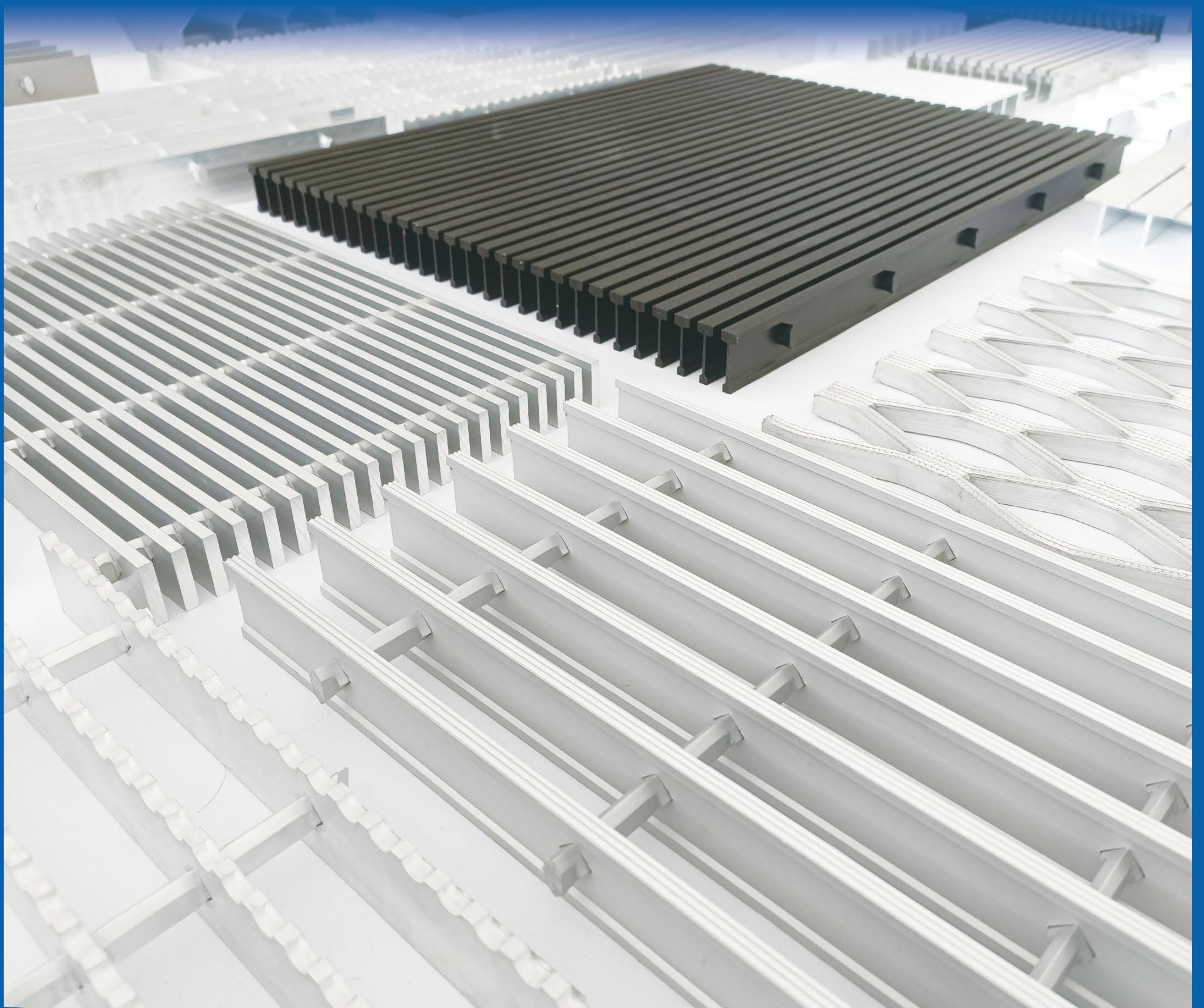


ALUMINUM GRATING

PRODUCT MANUAL



TONGDA

Jinan Tongda Mechanical Engineering Co., Ltd

About us

Jinan Tongda Mechanical Engineering Co., Ltd. established in 2004, is located in Longshan Industrial Park, Zhangqiu District, Jinan China. It has a technology R & D center in Huaiyin building, Huaiyin District, Jinan. The company specializes in producing all kinds of aluminum grating, aluminum louver, aluminum stair treads, expanded aluminum grating, aluminum expanded net and related products, with excellent and stable quality and customers all over the world. In 2021, the company was recognized as a national high-tech enterprise with strong design and R & D capacity. Tongda company has a high standard workshop of more than 5000 square meters and an annual output capacity of 150000 square meters of standard aluminum gratings, It is one of the largest aluminum grating manufacturers in China. Our commitment and goal to our customers are to abide by our promise, focus on quality, explore and innovate and pursue excellence.

We are committed to manufacturing high-quality products and providing customers with excellent customer experience. Our team is composed of various experts with many years of working experience in the manufacturing line and is always ready to answer any questions you have.

Sales team

The company has professional sales staff with rich experience and comprehensive industry knowledge, adheres to the concept of customer first and all for customer service, and puts forward practical solutions and suggestions from an economical and reasonable perspective.

Design team

Designers with professional technical knowledge can use CAD to design detailed layout drawings, optimize panel size, maximize material utilization, provide accurate and easy-to-understand drawings for company production and customer site installation, and can design 3D drawings.

Manufacture

The company's existing aluminum grating production line can process various aluminum gratings and aluminum sunscreens of different specifications, and can produce 12500 square meters of standard aluminum gratings every month. There are many MIG welding machines and TIG welding machines, which can meet different welding needs. Welders have been assessed and work with certificates.



Quality control

There is a quality inspection department, Incoming inspection of raw materials to ensure that the composition and mechanical properties meet relevant national standards; Raw materials are traceable. The mechanical properties of raw materials of aluminum grating comply with the national standard GB / T6892-2015, the chemical composition complies with GB / T 3190-2020, and the dimensional deviation complies with GB / T14846-2014. It also meets the corresponding American, European and Australian standards. Adopt advanced automation equipment and innovative processing technology to ensure excellent product quality and consistency; Quality inspectors track all links of production and solve problems in time. Enterprise standards formulated according to relevant international aluminum grating standards, Internal control quality is higher than international standards.

Quick delivery

The company reserves a large number of raw materials and has strong flexibility of processing equipment; A large number of high-quality professional designers and technical workers quickly complete various products with professional knowledge, serious and efficient working attitude and service awareness to ensure delivery according to the time specified in the contract.



Aluminum Characteristics

Aluminum is the most abundant metal element in nature. Its proportion is about 1 / 3 of that of steel. It has high strength to weight ratio, good corrosion resistance, non-toxic and non-magnetic, and is easy to recycle. The aluminum grating processed with aluminum alloy has light weight, high strength, corrosion resistance, long service life and beautiful appearance. It is widely used in construction, transportation, machinery, metallurgy, mining, chemical industry, papermaking, pharmacy, electric power, aviation, marine engineering, municipal engineering, and other industries.

Aluminum grating processing

Arrange a plurality of punched aluminum strips (load bar) at a certain distance, insert the aluminum square rod (cross rod) into the arranged load bar holes, press the part of the cross rod between the load bars to expand, tighten and fix the load bars, and form a grating plate together with the cross rods.

The load bar can be rectangular, I-shaped and T-shaped. 6063-T6 aluminum alloy is the most commonly used material for aluminum grating.

Common terms

► Load Bar (Bearing Bar) :

Aluminum strip mainly bearing load.

► Cross Rod (Cross Bar) :

Aluminum square bar connecting load bars.

► Banding Bar :

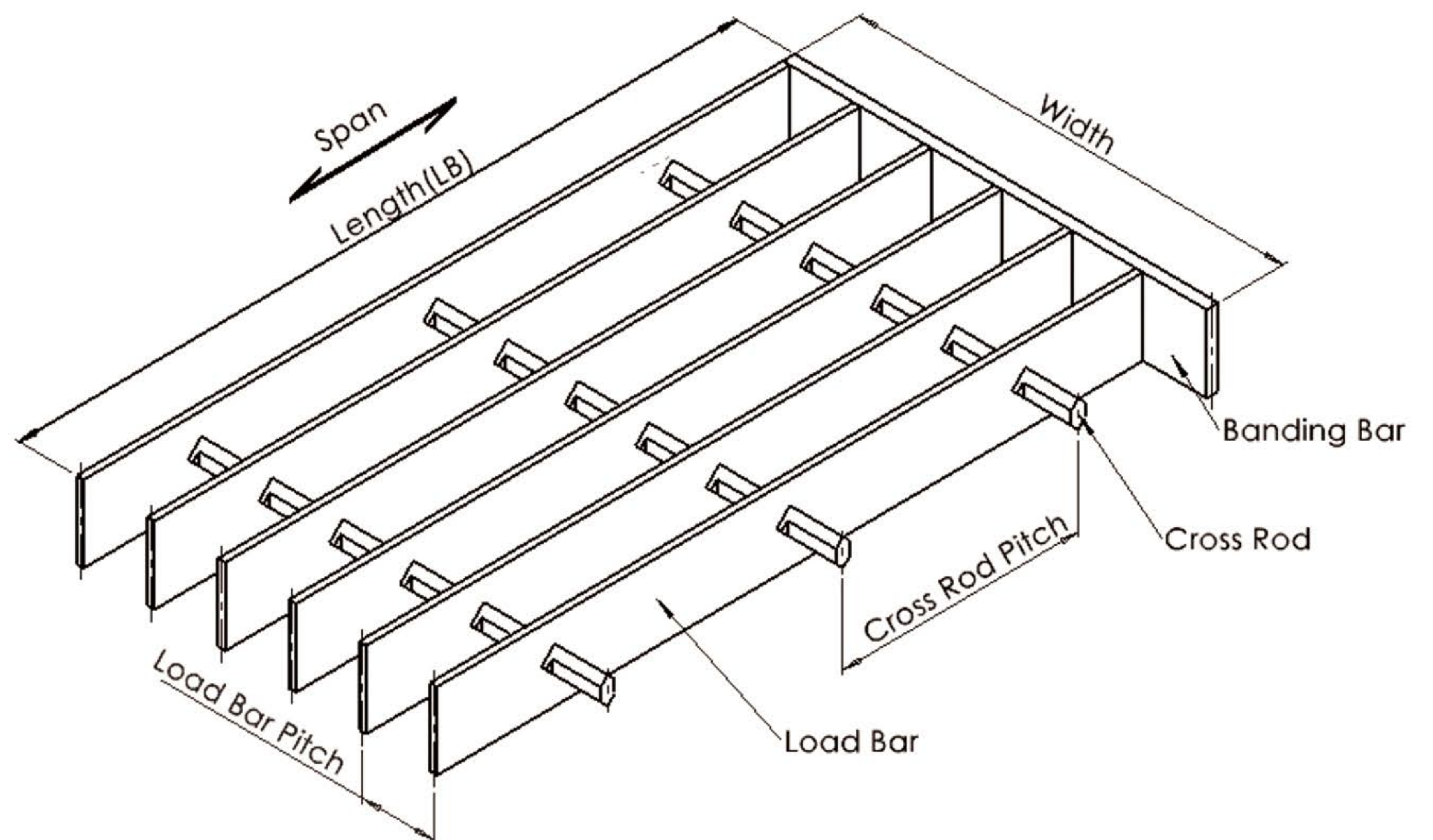
It is welded with the load bar at both ends or gaps of the load bar for connection.

► Width :

It is the width of aluminum grating along the direction of cross rod.

► Length :

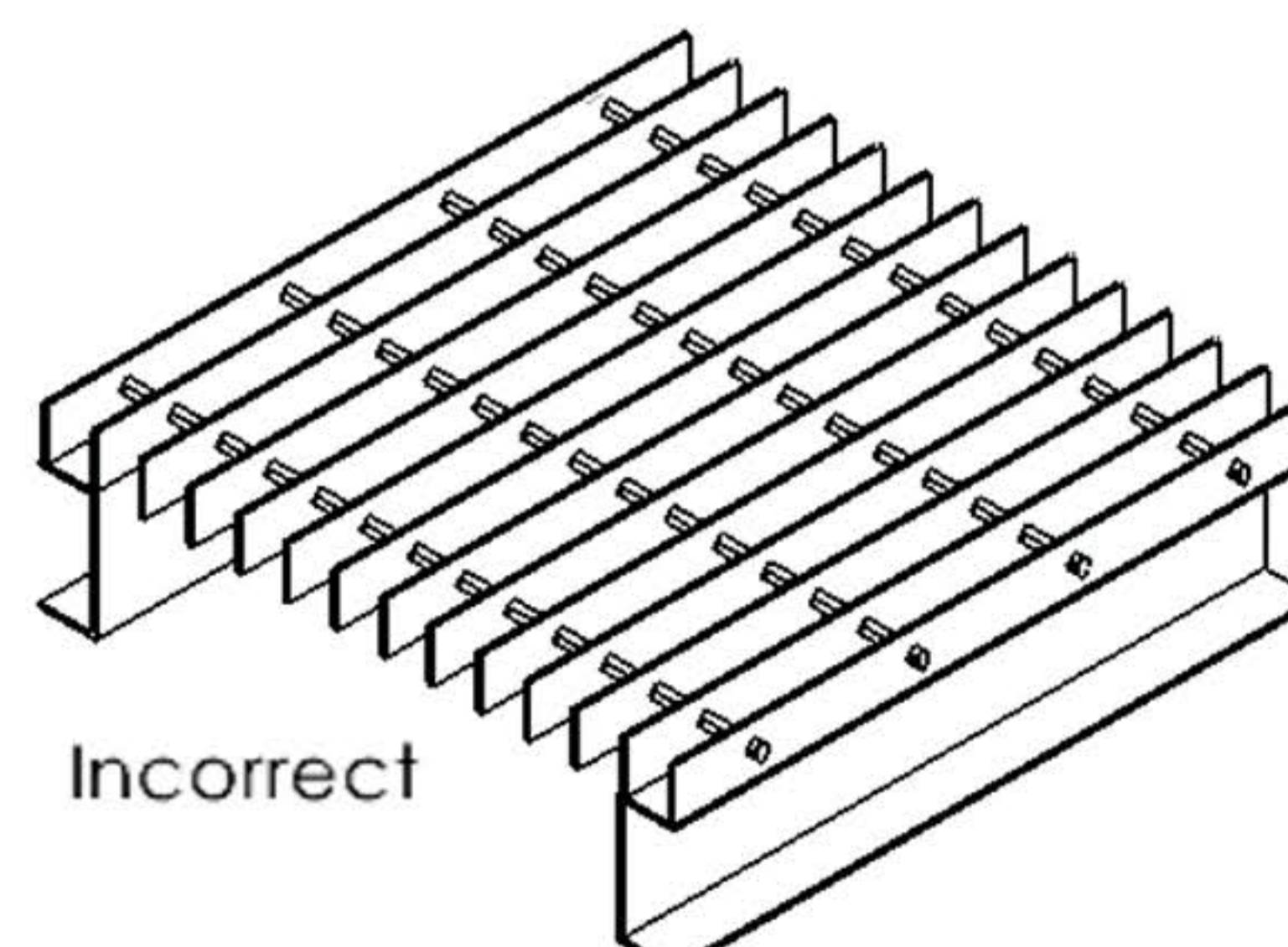
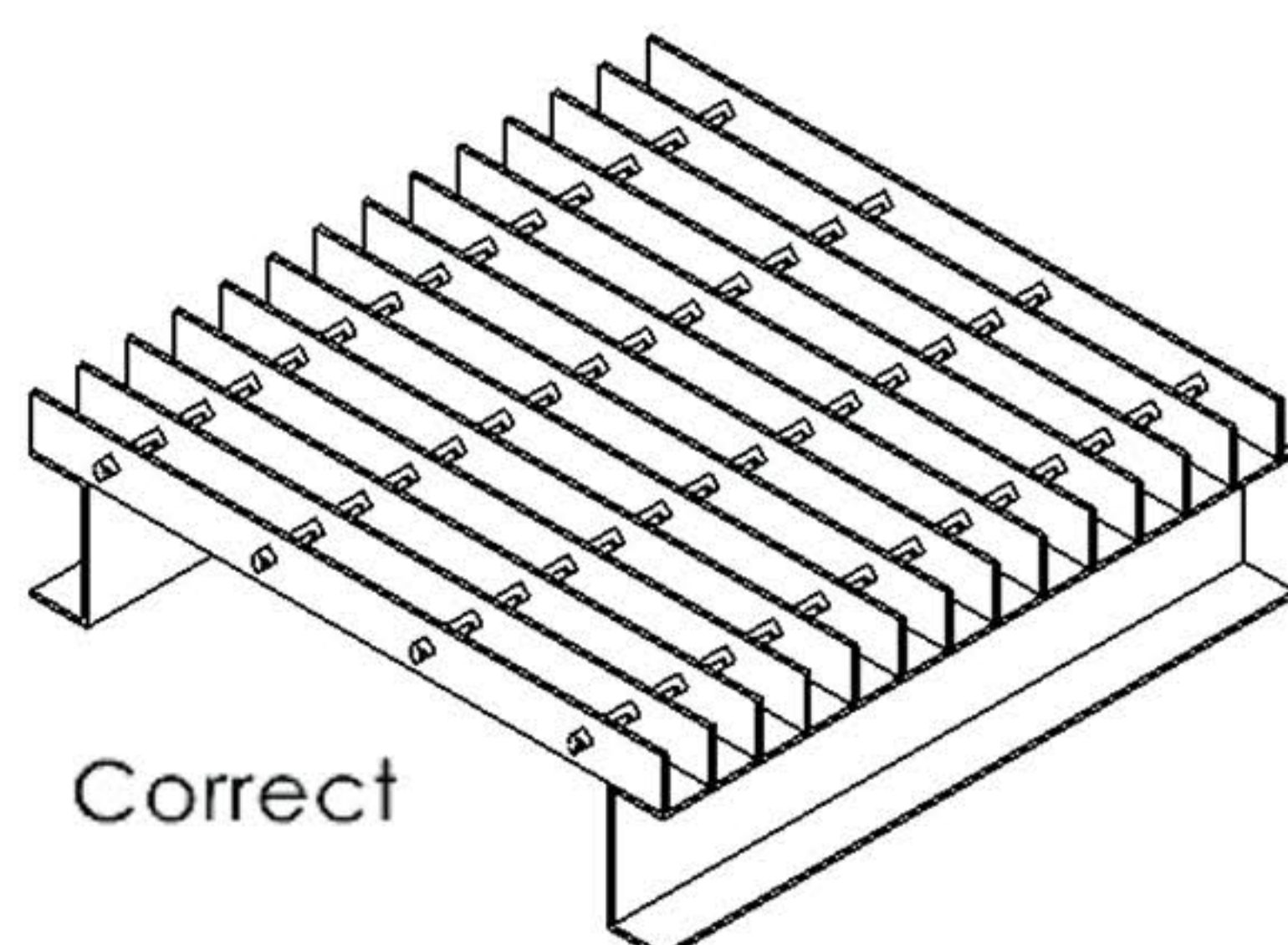
The length direction of aluminum grating along the arrangement direction of load bar is agreed as the length direction of aluminum grating, also known as the **span direction**, which is represented by arrow symbols, and LB is added after the dimension.



Span Direction

The direction that the load bars run is known as the span, and is important when considering supporting the grating.

Aluminum Grating has to be supported 90 ° to the span direction and does not require support on the other side. The support must be perpendicular to the height of the load bars.

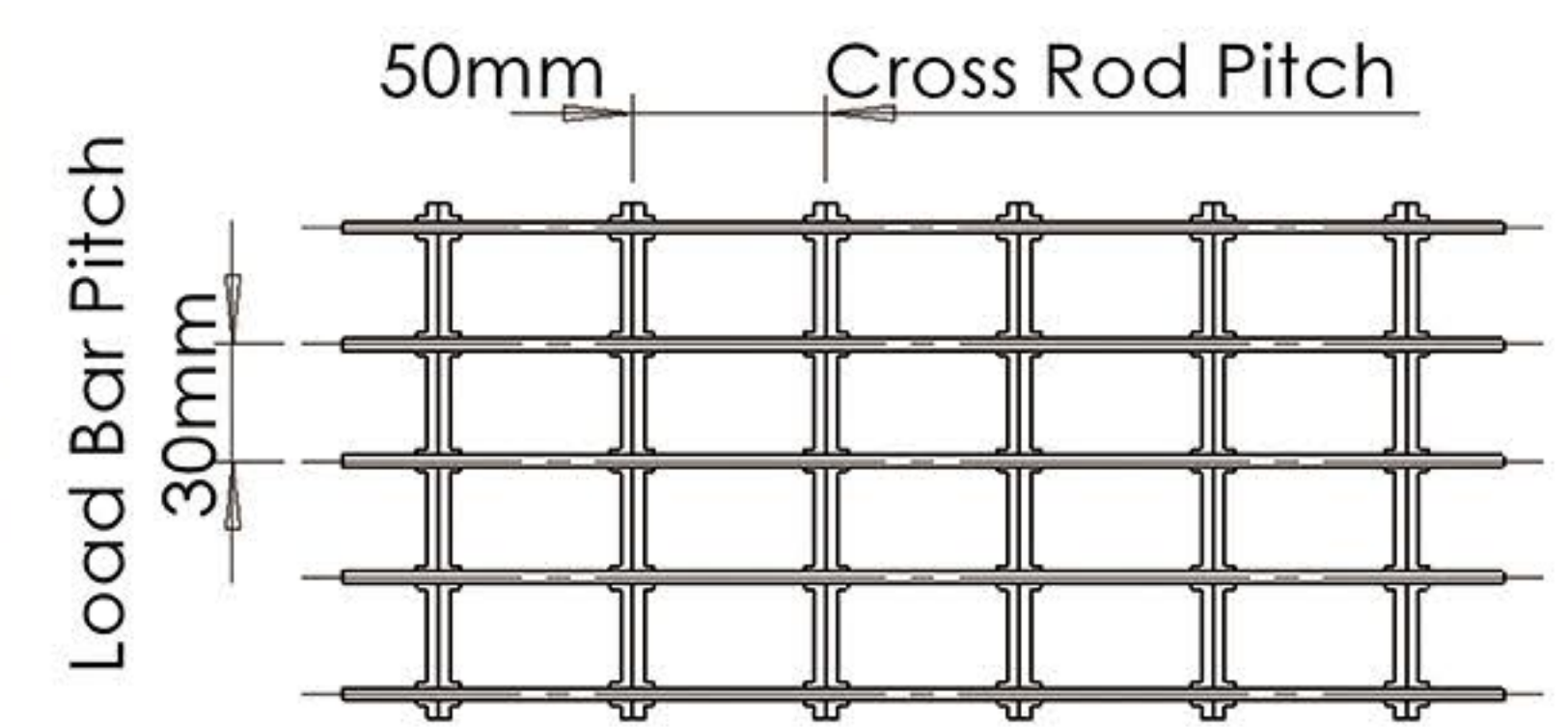
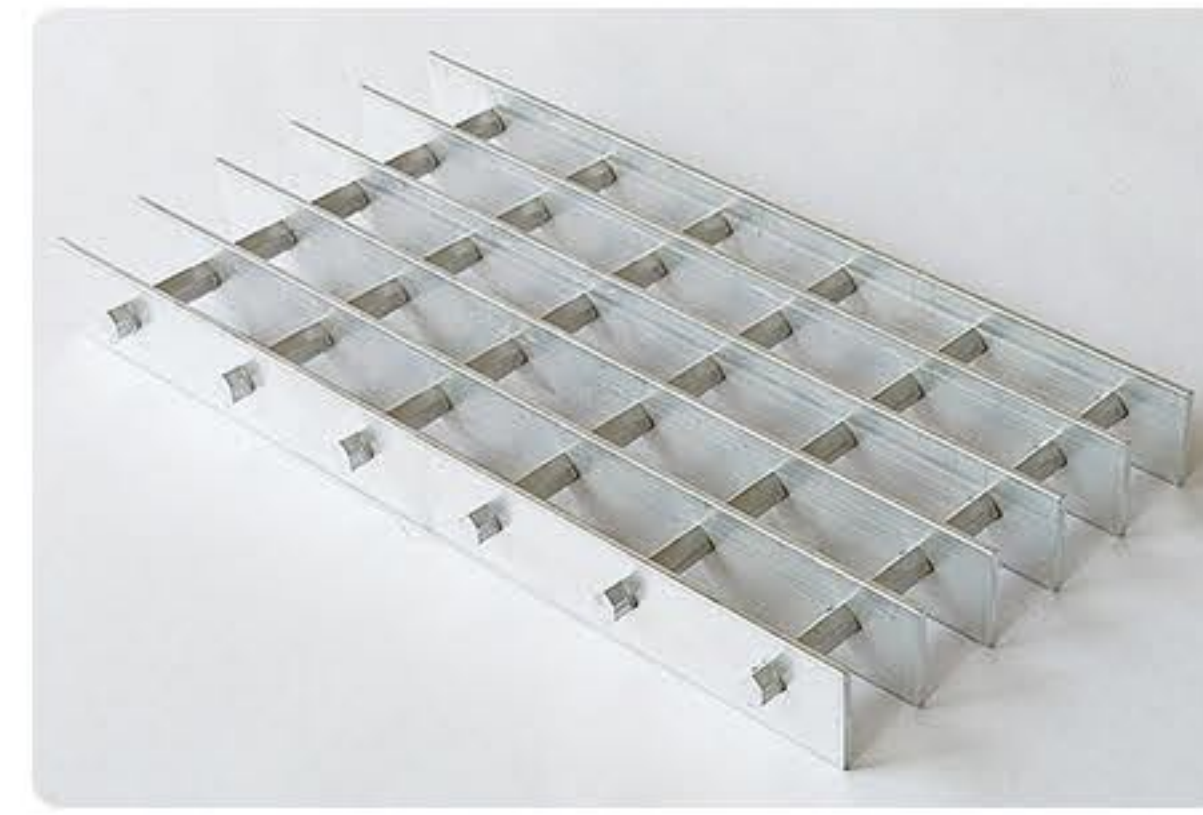
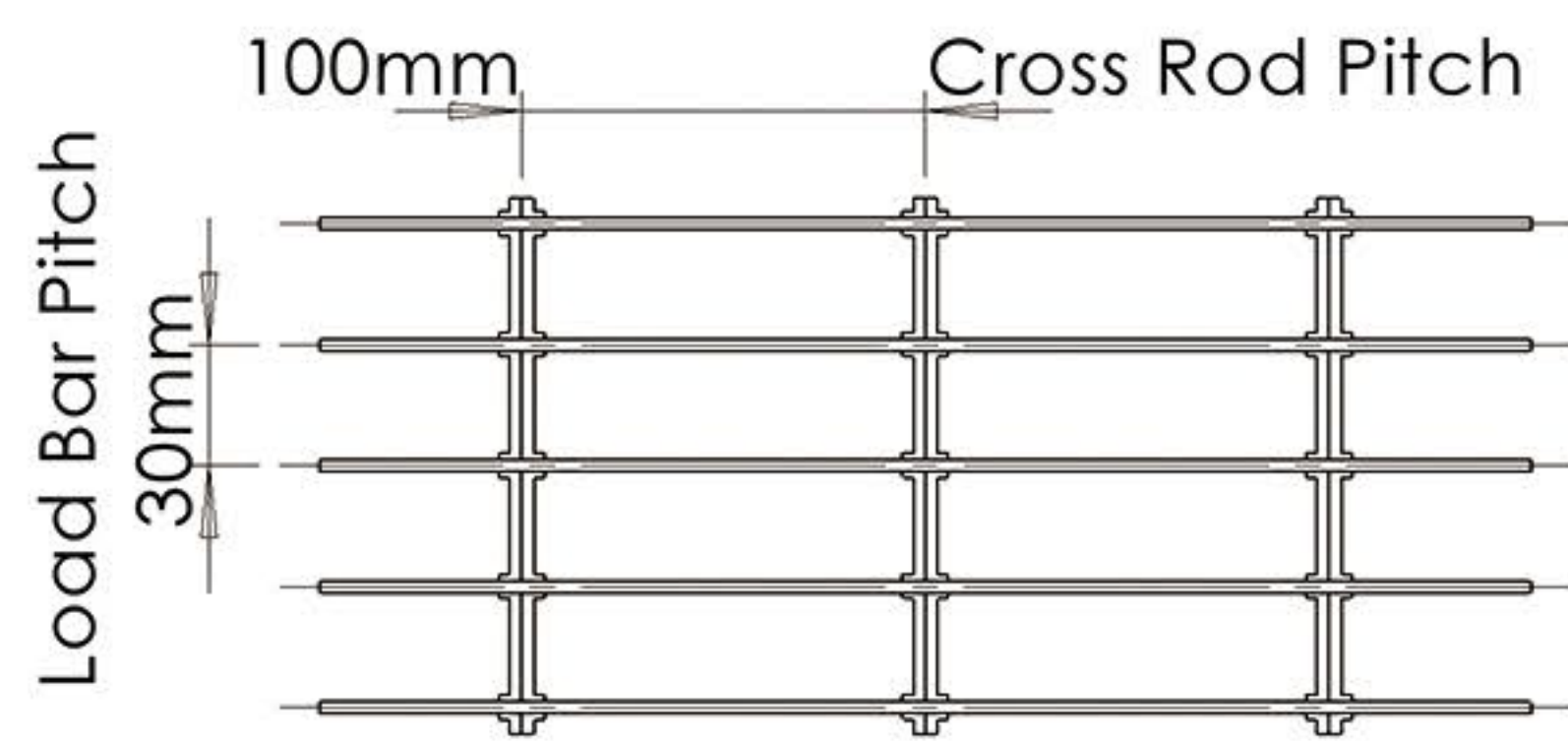


Aluminum Grating Series

The standard pitch of load bars is 30mm, 40mm and 60mm, which is called 30, 40 and 60 series.

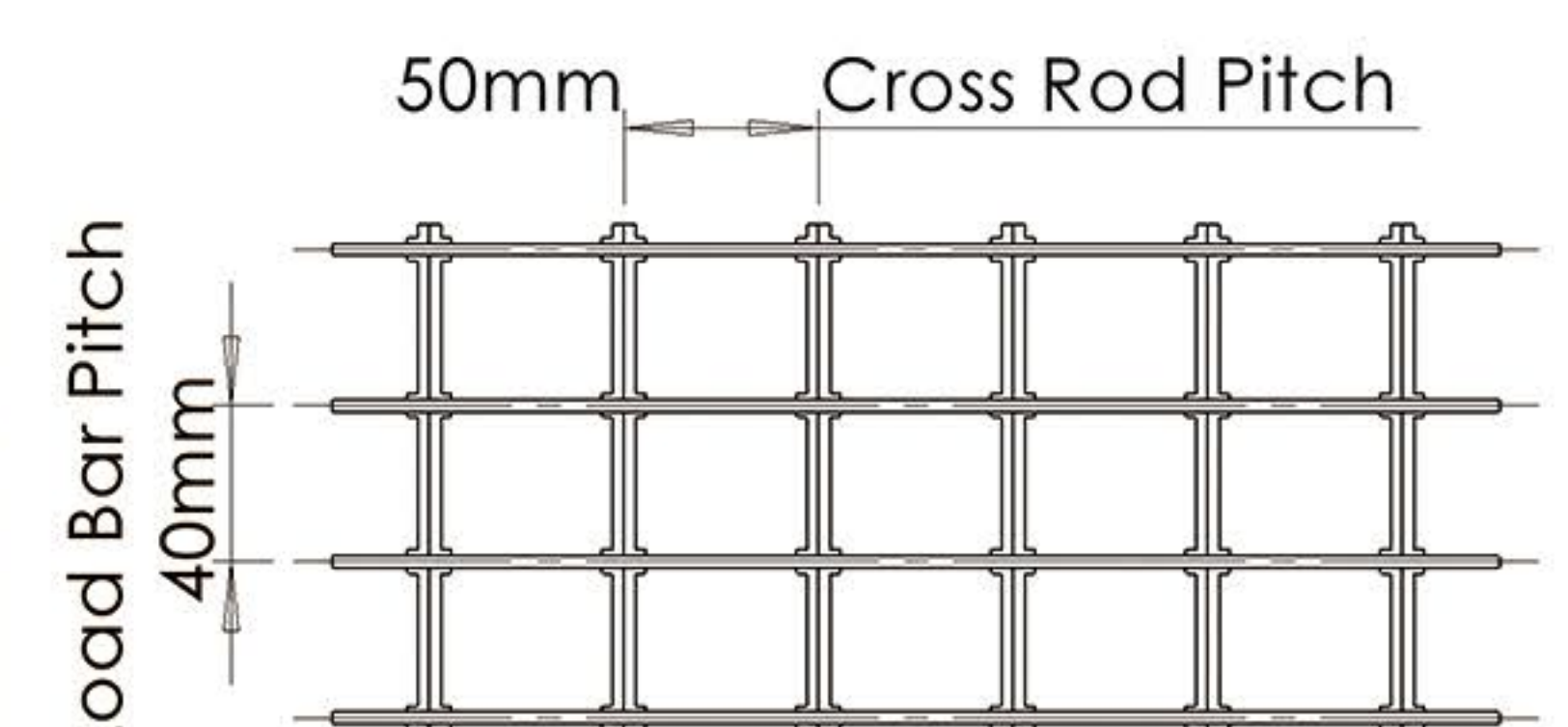
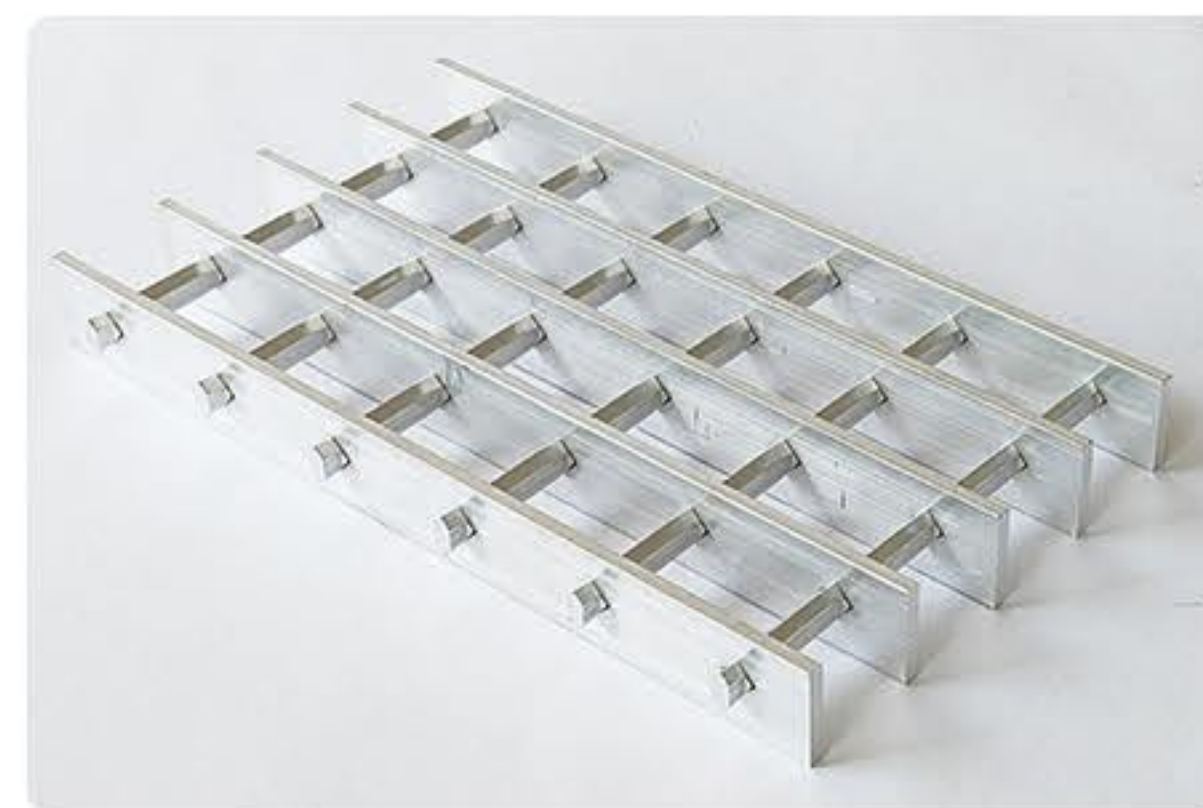
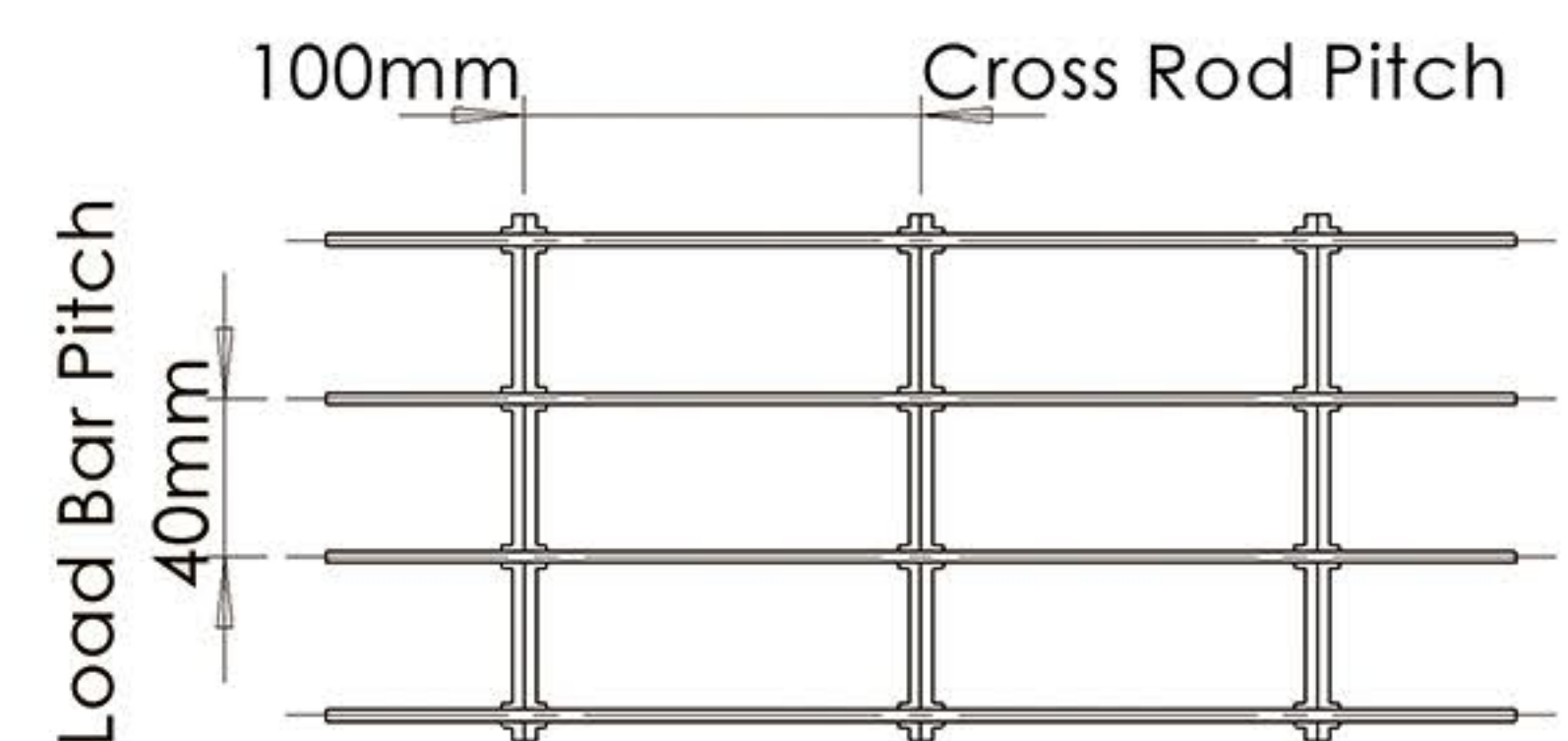
30 series aluminum grating

30 series aluminum grating is the most commonly used model. The load bar pitch is 30mm, and the cross rod pitch is 100mm and 50mm.



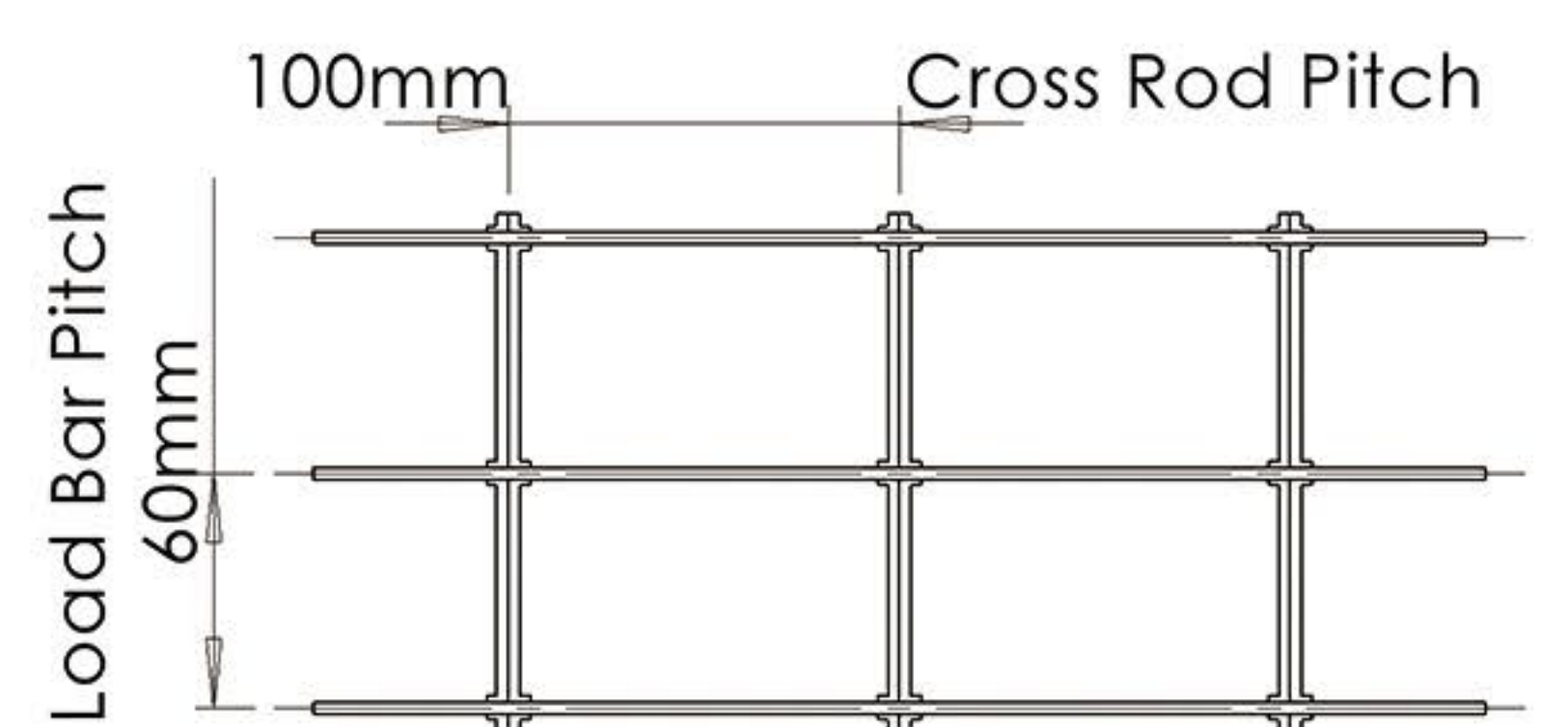
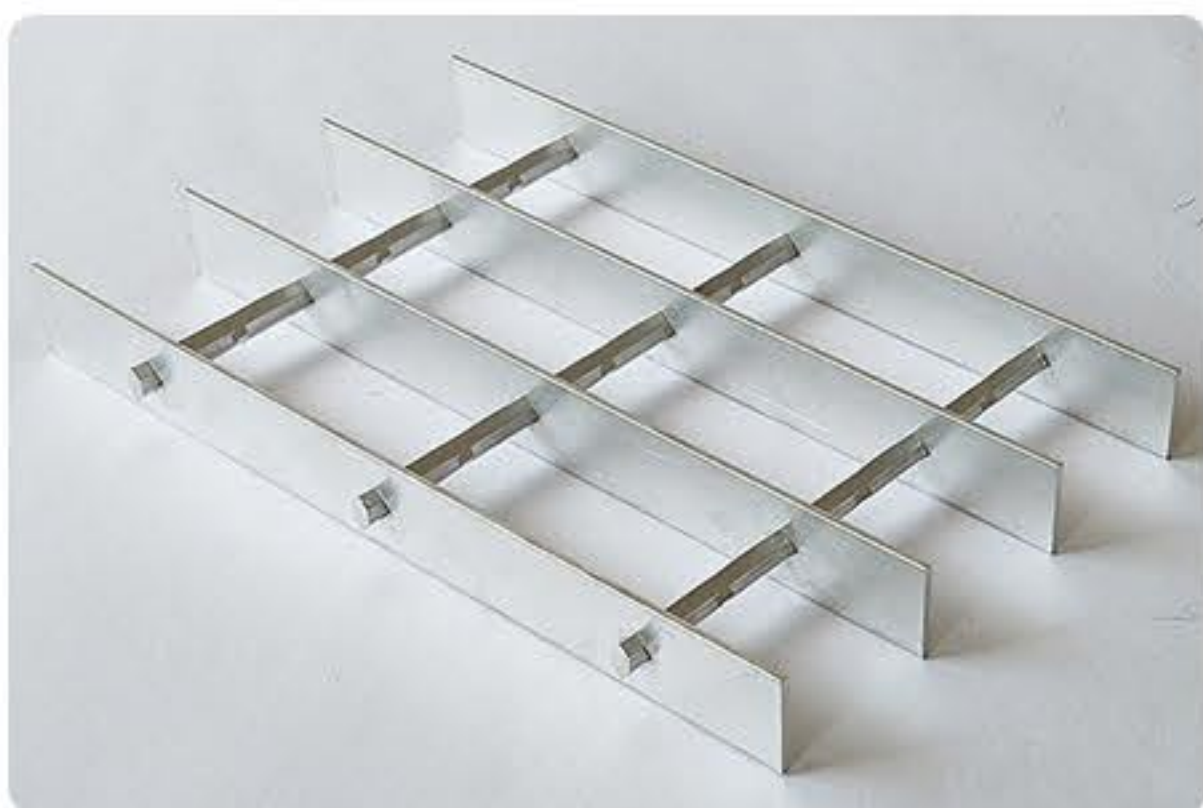
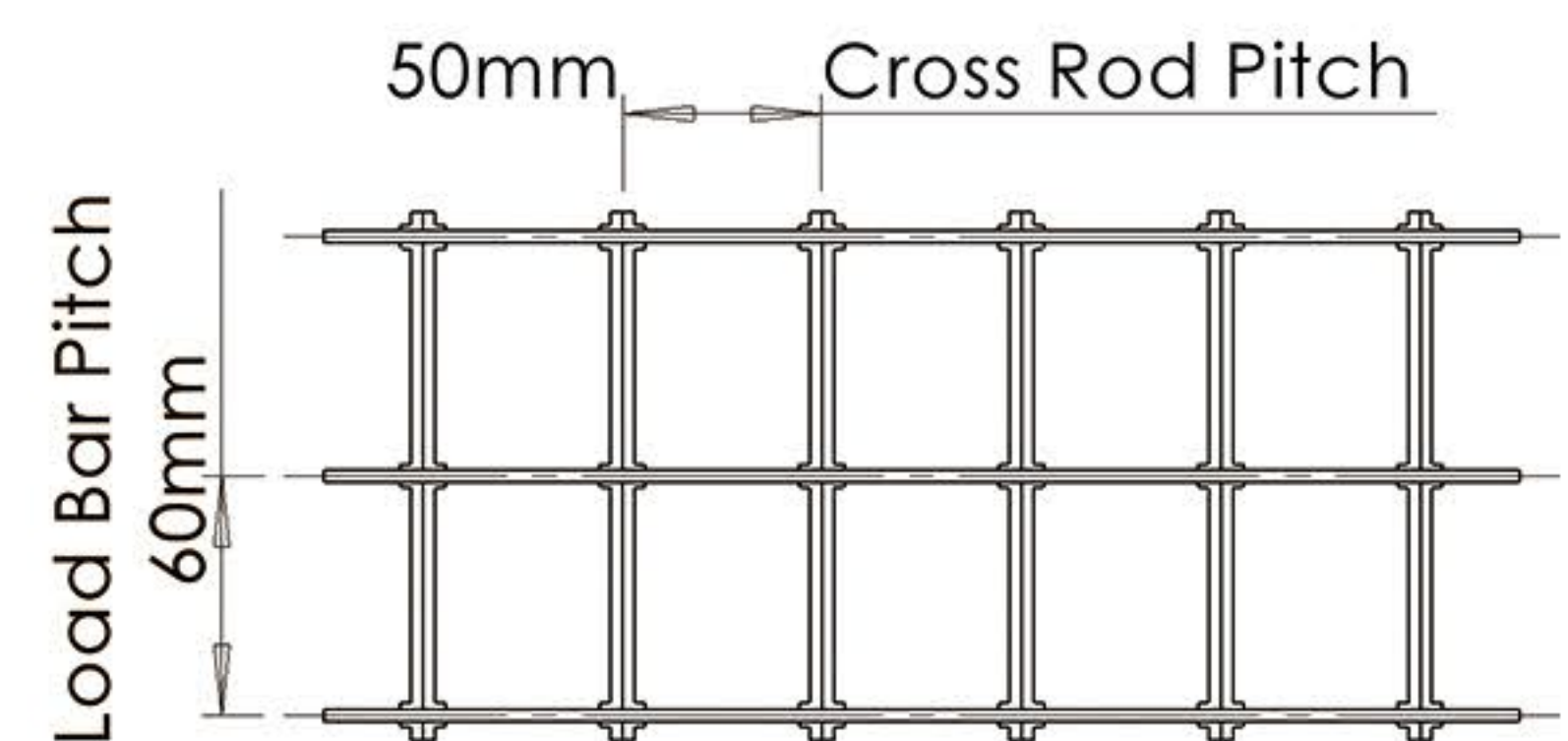
40 series aluminum grating

40 series aluminum grating, The load bar pitch is 40mm, and the cross rod pitch is 100mm and 50mm.



60 series aluminum grating

60 series aluminum grating, The load bar pitch is 60mm, and the cross rod pitch is 50mm and 100mm.



In addition to the above standard series, Tongda company can also manufacture aluminum grating with other sizes of load bar pitch, and the minimum pitch of load bar is 11mm.

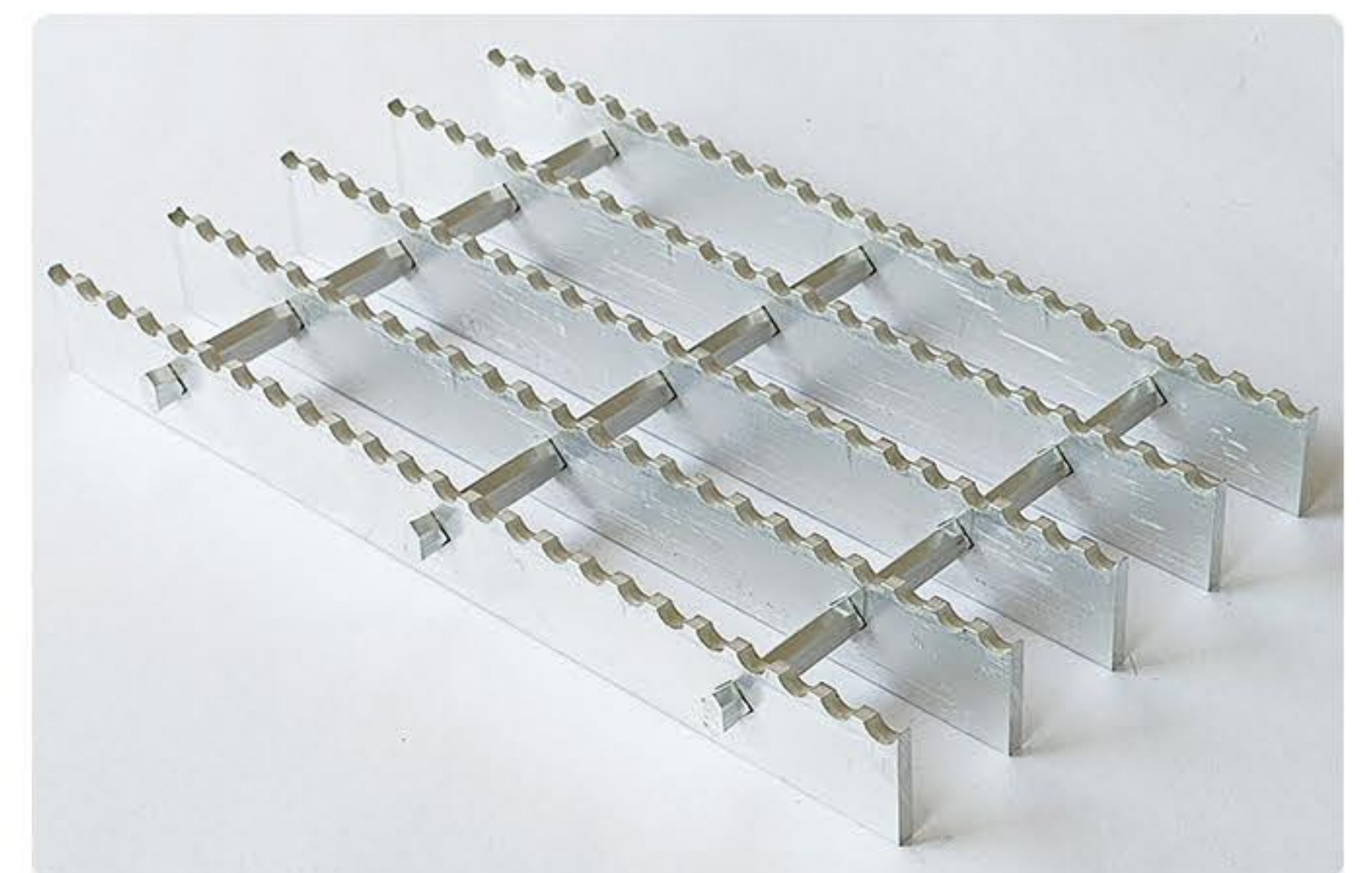
Tongda can also manufacture English standard aluminum grating, with load bar pitch of 7/16"~ 19/16", and cross rod pitch of 4" or 2".

Material: 6063-T6

6061-T6 and 6082-T6 can be used if required by customers

Top Surface:

The aluminum grating comprises plain square edge load bars, To increase the slip resistance, load bars with serrated edges can be specified.



Banding bar welding standard

The banding bar of aluminum grating is welded with load bar by single-sided fillet weld of no less than 3mm.

When the banding bar does not bear the load, One weld shall be welded at an interval of not more than 150mm, and for 30 series, weld one weld for every 5 load bars, for 40 series, weld one weld for every 4 load bars, for 60 series, weld one weld for every 3 load bars.

When the banding bar is under load (such as step side plate), each load bar shall be welded.

It can also be welded according to customer requirements.

Treatment



Mill Finish



Anodized



Chemical Cleaned



Powder Coated



Painted

Standard panel size

The standard length of the panel of Tongda aluminum grating is 5800mm, and the width meets the dimensions in the nominal width table, such as 5mm thick load bar, and the size of 30 series standard grating panel is 5800LbX995mm. Other lengths can be customized.

Nominal width

The distance between the outermost load bar of aluminum grating is called the nominal width of aluminum grating.

The right table is calculated according to the load bar thickness of 5mm, and the maximum nominal width of a single aluminum grating is 1205mm. The most commonly used aluminum grating widths of each series in the nominal width table are 995, 1005 and 1025 mm respectively, which are displayed in yellow. For load bar with a thickness of 3mm, the value in the table shall be reduced by 2mm. See the corresponding load table for the nominal width of type I bar and T bar.

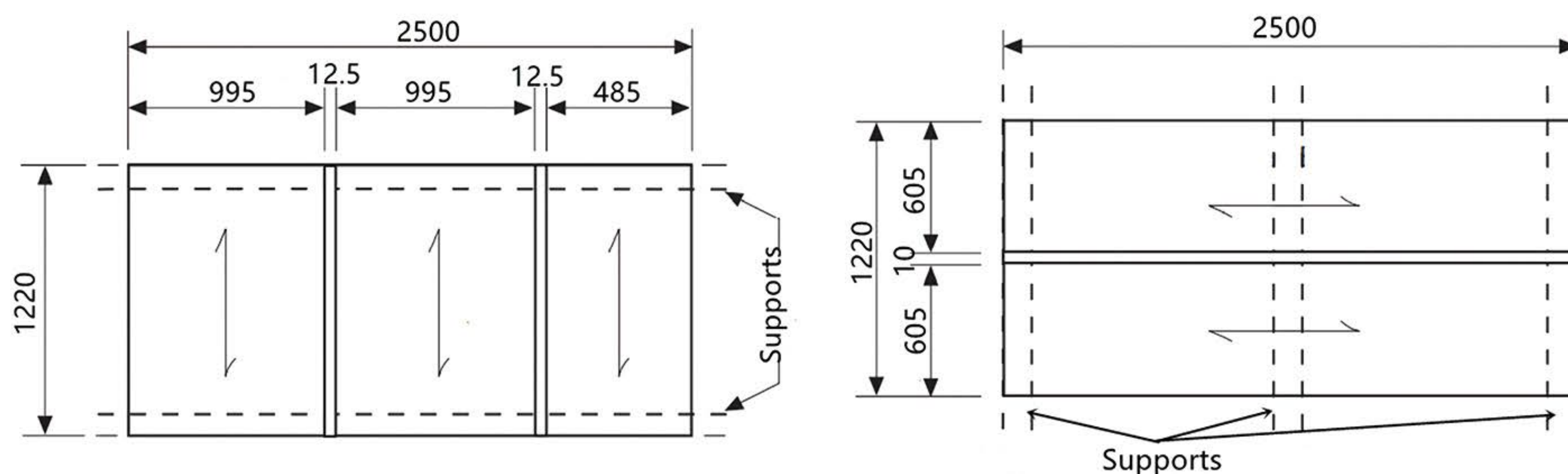
$$\text{Nominal Width} = \text{Load bar pitch} \times (\text{Number of load bar} - 1) + \text{Thickness of load bar}$$

In order to ensure that the outermost load bar does not come out, for aluminum grating panels with rectangular and I-shaped section load bars, the length of the cross rod protruding from the load bar is about 3mm, and the total width = nominal width + 6mm.

We recommend that aluminum grating length can take any value, while the width should nominal value as much as possible in light of attractive appearance, convenient process.

Typical Panel layouts

5mm thick, 30 series aluminum grating

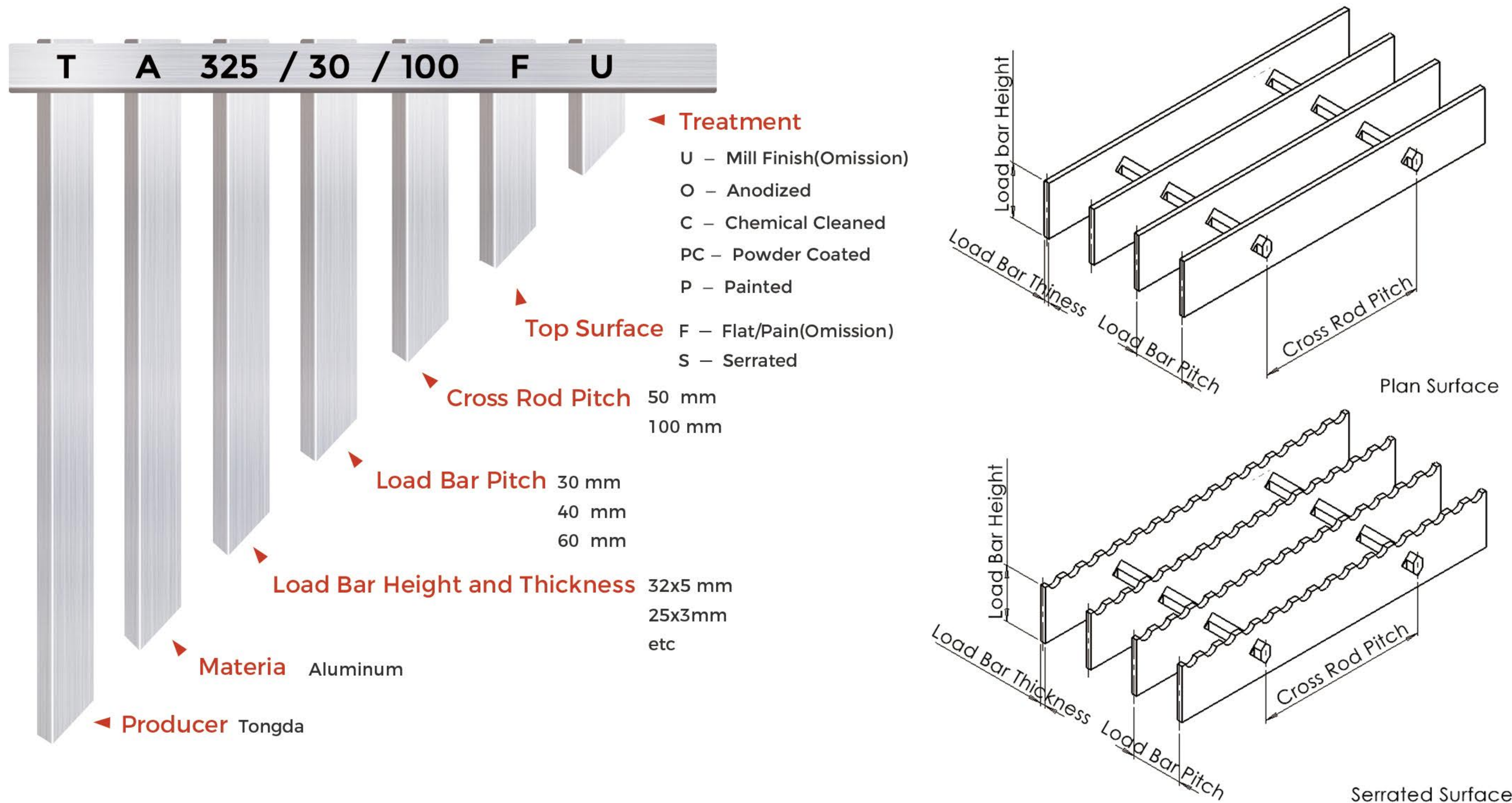


Nominal width table

Number of load bars	Nominal width (mm)		
	Load bar pitch 30mm	Load bar pitch 40mm	Load bar pitch 60mm
2	35	45	65
3	65	85	125
4	95	125	185
5	125	165	245
6	155	205	305
7	185	245	365
8	215	285	425
9	245	325	485
10	275	365	545
11	305	405	605
12	335	445	665
13	365	485	725
14	395	525	785
15	425	565	845
16	455	605	905
17	485	645	965
18	515	685	1025
19	545	725	1085
20	575	765	1145
21	605	805	1205
22	635	845	
23	665	885	
24	695	925	
25	725	965	
26	755	1005	
27	785	1045	
28	815	1085	
29	845	1125	
30	875	1165	
31	905	1205	
32	935		
33	965		
34	995		
35	1025		
36	1055		
37	1085		
38	1115		
39	1145		
40	1175		
41	1205		

Aluminum Grating

Aluminum grating usually refers to the aluminum grating with rectangular section load bar, which is the most widely used aluminum grating. There are three standard load bar pitches of 30, 40 and 60mm, which are called 30, 40 and 60 series, The top surface has two types: flat(plan) and serrated. If necessary, the pitch of load bar can also be customized.



Load Table of Aluminum Grating with Load Bar Pitch at 30mm																	
Product	Load Bar Size (mm)	Therotal Mass (kg/m ²)	4kPa 5mm Dflit Span(mm)		Span(mm)												
					450	600	750	900	1050	1200	1350	1500	1800	2100	2400	2700	3000
TA253/30/100	25x3	8.68	962	U(kPa)	48.30	27.17	17.39	12.08	8.87	6.79							
TA253/30/50		10.41		D(mm)	2.83	5.05	7.90	11.40	15.55	20.37							
TA255/30/100	25x5	13.32	1090	U(kPa)	80.50	45.28	28.98	20.13	14.79	11.32	8.94						
TA255/30/50		15.04		D(mm)	2.83	5.04	7.89	11.39	15.54	20.35	25.84						
TA323/30/100	32x3	10.63	1156	U(kPa)	79.10	44.49	28.48	19.78	14.53	11.12	8.79						
TA323/30/50		12.36		D(mm)	2.21	3.94	6.16	8.88	12.12	15.86	20.12						
TA325/30/100	32x5	16.56	1309	U(kPa)	131.80	74.14	47.45	32.95	24.21	18.53	14.64	11.86					
TA325/30/50		18.29		D(mm)	2.21	3.94	6.16	8.88	12.11	15.85	20.10	24.88					
TA403/30/100	40x3	12.85	1365	U(kPa)	123.60	69.53	44.50	30.90	22.70	17.38	13.73	11.12	7.73				
TA403/30/50		14.58		D(mm)	1.77	3.15	4.92	7.10	9.68	12.66	16.06	19.86	28.74				
TA405/30/100	40x5	20.27	1545	U(kPa)	206.00	115.88	74.16	51.50	37.84	28.97	22.89	18.54	12.88	9.46	7.24		
TA405/30/50		22.00		D(mm)	1.77	3.15	4.92	7.10	9.67	12.66	16.05	19.85	28.72	39.31	51.66		
TA455/30/100	45x5	22.59	1685	U(kPa)	260.70	146.64	93.85	65.18	47.88	36.66	28.97	23.46	16.29	11.97	9.17		
TA455/30/50		24.31		D(mm)	1.57	2.80	4.37	6.31	8.59	11.24	14.25	17.62	25.48	34.85	45.77		
TA505/30/100	50x5	24.90	1821	U(kPa)	321.90	181.07	115.88	80.48	59.12	45.27	35.77	28.97	20.12	14.78	11.32	8.94	7.24
TA505/30/50		26.63		D(mm)	1.42	2.52	3.94	5.67	7.73	10.11	12.82	15.85	22.90	31.31	41.10	52.30	64.97
TA555/30/100	55x5	27.22	1953	U(kPa)	399.50	224.72	143.82	99.88	73.38	56.18	44.39	35.96	24.97	18.34	14.04	11.10	8.99
TA555/30/50		28.95		D(mm)	1.32	2.35	3.67	5.29	7.21	9.42	11.94	14.76	21.32	29.14	38.22	48.61	60.35
TA605/30/100	60x5	29.54	2082	U(kPa)	441.80	248.51	159.05	110.45	81.15	62.13	49.09	39.76	27.61	20.29	15.53	12.27	9.94
TA605/30/50		31.27		D(mm)	1.12	2.00	3.13	4.50	6.14	8.03	10.17	12.57	18.16	24.81	32.55	41.39	51.38
TA655/30/100	65x5	31.86	2208	U(kPa)	550.00	309.38	198.00	137.50	101.02	77.34	61.11	49.50	34.38	25.26	19.34	15.28	12.38
TA655/30/50		33.58		D(mm)	1.10	1.96	3.06	4.41	6.01	7.85	9.95	12.30	17.76	24.25	31.79	40.40	50.12

Panel Nominal Width Chart(mm) Dimansions Are Out-to-Out of Load Bars																	
No. of Bars	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Panel Nominal Width	35	65	95	125	155	185	215	245	275	305	335	365	395	425	455	485	515
No. of Bars	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Panel Nominal Width	545	575	605	635	665	695	725	755	785	815	845	875	905	935	965	995	1025
No. of Bars	36	37	38	39	40	41											
Panel Nominal Width	1055	1085	1115	1145	1175	1205											

Add 6mm for extended cross rods. Panel nominal widths indicated are for gratings with 5mm thick load bars. Deduce 2mm for 3mm thick Load Bars.

Load Table of Aluminum Grating with Load Bar Pitch at 40mm																	
Product	Load Bar Size (mm)	Theoretical Mass (kg/m ²)	4kPa 5mm Dflit Span(mm)		Span(mm)												
					450	600	750	900	1050	1200	1350	1500	1800	2100	2400	2700	3000
TA253/40/100	25x3	6.99	896	U(kPa)	36.20	20.36	13.03	9.05	6.65								
TA253/40/50		8.72		D(mm)	2.83	5.04	7.90	11.40	15.55								
TA255/40/100	25x5	10.50	1016	U(kPa)	60.35	33.95	21.73	15.09	11.08	8.49							
TA255/40/50		12.23		D(mm)	2.83	5.04	7.89	11.39	15.54	20.36							
TA323/40/100	32x3	8.47	1078	U(kPa)	59.20	33.30	21.31	14.80	10.87	8.33	6.58						
TA323/40/50		10.20		D(mm)	2.21	3.93	6.15	8.87	12.10	15.84	20.09						
TA325/40/100	32x5	12.96	1221	U(kPa)	98.70	55.52	35.53	24.68	18.13	13.88	10.97	8.88					
TA325/40/50		14.69		D(mm)	2.21	3.93	6.15	8.87	12.09	15.83	20.08	24.86					
TA403/40/100	40x3	10.15	1273	U(kPa)	92.50	52.03	33.30	23.13	16.99	13.01	10.28	8.33					
TA403/40/50		11.88		D(mm)	1.77	3.14	4.91	7.09	9.66	12.64	16.03	19.83					
TA405/40/100	40x5	15.77	1441	U(kPa)	154.20	86.74	55.51	38.55	28.32	21.68	17.13	13.88	9.64	7.08			
TA405/40/50		17.50		D(mm)	1.77	3.14	4.91	7.09	9.66	12.64	16.02	19.82	28.68	39.26			
TA455/40/100	45x5	17.52	1573	U(kPa)	195.00	109.69	70.20	48.75	35.82	27.42	21.67	17.55	12.19	8.95	6.86		
TA455/40/50		19.25		D(mm)	1.57	2.79	4.36	6.29	8.57	11.21	14.21	17.58	25.42	34.78	45.69		
TA505/40/100	50x5	19.28	1700	U(kPa)	236.60	133.09	85.18	59.15	43.46	33.27	26.29	21.29	14.79	10.86	8.32		
TA505/40/50		21.01		D(mm)	1.39	2.47	3.86	5.56	7.58	9.91	12.56	15.54	22.46	30.71	40.32		
TA555/40/100	55x5	21.03	1824	U(kPa)	300.00	168.75	108.00	75.00	55.10	42.19	33.33	27.00	18.75	13.78	10.55	8.33	6.75
TA555/40/50		22.76		D(mm)	1.32	2.35	3.67	5.30	7.22	9.44	11.96	14.78	21.36	29.18	38.29	48.71	60.47
TA605/40/100	60x5	22.79	1945	U(kPa)	330.00	185.63	118.80	82.50	60.61	46.41	36.67	29.70	20.63	15.15	11.60	9.17	7.43
TA605/40/50		24.52		D(mm)	1.12	1.99	3.11	4.49	6.11	7.99	10.13	12.52	18.09	24.72	32.43	41.26	51.22
TA655/40/100	65x5	24.54	2064	U(kPa)	413.50	232.59	148.86	103.38	75.95	58.15	45.94	37.22	25.84	18.99	14.54	11.49	9.30
TA655/40/50		26.27		D(mm)	1.10	1.96	3.07	4.42	6.02	7.87	9.97	12.33	17.80	24.32	31.88	40.52	50.27

Panel Nominal Width Chart(mm) Dimensions Are Out-to-Out of Load Bars																	
No. of Bars	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Panel Nominal Width	45	85	125	165	205	245	285	325	365	405	445	485	525	565	605	645	685
No. of Bars	19	20	21	22	23	24	25	26	27	28	29	30	31				
Panel Nominal Width	725	765	805	845	885	925	965	1005	1045	1085	1125	1165	1205				

Add 6mm for extended cross rods. Panel nominal widths indicated are for gratings with 5mm thick load bars. Deduce 2mm for 3mm thick Load Bars.

Load Table of Aluminum Grating with Load Bar Pitch at 60mm																	
Product	Load Bar Size (mm)	Theoretical Mass (kg/m ²)	4kPa 5mm Dflit Span(mm)		Span(mm)												
					450	600	750	900	1050	1200	1350	1500	1800	2100	2400	2700	3000
TA253/60/100	25x3	5.31	811	U(kPa)	24.10	13.56	8.68	6.03	4.43								
TA253/60/50		7.03		D(mm)	2.83	5.04	7.89	11.39	15.55								
TA255/60/100	25x5	7.69	920	U(kPa)	40.20	22.61	14.47	10.05	7.38	5.65							
TA255/60/50		9.42		D(mm)	2.83	5.04	7.89	11.39	15.54	20.36							
TA323/60/100	32x3	6.31	975	U(kPa)	39.50	22.22	14.22	9.88	7.26	5.55							
TA323/60/50		8.04		D(mm)	2.21	3.93	6.16	8.88	12.12	15.87							
TA325/60/100	32x5	9.36	1106	U(kPa)	65.90	37.07	23.72	16.48	12.10	9.27	7.32	5.93					
TA325/60/50		11.09		D(mm)	2.21	3.94	6.16	8.89	12.12	15.86	20.13	24.92					
TA403/60/100	40x3	7.45	1152	U(kPa)	61.80	34.76	22.25	15.45	11.35	8.69	6.87	5.56					
TA403/60/50		9.18		D(mm)	1.77	3.15	4.93	7.10	9.69	12.68	16.08	19.90					
TA405/60/100	40x5	11.27	1306	U(kPa)	103.00	57.94	37.08	25.75	18.92	14.48	11.44	9.27	6.44				
TA405/60/50		13.00		D(mm)	1.77	3.15	4.92	7.10	9.68	12.67	16.06	19.88	28.77				
TA455/60/100	45x5	12.46	1425	U(kPa)	130.00	73.13	46.80	32.50	23.88	18.28	14.44	11.70	8.13	5.97			
TA455/60/50		14.19		D(mm)	1.57	2.79	4.36	6.29	8.57	11.22	14.22	17.59	25.45	34.82			
TA505/60/100	50x5	13.65	1541	U(kPa)	161.00	90.56	57.96	40.25	29.57	22.64	17.89	14.49	10.06	7.39	5.66		
TA505/60/50		15.38		D(mm)	1.42	2.52	3.94	5.68	7.74	10.12	12.83	15.86	22.94	31.37	41.19		
TA555/60/100	55x5	14.85	1654	U(kPa)	199.90	112.44	71.96	49.98	36.72	28.11	22.21	17.99	12.49	9.18	7.03		
TA555/60/50		16.57		D(mm)	1.32	2.35	3.67	5.29	7.21	9.43	11.96	14.78	21.36	29.20	38.32		
TA605/60/100	60x5	16.04	1765	U(kPa)	220.90	124.26	79.52	55.23	40.57	31.06	24.54	19.88	13.81	10.14	7.77		
TA605/60/50		17.77		D(mm)	1.12	2.00	3.13	4.51	6.14	8.03	10.17	12.58	18.18	24.84	32.60		
TA655/60/100	65x5	17.23	1873	U(kPa)	275.00	154.69	99.00	68.75	50.51	38.67	30.56	24.75	17.19	12.63	9.67	7.64	6.19
TA655/60/50		18.96		D(mm)	1.10	1.96	3.06	4.41	6.01	7.86	9.95	12.30	17.77	24.27	31.83	40.47	50.22

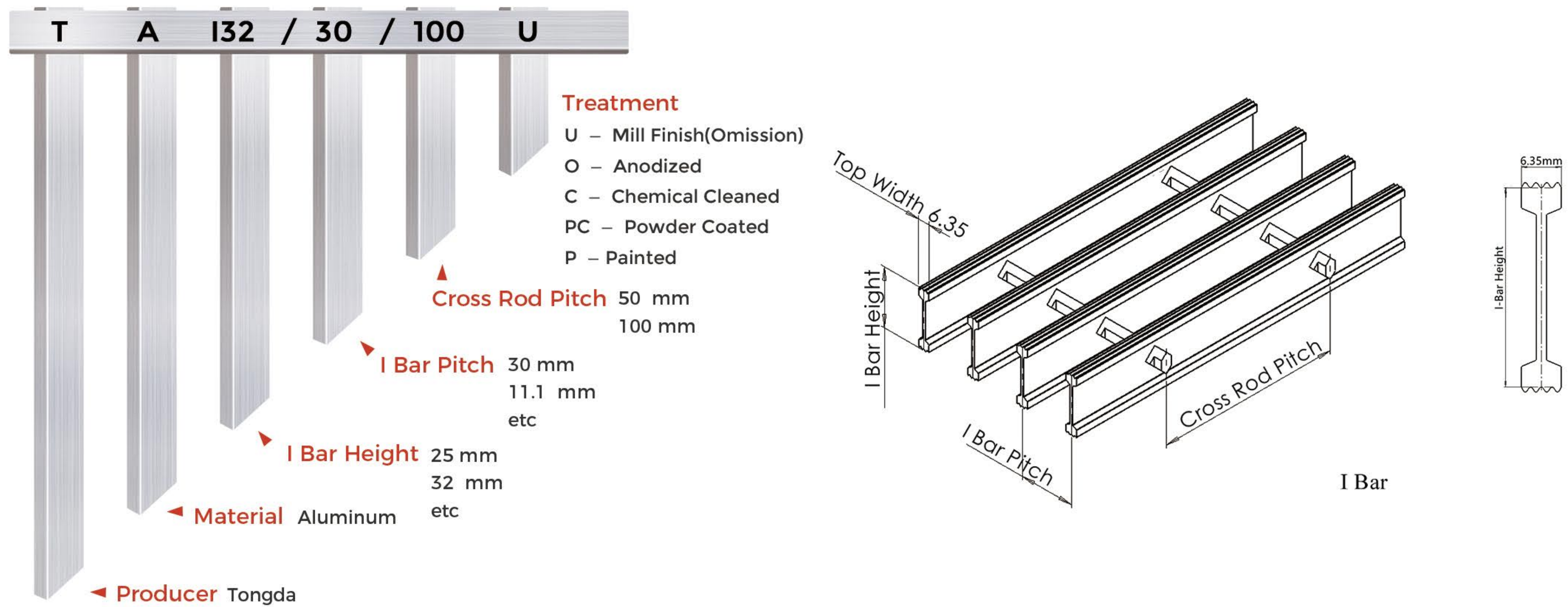
Panel Nominal Width Chart(mm) Dimensions Are Out-to-Out of Load Bars																	
No. of Bars	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Panel Nominal Width	65	125	185	245	305	365	425	485	545	605	665	725	785	845	905	965	1025
No. of Bars	19	20	21														
Panel Nominal Width	1085	1145	1205														

Add 6mm for extended cross rods. Panel nominal widths indicated are for gratings with 5mm thick load bars. Deduce 2mm for 3mm thick Load Bars.

Aluminum I Bar grating

Manufactured with a lighter I shaped extruded load bar, I Bar Grating carries the similar load as 5mm thick aluminum grating, but weights slightly less than per square meter. Additionally, the striated top and bottom flanges of the I bar provide enhanced skid resistance without the cost of serration. I-bar grating with load bar pitch of 11.1mm, and the top clearance is only 4.75mm, wheelchair and high-heeled shoes can pass through.

Other I-shaped extruded load-bars and load bar pitches can also be manufactured. As long as the cross-sectional drawings are provided, we can calculate the corresponding load deflection.



Load Table of Aluminum I-Bar Grating with Load Bar Pitch at 11.1 mm

Product	I- Bar Height (mm)	Theoretical Mass (kg/m ²)	4kPa 5mm Dflit Span(mm)	Span(mm)															
				450	600	750	900	1050	1200	1350	1500	1800	2100	2400	2700	3000			
TAI25/11.1/100	25.4	19.42	1389	U(kPa)	80.50	45.28	28.98	20.13	14.79	11.32	8.94	7.25	5.03	U - Safe uniform load (kPa) D - Deflection (mm) Grating for spans to the left of the heavy line have a deflection less than 5mm for uniform loads of 4kPa. The values are not intended to be absolute since the actual load capacity will be affected by the light variations in mill and manufacturing tolerances.					
TAI25/11.1/50		21.15		D(mm)	1.06	1.89	2.96	4.27	5.83	7.65	9.72	12.06	17.56						
TAI32/11.1/100	31.75	24.28	1641	U(kPa)	131.80	74.14	47.45	32.95	24.21	18.53	14.64	11.86	8.24						
TAI32/11.1/50		26.01		D(mm)	0.88	1.57	2.45	3.54	4.83	6.33	8.04	9.96	14.47						
TAI38/11.1/100	38.1	29.14	1879	U(kPa)	206.00	115.88	74.16	51.50	37.84	28.97	22.89	18.54	12.88					9.46	7.24
TAI38/11.1/50		30.87		D(mm)	0.79	1.41	2.21	3.18	4.34	5.68	7.21	8.93	12.94					17.75	23.40
TAI45/11.1/100	44.5	34.00	2105	U(kPa)	260.70	146.64	93.85	65.18	47.88	36.66	28.97	23.46	16.29					11.97	9.17
TAI45/11.1/50		35.72		D(mm)	0.63	1.12	1.75	2.53	3.45	4.51	5.72	7.09	10.27					14.07	18.53
TAI51/11.1/100	50.8	38.86	2321	U(kPa)	321.90	181.07	115.88	80.48	59.12	45.27	35.77	28.97	20.12					14.78	11.32
TAI51/11.1/50		40.58		D(mm)	0.52	0.92	1.45	2.09	2.84	3.72	4.72	5.84	8.46					11.59	15.26

Panel Nominal Width Chart(mm) Dimensions Are Out-to-Out of Load Bars

No. of Bars	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Panel Nominal Width	17.45	28.55	39.65	50.75	61.85	72.95	84.05	95.15	106.25	117.35	128.45	139.55	150.65	161.75	172.85	183.95	195.05
No. of Bars	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Panel Nominal Width	206.15	217.25	228.35	239.45	250.55	261.65	272.75	283.85	294.95	306.05	317.15	328.25	339.35	350.45	361.55	372.65	383.75
No. of Bars	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Panel Nominal Width	394.85	405.95	417.05	428.15	439.25	450.35	461.45	472.55	483.65	494.75	505.85	516.95	528.05	539.15	550.25	561.35	572.45
No. of Bars	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69
Panel Nominal Width	583.55	594.65	605.75	616.85	627.95	639.05	650.15	661.25	672.35	683.45	694.55	705.65	716.75	727.85	738.95	750.05	761.15
No. of Bars	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86
Panel Nominal Width	772.25	783.35	794.45	805.55	816.65	827.75	838.85	849.95	861.05	872.15	883.25	894.35	905.45	916.55	927.65	938.75	949.85
No. of Bars	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103
Panel Nominal Width	960.95	972.05	983.15	994.25	1005.35	1016.45	1027.55	1038.65	1049.75	1060.85	1071.95	1083.05	1094.15	1105.25	1116.35	1127.45	1138.55
No. of Bars	104	105	106	107	108	109											
Panel Nominal Width	1149.65	1160.75	1171.85	1182.95	1194.05	1205.15											

Add 6mm for extended cross rods. Panel nominal widths indicated are for gratings with 6.35mm top width I-bars.

Load Table of Aluminum I-Bar Grating with Load Bar Pitch at 30mm

Product	I- Bar Height (mm)	Theoretical Mass (kg/m ²)	4kPa 5mm Dflit Span(mm)	Span(mm)													
				450	600	750	900	1050	1200	1350	1500	1800	2100	2400	2700	3000	
TAI25/30/100	25.4	8.40	1091	U(kPa)	80.50	45.28	28.98	20.13	14.79	11.32	8.94	7.25	U - Safe uniform load (kPa) D - Deflection (mm) Grating for spans to the left of the heavy line have a deflection less then 5mm for uniform loads of 4kPa.				
TAI25/30/50		D(mm)		2.86	5.09	7.96	11.48	15.65	20.48	25.97	32.13						
TAI32/30/100	31.75	10.23	1291	U(kPa)	131.80	74.14	47.45	32.95	24.21	18.53	14.64	11.86	The values are not intended to be absolute since the actual load capacity will be affected by the light variations in mill and manufacturing tolerances.				
TAI32/30/50		D(mm)		2.38	4.23	6.61	9.53	12.99	16.99	21.53	26.62						
TAI38/30/100	38.1	12.06	1480	U(kPa)	206.00	115.88	74.16	51.50	37.84	28.97	22.89	18.54	12.88	9.46			
TAI38/30/50		D(mm)		2.14	3.81	5.95	8.57	11.68	15.27	19.35	23.91	34.53	47.16				
TAI45/30/100	44.5	13.89	1661	U(kPa)	260.70	146.64	93.85	65.18	47.88	36.66	28.97	23.46	16.29	11.97			
TAI45/30/50		D(mm)		1.70	3.02	4.73	6.81	9.28	12.13	15.37	18.99	27.42	37.43				
TAI51/30/100	50.8	15.72	1835	U(kPa)	321.90	181.07	115.88	80.48	59.12	45.27	35.77	28.97	20.12	14.78	11.32	8.94	7.24
TAI51/30/50		D(mm)		1.40	2.50	3.90	5.62	7.66	10.01	12.68	15.67	22.62	30.87	40.44	51.37	63.67	

Panel Nominal Width Chart(mm) Dimansions Are Out-to-Out of Load Bars

No. of Bars	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Panel Nominal Width	36.35	66.35	96.35	126.35	156.35	186.35	216.35	246.35	276.35	306.35	336.35	366.35	396.35	426.35	456.35	486.35	516.35
No. of Bars	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Panel Nominal Width	546.35	576.35	606.35	636.35	666.35	696.35	726.35	756.35	786.35	816.35	846.35	876.35	906.35	936.35	966.35	996.35	1026.35
No. of Bars	36	37	38	39	40	41											
Panel Nominal Width	1056.4	1086.35	1116.35	1146.35	1176.35	1206.35											

Add 6mm for extended cross rods. Panel nominal widths indicated are for gratings with 6.35mm top width I-bars.

Load Table of Aluminum I-Bar Grating with Load Bar Pitch at 40mm

Product	I- Bar Height (mm)	Theoretical Mass (kg/m ²)	4kPa 5mm Dflit Span(mm)	Span(mm)													
				450	600	750	900	1050	1200	1350	1500	1800	2100	2400	2700	3000	
TAI25/40/100	25.4	6.78	1016	U(kPa)	60.35	33.95	21.73	15.09	11.08	8.49	6.71	5.43	U - Safe uniform load (kPa) D - Deflection (mm) Grating for spans to the left of the heavy line have a deflection less then 5mm for uniform loads of 4kPa.				
TAI25/40/50		D(mm)		2.86	5.09	7.96	11.48	15.65	20.48	25.97	32.14						
TAI32/40/100	31.75	8.16	1202	U(kPa)	98.70	55.52	35.53	24.68	18.13	13.88	10.97	8.88	The values are not intended to be absolute since the actual load capacity will be affected by the light variations in mill and manufacturing tolerances.				
TAI32/40/50		D(mm)		2.37	4.22	6.60	9.52	12.97	16.97	21.51	26.60						
TAI38/40/100	38.1	9.55	1379	U(kPa)	154.20	86.74	55.51	38.55	28.32	21.68	17.13	13.88	9.64	7.08			
TAI38/40/50		D(mm)		2.14	3.80	5.94	8.56	11.66	15.24	19.32	23.88	34.48	47.10				
TAI45/40/100	44.5	10.94	1548	U(kPa)	195.00	109.69	70.20	48.75	35.82	27.42	21.67	17.55	12.19	8.95			
TAI45/40/50		D(mm)		1.70	3.02	4.71	6.79	9.25	12.10	15.33	18.94	27.35	37.35				
TAI51/40/100	50.8	12.33	1711	U(kPa)	236.60	133.09	85.18	59.15	43.46	33.27	26.29	21.29	14.79	10.86	8.32	6.57	5.32
TAI51/40/50		D(mm)		1.38	2.45	3.82	5.51	7.51	9.81	12.43	15.36	22.17	30.27	39.67	50.40	62.48	

Panel Nominal Width Chart(mm) Dimansions Are Out-to-Out of Load Bars

No. of Bars	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Panel Nominal Width	46.35	86.35	126.35	166.35	206.35	246.35	286.35	326.35	366.35	406.35	446.35	486.35	526.35	566.35	606.35	646.35	686.35
No. of Bars	19	20	21	22	23	24	25	26	27	28	29	30	31				
Panel Nominal Width	726.35	766.35	806.35	846.35	886.35	926.35	966.35	1006.35	1046.35	1086.35	1126.35	1166.35	1206.35				

Add 6mm for extended cross rods. Panel nominal widths indicated are for gratings with 6.35mm top width I-bars.

Load Table of Aluminum I-Bar Grating with Load Bar Pitch at 60mm

Product	I- Bar Height (mm)	Theoretical Mass (kg/m ²)	4kPa 5mm Dflit Span(mm)	Span(mm)													
				450	600	750	900	1050	1200	1350	1500	1800	2100	2400	2700	3000	
TAI25/60/100	25.4	5.16	919	U(kPa)	40.20	22.61	14.47	10.05	7.38	5.65	4.47	3.62	U - Safe uniform load (kPa) D - Deflection (mm) Grating for spans to the left of the heavy line have a deflection less then 5mm for uniform loads of 4kPa.				
TAI25/60/50		D(mm)		2.86	5.09	7.96	11.48	15.65	20.49	25.99	32.17						
TAI32/60/100	31.75	6.10	1088	U(kPa)	65.90	37.07	23.72	16.48	12.10	9.27	7.32	5.93	The values are not intended to be absolute since the actual load capacity will be affected by the light variations in mill and manufacturing tolerances.				
TAI32/60/50		D(mm)		2.38	4.23	6.62	9.54	13.00	17.01	21.56	26.67						
TAI38/60/100	38.1	7.04	1248	U(kPa)	103.00	57.94	37.08	25.75	18.92	14.48	11.44	9.27	6.44	4.73			
TAI38/60/50		D(mm)		2.14	3.81	5.95	8.58	11.69	15.28	19.36	23.94	34.59	47.26				
TAI45/60/100	44.5	7.99	1401	U(kPa)	130.00	73.13	46.80	32.50	23.88	18.28	14.44	11.70	8.13	5.97			
TAI45/60/50		D(mm)		1.70	3.02	4.72	6.80	9.26	12.10	15.33	18.96	27.38	37.39				
TAI51/60/100	50.8	8.93	1549	U(kPa)	161.00	90.56	57.96	40.25	29.57	22.64	17.89	14.49	10.06	7.39	5.66	4.47	3.62
TAI51/60/50		D(mm)		1.40	2.50	3.90	5.62	7.66	10.02	12.69	15.68	22.65	30.92	40.53	51.50	63.87	

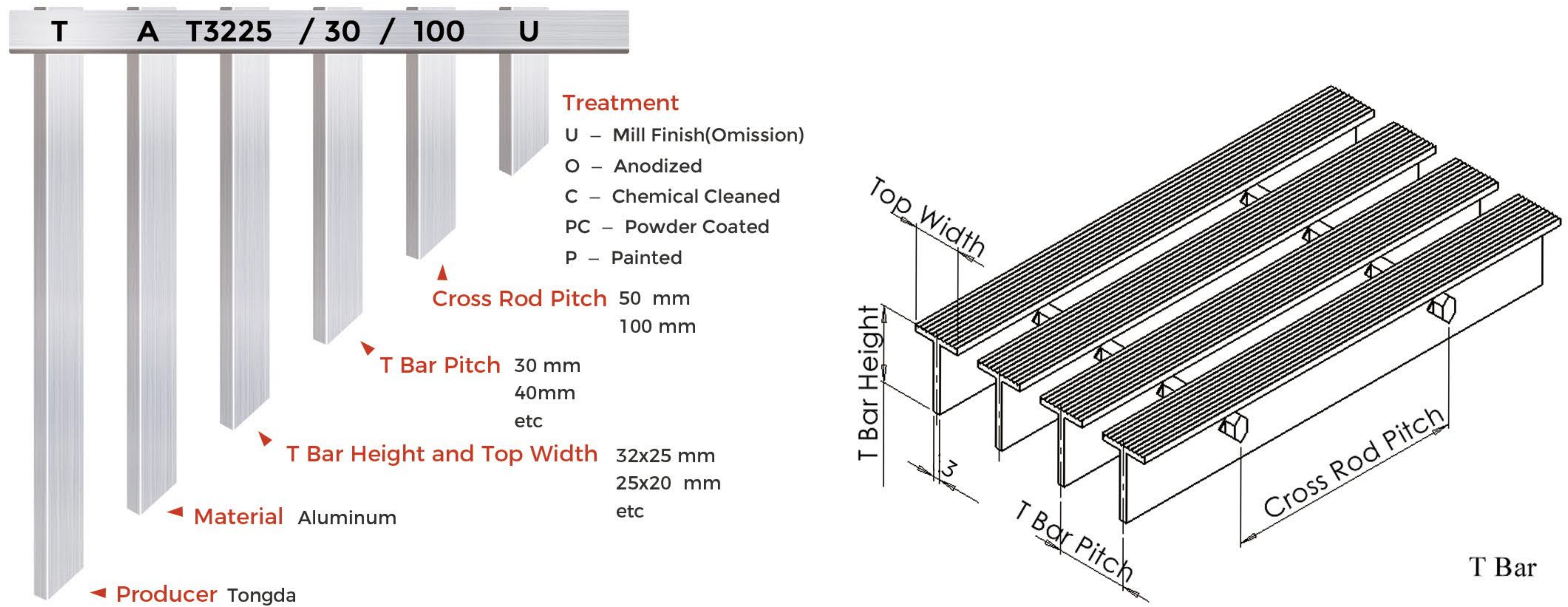
Panel Nominal Width Chart(mm) Dimansions Are Out-to-Out of Load Bars

No. of Bars	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Panel Nominal Width	66.35	126.35	186.35	246.35	306.35	366.35	426.35	486.35	546.35	606.35	666.35	726.35	786.35	846.35	906.35	966.35	1026.35
No. of Bars	19	20	21														
Panel Nominal Width	1086.35	1146.35	1206.35														

Add 6mm for extended cross rods. Panel nominal widths indicated are for gratings with 6.35mm top width I-bars.

Aluminum T Bar Grating

Manufactured with T-shaped extruded load bars, the T-Bar has various cross-sectional shapes, and the top surface is provided with a serrated anti-skid groove. Provides a more comfortable walking surface due to the wide top. The clearance on the top of the aluminum T-Bar grating can be 2 mm, and wheelchairs and high-heeled shoes can pass through.



Load Table of Aluminum T-Bar Grating with Load Bar Pitch at 30mm

Product	Load Bar Size (mm)	Theoretical Mass (kg/m ²)	4kPa 5mm Dflr Span(mm)	Span(mm)															
				450	600	750	900	1050	1200	1350	1500	1800	2100	2400	2700	3000			
TAT2520/30/100	25x20	12.68	1115	U(kPa)	80.50	45.28	28.98	20.13	14.79	11.32	8.94	U - Safe uniform load (kPa) D - Deflection (mm) Grating for spans to the left of the heavy line have a deflection less than 5mm for uniform loads of 4kPa. The values are not intended to be absolute since the actual load capacity will be affected by the light variations in mill and manufacturing tolerances.							
TAT2520/30/50				D(mm)	2.60	4.62	7.23	10.44	14.24	18.64	23.66								
TAT2527/30/100	25x27	14.30	1141	U(kPa)	131.80	74.14	47.45	32.95	24.21	18.53	14.64								
TAT2527/30/50				D(mm)	3.86	6.86	10.74	15.48	21.10	27.61	35.01								
TAT3220/30/100	32x20	14.62	1325	U(kPa)	206.00	115.88	74.16	51.50	37.84	28.97	22.89						18.54	12.88	
TAT3220/30/50				D(mm)	3.31	5.88	9.19	13.25	18.05	23.61	29.92						36.99	53.44	
TAT4020/30/100	40x20	16.85	1547	U(kPa)	260.70	146.64	93.85	65.18	47.88	36.66	28.97						23.46	16.29	
TAT4020/30/50				D(mm)	2.24	3.99	6.24	8.99	12.25	16.02	20.30						25.09	36.24	
TAT4025/30/100	40x25	18.05	1576	U(kPa)	321.90	181.07	115.88	80.48	59.12	45.27	35.77						28.97	20.12	14.78
TAT4025/30/50				D(mm)	2.56	4.55	7.12	10.26	13.97	18.26	23.14						28.60	41.29	56.38

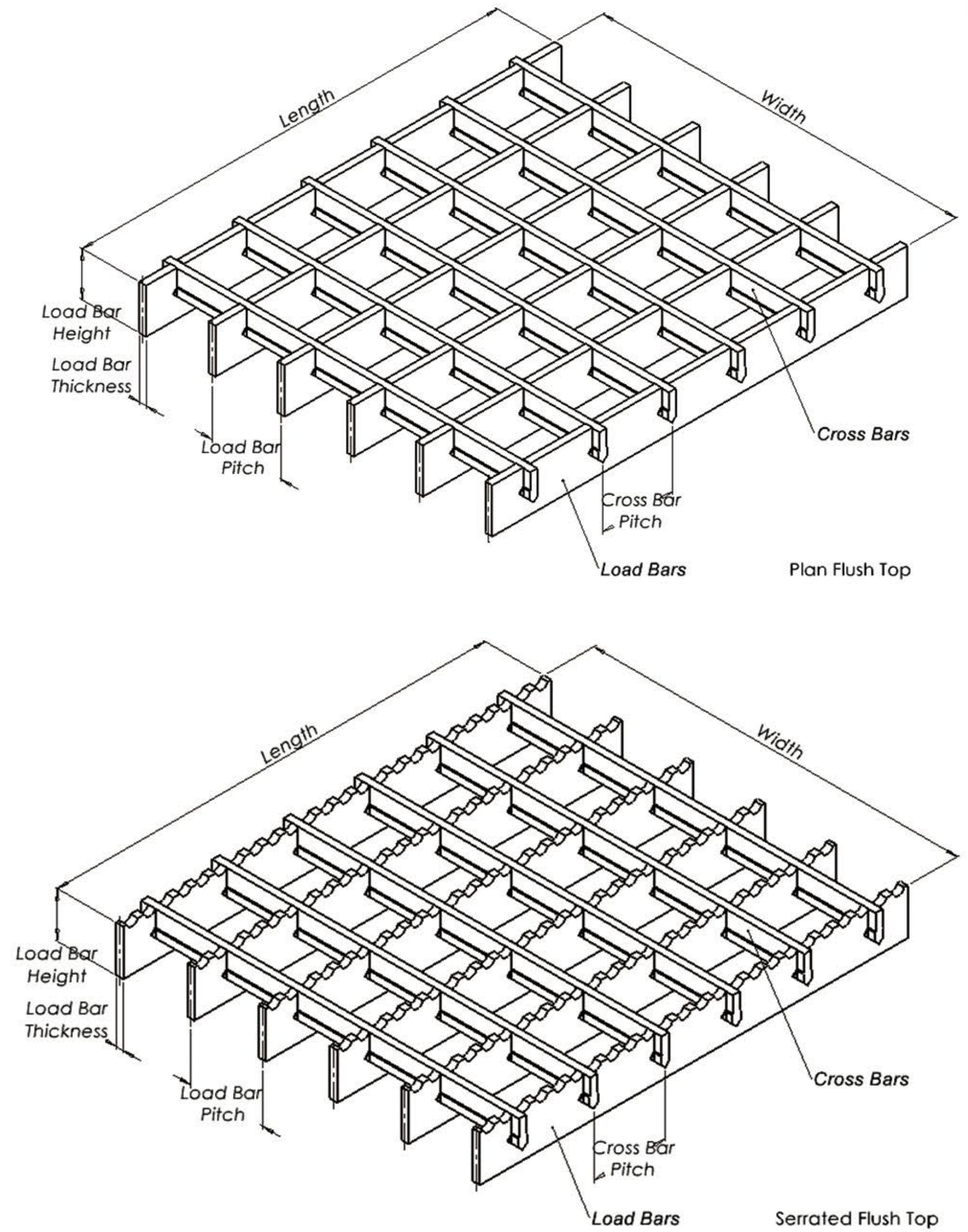
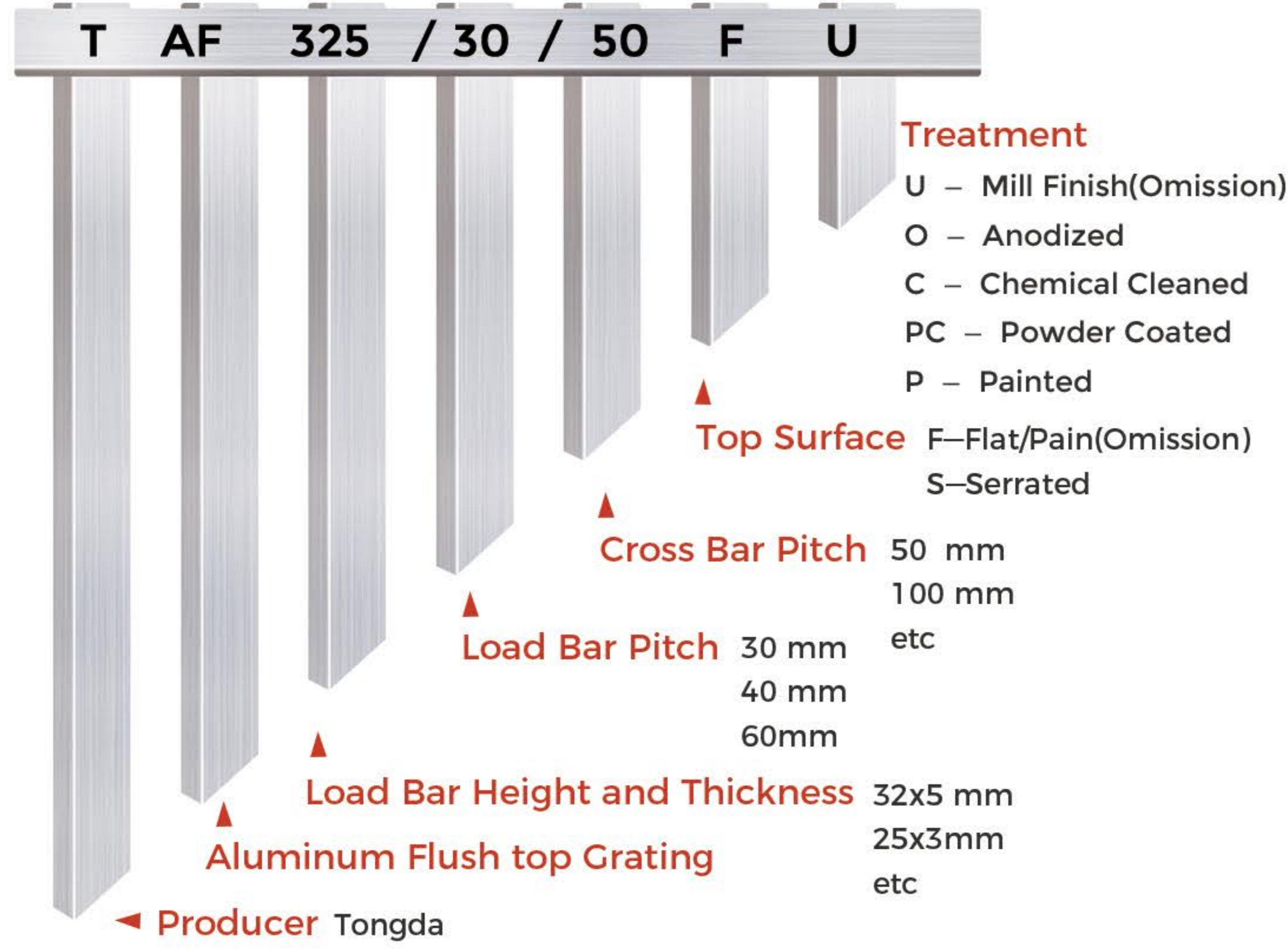
Panel Nominal Width Chart(mm) Dimensions Are Out-to-Out of Load Bars

No. of Bars	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Panel Nominal Width	50	80	110	140	170	200	230	260	290	320	350	380	410	440	470	500	530
No. of Bars	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Panel Nominal Width	560	590	620	650	680	710	740	770	800	830	860	890	920	950	980	1010	1040
No. of Bars	36	37	38	39	40	41											
Panel Nominal Width	1070	1100	1130	1160	1190	1220											

Panel nominal widths indicated are for gratings with 20mm top width T-bars. For T-bars with a top width of 25 and 27 mm, Add 5mm and 7 mm.

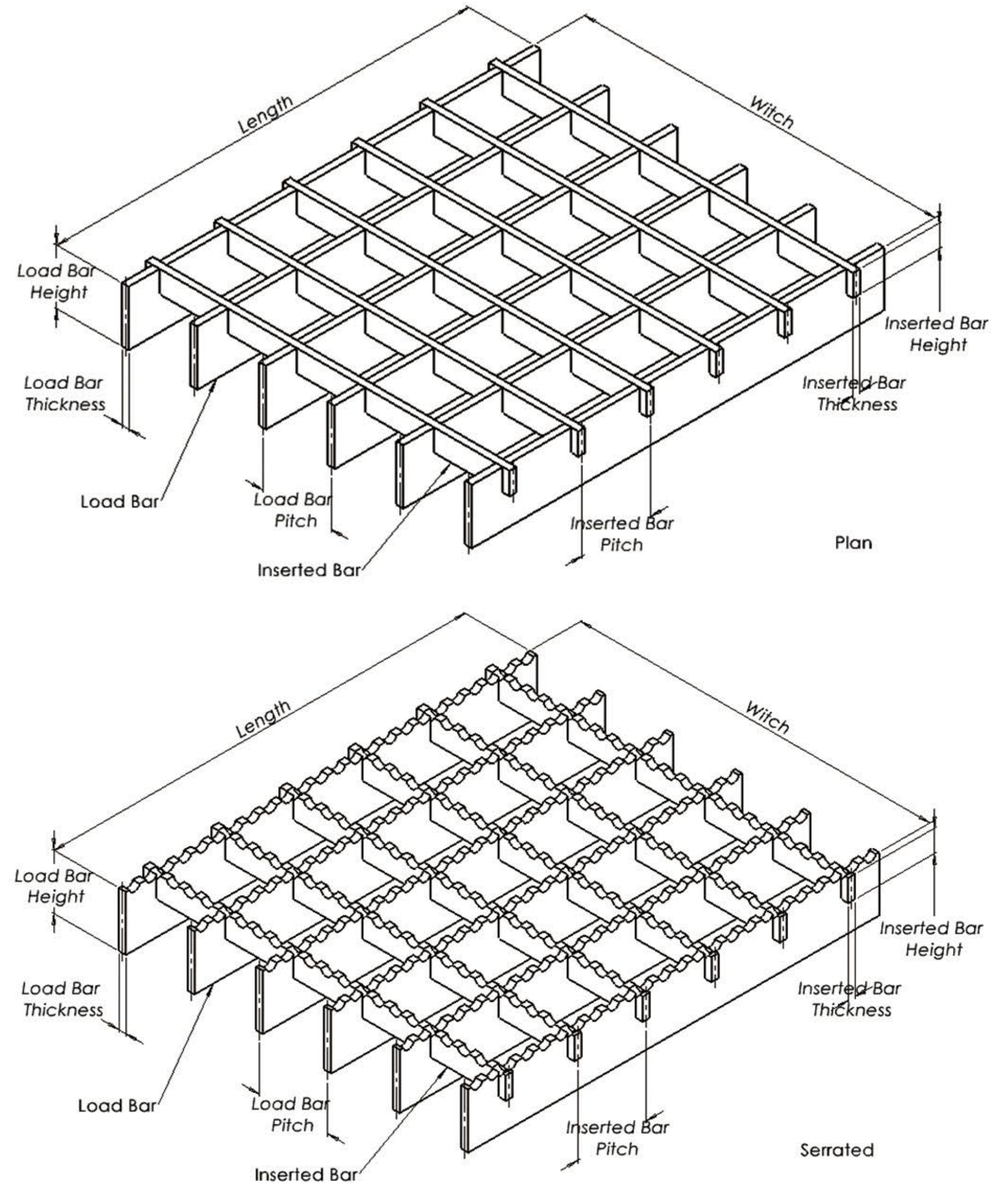
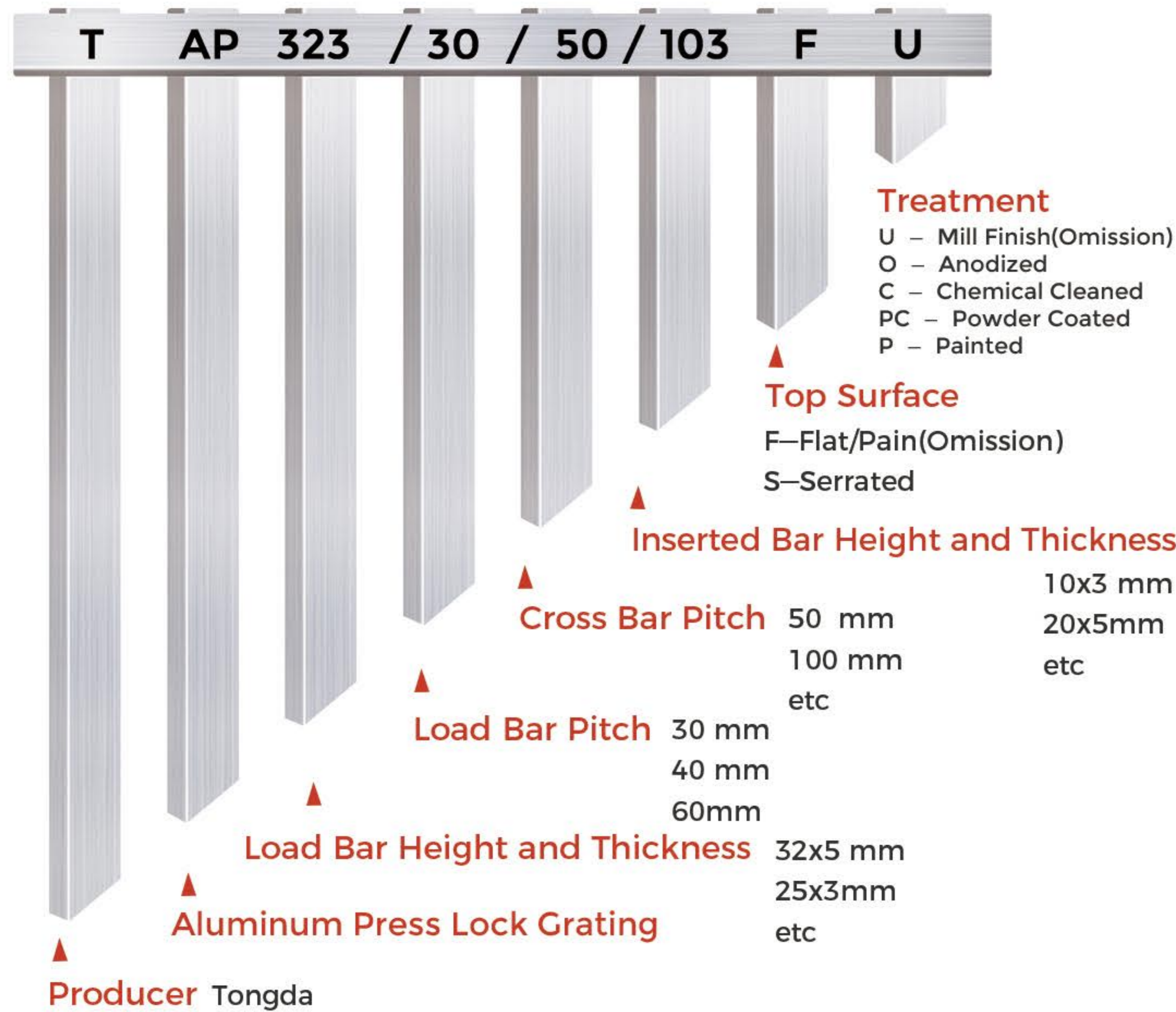
Aluminum Flush Top Grating

This type of aluminum grating uses dovetail aluminum strips (Cross Bars) instead of cross rods. The cross bars and the top surface of the load bars are in the same plane. The appearance is beautiful and can replace aluminum gratings of the same specification.

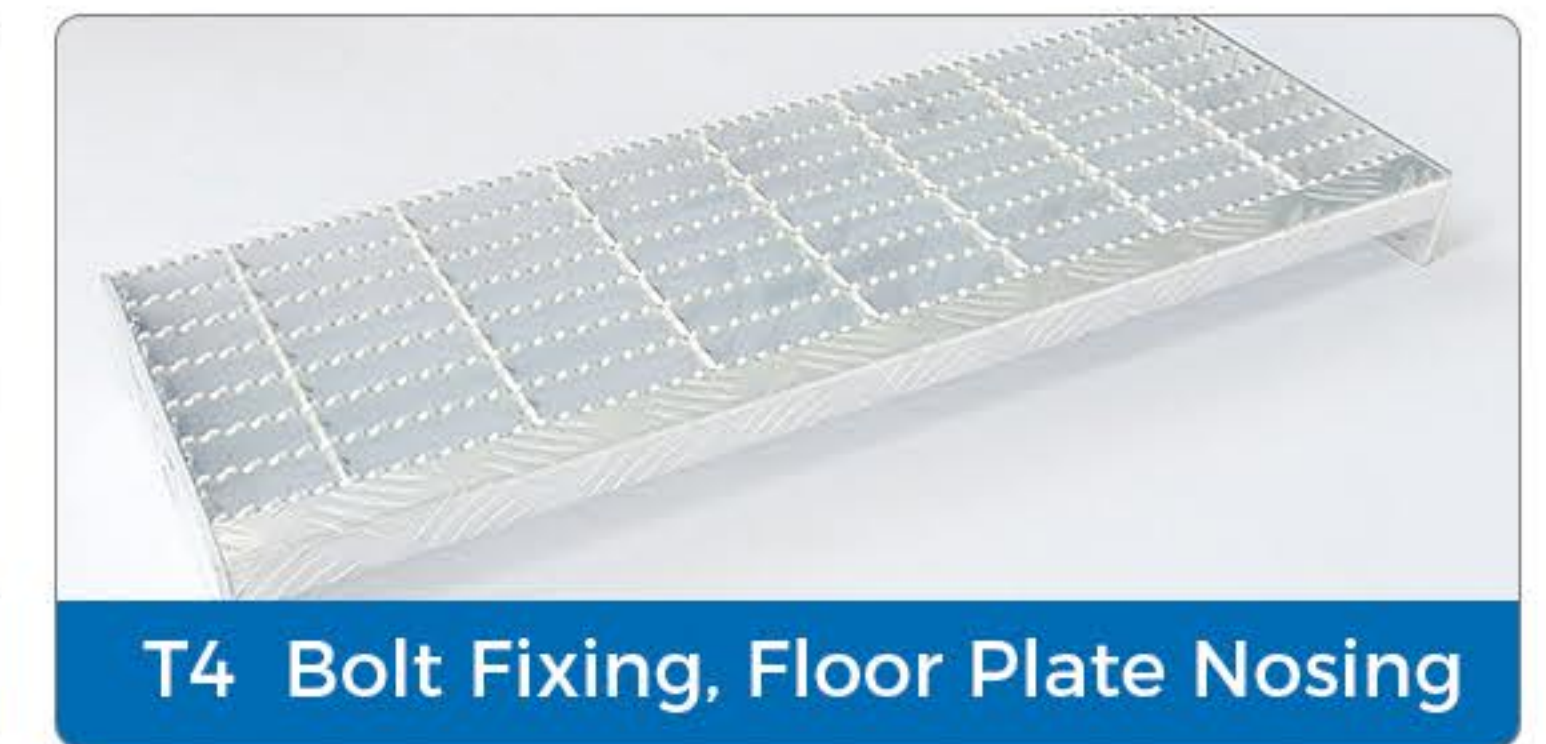
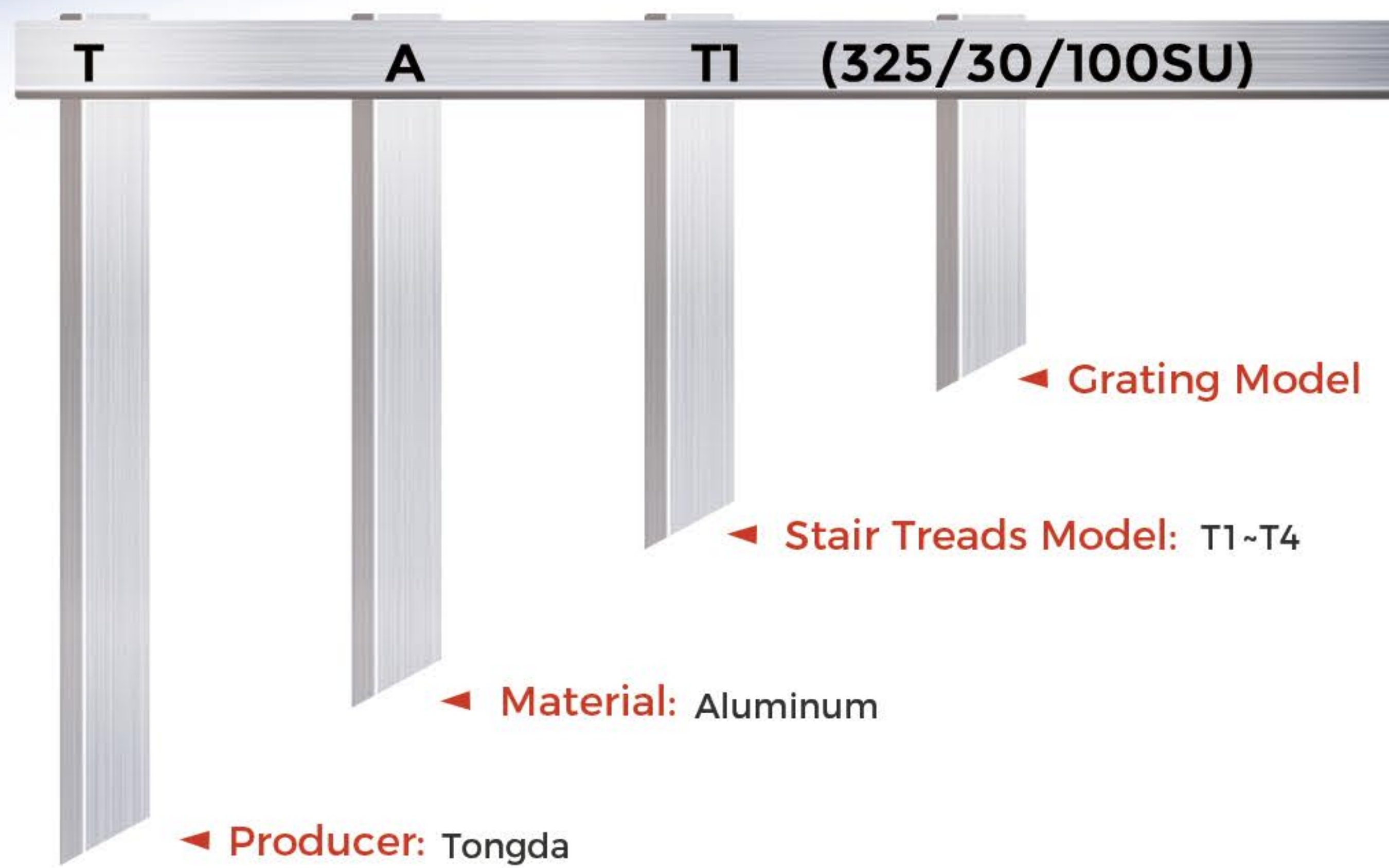


Aluminum Press Lock Grating

This kind of aluminum grating cross rod also uses aluminum strips (inserted bars), which is put into the pre slotted load bar, and is pressed into the load bars through pressure to connect it into a panel.



Aluminum Stair Treads

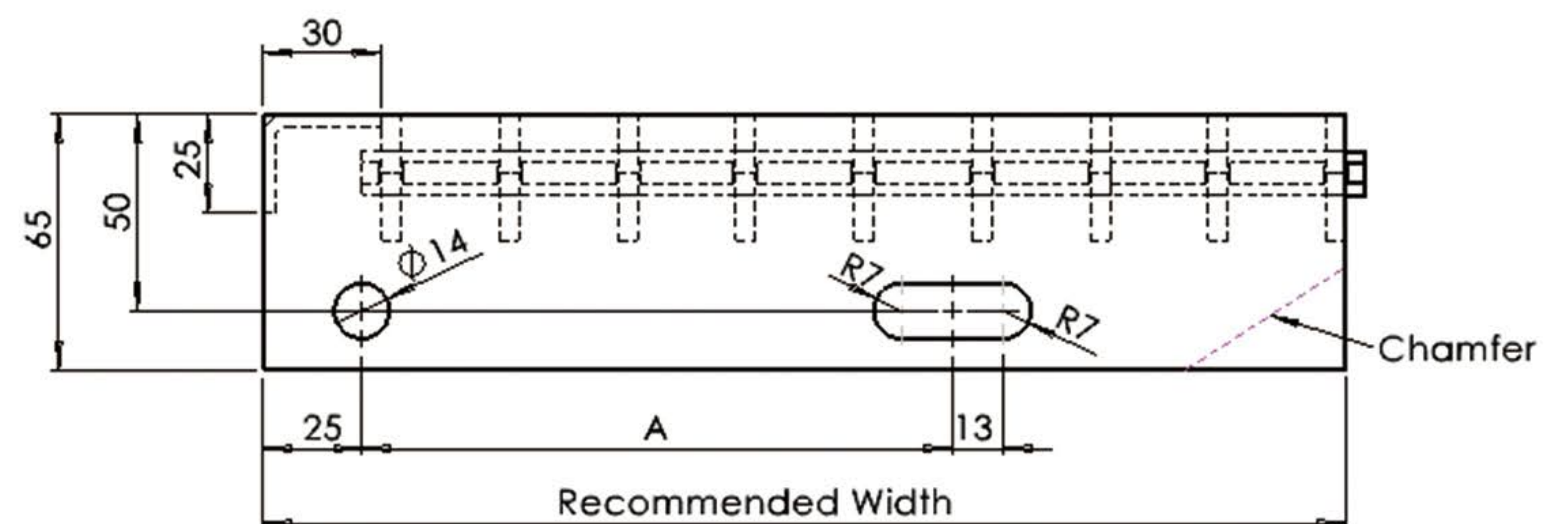


Recommended maximum length of aluminum tread			
Load bar size	25x5	32x5	40x5
30 series	550	900	1275
40 series		675	1050
60 series		450	700

Recommended width and mounting hole location (based on 5mm thick load bar)							
30 series T1~T4	125	155	185	215	245	275	305
40 series T1~T2	125	165		205	245	285	325
40 series T3~T4	115	155		195	235	275	315
60 series T1~T2			185		245		305
60 series T3~T4		155				275	
Center distance of mounting hole A	45	75	75	100	100	150	150

End Plates

The standard tread end plates for the different width stair treads are shown right. Tread end plates are manufactured from 65 x 5 flat bar and chamfered only when required by the customer. For load bars > 40mm depth, special end plates are required.

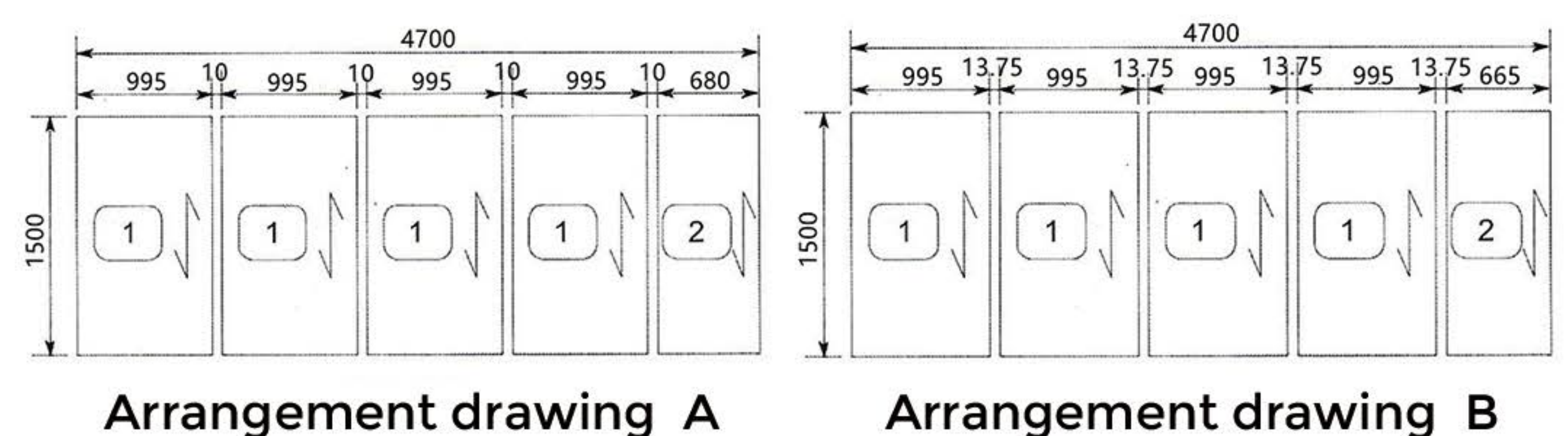


Ordering Guide

Aluminum grating

- 1 - Specify the material, load bar size, top surface and treatment method of aluminum grating.
- 2 - Refer to the load table to select the model of aluminum grating.
- 3 - Indicate whether to wrap the edge and the specific requirements at the gap.
- 4 - Provide the size and quantity of aluminum grating, and indicate the direction of aluminum grating (i.e. span direction, followed by "LB" for difference).
- 5 - In places where aluminum grating is used in a large area, please provide the location drawing of support beam and its relevant drawings.
- 6 - Reasonable arrangement of aluminum grating.
For example, TA325/30/100 aluminum grating is laid on 4700x1500mm platform, and there are beams at both ends of 1500mm to support the aluminum grating. A certain installation clearance (generally 10mm) shall be reserved between the length and width of each panel. If the platform has a frame, a certain installation gap (generally 10mm) shall be reserved between the frame and the panel. The width of

each panel is designed according to the nominal width (Part 1), and only the width of the last adjusting panel (Part 2) does not comply with the nominal width (arrangement drawing A); If it is allowed to adjust the installation clearance of each panel (arrangement drawing B), so that the width of the adjustment panel also meets the nominal width, this is the most ideal situation, that is, all panels meet the nominal width.

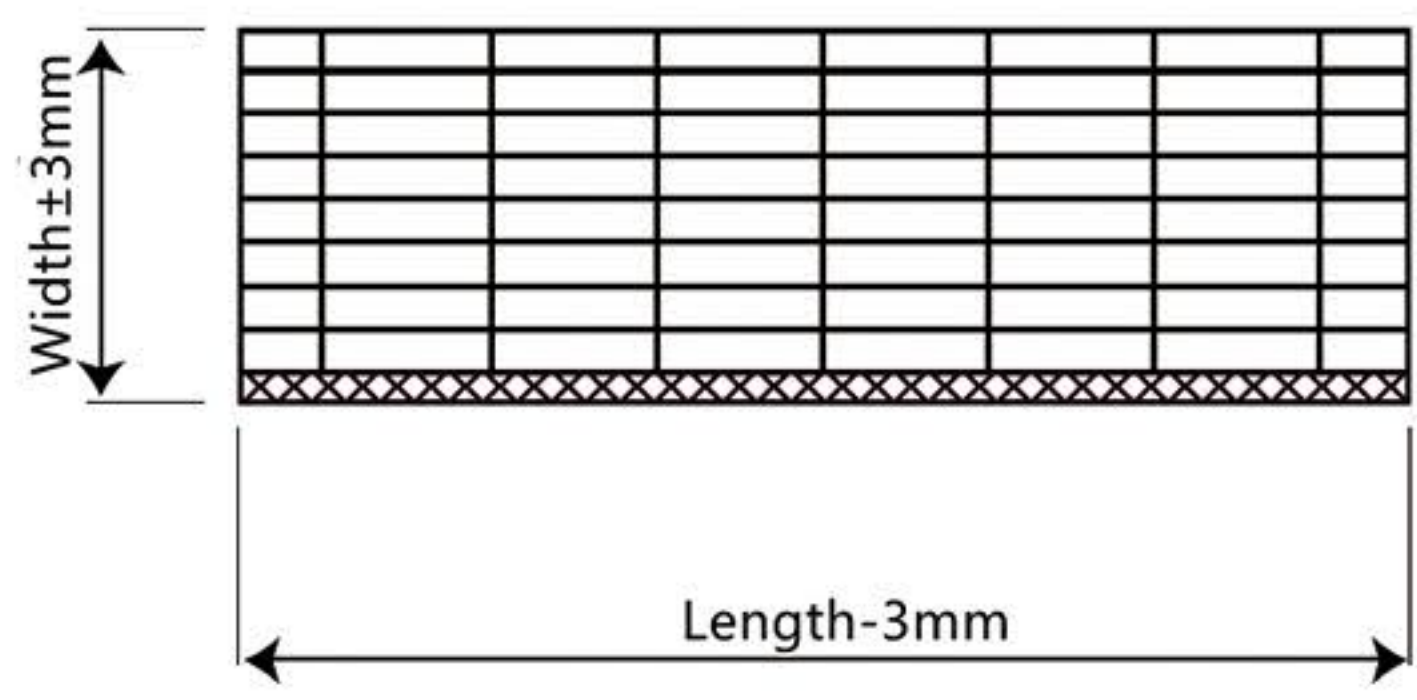


Stair treads

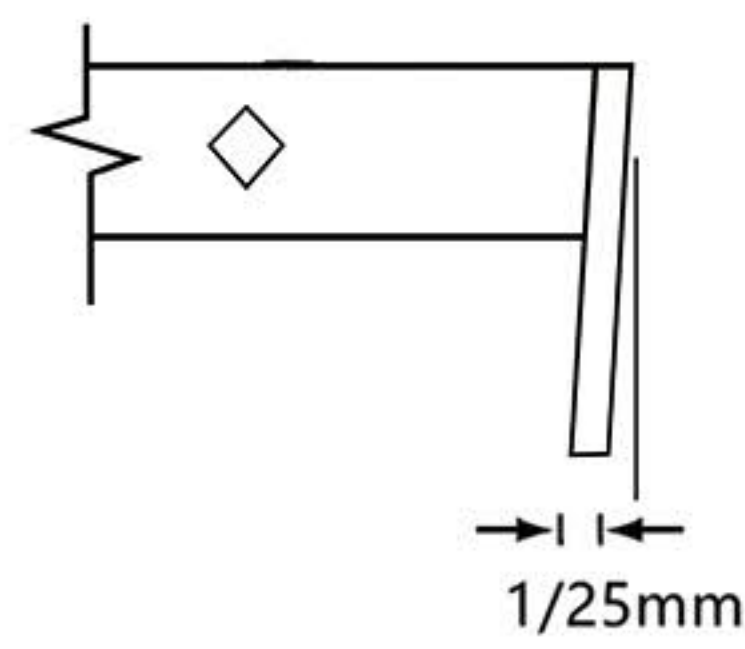
1. Specify the load bar size, top surface shape and treatment method of stair treads.
2. Select the stair treads type and aluminum grating model according to page XX.
3. Provide the size and quantity of stair treads.
4. Provide special customized drawings.

Manufacture Tolerance

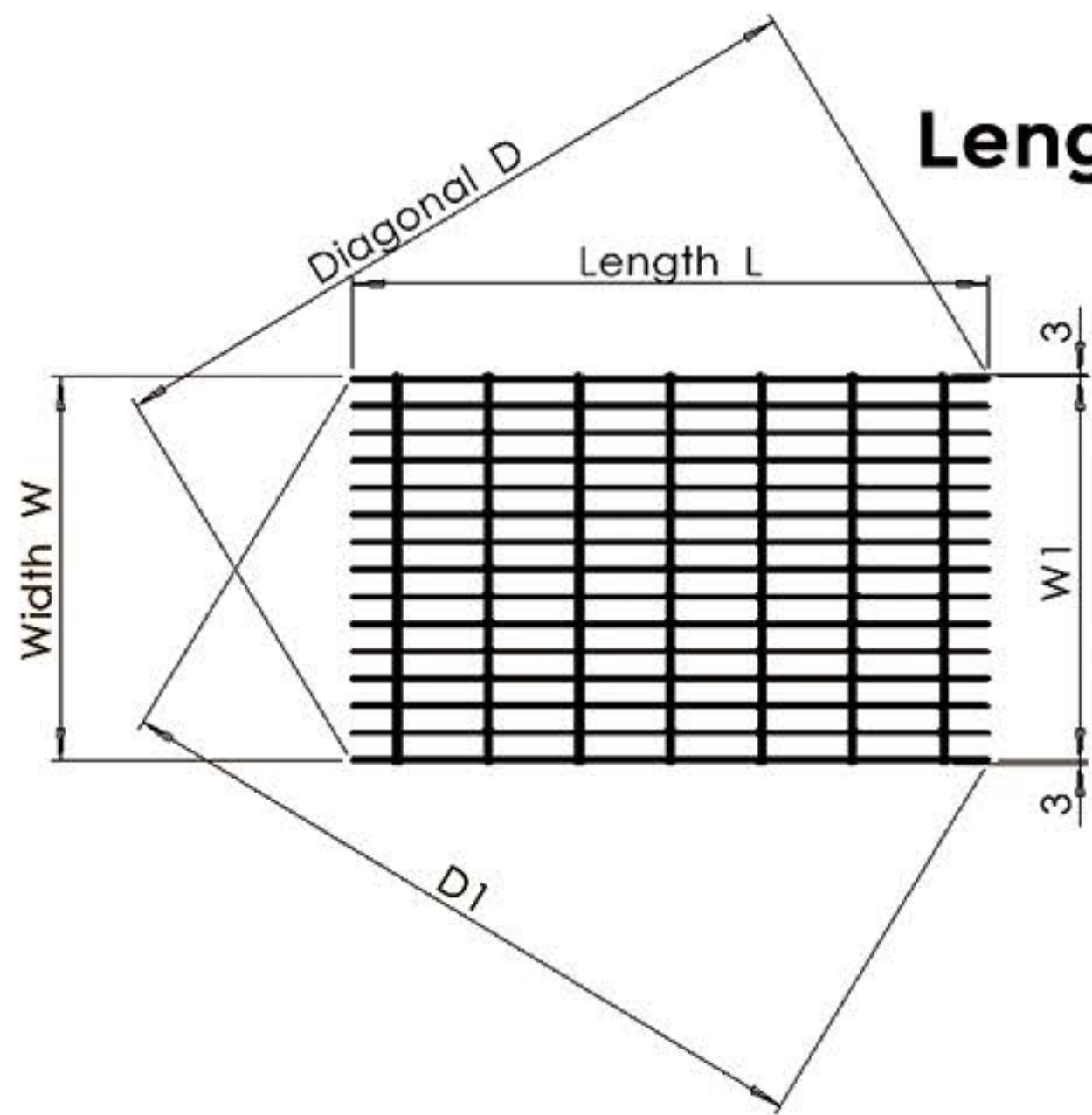
Stair Treads Tolerance



End plate lean



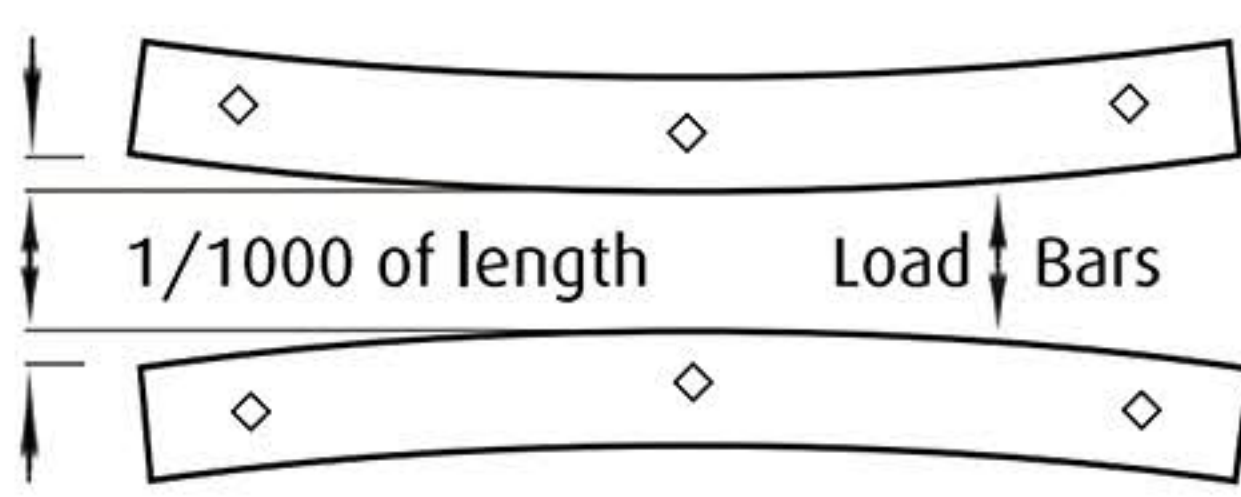
Aluminum Grating Tolerance



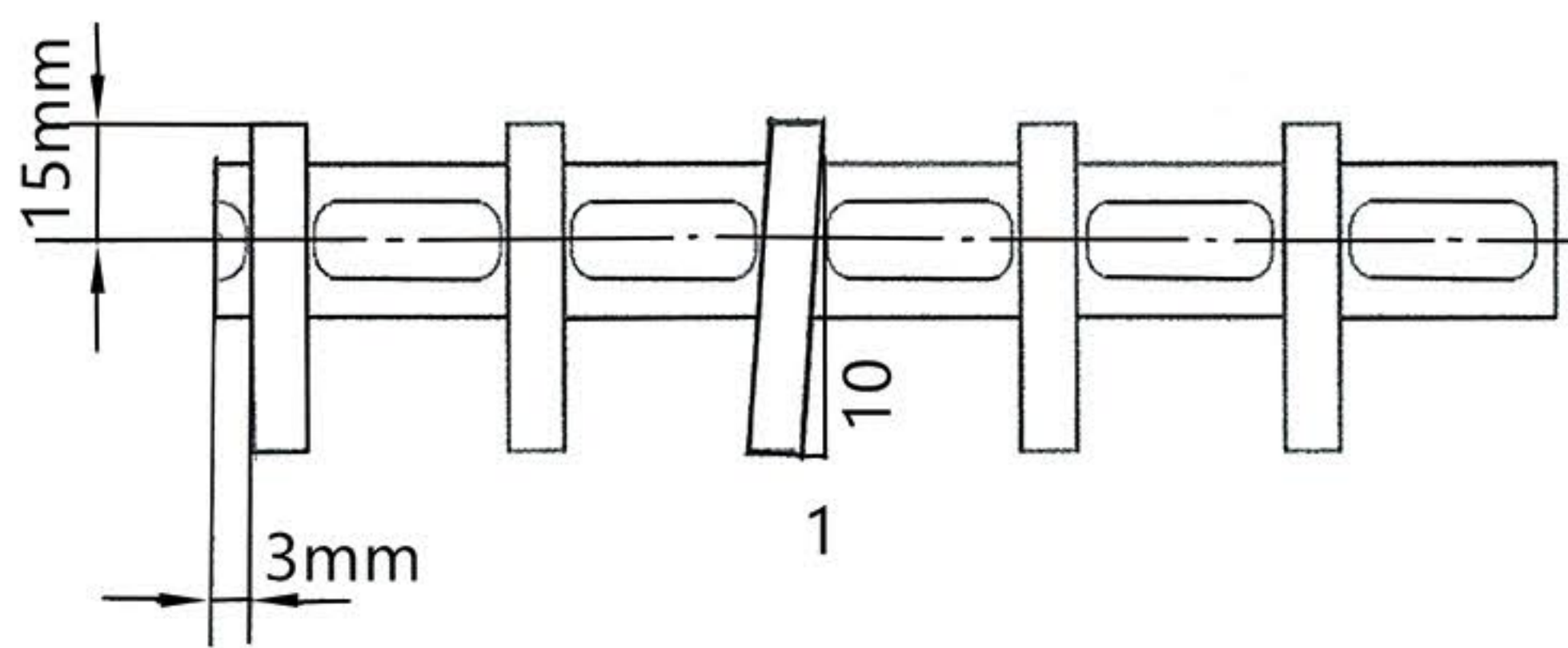
Length, width and diagonal tolerance

Panel length L (mm)	L (mm)	W1 (mm)	D1 (mm)
$L \leq 3000$	± 3	$W \pm 3$	$D \pm 3.5$
$3000 < L \leq 6000$	$\pm L/1000$	$W \pm 3$	$D \pm L/500$

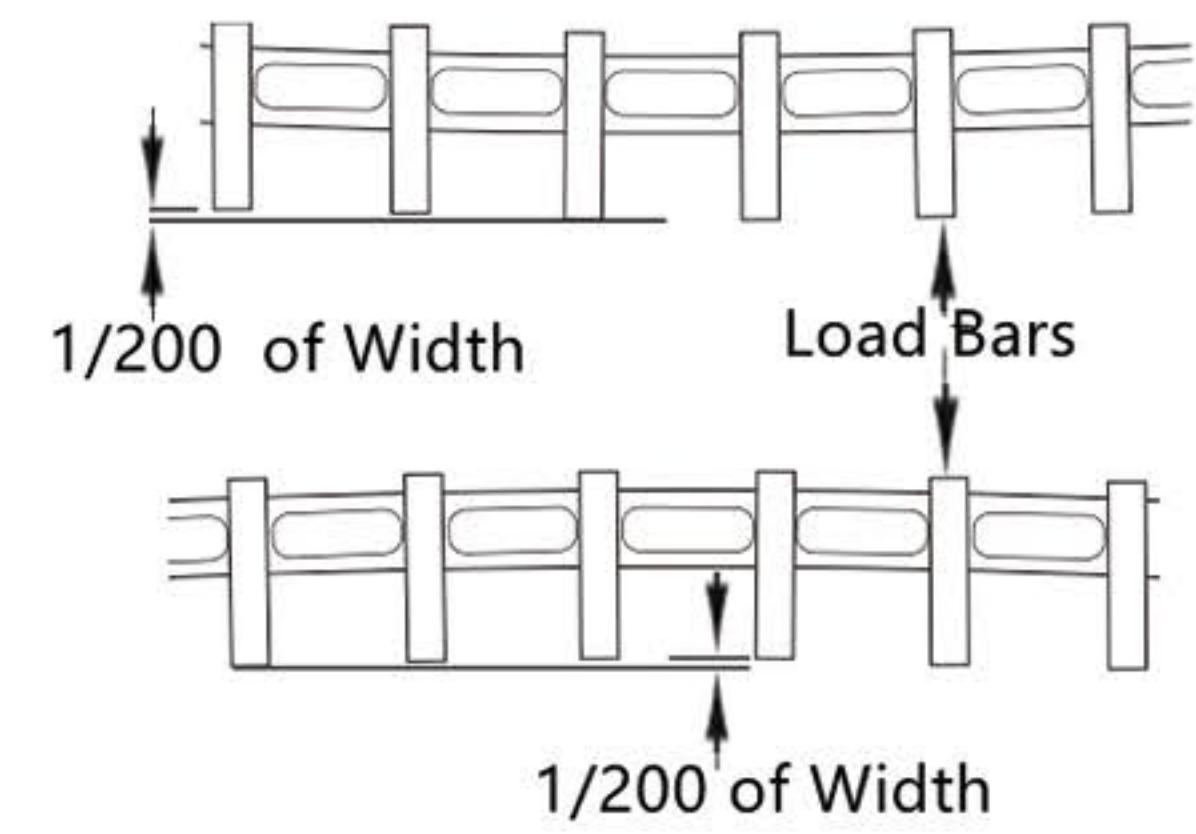
Longitudinal Bow



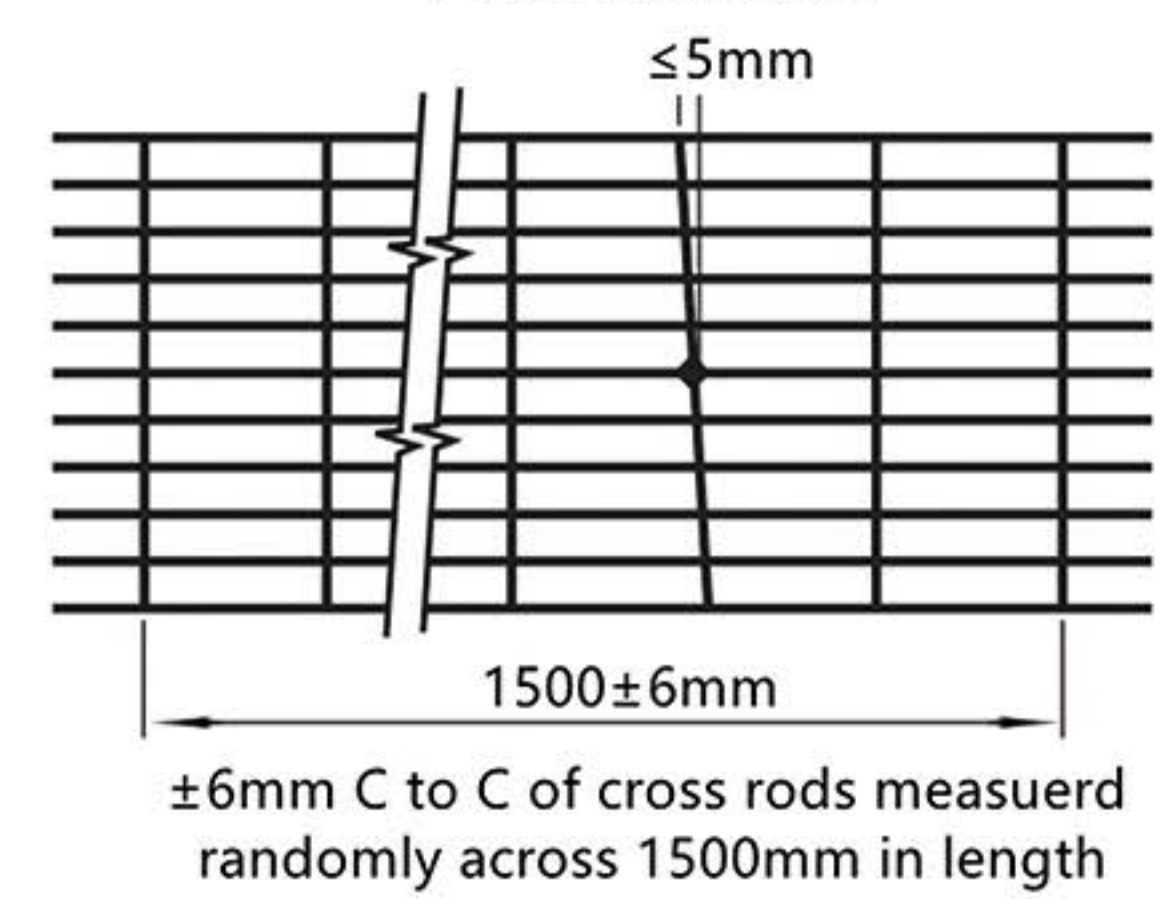
Cross Rod Location And Load Bar Lean



Transverse bow



Cross Rod Pitch and Vertical Tolerance



Expanded Aluminum Grating

T AE / 201 / 600 U

Treatment
 U – Mill Finish(Omission)
 O – Anodized

Width 600mm

Models 201, 202, 203

Expanded Aluminum Grating

Producer Tongda

The expanded aluminum grating adopts an aluminum alloy profile with a certain cross-section, punches holes in a certain arrangement, and then stretches it to the required width through the equipment. The expanded aluminum grating is corrosion resistant, lighter in weight, and the surface can be hobbled and non-slip. It is widely used in maintenance channels, platforms, steps, etc.



The standard length of each board is 5800mm and the width is 600mm. You can also customize the length or cut it to the required size according to customer requirements.

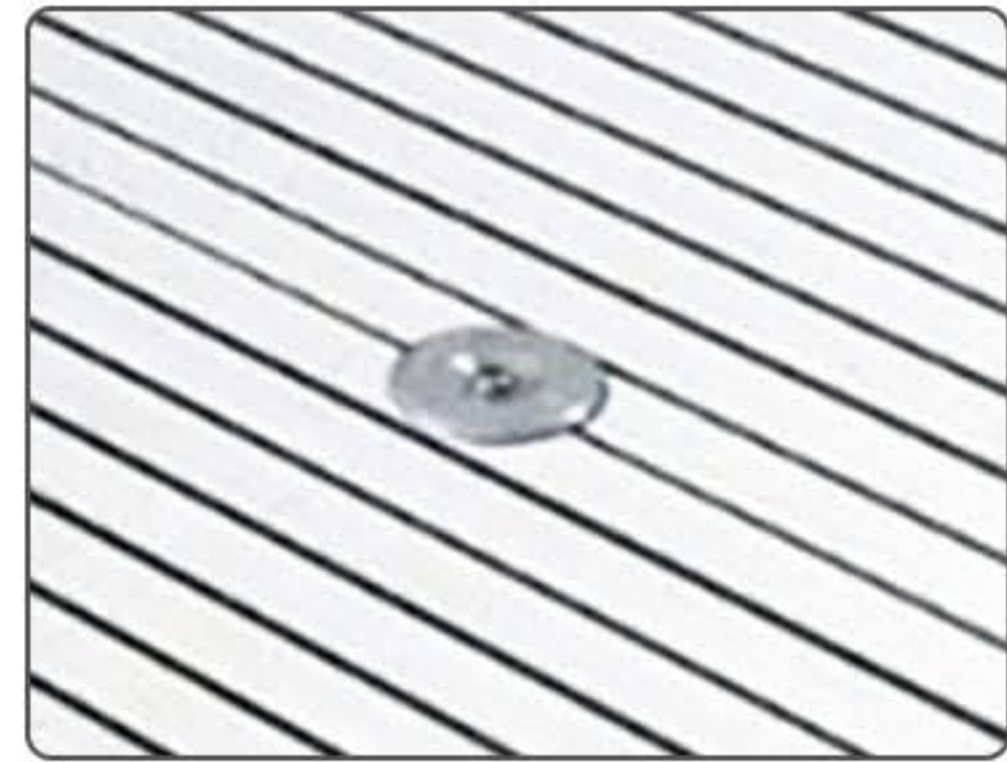
Model	Hole size	Section size(mm)	Standard length(mm)	Standard width(mm)	Weight (kg/panel)
201			5800	600	25
202			5800	600	31
203			5800	600	43

Installation of Aluminum Grating

Fixing method

The aluminum grating panel is generally fixed with the support by bolts or clips. When the support material is aluminum alloy, it can also be fixed by welding.

1 - Pre weld the mounting block at the bottom of the aluminum grating, and fix it with the support beam with bolts or self tapping screws during installation;



2 - For T-bar aluminum grating and dense aluminum grating, special washers can be used to fix with the support beam with self tapping screws;

3 - The special stainless-steel clip is used to fix it with the support beam.

Fixing clips

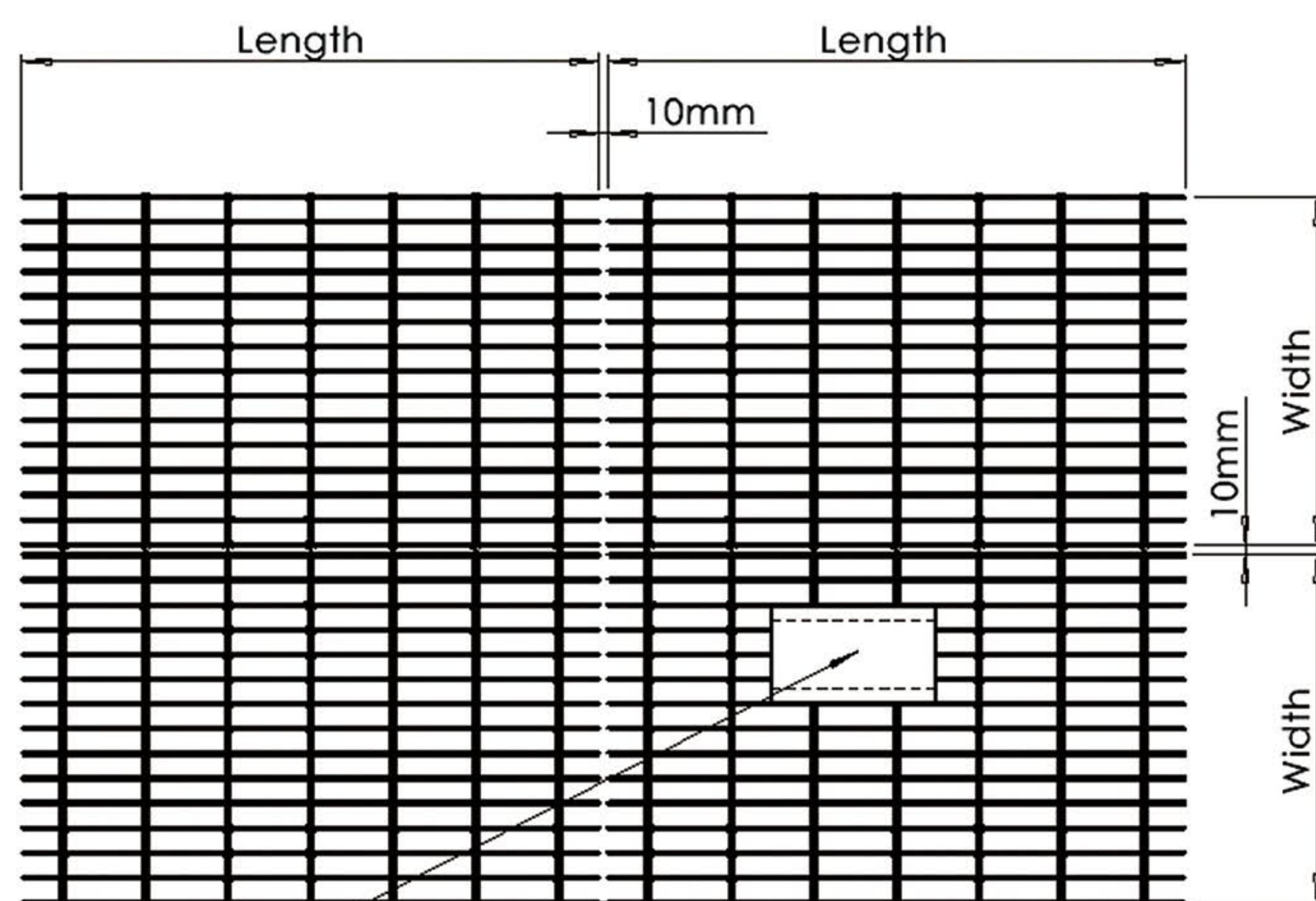
A set of fixing clips is composed of upper clip, lower clip and bolt nut, all of which are made of 304 stainless-steel, Bolts are generally M8.

One set of fixing clips is available in three types: A, B and C

Installation clearance

When laying aluminum grating, the gap between each aluminum grating and between aluminum grating and boundary (platform edge or foundation boundary) is generally 10mm.

For circular obstacles, the reserved incision is 30 ~ 50mm larger than the diameter of the actual obstacle.



Dotted line area is specified cutout, Real line area is the actual cutout. Actual cutout will be to the nearest load bar.

Example of fixing clip type

Fixing clip type	Applied aluminum grating
A-30 B-30 C-30	Load bar pitch at 30mm
A-40 B-40 C-40	Load bar pitch at 40mm
A-60 B-60 C-60	Load bar pitch at 60mm



Type A is used for fixing a single aluminum grating;



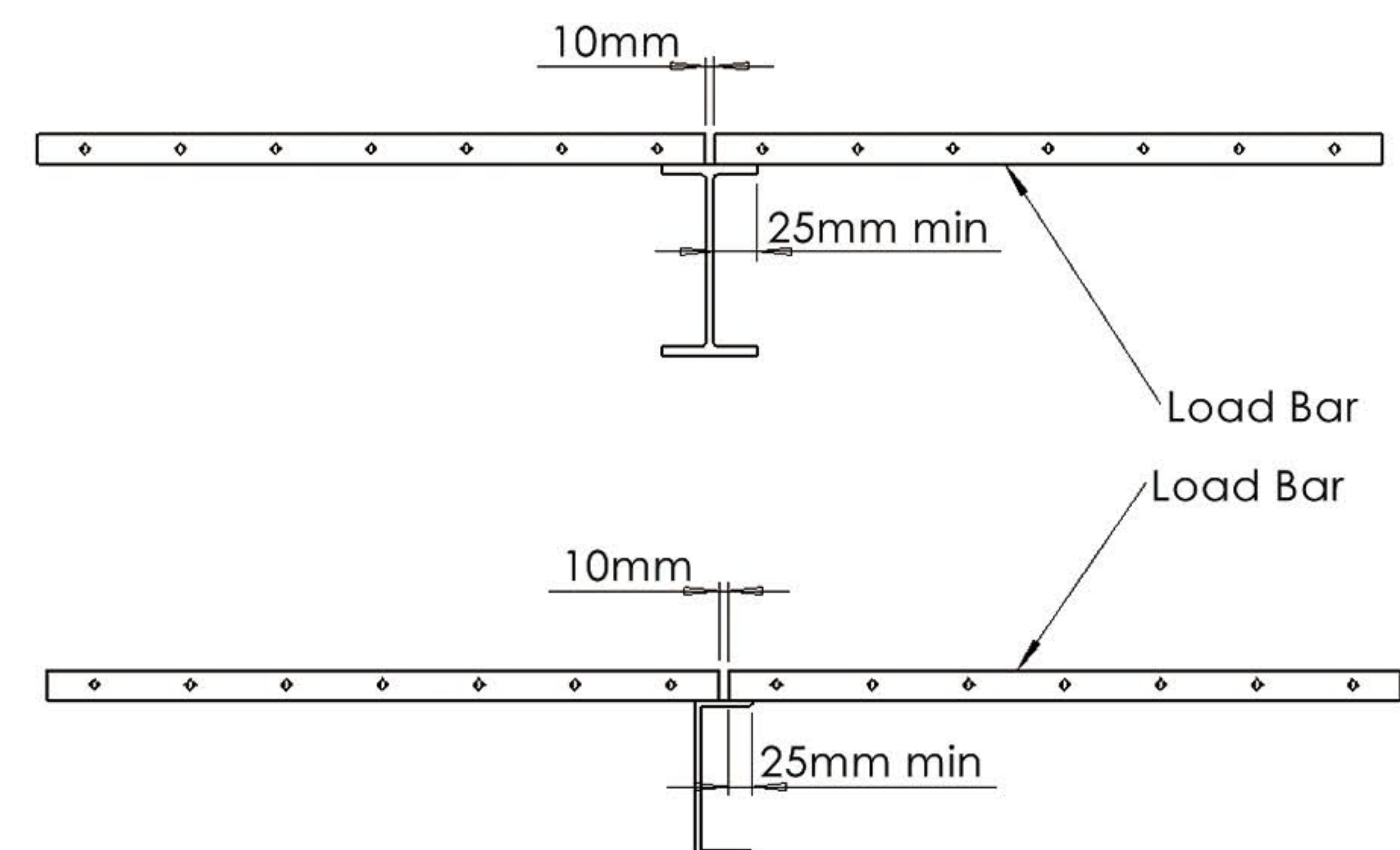
Type B is used to fasten two adjacent aluminum gratings at the same time;



Type C has only upper clip, and the bolt is fixed with the support beam.

Minimum support length

The support length of aluminum grating load bar on the support beam shall not be less than 25mm, and the recommended support length is equal to the height of aluminum grating load bar.



Cantilever length of aluminum grating

The cantilever length of aluminum grating in the direction of load bar shall not be greater than 250mm. Each load bars must be supported by a beam, and there shall be no cantilever in the width direction (along the cross rod direction) .

Aluminum Sunscreen Louvers

Aluminum sun sunscreen louvers can avoid direct sunlight and reduce plant operation cost. Using the same process as the aluminum grating, the load bar is multiple L-shaped aluminum bars with a certain angle. By changing the angle and different arrangement distance of L-shaped aluminum bars, various shading effects and ventilation can be obtained.

T AS 32354 / 60 / 100 / 20° PC

Treatment
 U – Mill Finish(Omission)
 O – Anodized
 PC – Powder Coated
 P – Painted

Angle of L-Bar 45°(Omission)
 20°
 etc

Cross Bar Pitch 50 mm
 100 mm

L-Bar Pitch 60mm
 90mm
 etc

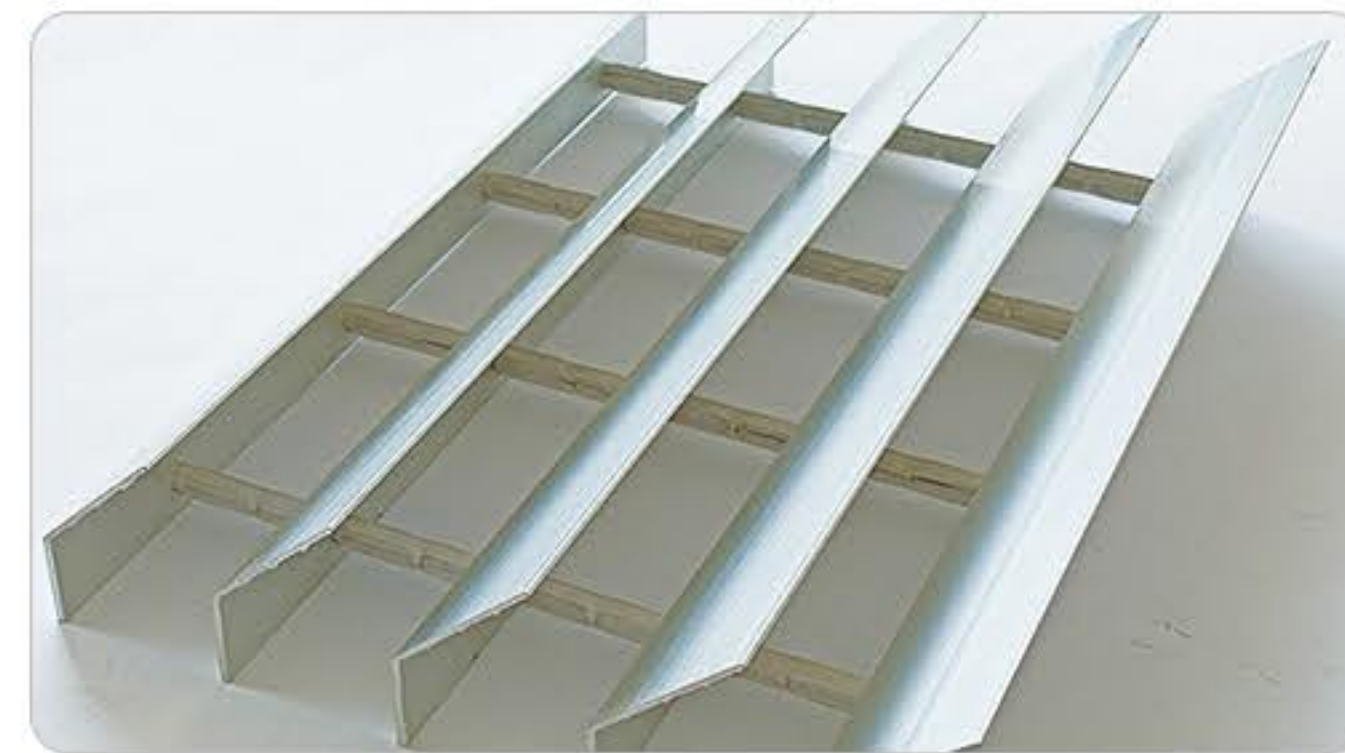
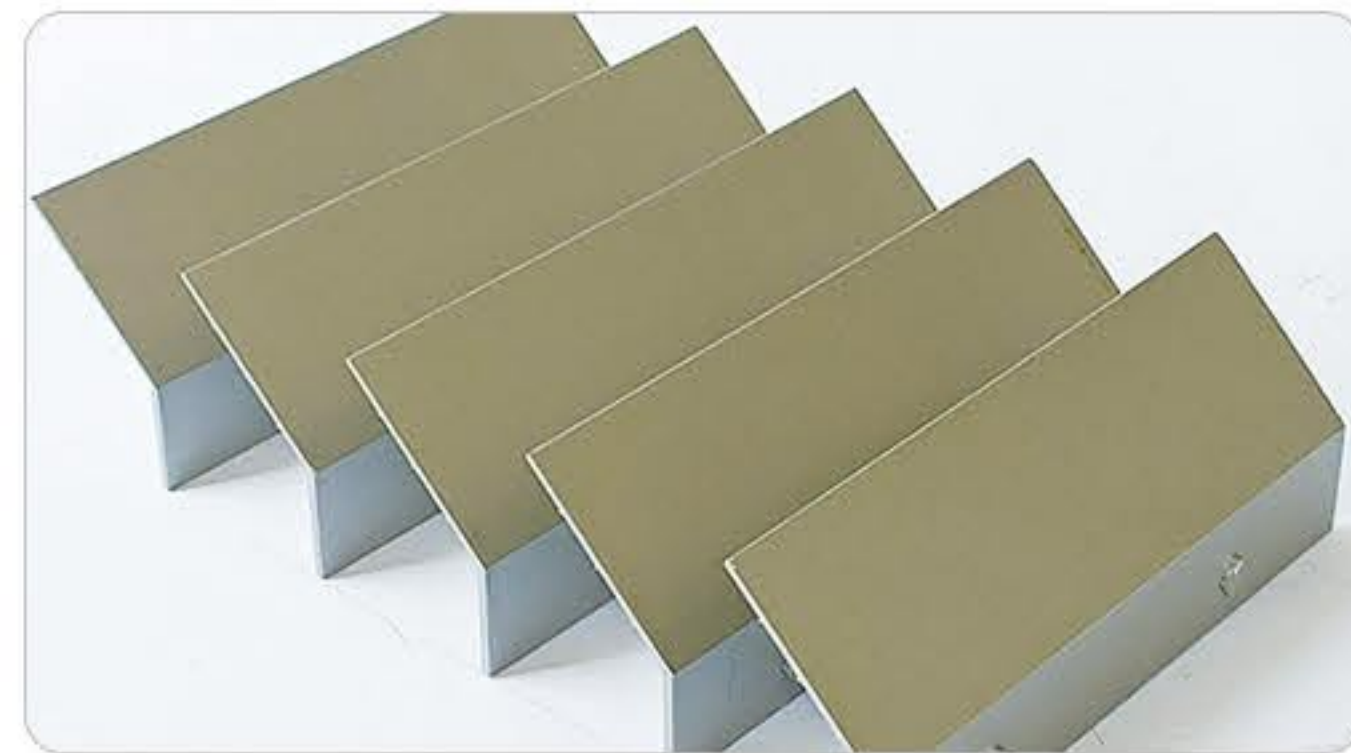
L-Bar Size 32x3x54mm
 40x3x60mm
 etc

Aluminium Sunscreen

Producer Tongda

A Model
 54 TAS32354/60/100/20°
 60 TAS32360/60/100/20°
 80 TAS32380/60/100/20°

A Model
 54 TAS32354/60/100
 60 TAS32360/60/100
 80 TAS32360/80/100



Trafficable Aluminum Sunscreen Louvers

The Trafficable Aluminum Sunscreen Louvers have all the characteristics of aluminum Sunscreen louvers, and can also bear a certain load. Personnel can pass on it to clean and maintain the building.

T ASC 32360 / 30 / 100 / 20° PC

Treatment
 U – Mill Finish(Omission)
 O – Anodized
 PC – Powder Coated
 P – Painted

Angle of L-Bar 45°(Omission)
 20°
 etc

Cross Bar Pitch 50 mm
 100 mm

Bar Pitch 30mm
 40mm

L-Bar Size 32x3x60mm
 40x3x54mm
 etc

Trafficable Aluminum Sunscreen

Producer Tongda

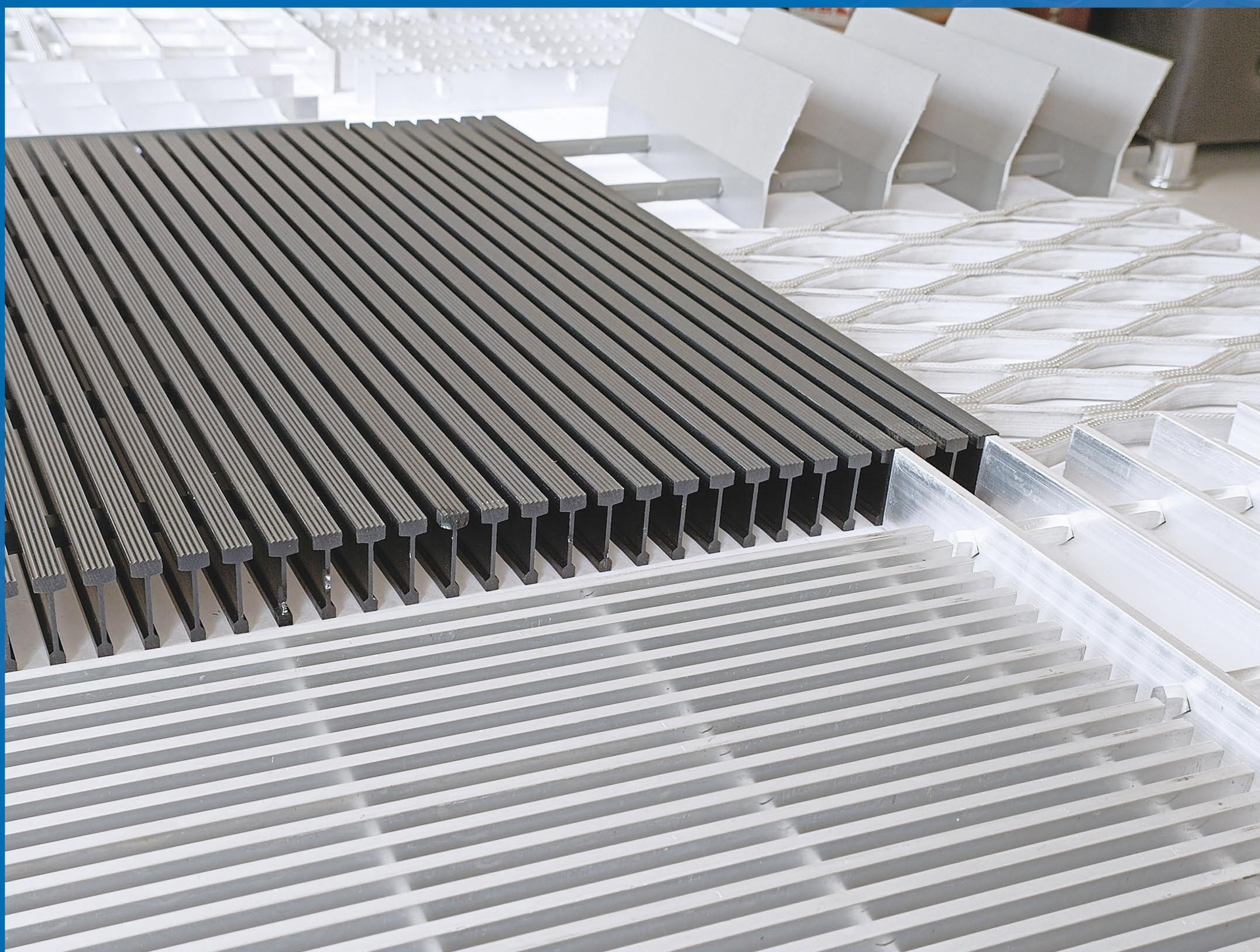
A Model
 32 TASC323/30/100/20°
 40 TASC403/30/100/20°

A Model
 32 TASC32360/30/100
 40 TASC40360/30/100



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