OF HIGH QUALITY ENGINEERED METALWORK SOLUTIONS.

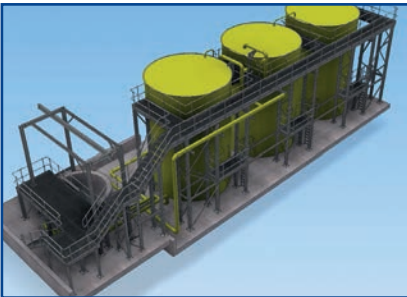


COMPANY

Since 1928, Steelway Fensecure Ltd has continued to be the market leader in the field of fabrication excellence and expertise. We manufacture from our two state of the art production facilities, which are located in Wolverhampton and West Bromwich.

QUALITY ASSURANCE AND ACCREDITATION

To meet and exceed the quality assurance expectations of our customers, Steelway are CE certified to execution class 3 and our operations are certified under PAS99, an Integrated Management System. PAS99 encompasses BS EN ISO 9001 - for Quality Management, BS EN ISO 14001 – for Environmental Management and OHSAS 18001 – for Health & Safety Management. We are accredited with UVDB & RISQS and due to the multitude of markets that we supply into, we are also committed to many other industry accreditation schemes, product certification and approvals, a full list is available on our website. Both our sites are certified to produce security products to varying levels in line with LPS1175.



CUSTOMER COMMITMENT AND SERVICE

We continually aim to provide a high level of customer service and are continually monitoring and developing our systems to meet with the expectations of our customer base. The understanding of professional Key Account Management and commitment to KPI requirements are a daily occurrence for our teams. We are committed to build and develop relationships in both the short and long term.



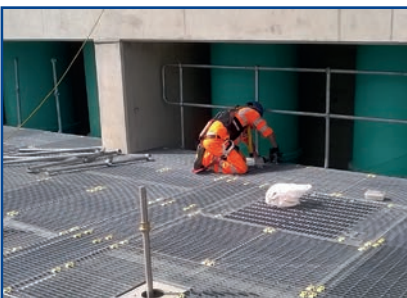
SUSTAINABILITY

Our commitment to sustainable practises is paramount. Not only for the future of our own business, but to also support the goals and objectives of our customer base. From simple initiatives such as recycling and improvements in energy efficiency, sustainable solutions are also at the forefront of our minds during the early stages of any new product development. Reductions in material and scrappage, optimum utilisation of laser cut components, improvements in production efficiency, packaging, transportation and overall improvisation of the products life expectancy are taken into consideration.



DESIGN & EXPERTISE

Our sales and design functions are equipped with the latest technology systems available. Utilising 3D CAD software, combined with communication and IT systems, we are able to provide our customers with a rapid response to enquiries and orders. Designing with 3D systems also allows for easy design verification prior to fabrication. We continue to invest in our design and fabrication facilities with plant, equipment, high speed automatic laser cutting equipment and software across both sites. Detailed structural design supported by full calculations if required.



PROJECT SOLUTIONS & SUPPORT

Utilising our experienced sales teams, installation engineers and project managers we have the experience to take your product and project requirements from initial concept right through to commission. We welcome the opportunity to provide a complete package approach. This can include, design consultation and specification, site survey, quotation, design verification, manufacture, delivery, installation and final commissioning.

Steelway Fensecure Ltd has been the market leader in the field of fabrication excellence and expertise since 1928. Our continued commitment to industry standards, specifications and design procedures gives customers confidence in Steelway to provide standard and engineered fabrication solutions.

Steelway offer our customers the assurance that all products supplied are of the highest quality, fully compliant with the relevant standards, codes of practice and building regulations. This is fully backed by our rigorous internal quality systems and factory production controls.

Architects, engineers and others now have the benefit of our experience brought together in this brochure of products engineered by Steelway. Guidance will readily be given by our Engineers for the specification and type of Steelway application most suitable for your project. This help is available from the outset when the initial plans are being drawn up. It will prove invaluable to the architect, Engineer and Draughtsman alike.

From design through to manufacture and installation, we work to the most exacting standards to provide quality products for the Water, Telecommunications and Power Utility Sectors as well as the Nuclear Sector, MOD, MOJ and other Government bodies, on projects where confidentiality is of the utmost importance.

Steelway are frequently requested to not only design, manufacture & supply our products, but also to assemble & carry out site installation. Our experienced teams of installation engineers undertake this work, controlled from our Wolverhampton works, we offer this service throughout the UK.

In the interest of quality and customer service, we pursue a policy of continuous product development and reserve the right to modify product designs without notice. Due to the limitations of space we have not been able to illustrate our complete product range. Please enquire if you do not find the products that fulfil your requirements - we may still be able to help you.

- We offer:
- Free advice.
 - Free Preliminary Surveys.*
 - Free estimates and detailed quotations.
 - Drawings for approval & structural calculations where applicable prior to manufacture on receipt of order.
 - Full in-house manufacturing.
 - On site assembly and installation service.*

* U.K. only.

At Steelway, we pride ourselves on customer service, on site support and our ability to produce quality fabrications either standard or bespoke that meet project requirements, timescales and budgets.

All information included is correct at date of publication.

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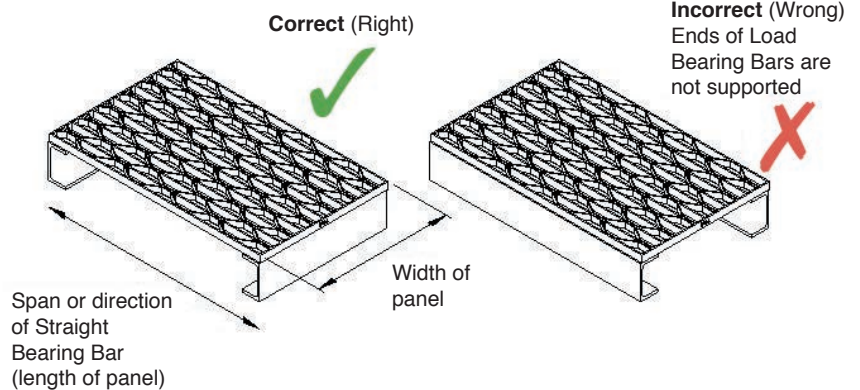
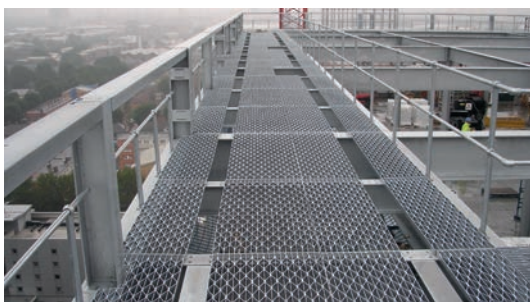
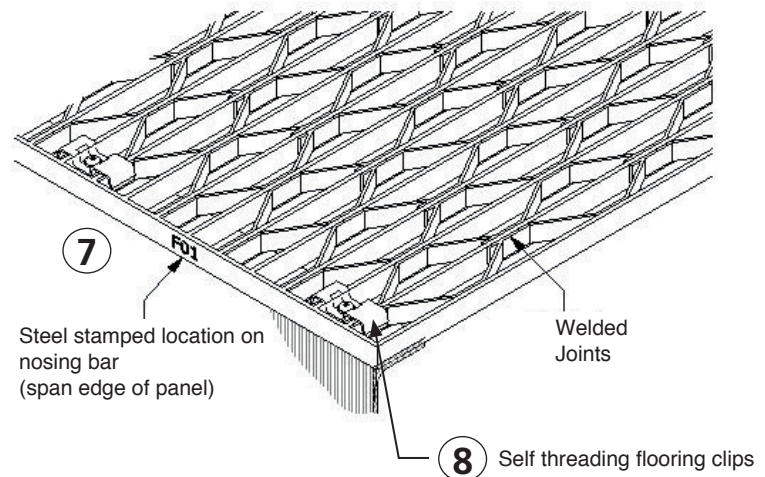
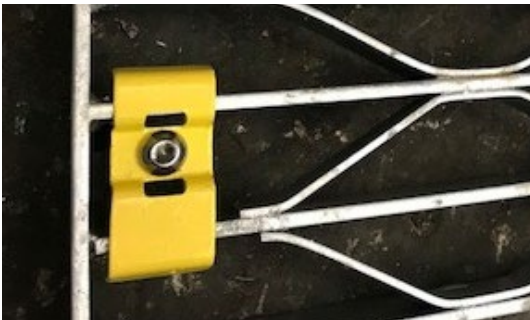
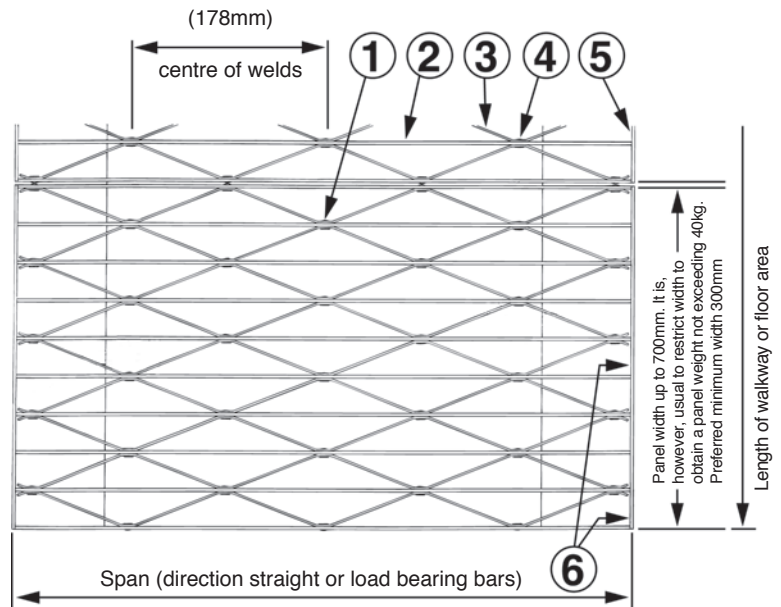


Industrial Flooring - Diamond Pattern Open Mesh Flooring

Key

1. Steelway mild steel diamond pattern open mesh flooring of welded construction.
2. Straight bar (load bearing bars).
3. Pressed bar, acts as spacer and transmits localised loads to adjacent load-bearing bars.
4. Strong stitch welded joints.
5. Nosing bar (binding bar) 5mm thick flat bar welded along the span edge of all panels. Nosing bars are not intended to be load bearing.
6. Every fourth or fifth straight bar and the edge bars are strongly welded to the nosing bars.
7. Installation marks are steel stamped in the centre of nosing bars - see drawing below.
8. Fully compliant self threading open mesh flooring clips. Minimum four clips per panel.

Available in: Mild Steel (self-colour or hot dip galvanised), Stainless Steel & Aluminium





Safe Load Tables Diamond Pattern Mild Steel Open Mesh Flooring:

When using the load tables please consider the following notes

1. Material grade S275JR, $f_y = 275\text{N/mm}^2$ in accordance with BS EN 1993-1-1 (EC3).
2. Flooring panels simply supported.
3. The loads shown in the table are based upon the design strength divided by a partial safety factor, $\gamma_Q = 1.5$, allowance for the self weight of the flooring has been included.
4. Deflections limited to $L/200$, 10mm or 4mm* whichever is the lesser. * The difference in level between loaded and unloaded neighbouring panels has been limited to 4mm in accordance with BS EN ISO14122-2:2016 & BS 4592-0:2006+A1:2012. Should the neighbouring panels be secured together the 4mm deflection rule need not apply and larger spans may be achievable, contact our sales team for further information.
5. Serrated load bearing bars to provide enhanced slip resistance are available upon request, contact our sales team for further information.
6. Steelway Diamond pattern flooring complies with clause 4.2.4.4 of BS EN ISO 14122-2:2016 and 5.1 of BS 4592-0:2006+A1:2012, where the maximum opening shall not permit the passage of a 35mm diameter sphere. *Should the working platform be above a place where people are **continuously** working, as opposed to passing occasionally the maximum opening should not permit the passage of a 20mm diameter sphere and an alternative floor type / means of protection to prevent falling objects should be provided.* For further information and advice please contact our sales team.
7. Values in red are below the required UDL or CL load requirements for general duty loading of table , 1 BS 4592-0:2006+A1:2012.
8. U.D.L = Uniformly Distributed Load per square metre
C.L = Concentrated load over 200mm x 200mm

Diamond Pattern Open Mesh Flooring

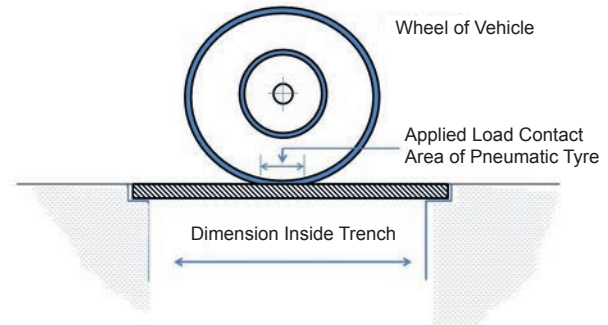
Load bearing bars (mm)	Pressed bar	Mass kg/m ²	Load type	Clear span (mm)												Max'm span (mm) for 5 kN/m ²	Max'm span (mm) for 1.5 kN	
				600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250			2400
FL25H	20x3	41.99	U.D.L	63.19	32.36	16.64	8.98	5.27	3.29								1227	
			C.L	10.68	6.71	4.10	2.57	1.71	1.20	0.87								
FL30H	25x3	51.12	U.D.L	109.20	55.91	28.76	15.52	9.10	5.68	3.73	2.55						1407	
			C.L	19.20	12.16	7.43	4.65	3.10	2.17	1.58	1.19	0.91						
FL35H	25x3	56.58	U.D.L	161.79	88.78	45.67	24.65	14.45	9.02	5.92	4.04	2.85					1579	
			C.L	22.26	16.45	10.05	6.29	4.20	2.94	2.14	1.60	1.23	0.97	0.78				
FL40H	25x3	62.04	U.D.L	211.40	132.53	68.17	36.80	21.57	13.47	8.84	6.03	4.26	3.09				1746	
			C.L	26.25	20.17	13.54	8.47	5.65	3.96	2.88	2.16	1.66	1.31	1.05	0.85			
FL45H	25x3	67.50	U.D.L	267.63	171.11	97.07	52.39	30.71	19.17	12.58	8.59	6.07	4.40	3.27			1907	
			C.L	26.61	20.44	15.45	9.67	6.45	4.52	3.29	2.47	1.90	1.49	1.19	0.97	0.80		
FL50H	25x3	72.96	U.D.L	330.49	211.32	133.15	71.87	42.13	26.30	17.26	11.79	8.32	6.04	4.49	3.41	2.63	2064	
			C.L	31.39	24.12	19.56	12.67	8.45	5.92	4.31	3.23	2.49	1.95	1.56	1.27	1.05		
FL70H	40x3	105.82	U.D.L	648.03	414.46	287.58	197.21	115.60	72.17	47.35	32.34	22.84	16.58	12.33	9.35	7.23	2400	
			C.L	65.38	50.25	40.78	34.30	24.63	17.25	12.55	9.42	7.24	5.69	4.56	3.70	3.05		



Safe Load Tables Diamond Pattern Mild Steel Open Mesh Flooring - Concentrated Loads

In addition to the notes on page 5, when using the load tables please consider the following notes:

1. The loads shown include a 25% increase to the characteristic static load allowing for the effects of impact as per table 1 of BS 4592-0:2006+A1:2012.
2. Deflections limited to L/200, 10mm
3. Serrated load bearing bars (FLS) to provide enhanced slip resistance are available upon request, contact our sales team for further information.
4. Durbar solid top flooring (FLP) is available for enhanced load carrying capacities; contact our sales team for further information.
5. The load table below is based upon concentrated loads applied by slow moving road vehicles with pneumatic tyres. Where covers are subject to other types of usage e.g. Fork Lift trucks etc. a specific enquiry should be made.
6. Alternative concentrated load areas available on request.



C.L = Concentrated area load over 200mm x 200mm*

Load bearing bars (mm)	Pressed bar (mm)	Mass kg/m ²	Load type	Clear span (mm)													
				600	750	900	1000	1200	1350	1500	1650	1800	1950	2100	2250	2400	
FL25L	20x3	32.26	C.L	6.40	4.02	2.76	2.23	1.54	1.21	0.98	0.81	0.68	0.58	0.47	0.39	0.32	
FL25H	20x3	41.99	C.L	8.55	5.37	3.69	2.98	2.06	1.62	1.31	1.08	0.91	0.77	0.63	0.51	0.42	
FL30L	25x3	39.47	C.L	11.15	7.01	4.82	3.88	2.68	2.11	1.71	1.41	1.18	1.01	0.83	0.67	0.55	
FL30H	25x3	51.12	C.L	15.48	9.73	6.69	5.39	3.72	2.93	2.37	1.96	1.64	1.40	1.15	0.93	0.77	
FL35L	25x3	42.88	C.L	14.10	9.45	6.50	5.24	3.62	2.85	2.30	1.90	1.60	1.36	1.11	0.91	0.75	
FL35H	25x3	56.58	C.L	19.64	13.16	9.05	7.30	5.04	3.97	3.21	2.65	2.22	1.89	1.55	1.26	1.04	
FL40L	25x3	46.28	C.L	15.92	12.19	8.38	6.76	4.67	3.68	2.97	2.45	2.06	1.75	1.44	1.17	0.96	
FL40H	25x3	62.04	C.L	23.15	17.73	12.19	9.83	6.79	5.35	4.32	3.57	2.99	2.55	2.09	1.70	1.40	
FL45L	25x3	49.68	C.L	18.23	14.03	10.80	8.71	6.01	4.74	3.83	3.16	2.65	2.26	1.85	1.51	1.24	
FL50L	25x3	53.08	C.L	18.00	13.85	11.25	9.55	6.60	5.20	4.20	3.47	2.91	2.48	2.03	1.65	1.36	
FL50H	25x3	72.96	C.L	27.68	21.29	17.30	14.69	10.14	7.99	6.46	5.33	4.48	3.81	3.13	2.54	2.09	
FL65H6	40x3	110.15	C.L	60.05	46.19	37.53	33.36	27.29	22.54	18.22	15.04	12.62	10.74	8.82	7.16	5.90	
FL65H8	40x3	131.96	C.L	76.40	58.77	47.75	42.45	34.73	28.68	23.18	19.13	16.06	13.67	11.22	9.12	7.51	
FL80H6	40x3	129.06	C.L	83.25	64.04	52.03	46.25	37.84	33.30	29.73	25.66	21.54	18.33	15.04	12.22	10.07	
FL80H8	40x3	156.16	C.L	108.03	83.10	67.52	60.02	49.10	43.21	38.58	33.29	27.95	23.79	19.52	15.86	13.07	
FL80H10	40x3	180.57	C.L	110.68	85.14	69.17	61.49	50.31	44.27	39.52	34.11	28.63	24.37	20.00	16.25	13.39	
FL100H8	40x3	188.42	C.L	162.01	124.62	101.25	90.00	73.64	64.80	57.86	52.26	47.65	43.78	36.60	29.74	24.49	
FL100H10	40x3	219.22	C.L	167.27	128.67	104.54	92.93	76.03	66.91	59.74	53.95	49.19	45.20	37.78	30.70	25.29	
FL100H12	40x3	246.66	C.L	199.54	153.49	124.71	110.85	90.70	79.81	71.26	64.36	58.68	53.92	45.07	36.63	30.16	

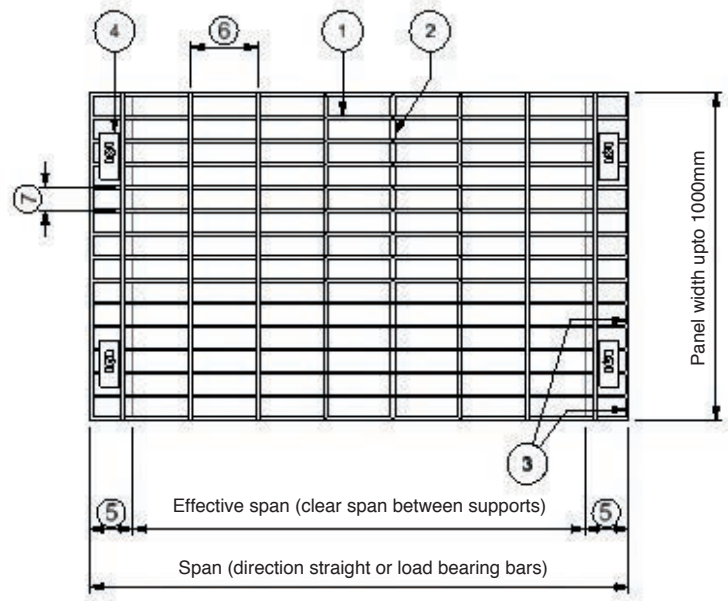


Rectangular Pattern Open Mesh Flooring

Key

1. Load bearing bars (Straight bars).
2. Transverse twisted bars.
3. Nosing Bar (Binding bar) to be welded perpendicular to every fourth or fifth load bearing bar. Nosing bars are not intended to be load bearing. Bars shall be of equal thickness to the thickness of the load bearing bars and shall be flush with the top of the load bearing bars.
4. Fully compliant self threading open mesh flooring clip. Minimum four number clips per panel.
5. Load bearing bars must be supported at each end by a minimum of 25mm.
6. Transverse twisted bar centres
Generally 50 or 100.
7. Load bearing bar centres.
Generally 23, 30, 34 or 41

Available in Mild Steel (self-colour or hot dip galvanised), & Stainless Steel

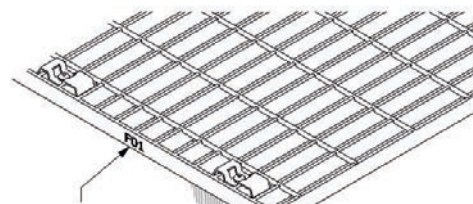


Load bearings in 3mm and 5mm thickness and varying depths are available for each type of grating. See load tables for the range of sections.

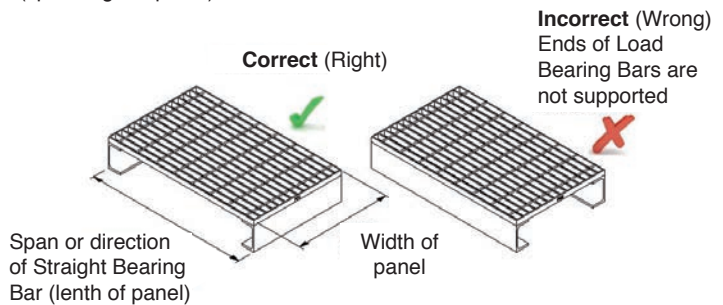


Stock Panels

These can be supplied in nominal 6m lengths by 1m wide.



Steel stamped location on nosing bar (span edge of panel)



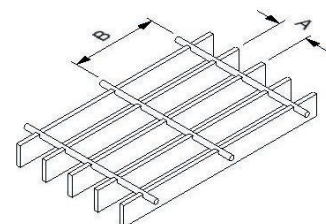
Plain and Serrated Load Bearing Bars

Our standard range of gratings with the special transverse twisted bar provide better than average slip resistance. Where oily or icy conditions are likely to be prevalent, then gratings with serrated edge load bearing bars can be supplied for improved grip.

Fabrication

Your specific requirements are undertaken after submission of our detailed drawings for your approval. Our proposals will provide you with the optimum layout taking account of all requirements for cut-outs, shaping and supporting steelwork. For ease of installation on site, each fabricated panel is hard stamped on the binding bar with an erection mark to correspond with our layout drawings.

Pattern	Dim 'A'	Dim 'B'	Prevent passing of 35mm dia ball	Prevent passing of 20mm dia ball
41/100	41	100	No	No
41/50	41	50	No	No
34/100	34	100	Yes	No
34/50	34	50	Yes	No
30/100	30	100	Yes	No
30/50	30	50	Yes	No
23/100	23	100	Yes	Yes
41/24	41	24	Yes	Yes





Safe Load Tables Rectangular Pattern Mild Steel Open Mesh Flooring

When using the load tables please consider the following notes:

1. Material grade S275JR, $f_y = 275\text{N/mm}^2$ in accordance with BS EN 1993-1-1 (EC3).
2. Flooring panels simply supported.
3. The loads shown in the table are based upon the design strength divided by a partial safety factor, $\gamma_0 = 1.5$, allowance for the self weight of the flooring has been included.
4. Deflections limited to $L/200$, 10mm or 4mm* whichever is the lesser. * The difference in level between loaded and unloaded neighbouring panels has been limited to 4mm in accordance with BS EN ISO 14122-2:2016 & BS 4592-0:2006+A1:2012. Should the neighbouring panels be secured together the 4mm deflection rule need not apply and larger spans may be achievable, contact our sales team for further information.
5. Serrated load bearing bars to provide enhanced slip resistance are available upon request, contact our sales team for further information.
6. All floor types with the exception of the 41mm pattern comply with clause 4.2.4.4 of BS EN ISO 14122-2:2016 and 5.1 of BS 4592-0:2006+A1:2012, where the maximum opening shall not permit the passage of a 35mm diameter sphere. Should the working platform be above a place where people are continuously working, as opposed to passing occasionally the maximum opening should not permit the passage of a 20mm diameter sphere and an alternative floor type / means of protection to prevent falling objects should be provided. For further information and advice please contact our sales team.
7. Values in red are below the required UDL or CL load requirements for general duty loading of table 1, BS 4592-0:2006+A1:2012.
8. U.D.L = Uniformly Distributed Load per square metre, kN/m^2 .
C.L = Concentrated load over 200mm x 200mm, kN.

Rectangular Pattern Mild Steel Open Mesh 34/100

Load bearing bars (mm)	Type	Mass kg/m^2	Load type	Clear span (mm)												Max' m span (mm) for 5 kN/m^2	Max' m span (mm) for 1.5 kN		
				600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250			2400	
20 x 3	34/100	16.67	U.D.L	22.40	11.47	5.90	3.18											938	
			C.L	2.07	1.30	0.79													
25 x 3	34/100	20.20	U.D.L	43.75	22.40	11.52	6.22	3.65										1109	
			C.L	4.03	2.53	1.55	0.97												
25 x 5	34/100	31.81	U.D.L	72.92	37.33	19.20	10.37	6.08	3.79									1260	
			C.L	6.72	4.22	2.58	1.62	1.08	0.75										
30 x 3	34/100	23.74	U.D.L	75.60	38.71	19.91	10.75	6.30	3.93	2.58								1271	
			C.L	6.91	4.38	2.68	1.67	1.12	0.78										
30 x 5	34/100	37.70	U.D.L	126.00	64.51	33.19	17.91	10.50	6.56	4.30	2.94							1445	
			C.L	11.52	7.30	4.46	2.79	1.86	1.30	0.95									
35 x 3	34/100	27.27	U.D.L	112.09	61.47	31.62	17.07	10.00	6.25	4.10	2.80							1427	
			C.L	9.41	6.95	4.25	2.66	1.77	1.24	0.90									
35 x 5	34/100	43.59	U.D.L	186.84	102.44	52.70	28.44	16.67	10.41	6.83	4.66	3.29						1622	
			C.L	15.68	11.59	7.08	4.43	2.96	2.07	1.51	1.13	0.87							
40 x 3	34/100	30.80	U.D.L	146.44	91.75	47.20	25.48	14.93	9.32	6.12	4.18	2.95						1578	
			C.L	12.29	9.44	6.34	3.97	2.65	1.86	1.35	1.01	0.78							
40 x 5	34/100	49.48	U.D.L	244.08	152.92	78.66	42.46	24.89	15.54	10.19	6.96	4.92	3.57	2.65				1792	
			C.L	20.49	15.74	10.57	6.62	4.41	3.09	2.25	1.69	1.30	1.02	0.82					
50 x 5	34/100	61.25	U.D.L	381.50	244.00	153.64	82.93	48.61	30.35	19.91	13.60	9.60	6.97	5.18	3.93	3.04		2119	
			C.L	32.03	24.61	19.97	12.92	8.62	6.04	4.39	3.30	2.54	1.99	1.59	1.30	1.07			
60 x 5	34/100	73.03	U.D.L	549.47	351.47	243.91	143.30	84.00	52.44	34.41	23.50	16.59	12.05	8.96	6.80	5.25		2429	
			C.L	46.14	35.46	28.78	22.33	14.90	10.43	7.59	5.70	4.38	3.44	2.76	2.24	1.84			



Rectangular Pattern Mild Steel Open Mesh Flooring 30/100 and 30/50

Load bearing bars (mm)	Type	Mass kg/m ²	Load type	Clear span (mm)												Max'm span (mm) for 5 kN/m ²	Max'm span (mm) for 1.5 kN	
				600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250			2400
20 x 3	30/100	18.53	U.D.L	25.39	13.00	6.69	3.61										968	
			C.L	2.36	1.48	0.91												
25 x 3	30/100	22.54	U.D.L	49.58	25.39	13.06	7.05	4.13	2.58								1144	
			C.L	4.61	2.90	1.77	1.11											
25 x 5	30/100	35.69	U.D.L	82.64	42.31	21.76	11.75	6.89	4.30	2.82							1300	
			C.L	7.68	4.83	2.95	1.85	1.23	0.86									
30 x 3	30/100	26.54	U.D.L	85.68	43.87	22.57	12.18	7.14	4.46	2.92							1312	
			C.L	7.90	5.00	3.06	1.91	1.28	0.89									
30 x 5	30/100	42.37	U.D.L	142.80	73.11	37.61	20.30	11.90	7.43	4.87	3.33						1490	
			C.L	13.16	8.34	5.10	3.19	2.13	1.49	1.08	0.81							
35 x 3	30/100	30.54	U.D.L	127.04	69.66	35.83	19.34	11.34	7.08	4.64	3.17						1473	
			C.L	10.75	7.95	4.86	3.04	2.03	1.42	1.03	0.78							
35 x 5	30/100	49.04	U.D.L	211.75	116.10	59.72	32.24	18.90	11.80	7.74	5.29	3.73	2.71				1673	
			C.L	17.92	13.24	8.09	5.07	3.38	2.37	1.72	1.29	0.99	0.78					
40 x 3	30/100	34.55	U.D.L	165.97	103.98	53.49	28.87	16.92	10.57	6.93	4.73	3.34					1628	
			C.L	14.05	10.79	7.25	4.54	3.03	2.12	1.54	1.16	0.89						
40 x 5	30/100	55.71	U.D.L	276.63	173.31	89.15	48.12	28.21	17.61	11.55	7.89	5.57	4.05	3.01			1849	
			C.L	23.42	17.99	12.08	7.56	5.04	3.53	2.57	1.93	1.48	1.17	0.93	0.76			
50 x 5	30/100	69.06	U.D.L	432.37	276.54	174.12	93.99	55.09	34.39	22.57	15.41	10.88	7.90	5.87	4.46	3.44	2186	
			C.L	36.61	28.13	22.83	14.77	9.85	6.90	5.02	3.77	2.90	2.28	1.82	1.48	1.22		
60 x 5	30/100	82.40	U.D.L	622.73	398.33	276.44	162.41	95.20	59.43	38.99	26.63	18.80	13.65	10.15	7.70	5.95	2507	
			C.L	52.73	40.53	32.89	25.52	17.03	11.93	8.68	6.51	5.01	3.94	3.15	2.56	2.11		

* For mass Type 30/50 add 2.8 kg/m²

Rectangular Pattern Mild Steel Open Mesh Flooring 41/100 and 41/50

Load bearing bars (mm)	Type	Mass kg/m ²	Load type	Clear span (mm)												Max'm span (mm) for 5 kN/m ²	Max'm span (mm) for 1.5 kN	
				600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250			2400
20 x 3	41/100	14.35	U.D.L	18.67	9.56	4.92	2.65										896	
			C.L	1.77	1.11													
25 x 3	41/100	17.30	U.D.L	36.46	18.67	9.60	5.18	3.04									1059	
			C.L	3.46	2.17	1.33	0.83											
25 x 5	41/100	26.97	U.D.L	60.76	31.11	16.00	8.64	5.06	3.16								1204	
			C.L	5.76	3.62	2.21	1.38	0.92										
30 x 3	41/100	20.24	U.D.L	63.00	32.26	16.59	8.96	5.25	3.28								1215	
			C.L	5.92	3.75	2.29	1.44	0.96										
30 x 5	41/100	31.88	U.D.L	105.00	53.76	27.65	14.93	8.75	5.46	3.58							1380	
			C.L	9.87	6.26	3.82	2.39	1.60	1.12	0.81								
35 x 3	41/100	23.18	U.D.L	93.41	51.22	26.35	14.22	8.34	5.20	3.41							1364	
			C.L	8.06	5.96	3.64	2.28	1.52	1.07	0.77								
35 x 5	41/100	36.79	U.D.L	155.69	85.37	43.91	23.70	13.89	8.67	5.69	3.89	2.74					1549	
			C.L	13.44	9.93	6.07	3.80	2.53	1.78	1.29	0.97							
40 x 3	41/100	26.13	U.D.L	122.03	76.46	39.33	21.23	12.44	7.77	5.10	3.48						1507	
			C.L	10.54	8.09	5.44	3.40	2.27	1.59	1.16	0.87							
40 x 5	41/100	41.69	U.D.L	203.40	127.43	65.55	35.38	20.74	12.95	8.50	5.80	4.10	2.97				1713	
			C.L	17.56	13.49	9.06	5.67	3.78	2.65	1.93	1.45	1.11	0.87					
50 x 5	41/100	51.50	U.D.L	317.91	203.33	128.03	69.11	40.51	25.29	16.59	11.33	8.00	5.81	4.32	3.28	2.53	2025	
			C.L	27.46	21.10	17.12	11.08	7.39	5.18	3.77	2.83	2.17	1.71	1.37	1.11	0.91		
60 x 5	41/100	61.32	U.D.L	457.89	292.89	203.26	119.42	70.00	43.70	28.67	19.58	13.83	10.04	7.46	5.66	4.38	2321	
			C.L	39.55	30.39	24.67	19.14	12.77	8.94	6.51	4.88	3.76	2.95	2.36	1.92	1.58		

* For mass Type 41/50 add 2.8kg/m²

Industrial Flooring (continued)

FLP FLOORING

with integral solid floor plate.



'FLP'

'FLP' flooring has a solid surface of Durbar pattern plate or alternatively plain surface plate as preferred, welded to the top face of open mesh flooring. 'FLP' covers may be used alongside open mesh of matching depth, without a trip, to provide a virtually closed floor area over machinery or other sensitive equipment, whilst retaining the advantage of open mesh flooring in other areas. This type of cover also provides better distribution of highly concentrated point loads across a panel without the usual distortion.

Covers can be supplied in a range of depths. For particularly slippery conditions a carborundum surface finish for solid covers is available. 'FLP' floor covers and open mesh flooring panels have been used extensively for raised flooring systems, thus allowing easy access to services below should the need arise.

Example: FLP 30 is 25mm open mesh +4.5mm plate cover.

Mild Steel Angle Curb

For straight runs of duct we supply standard 3m lengths of curb.

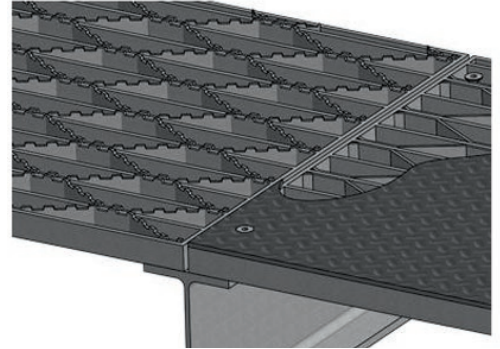
Make-up lengths are provided to obtain the correct overall length, these are marked for identification on site. Each angle curb is provided with joint plates and countersunk bolts to assist installation on site. Lugs are welded on at approximately 900mm centres and at approximately 150mm from each end. It is preferable, though not essential, for customers to provide a layout showing all ducts where it is proposed to have floor covers and curbing: this will allow us to provide you with drawings for your approval showing the most economical arrangement.

- Available in mild steel, aluminium or stainless steel.

ANGLE CURB TYPE CODE AND SIZES					
Type Code	Fl.Depth 'A'	Clearance 'B'	Bearing 'C'	Min. Rebate 'D'	Rebate 'E'
FLC 20	20	8	32	100	60
FLC 25	25	10	50	120	65
FLC 35	35	10	30	100	80
FLC 40	40	11	34	110	90
FLC 45	45	11	39	110	100
FLC 50	50	16	44	120	110

FLS OPEN FLOORING

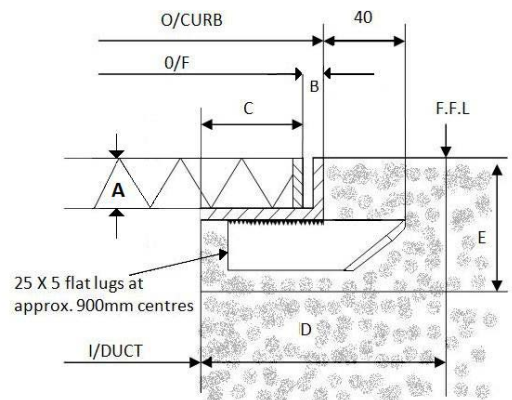
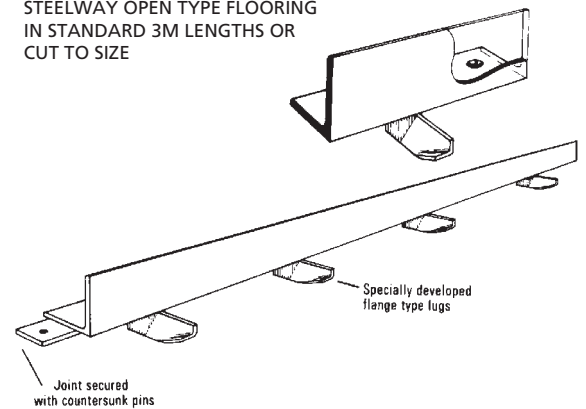
with serrated edge.



'FLS'

Steelway 'FLS' serrated flooring. Pressed spacer bars have a serrated edge providing extra grip for the user on the walking surface. Serrated flooring, apart from the serrated surface, is supplied in panels of similar specification to our standards 'FL' flooring.

ANGLE CURBING 'FLC' FOR STEELWAY OPEN TYPE FLOORING IN STANDARD 3M LENGTHS OR CUT TO SIZE



Section Through Angle Curb



Mild Steel & Stainless Steel Floor Plate

Durbar raised pattern slip resistant mild steel solid floor plate.

This plate may be used for trench covers, platforms, stair landings and stair treads. The raised leaf pattern, provides a slip resistance surface to increase grip in all directions. For particularly slippery conditions a carborundum surface finish is available. Plates of this type are easily cleaned, therefore minimising corrosion and ensuring longer life. Trench covers, which are to be readily removed, are holed for and supplied complete with standard lifting keys. Where necessary, plates are cut to clear pipework or other obstructions and are countersunk drilled for securing to steelwork with fixing screws. Mild Steel Floor Plate is available in 4.5, 6.0, 8.0, 10.0 and 12.5mm base thickness. Primer Painted or Galvanised. Also available in Stainless Steel.



Aluminium Tread Plate

Aluminium tread plate, designed primarily for flooring applications provides a slip resistant, easy clean and hard wearing surface, which has found extensive use in Industrial, Marine and Transport fields. Tread plate comes in three popular patterns to suit various conditions of service and personal preferences. Thickness for thickness, in a particular material, the load bearing characteristics of the three patterns, are not significantly different, but a choice does accommodate factors such as pedestrian comfort, durability, and aesthetic consideration. Applications vary from loading ramps, factory flooring and stairtreads to protective facias. Supplied self-colour.



ONE-BAR PATTERN



PGP HEAVY PATTERN



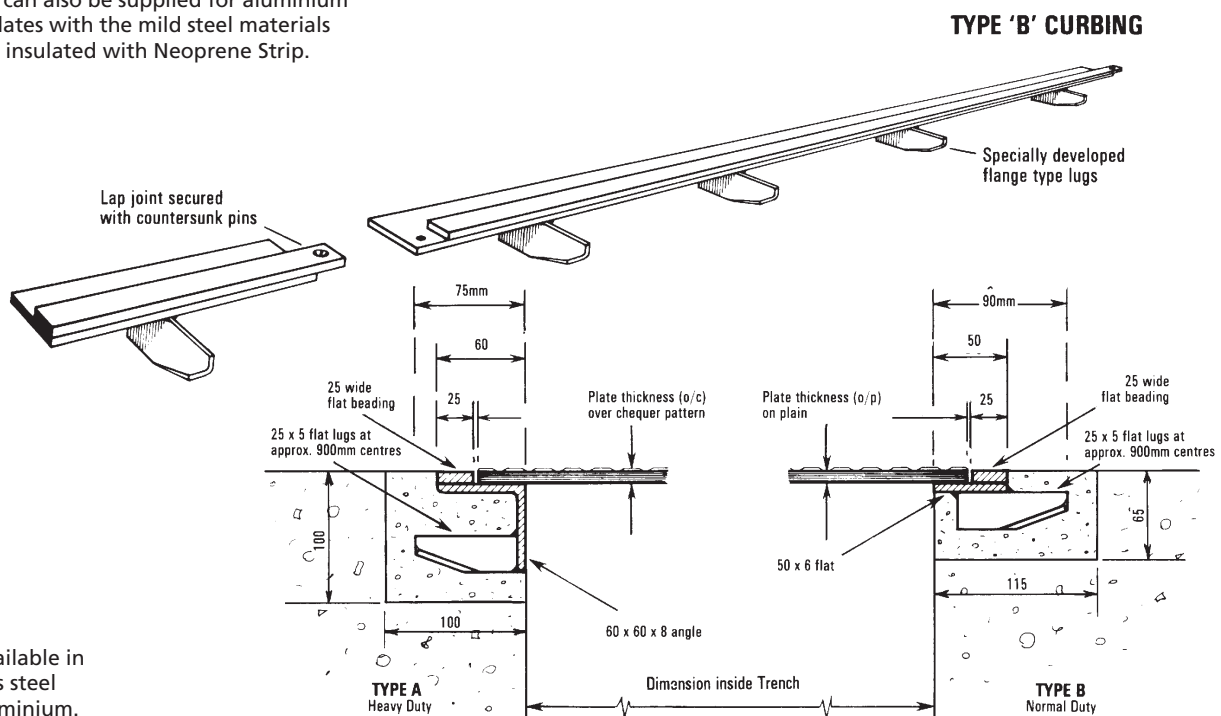
FIVE-BAR PATTERN

Mild Steel Built-up Curbing

Mild steel built-up curbs suitable for mild steel 'Durbar' plate trench covers. Curbs are supplied in a number of finishes and can be tapped to receive fixing screws to secure covers if necessary. Mild steel built-up curbing can also be supplied for aluminium P.G.P. plates with the mild steel materials suitably insulated with Neoprene Strip.

For long straight runs of trench we supply standard 3-metre lengths. Make-up lengths are provided as necessary and as shown on location drawings. Joints are secured with countersunk bolts to assist installation.

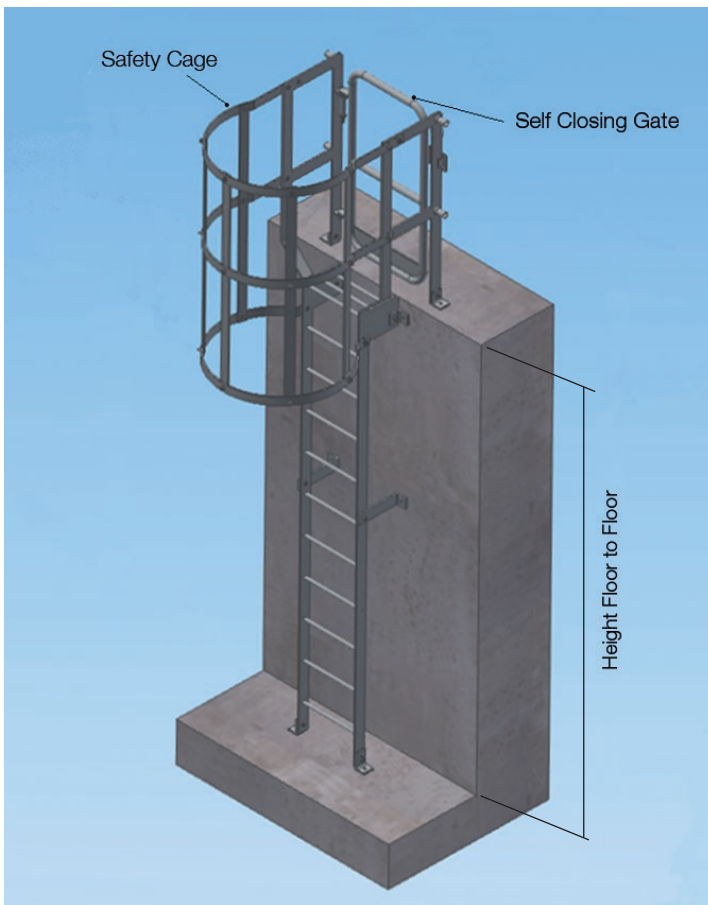
Lugs are welded on at approximately 900mm centres and approximately 150mm from each end.



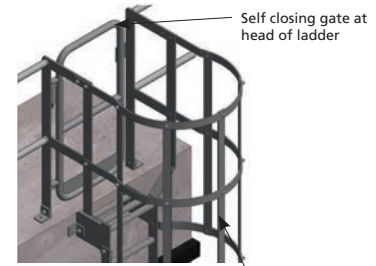
Also available in stainless steel and aluminium.



Industrial Ladders

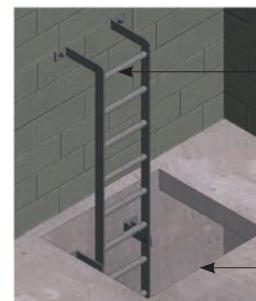


LADDER WITH EXTENDED SIDES TYPE 'A'
(Extended sides can be top or side fixed)



Safety cage required when the climbing height of the ladder is more than 2000mm or if the height is less than 2000mm but there is a risk of falling a total distance of more than 2000mm.

LADDER WITH EXTENDED SIDES TYPE 'B'



LADDER WITH RETRACTABLE TUBULAR HANDHOLD TYPE 'D'

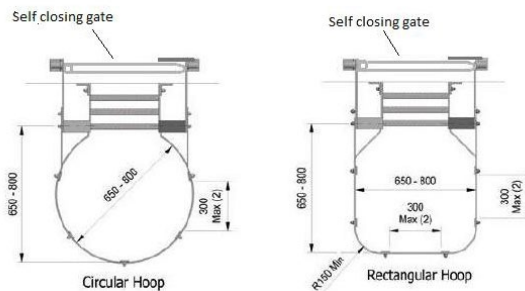
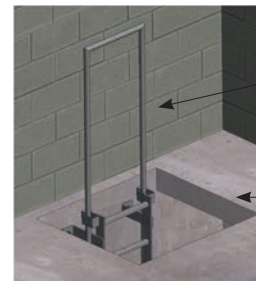


TABLE OF RECOMMENDED LADDER SECTIONS AND FIXING CENTRES
Fixing centres of stays indicated are based on good connections to steelwork. For fixings to good sound brickwork or concrete divide stated centres by 1.5.

Section of Stringer (Mild Steel)	Max. Spacing of Stays or Fixings	
	Vert. Ladders	Sloping Ladders
65 x 10 Flat	3.7	3.1
65 x 12 Flat	4.1	3.5
70 x 10 Flat	4.0	3.4
70 x 12 Flat	4.4	3.7
80 x 10 Flat	4.6	3.9
80 x 12 Flat	5.0	4.2
75 x 50 x 8 Angle	4.8	4.1
100 x 65 x 8 Angle	6.2	5.2
125 x 75 x 10 Angle	7.7	6.5

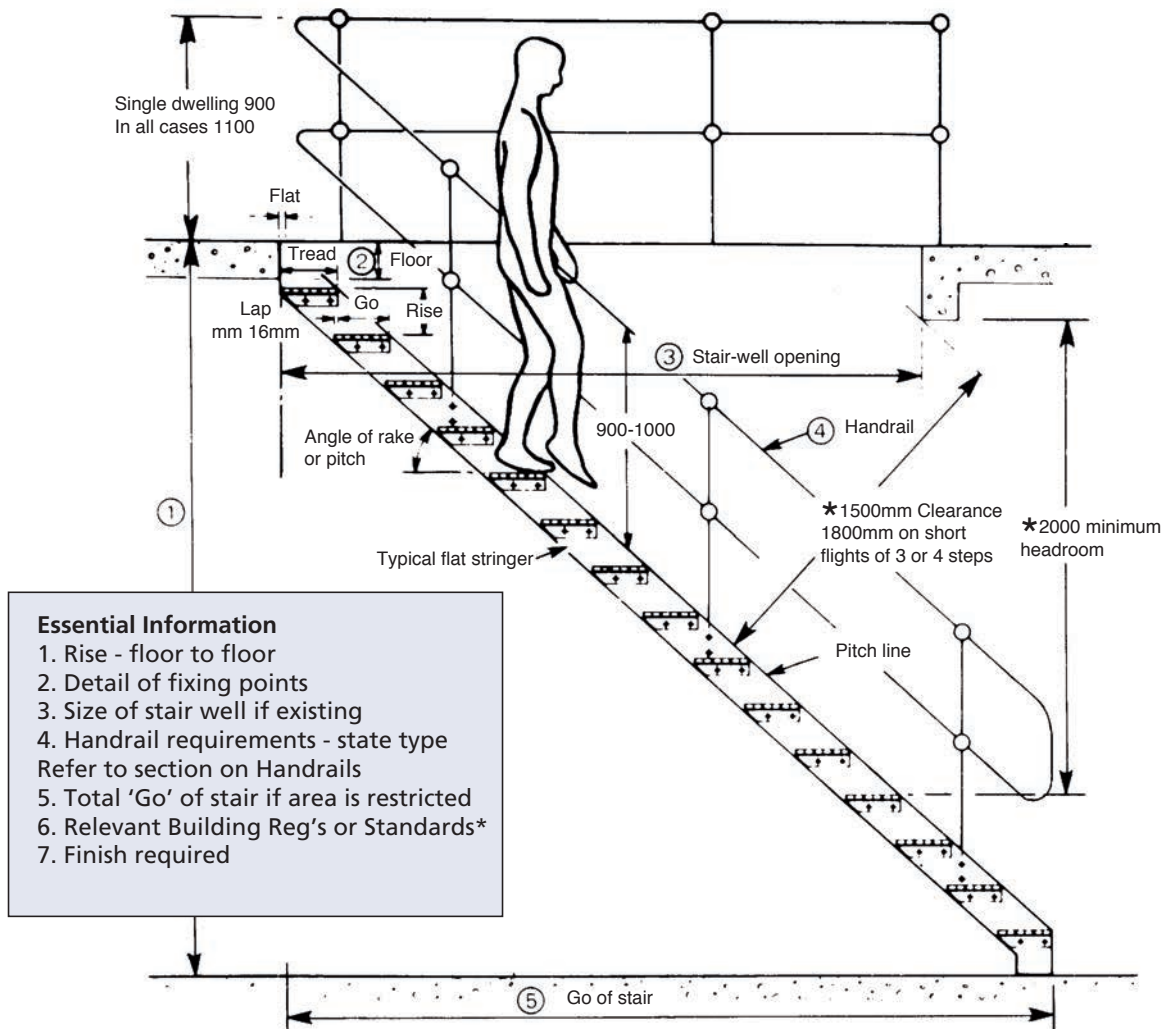
Notes

- The clear width between stringers should be between 300mm & 600mm with a preferred clear width of 400mm. Before a shorter clear width is used a check should be carried out to see if there is a more favourable position for the ladder allowing a clear width of 400mm or more.
- Where a single ladder does not form part of a series of ladders then the maximum height can be increased to 10000mm.
- Formed durbar plate rungs to meet BS EN ISO 14122-4:2016
- Solider plate at bottom of ladder can be provided to deter un-authorized access



Staircases & Platforms

Steelway Fensecure have wide experience in the design and construction of staircases, mezzanine floors, walkways and platforms. Where required, the company's own engineers will visit the site of a proposed installation and subsequently prepare schemes for access, storage or for fire emergency use. These proposals are then submitted to the customer for approval. Designs are produced to the most exacting requirements to ensure stability and durability.

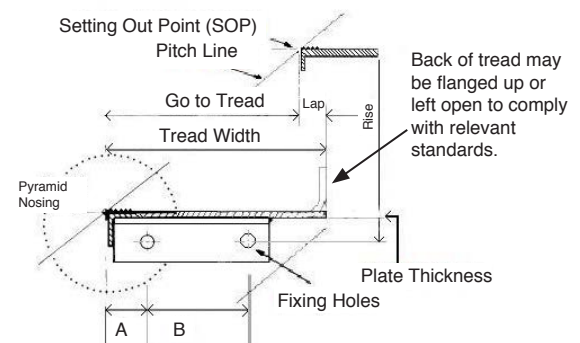


Solid Pattern Treads With Contrasting Nosing



Steelway Solid Mild Steel Tread with Raised Pattern-Tabulated Mass in kg

Width of Tread in mm	Preferred lengths of treads in metres and thickness in mm								Hole centres in mm		Hole dia. mm
	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20	A	B	
100	3.69	4.31							30	45	12
150	5.30	6.17	7.05						40	75	15
200	6.92	8.04	9.17	10.29	14.59				50	100	15
250			11.28	16.11	17.91	19.72	26.27	28.51	50	100	15
300				19.11	21.24	23.36	31.11	33.75	50	125	15



Open Mesh Stair Treads

Available in both Diamond and Rectangular Patterns, to complement the flooring range. Steelway open type treads embody all the advantages of open steel flooring i.e. lightweight, strong, durable, self draining, slip resistant contrasting nosing.

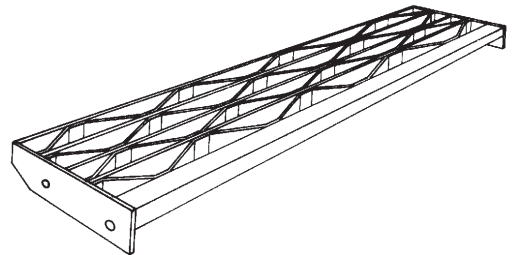
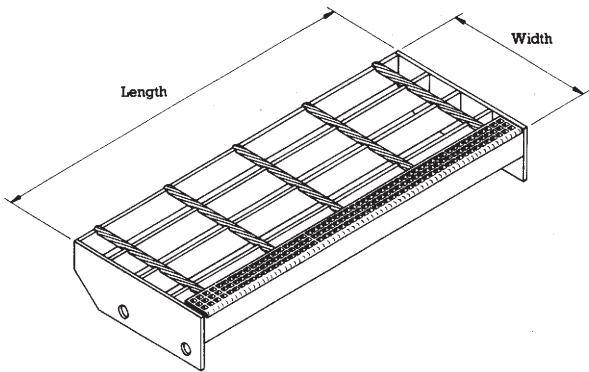
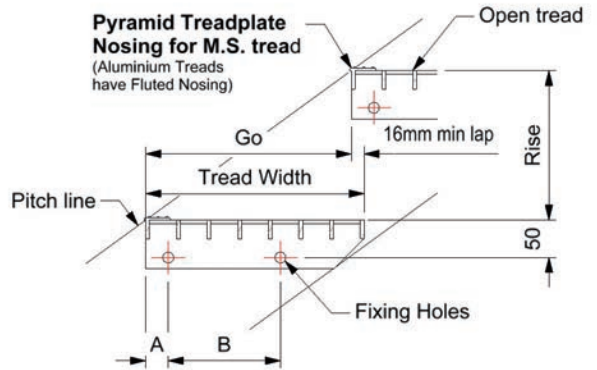
Available in a wide range of lengths & standard widths with slip resistant nosing.

Steelway open mesh treads are normally manufactured using the following flooring sections.

- Treads to 900mm long from 25 x 5mm section
- 1200mm long from 30 x 5mm section
- 1425mm long from 35 x 5mm section
- 1500mm long from 40 x 5mm section

End plates are 65 x 6mm flat and standard end plate drilling details are given in tables.

If required back of tread can be provided with a closed riser plate to comply with relevant standards.



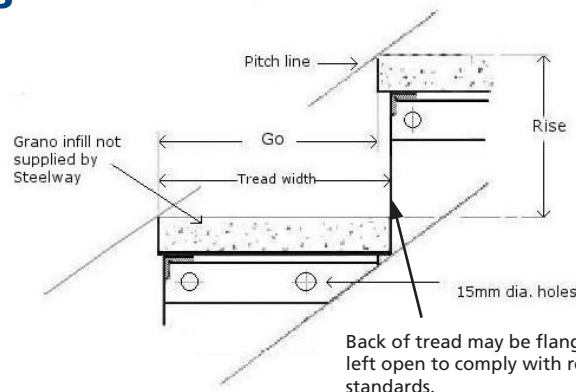
Rectangular Pattern Treads						
Tread Width in mm			Hole Centres in mm		Hole Dia.	Bolt Dia.
41/100	34/100	30/100	A	B		
87	107	95	15	35	12	M10
128	141	125	30	45	12	M10
169	175	155	30	75	15	M12
		185	30	100	15	M12
210	209	215	30	100	15	M12
251	243	245	30	125	15	M12
292	280	275	30	150	15	M12
		313	30	175	15	M12
333	345	335	30	175	15	M12

Diamond Pattern Treads				
Tread Width in mm	Hole Centres in mm		Hole Dia.	Bolt Dia.
40mm Centres	A	B		
85	15	35	12	M10
125	30	45	12	M10
165	30	75	15	M12
205	30	100	15	M12
245	30	125	15	M12
285	30	150	15	M12
325	30	175	15	M12
365	30	175	15	M12

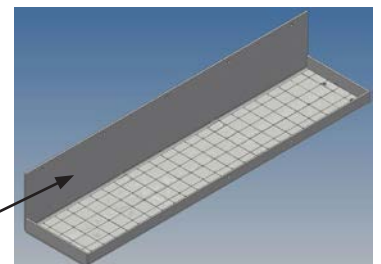
Pan Type Treads

Nosings

Nosings can be supplied suitable for fixing to new or existing concrete or timber steps. They are of extruded aluminium sections with either carborundum, rubber or fabric infilling.



Back of tread may be flanged up or left open to comply with relevant standards.





Companionway Stair / Ship Type Ladder

Ship type /companion ladders, offer an alternative option in a situation where a vertical ladder is unsuitable and there is insufficient space for a staircase.

The 65 degree to 75 degree slope is easier to negotiate than a vertical or near vertical ladder. We recommend that the maximum vertical rise should not exceed 3000mm and the width between stringers should preferably be between limits of 450mm and 550mm. It should be noted that 250mm minimum foot space should be allowed from the nose of treads to the wall, platform face or other obstruction, see illustration. A top tread should be provided at floor level, or the platform can be arranged to run over, but the minimum foot space should still be maintained. Handrails are necessary on this type of ladder and should be provided on both sides without exception.

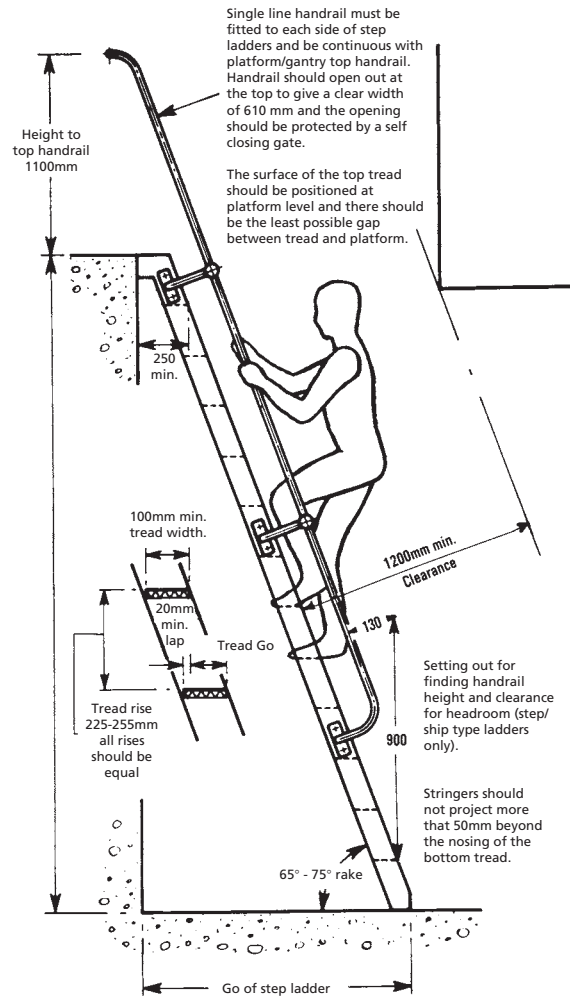


Chart giving useful recommendations for staircases

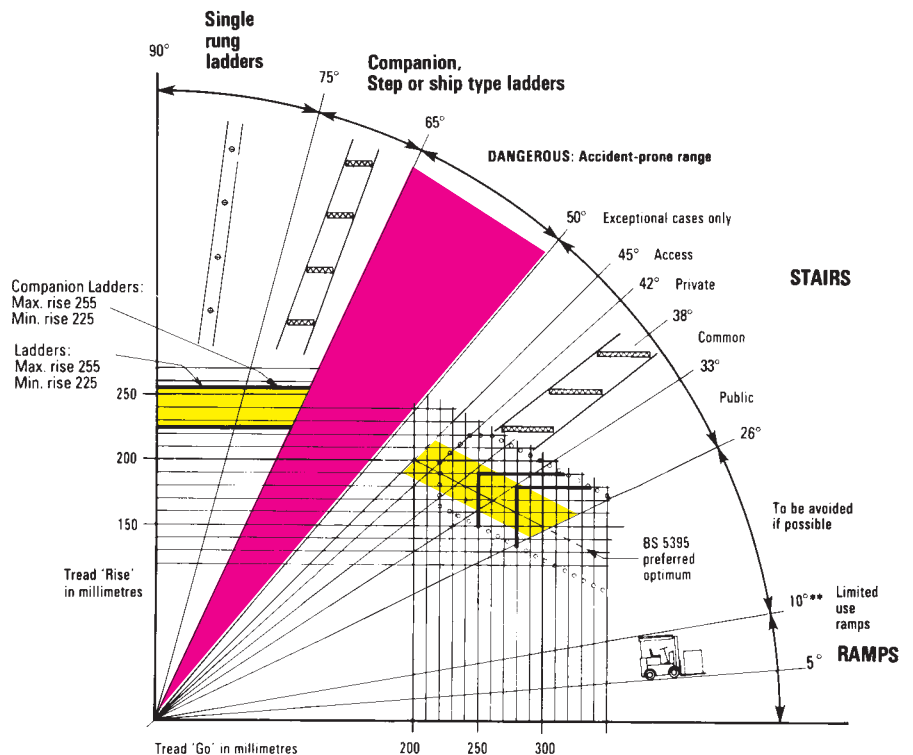
This chart gives preferred rise/go dimensions see section coloured yellow for any given rake of staircase or ladder. Rise and go on stairs to comply with relevant specification:

'Go' is the term used for the horizontal dimension of a stair or tread.

'Rise' is the vertical dimension.

'Overlap' is the amount the nosing of one tread overlaps the one below (minimum 16mm).

Example: A single flight stair has a rise of 2600mm and has to comply with a minimum tread 'go' of 250mm and a maximum rise of 190mm. From the chart opposite we see with a 'go' of 250mm an acceptable rise will be about 185mm. This will give 14 equal rises. The stair will thus have an angle of rake pitch of 36° 36' and will fall within the limits required for this type of stair. Also the aggregate of twice the rise plus the go equals 620mm, close to the optimum recommended in BS EN ISO 14122-3:2016.





Spiral Stairs & Helical Stairs

Spiral Staircases

A spiral staircase suitable for a wide range of applications from Residential to Industrial, and complying with the relevant standards of BS.5395: Part 2. Rising clockwise or anti-clockwise in a range of materials and finishes to suit customers' requirements.

All parts are prefabricated for easy site assembly. Spirals of 2.0m diameter or less require relaxation of Building Regulations regarding minimum tread 'go'. The 2.2m diameter spiral will give 800mm clear width of stair when fitted

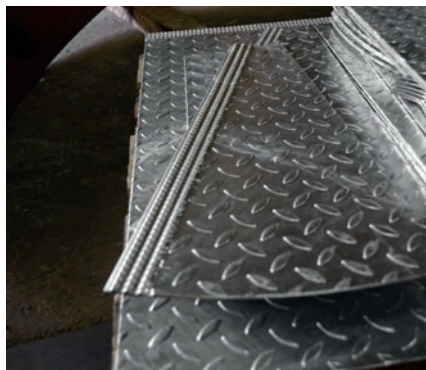
with an inside handrail to comply with Building Regulations.

Standard handrails comprise of a 42.4mm dia. tube supported on 20mm dia. balusters that also serve to secure the outer extremities of the treads, and together, they form a rigid construction.

Standard spiral stairs consist of a diameter of 1.7m, 2.0m & 2.2m to comply with relevant standards. Bespoke options are available on request.

Helical Staircases

Helical stairs are available to suit both industrial and architectural requirements. These are typically used for access to circular tanks. Helical stairs can also be designed and manufactured for architectural/feature stairs and are available with a range of treads, handrails and balustrades in various materials and finishes.





Handrail & Guardrails

General Application

As a general rule, any unprotected edge of a walkway, platform, staircase or other raised area from which a person may fall more than 0.5m must be fitted with a guardrail. Steelway handrails and guardrails are designed to provide safety and give reassurance for users of staircases and walkways. They may be of tubular or solid construction or a combination of both. We supply handrails not only to complement our staircases, platforms, and other similar structures, but also as completely independent items to fit customers own equipment or civil engineering work etc.

All component parts are tailor-made in easy to handle lengths and clearly marked for assembly on site. Drawings are provided for customers' use where they wish to undertake the site erection themselves. Alternatively, we can provide a speedy and efficient site installation service.

Design

Our designs follow the recommendation of BS EN ISO 14122-1:2016, BS 5395-3, BS 4592-0 and BS 6180. There are at least two horizontal rails - a top rail (handrail) and an intermediate rail (knee rail) at approximately mid height. For step (companion) ladders and staircases in close proximity to, or bounded by a wall, a single handrail only is required with a minimum clearance for the hand of 50-75mm** (EEMUA publication 105 recommends a minimum of 100mm). If glazed areas occur adjacent to a walkway, platform, balcony or staircase, they should be guarded by a secure handrail or balustrade.

Wherever possible, handrails should be continuous and follow the exposed edge of raised platform areas and staircases. Sharp changes of direction in the vertical plane should be avoided in runs of handrail. The minimum height of handrails for platforms walkways and landings is 1.1m above the walking surface; for staircases the handrail height should be between 0.9m and 1m above the pitch line. Handrails should terminate in a swept end, either to the wall or to the knee rail, or return to the standards.

Note: Sharp corners, protrusions and stop ends should be avoided since these may catch clothing and cause accidents. Return bends ('U' bends) should not extend more than 350mm from the centre line of the standards. At the foot of staircases, 'U' bends should extend to the point of maximum extension of the stringer.

Loadings

BS 4592-0 recommends the following minimum design imposed lateral loads that should be used for handrails in industrial situations:

General duty:	0.36 kN/m
Heavy duty:	0.74 kN/m
Areas subject to crowd loading $\geq 1.5m \leq 3.0m$ wide:	1.5 kN/m
Areas subject to crowd loading $\geq 3m$ wide:	3.0 kN/m

If there is any possibility of vehicular impact, the recommendations in Annex A of BS 6180 should be followed. For light access stairs, gangways etc., which are not more than 600mm wide, a minimum design load of 0.22 kN/m may be used (BS EN 1991-1-1).

Protective Treatments

Steel can be supplied in the following finishes:

- Self colour.
- Prime paint
- Hot dipped galvanised to BSENISO 1461. Recommended for exposed or corrosive conditions. Decorative paint finishes can be applied by the customer on top of galvanised materials, but a suitable priming system must be used prior to painting.
- Nylon/Plastic coated. Not recommended for exposed conditions.
- Powder coated finishes are available to special order.

Aluminium alloy and stainless steel do not normally require protective treatment. However, where additional protection or improved appearance is thought necessary, then aluminium can be anodised and stainless steel polished.

Note: Some discolouration may occur on Aluminium bends and heat affected areas when anodised.

Handrails

Tubular and Solid mild steel handrails are available in a range of sizes

Tubular:	33.7 o/d x 3.2mm wall minimum, 42.4 o/d x 3.2mm wall minimum, 48.3 o/d x 4.0mm wall minimum,	Solid:	25mm dia. solid bar 32mm dia. solid bar
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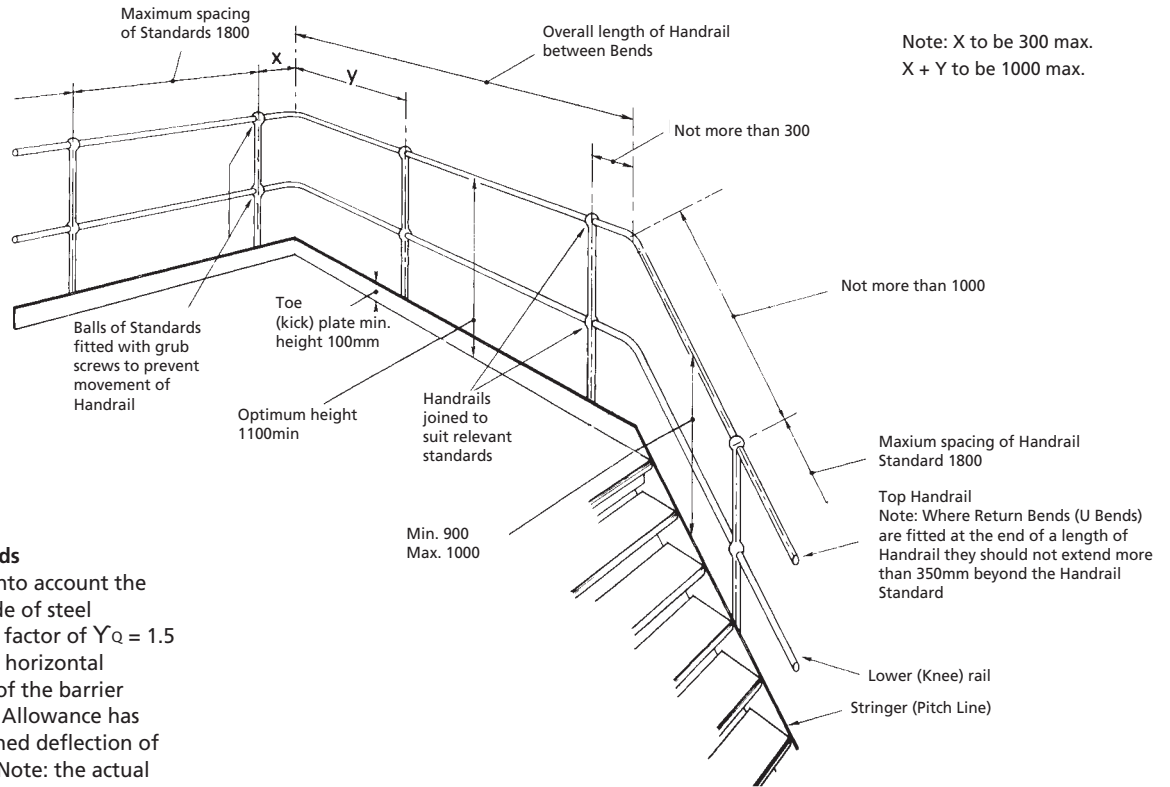
Stainless steel handrails are available with ball type standards, but all welded construction can also be accommodated.

Aluminium tubular handrail is also available on request in a range of sizes.

** BS 5395



Typical arrangement of Handrails for Stairs, Platforms and Walkways



Spacing Between Standards

SWL tables A and B take into account the limiting stress for the grade of steel specified. A partial safety factor of $\gamma_Q = 1.5$ has been allowed for. The horizontal displacement of any part of the barrier should not exceed 25mm. Allowance has been made for the combined deflection of handrails and standards. Note: the actual spacing of handrail standards may be dependent upon the type base plate, connections and support / substructure.

Max'm spacing (mm) Mild steel handrail standards where intensity of horizontal loading = 0.36 kN/m

	Height of handrail standards (mm)		900	1100	1250
	Specification of handrail standards	Specification of rail	Maximum Spacing at design load		
Tubular	42.4x 3mm CHS x 80mm dia. Ball	33.7x 3mm CHS	1800	1750	1400
	42.4x 3mm CHS x 80mm dia. Ball	42.4x 3mm CHS	1800	1800	1500
	48.3x 4mm CHS x 80mm dia. Ball	42.4x 3mm CHS	1800	1800	1800
	48.3x 4mm CHS x 80mm dia. Ball	48.3x 4mm CHS	1800	1800	1800
	60.3x 4mm CHS x 80mm dia. Ball	48.3x 4mm CHS	1800	1800	1800
Solid	32mm Dia. x 70mm dia. Ball	33.7x 3mm CHS	1800	1450	1100
	38mm Dia. x 70mm dia. Ball	42.4x 3mm CHS	1800	1800	1800

Material grade S275 JOH

Max'm spacing (mm) Mild steel handrail standards where intensity of horizontal loading = 0.74 kN/m

	Height of handrail standards (mm)		900	1100	1250
	Specification of handrail standards	Specification of rail	Maximum Spacing at design load		
Tubular	42.4x 3mm CHS x 80mm dia. Ball	33.7x 3mm CHS	1250	1050	N/A
	42.4x 3mm CHS x 80mm dia. Ball	42.4x 3mm CHS	1250	1050	N/A
	48.3x 4mm CHS x 80mm dia. Ball	42.4x 3mm CHS	1800	1650	1300
	48.3x 4mm CHS x 80mm dia. Ball	48.3x 4mm CHS	1800	1750	1350
	60.3x 4mm CHS x 80mm dia. Ball	48.3x 4mm CHS	1800	1800	1800
Solid	32mm Dia. x 70mm dia. Ball	33.7x 3mm CHS	1250	N/A	
	38mm Dia. x 70mm dia. Ball	42.4x 3mm CHS	1800	1400	1000

Material grade S275 JOH



Handrail Standards

Steelway tubular and solid ball type standards are made in varying heights to suit single, double and multi-line handrails. Balls are drilled to suit handrails or can be fitted with eyes for chains. Grub screws are a standard fitment in balls to secure handrails against movement.

Note: Handrail standards must not be supported from toe plates, unless it can be shown that the toe plates are structural members.

Tubular and Solid ball type mild steel standards are available in a variety of types and sizes. A handrail system may be tubular or solid, or a combination of both e.g. tubular handrails with solid standards. However, it is important to select a standard with adequate ball size to be compatible with the diameter of handrail to be used, as illustrated on page 18.

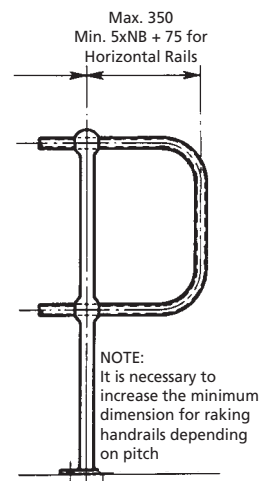
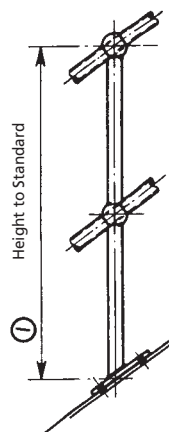
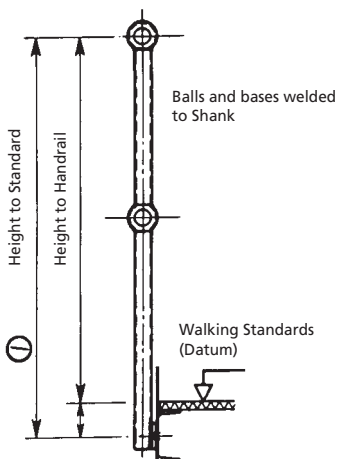
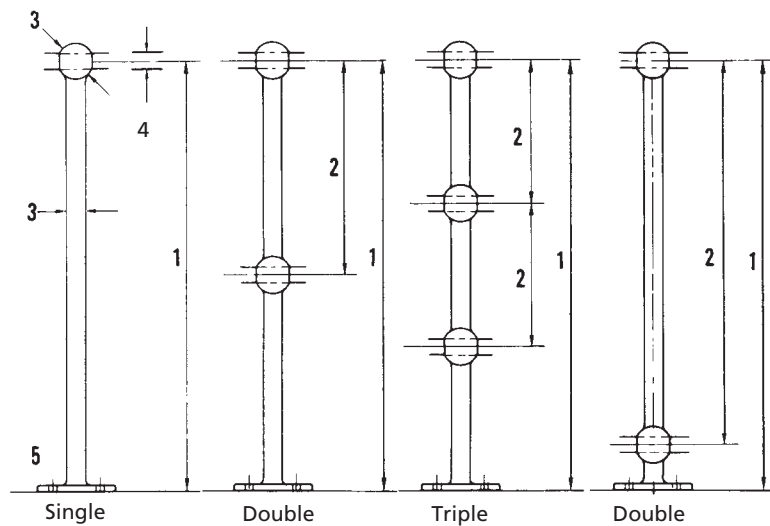
Details regarding the spacing between Standards at different Loadings are given on page 18.

Aluminium tubular Standards are also available to complement the Aluminium tubular handrailing.

We have a range of base plate options to suit your individual requirements. A larger size of base is more suitable when fixing to materials which have a lower density than steel e.g. concrete, brickwork, block work. The size and spacing of fixing bolts into concrete or other low density materials requires careful consideration. There is an optimum requirement for fixings, and exceeding this may weaken rather than strengthen the attachment.

When ordering please indicate whether solid type or tubular type standards are required, and state:

- 1) Height.
- 2) Ball centres.
- 3) Diameter of ball/shank.
- 4) Outside diameter of handrail.





Handrail continued

Gates

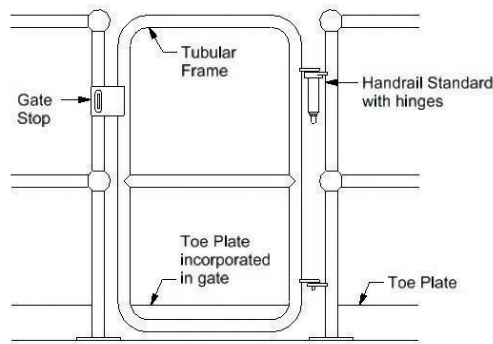
Where loading access is required for a mezzanine floor, or for protection across openings at the head of stairs and ladders. we can supply gates of tubular construction to match the design of adjoining handrails.

Infill Panels and Mesh Guards

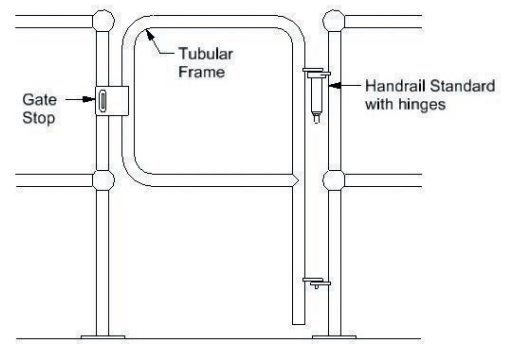
Where a two line system of handrail is preferred or for existing handrails where the need arises for additional protection, we can provide infill panels. These panels can be offered in various patterns the standard being 50mm sq welded mesh constructed from 3.25mm dia. wire with heavy gauge wire frame surrounds and supplied complete with fixing clips for securing to handrails/standards.

As an alternative to wire mesh infill panels we can offer perforated or solid infill panels.

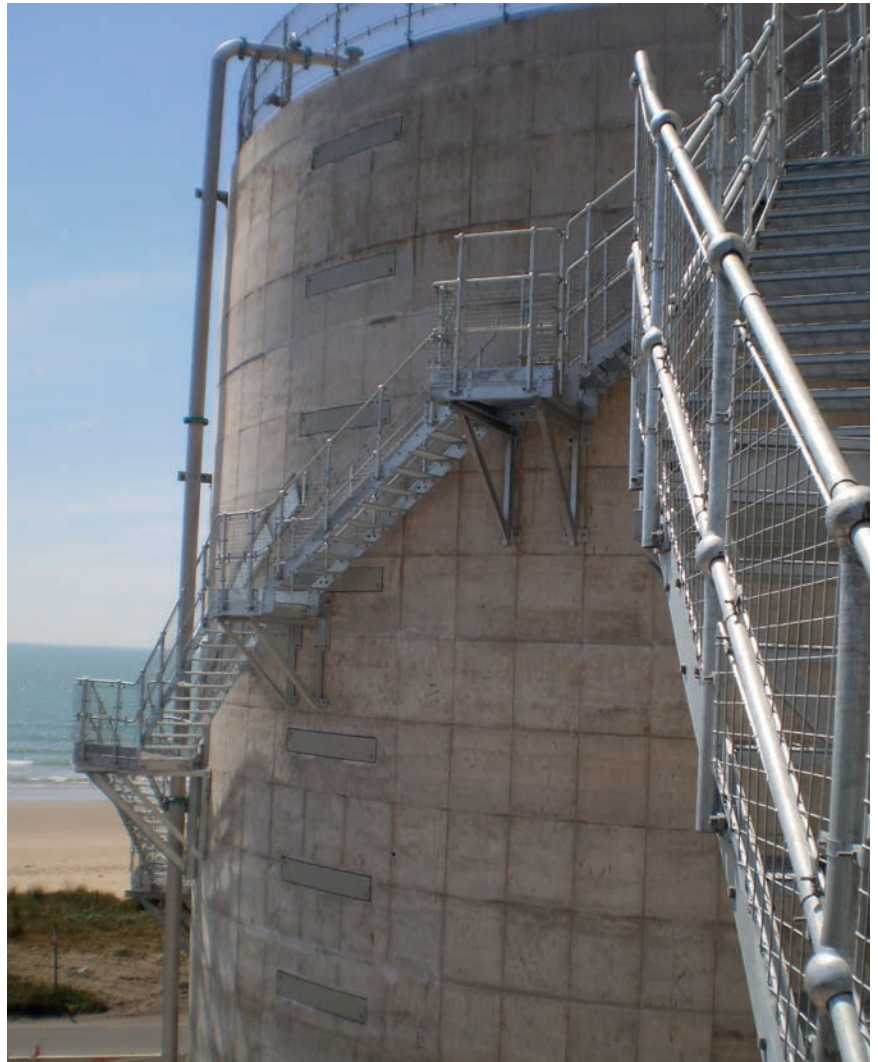
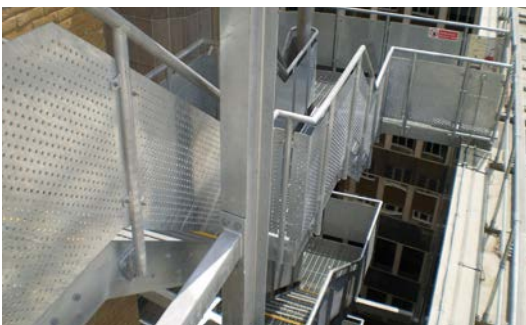
Self closing hinged tubular gate should be fitted in preference to safety chains.



Full Height Gate



Half Height Gate



Complete support structures are available constructed from GRP sections with stainless steel fixings, in both fire and non fire retardant GRP materials.

Open Mesh Floor Panels in GRP have been designed to fulfill industry's need for a versatile, corrosion resistant system that can be used either internally or externally.

GRP Industrial Flooring is suitable for numerous applications, and although designed primarily as a walking surface, it can be adapted for use as trench covers, grilles and drainage gratings. It is ideal for installation in special problem areas such as chemical, metal finishing and processing plants, it being resistant to chemical, electrolytic and atmospheric erosion.

Standard panels are made of glass reinforced polyester resin which offers resistance at an economical cost, however, the degree of corrosion and chemical resistance is dependent on the type of resin used. GRP has excellent electrical and thermal insulation properties.

The benefits of GRP materials are numerous

- Low weight
- Corrosion resistance
- Low maintenance
- Low conductivity to heat and electricity
- Non magnetic
- Non sparking

GRP Products Available:

- Staircases
- Platforms/Walkways
- Handrails
- Ladders
- Bespoke Structures



GRP Moulded Gratings

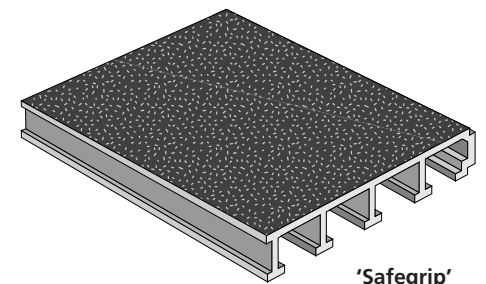
Available in 25mm, 38mm or 50mm thick in standard ISO polyester panels 1.22m*3.66m. Gritted top walking surface.



**standard colours available: Grey; Green; Yellow subject to availability*

GRP 'Safegrip' Planking

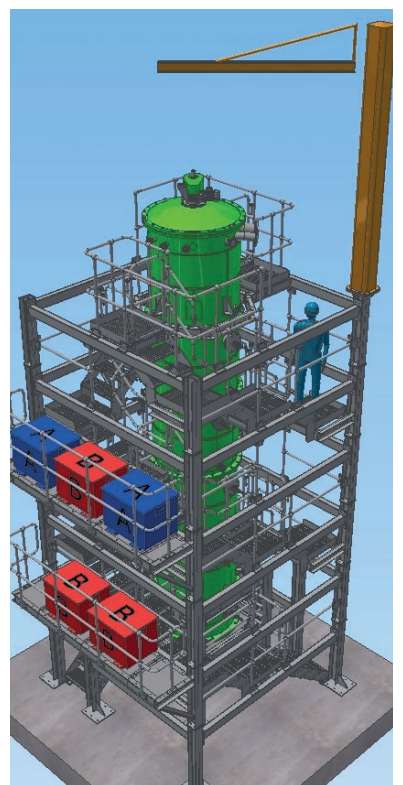
Supplied in standard ISO polyester panels 6m*0.5m. Panels can be cut and shaped to size as required. Gritted top walking surface.



'Safegrip'









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www.steelway.co.uk

Steelway is a leading engineering and fabrication company that specialises in the manufacture and installation of steel, aluminium and GRP products.

Our dedicated workforce prides itself on its professionalism and quality finish. We are experts in our field.

For more information, please visit our website www.steelway.co.uk

