

WIDE RANGE OF PRODUCTS



WELDED GRATINGS AND STAIR TREADS

STACO 

GRATING TECHNOLOGY

PERFECT IN FORM

STACO. STACO's manufacturing plants provide a complete range of high-quality gratings and stair treads. In steel, aluminium and stainless steel. STACO provides a grating solution for every application, from flooring and railings to cladding material. Galvanizing and powder coating are used to lengthen the products' economic life considerably.

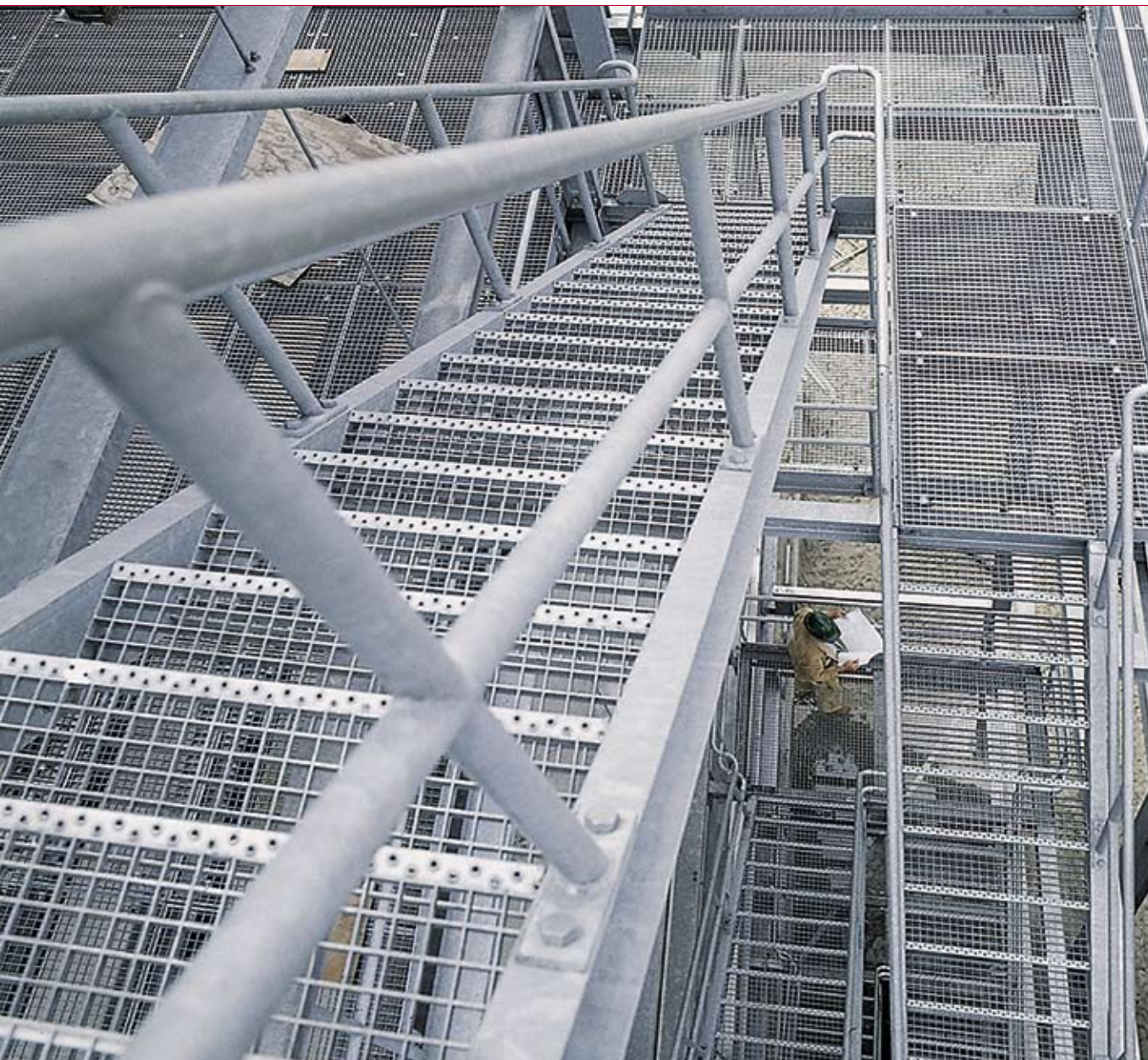
STACO is synonymous with an attractive price/quality ratio, innovative technology and outstanding service. Its vast range of products is ubiquitous in the non-residential sector, at garages and coachbuilders, in offshore companies, in shipbuilding, in civil engineering and in many other applications. Our gratings, steps and associated products also provide a genuine contribution to the visible architecture of countless buildings.

Nearly all our standard products can be supplied directly from stock. Although STACO's sites all use high-tech machinery, we also consider manual skill to be essential when it comes to manufacturing special custom products and constructional gratings under tight deadlines. Our experts are eager to help you find a suitable solution, giving advice on subjects like material strength, complex grating and flooring layouts and the creation of technical designs. In a nutshell, STACO is a dependable and a client-focused partner.



THE POWER OF THE GROUP





A POWERFUL NETWORK



Part of  www.rotogroep.nl

STACO is a ROTO company, a powerful network of companies specializing in expanded metal, steel and steel processing, grating technology and/or surface treatment. ROTO also represents a personal approach at STACO, this means that the client's requirements are key.

STACO 

www.staco.eu

STACO has sites in: Belgium, France, Germany, The Netherlands, Poland, The United Kingdom
STACO POLSKA Spółka z o. o.: PL-32-005 Niepołomice, ul. Fabryczna 8, T (+48) 12 281 35 05, info@staco.pl

Welded Gratings and Stair Treads

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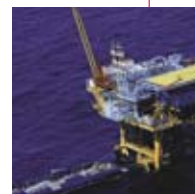


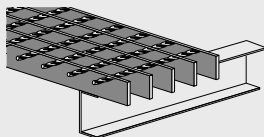
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STACO provides a solution for every application; many of these solutions are included in this brochure. Our website not only provides a great deal of additional information, but also includes current stock and interactive modules for strength and permeability analyses. The website also allows you to request or download our other brochures; “Pressed Gratings, Stair Treads and GRP Gratings”, “Perfo Planks and Stair Treads” and “Architectural Gratings”. For more information go to **www.staco.pl**



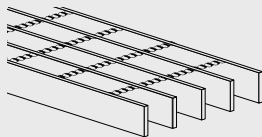
GRATINGS AND TREADS GLOSSARY

Bearing bar



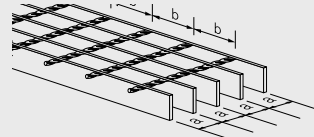
The bars that are required to take the load and should be supported at both ends. This is the first and/or underlined size.

Cross bar



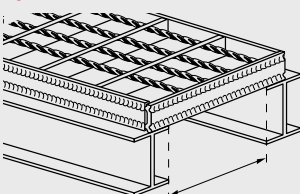
The cross bars are made of round (twisted) material. These are the bars that join the bearing bars to each other.

Mesh size



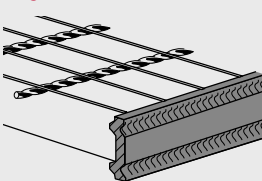
The c.t.c. mesh size is the distance between the bearing bars, followed by the distance between the cross bars.

Span



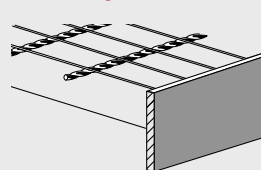
This is the clear width between the two supports. A grating can cover multiple supports.

Edges



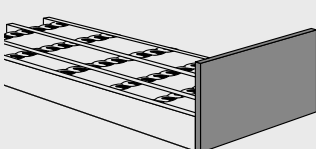
Edging is applied to the grating at the ends of the bearing bars and cross bars (i.e. right round).

Flush edge



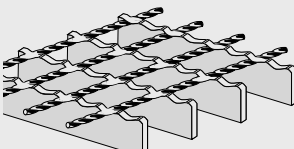
A strip welded to the grating. This strip projects below the grating.

Kicker plate



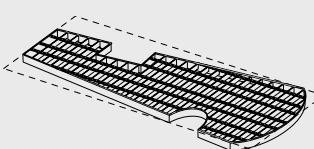
A strip welded to the grating. This strip projects above the grating.

Anti-slip



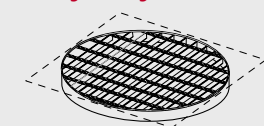
The anti-slip property is accentuated by using serrations on the bearing bars.

Recesses



The general term for all holes and cut-outs in the grating.

Gross grating surface area

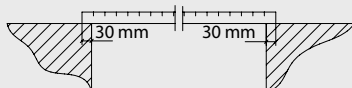


The total grating surface area before it is cut to size and any recesses are created. (see dotted line)

Net grating surface area

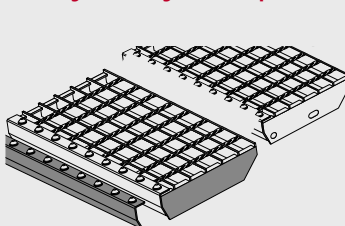
The net surface area remaining after cutting the grating to size, including recesses.

Minimum bearing bar overlap



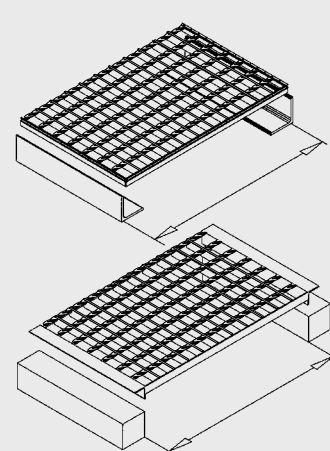
The minimum overlap of the grating = bearing bar height, but not less than 30 mm.

Toe edge nosing + Side plates



An anti-slip toe edge nosing has been fitted to the front of the steps. This creates a clear visual distinction between the separate steps, and also increases load capacity. The steps are fitted with welded side plates for mounting to the stair stringers, which are predrilled with the required mounting holes.

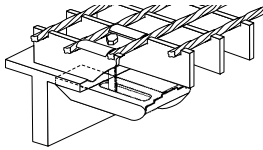
Hole size / Clear width



The net internal dimensions, between the mounting profiles, or the net recess dimensions. The grating size must be 4-8 mm smaller than the hole size.

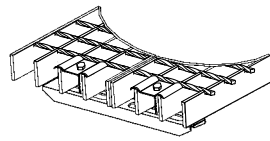
FASTENERS FOR GRATINGS AND TREADS

Fastening set



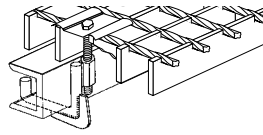
- upper clamp (saddle)
- tap bolt + nut M8
- lower bracket

Coupling set



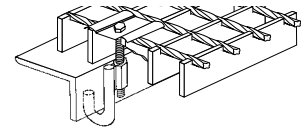
- 2 x upper clamps (saddle)
- 2 x tap bolt + nut M8
- 1 x solid lower bracket (coupling strip)

U-hook set



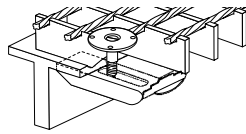
- upper clamp (saddle)
- U-hook, various sizes
- tap bolt M8

J-hook set



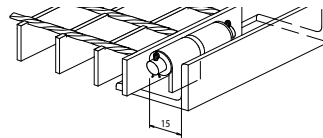
- J-hook set, upper clamp (saddle)
- J-hook, various sizes
- tap bolt M8

Fastening set with plate



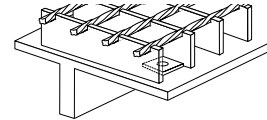
- plate
- bolt + nut M8
- lower bracket

Hinge



- 2 x bar 20 x 3
- 1 x bolt with ring
- 2 x gasket ring

Welded plate

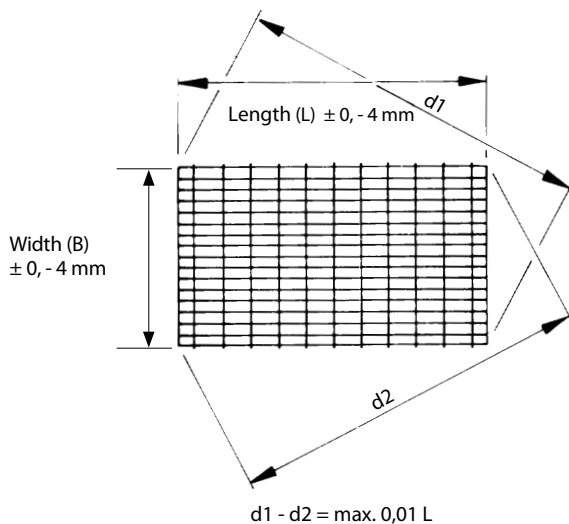


- welded material as in drawing

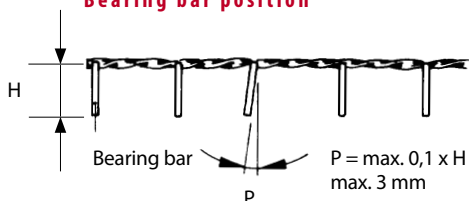
TOLERANCES — TYPE SP

Length, width and diagonals

Length of grating (L) = length of bearing bars
Width of grating (B) = length of cross round bars



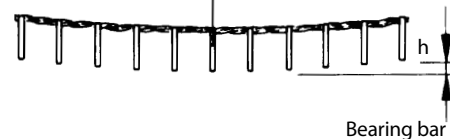
Bearing bar position



Cross bar distortion

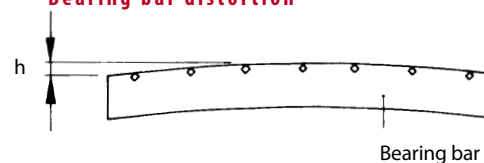


$h = \max. 3 \text{ mm, if } L < 450 \text{ mm}$
 $h = \max. 1/150 \times L, \text{ if } L > 450 \text{ mm, max. } 8 \text{ mm}$

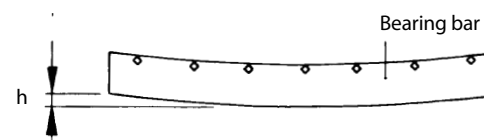


$h = \max. 3 \text{ mm, if } L < 600 \text{ mm}$
 $h = \max. 1/200 \times L, \text{ if } L > 600 \text{ mm, max. } 8 \text{ mm}$

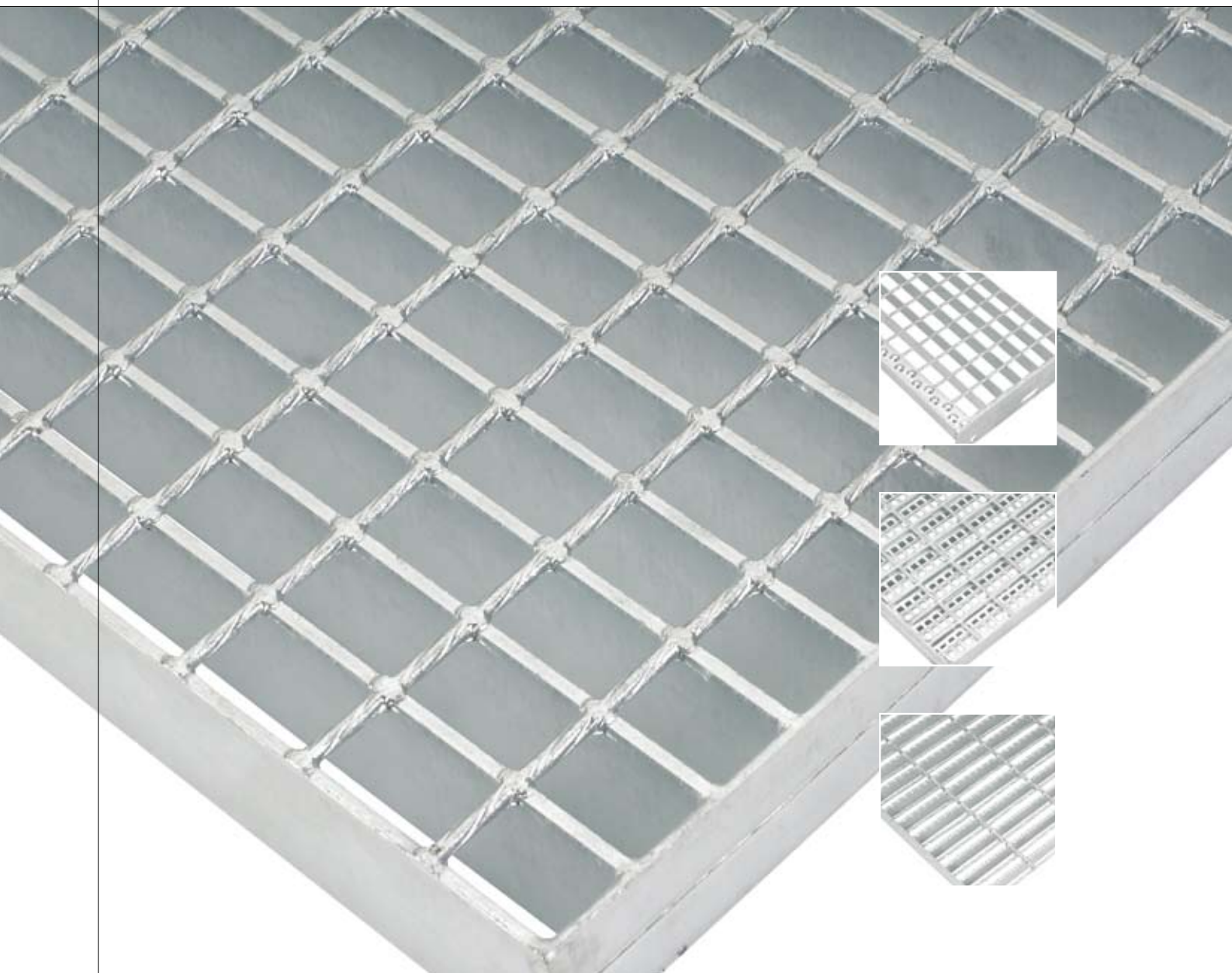
Bearing bar distortion



$h = \max. 3 \text{ mm, if } B < 450 \text{ mm}$
 $h = \max. 1/150 \times L, \text{ if } B > 450 \text{ mm, max. } 8 \text{ mm}$



$h = \max. 3 \text{ mm, if } B < 600 \text{ mm}$
 $h = \max. 1/200 \times L, \text{ if } B > 600 \text{ mm, max. } 8 \text{ mm}$



} WELDED GRATINGS TYPE SP

These grating mats, with a bearing bar length of approximately 6100 mm and a standard mat width of 1000 mm, form the basis of tailor-made precision gratings with multiple applications. They are made of strip steel with cross bars of drawn and twisted steel of diameter from 4 up to 8 mm, respectively. The cross bars are pressed into the bearing bars, with all joints being resistance welded. Depending on the mesh size, the grating has 600 to 1000 welded joints per square metre, ensuring very high stability. These grating mats can be produced to virtually any required size.

GRATINGS TYPE SP

WELDED GRATINGS – TYPE SP

Type SP — standard (smooth bearing bars, 2,3,4 & 5 mm thick)

The standard grating with multiple applications.

Type SP — anti-slip versions (serrated bearing bars, 2, 3, 4 & 5 mm thick)

Extra safe thanks to serrated bearing bars that create a greater anti-slip effect. Especially suited to situations in which rain, ice or oil may cause higher risk. This version is not possible for all types and is supplied on request.

Type SP — offshore

Especially produced for use in the offshore industry. One or two extra round bars fitted between the bearing bars that half the distance and prevent tools or objects from falling through the grating. Dimensions conform to the requirement that states that a ball of Ø 15 mm must be prevented from falling through the grating.

Choice of the following materials:

- steel quality S235JR, bearing bar thickness of 2 to 5 mm
- Stainless Steel 1.4301 (V2A)
- Stainless Steel 1.4571 (V4A)



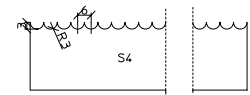
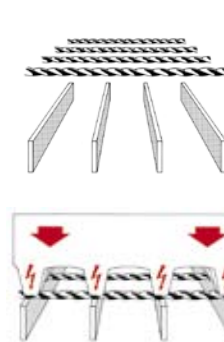
SP grating treads

Corresponding grating stair treads are available for all SP types. The grating treads are fitted with a safe toe edge nosing and mounting plates as standard for fastening between the stringers.

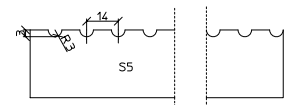
The benefits of SP gratings:

- recommended especially for industrial applications
- remains straight in the toughest conditions (for instance floor vibrations etc.)
- additional anti-slip effect created by the twisted round cross bars

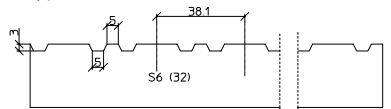
For anti-slip classes, please refer to www.staco.pl



Type S4



Type S5



Type S6: *example dimensions
for mesh 34,3 x 38,1



1) Clear width in mm (indicative, depending on material thickness)

2) Mesh size centre to centre in mm

— Approximate weight in kg per 1 m² of hot-dip galvanized SP grating with edging strips

— 'N','T' see legend at bottom, page 11 —

Type	Number of bearing bars over 1000 mm wide	Clear width ¹⁾ Mesh size ²⁾ [mm]	Bearing bar size: height/thickness																							
			20/2	20/3	25/2	25/3	25/4	25/5	30/2	30/3	30/4	30/5	35/2	35/3	35/4	35/5	40/2	40/3	40/4	40/5	50/3	50/4	50/5	60/4	60/5	
AA	30	31 x 33 34,3 x 38,1	15	20	18	24 N	32 N	38	20 T	28 TN	37 TN	45 T	23 T	32 T	42 T	52 T	26 T	36 TN	48 TN	58 T	44 TN	58 T	72 T	69 N	85	
AC	30	31 x 45 34,3 x 50,8	14	19	16	23 N	30 N	37	19 T	27 TN	36 TN	44 T	22 T	31 T	41 T	51 T	25 T	35 TN	46 TN	57 T	43 TN	57 TN	71 T	68 N	84	
AX	30	31 x 71 34,3 x 76,2	13	18	16	22 S	29 S	36	18 T	26 T	35 T	43 T	21 T	30 T	40 T	49 T	24 T	34 T	45 T	56 T	—	56 T	70 T	—	—	
AE	30	31 x 96 34,3 x 101,6	12	18	15	22 N	29 N	35	18 T	26 TN	34 TN	42 T	20 T	30 T	39 T	49 T	23 T	34 TN	45 TN	56 T	42 TN	56 TN	69 T	66 N	82	
AI	30	31 x 14 34,3 x 19	19	24	21	28	36	43	24	32	41	47	27	36	47	56	—	40	52	63	—	—	—	—	—	
AK	30	31 x 19 34,3 x 24	17	22	20	26	34	41	22	31	39	48	25	35	45	54	—	—	50	61	—	—	—	—	—	
IX	68	12 x 71 14,8 x 76,2	26	37	32	46	—	—	37	55	—	—	43	64	—	—	49	73	—	—	—	—	—	—	—	
IE	68	12 x 96 14,8 x 101,6	25	37	31	46	—	—	37	54	—	—	43	63	—	—	49	72	—	—	—	—	—	—	—	
KK	46	19 x 19 22,1 x 24	22	31	25	37	53	—	31	43	61	—	35	49	69	—	39	55	77	—	—	—	—	—	—	
KA	46	19 x 33 22,1 x 38,1	20	28	24	34 N	45	—	28	40 N	53	—	32	46	61	—	36	52 N	69	—	65	85	—	102	—	
KC	46	19 x 45 22,1 x 50,8	19	27	23	33 N	44	—	27	39 N	52	—	31	45	60	—	35	51 N	68	—	64	84	—	100	—	
KX	46	19 x 71 22,1 x 76,2	18	26	22	32	43	—	26	38	51	—	30	44	59	—	34	51	67	—	63	83	—	99	—	
KE	46	19 x 96 22,1 x 101,6	18	26	22	32 N	42	—	26	38 N	50	—	30	44	58	—	34	50 N	66	—	62	82	—	99	—	
MM	41	22 x 20 24,9 x 25	20	28	24	33	43	—	28	39	50	—	31	44	57	—	35	49	65	—	—	—	—	—	—	
MA	41	22 x 33 24,9 x 38,1	19	26	22	31	41	—	25	37	48	—	29	42	55	—	33	47	62	—	58	77	—	91	—	
MC	41	22 x 45 24,9 x 50,8	17	25	21	30	40	—	25	36	47	—	28	41	54	—	32	46	61	—	57	76	—	90	—	
MX	41	22 x 71 24,9 x 76,2	17	24	20	29	39	—	24	35	46	—	27	40	53	—	31	45	60	—	56	75	—	89	—	
ME	41	22 x 96 24,9 x 101,6	16	23	20	29	38	—	23	34	45	—	27	39	52	—	30	45	60	—	56	74	—	89	—	
BA	34	27 x 33 30,1 x 38,1	16	22	19	27	35	42	22	31	41	50	25	35	47	58	28	40	53	65	49	65	80	77	95	
BC	34	27 x 45 30,1 x 50,8	15	21	18	26 N	34 N	41	21	30 N	40 N	49	24	35	46	56	27	39 N	52 N	64	48 N	64 N	79	76 N	94	
BX	34	27 x 71 30,1 x 76,2	14	20	17	25	33	40	20	29	39	48	23	34	45	55	26	38	51	63	—	63	78	—	—	
BE	34	27 x 96 30,1 x 101,6	14	20	17	24	32	40	20	29	38	47	23	33	44	55	26	38	50	62	47	62	77	74	93	
EA	31	30 x 33 33,1 x 38,1	15	21	18	25	32	39	21	29 T	38 T	46 T	23 T	33 T	43 T	53 T	26 T	37 T	49 T	60 T	46 T	60 T	74 T	71	88	
EDF	31	30 x 27 33,1 x 33,8	—	21	18	25	33	40	21 T	29 T	38 T	47 T	24 T	34 T	44 T	54 T	27 T	38 T	50 T	61 T	— T	61 T	75 T	—	88	
EC	31	30 x 45 33,1 x 50,8	14	20	17	24	31	38	20 T	28 T	37 T	45 T	22 T	32 T	42 T	52 T	25 T	36 T	48 T	59 T	45 T	59 T	73 T	70	87	
EX	31	30 x 71 33,1 x 76,2	13	19	16	23	30	37	19 T	27 T	36 T	44 T	22 T	31 T	41 T	51 T	24 T	35 T	47 T	58 T	— T	58 T	72 T	—	—	
EE	31	30 x 96 33,1 x 101,6	13	18	15	22	29	36	18 T	26 T	35 T	43 T	21 T	31 T	41 T	50 T	24 T	35 T	46 T	57 T	43 T	57 T	71 T	68	85	
FA	27	35 x 33 38,3 x 38,1	—	19	16	22	29	35	19 T	26 T	34 T	41 T	21 T	30 T	39 T	47 T	24 T	33 T	44 T	53 T	41 T	53 T	66 T	63	78	
FC	27	35 x 45 38,3 x 50,8	—	18	15	21 N	28	34	18 T	25 TN	33 TN	40 T	20 T	29 T	38 T	46 T	23 T	32 T	42 T	52 T	40 T	52 T	64 T	62	77	
FX	27	35 x 71 38,3 x 76,2	—	17	14	20 N	27	33	17 T	24 T	32 T	39 T	19 T	28 T	37 T	45 T	22 T	31 T	41 T	51 T	39 T	51 T	63 T	—	—	
FE	27	35 x 96 38,3 x 101,6	—	15	14	20	26	32	16 T	23 TN	31 TN	38 T	19 T	27 T	36 T	44 T	21 T	31 T	41 T	50 T	38 T	50 T	63 T	60	75	

☐ Standard programme – quick delivery

☐ Special programme; for minimum order volumes and delivery terms, please contact STACO.

1) Clear width in mm (indicative, depending on material thickness)

2) Mesh size centre to centre in mm

— Approximate weight in kg per 1 m² of hot-dip galvanized SP grating with edging strips

— 'N', 'T' see legend at bottom —

Type	Number of bearing bars over 1000 mm wide	Clear width ¹⁾ Mesh size ²⁾ [mm]	Bearing bar size: height/thickness																					
			20/3	25/2	25/3	25/4	25/5	30/2	30/3	30/4	30/5	35/2	35/3	35/4	35/5	40/2	40/3	40/4	40/5	50/3	50/4	50/5	60/4	60/5
GA	25	38 x 33 41,4 x 38,1	18	15	21	27	33	18	24	32	39	20	28	36	44	22	31	41	50	38	50	61	59	73
GC	25	38 x 45 41,4 x 50,8	17	14	20	26	32	17	23	31	37	19	27	35	43	21	30	40	49	37	49	60	58	72
GX	25	38 x 71 41,4 x 76,2	16	13	19	25	31	16	23	30	36	18	26	34	42	20	29	39	48	36	48	59	—	—
GE	25	38 x 96 41,4 x 101,6	15	13	19	24	30	15	22	29	36	17	25	34	41	20	29	38	47	—	47	58	56	70
CK	24	40 x 19 43,2 x 24	19	17	23	29	35	19	26	33	40	22	29	38	45	—	33	42	51	37	—	—	—	—
CA	24	40 x 33 43,2 x 38,1	17	15	20	26	32	17	24	31	37	19	27	35	43	22	30	40	48	36	48	59	57	70
CC	24	40 x 45 43,2 x 50,8	16	14	19	25	31	16	23	30	36	18	26	34	42	20	29	38	47	35	47	58	56	69
CX	24	40 x 71 43,2 x 76,2	15	13	18	24	30	15	22	29	35	17	25	33	41	20	28	37	46	34	46	57	—	—
CE	24	40 x 96 43,2 x 101,6	15	12	18	24	29	15	21	28	35	17	24	32	40	19	28	37	45	34	45	56	54	67
HMA	21	47 x 33 49,8 x 38,1	15	14	19	24	—	16	21	28	—	18	24	32	—	20	27	36	—	—	43	—	—	—
HMC	21	47 x 45 49,8 x 50,8	15	13	18	23	—	15	20	27	—	17	23	31	—	18	26	34	—	32	42	—	50	—
HMX	21	47 x 71 49,8 x 76,2	14	12	17	22	—	14	20	26	—	16	22	29	—	18	25	33	—	31	41	—	—	—
HME	21	47 x 96 49,8 x 101,6	13	11	16	21	—	13	19	25	—	15	22	29	—	17	25	33	—	31	40	—	48	—
HEA	16	63 x 33 66,3 x 38,1	13	12	15	20	24	13	18	23	27	15	20	26	31	16	22	29	35	27	35	42	41	50
HEC	16	63 x 45 66,3 x 50,8	12	11	14	19	22	12	17	22	26	14	19	25	30	15	21	28	34	26	34	41	40	49
HEX	16	63 x 71 66,3 x 76,2	11	10	13	18	21	11	16	21	25	13	18	24	29	14	20	27	33	25	33	40	—	—
HEE	16	63 x 96 66,3 x 101,6	11	9	13	17	20	11	15	20	24	12	17	23	28	14	20	26	32	24	32	40	38	47
ZC	17	59 x 45 62,2 x 50,8	—	—	15	20	23	13	18	23	27	—	—	—	—	—	—	—	—	—	—	—	—	—
ZD	17	59 x 60 62,2 x 65	—	—	15	20	23	13	18	23	27	—	—	—	—	—	—	—	—	—	—	—	—	—
ZE	17	59 x 96 62,2 x 101,6	—	—	14	19	22	12	17	22	26	—	—	—	—	—	—	—	—	—	—	—	—	—
ZY	17	59 x 127 62,2 x 132	—	—	13	17	20	11	15	20	24	—	—	—	—	—	—	—	—	—	—	—	—	—
AA-8 x 8	30	8 x 8* 34,3 x 38,1	—	—	—	—	—	—	31	40	—	—	—	—	—	29	39	51	—	47	61	—	—	—
Type offshore AE	30	13 x 96** 34,3 x 101,6	—	—	27	34	40	—	31	39	47	—	35	44	54	—	39	50	60	—	60	74	70	62
Type offshore CE	24	11 x 96*** 43,2 x 101,6	—	—	25	31	37	—	28	35	41	—	31	39	47	—	35	44	52	—	52	63	87	75

☐ Standard programme – quick delivery

☐ Special programme; for minimum order volumes and delivery terms, please contact STACO

* clear width = 8 x 8 mm with the safety profile welded underneath

** clear width = 13 x 96 mm with a round bar welded between the 5 mm strong bearing bars

*** clear width = 11 x 96 mm with two round bars welded between the bearing bars

Choice of the following materials:

steel quality S235JR to S355JR

conforming with EN 10025

Special mesh patterns are also

available on request.

Options for special versions:

– serrated S4 and S5 (all types in bearing bar thickness

2/3/4 and 5 mm except 20/2)

– serrated S6 (all types with 'T' in the name, twisted cross

bars available in Ø 4,5 / 5 / 6 / 8 mm; smooth/round cross

bars in Ø 4 / 5 / 6 mm)

All types with 'N' in the name are available in stainless steel

1.4301 (V2A) or 1.4571 (V4A) with smooth/round cross

bars in Ø 4 mm.

The weight of the stainless steel grating is decreased of approx. 7% in comparison to the standard steel and galvanized grating.

TYPE A

Material: steel
quality S235JR

mesh size:

34,3/19

34,3/24

34,3/38,1

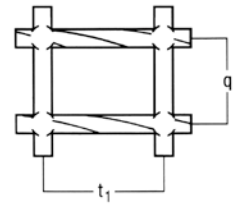
Load values
see table

mesh size:

34,3/50,8

34,3/76,2

34,3/101,6

Load values
see table minus 5% t_1 = Bearing bar spacing
(centre/centre) q_1 = Cross bar spacing
(centre/centre)

Bearing bar dimension [mm]		Span L [mm]																				
		500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500
20 x 3	F _v	2923	2030	1371	918	645	470	353	272	214	171	139	115	96	81	69	59	51	44	39	34	30
	f _v	0,19	0,28	0,35	0,40	0,45	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
	F _p	253	203	169	131	103	83	68	57	49	42	37	32	28	25	23	20	19	17	15	14	13
	f _p	0,18	0,25	0,34	0,40	0,45	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
25 x 2	F _v	3045	2115	1554	1189	840	612	460	354	279	223	181	150	125	105	89	77	66	58	50	44	39
	f _v	0,16	0,22	0,30	0,40	0,45	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
	F _p	262	209	175	150	131	107	88	74	63	54	47	41	37	33	29	26	24	22	20	18	17
	f _p	0,14	0,20	0,27	0,35	0,44	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
25 x 3	F _v	4568	3172	2330	1784	1260	918	690	532	418	335	272	224	187	158	134	115	99	86	75	66	59
	f _v	0,16	0,22	0,30	0,40	0,45	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
	F _p	393	314	262	224	196	161	133	111	95	81	71	62	55	49	44	40	36	33	30	28	25
	f _p	0,14	0,20	0,27	0,35	0,44	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
25 x 4	F _v	6090	4229	3107	2379	1680	1224	920	709	557	446	363	299	249	210	179	153	132	115	101	89	78
	f _v	0,16	0,22	0,30	0,40	0,45	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
	F _p	524	419	349	299	262	215	177	148	126	109	94	83	73	65	59	53	48	44	40	37	34
	f _p	0,14	0,20	0,27	0,35	0,44	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
25 x 5	F _v	7613	5287	3884	2974	2100	1531	1150	886	697	558	454	374	312	263	223	191	165	144	126	111	98
	f _v	0,16	0,22	0,30	0,40	0,45	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
	F _p	655	524	436	374	327	268	221	185	158	136	118	104	92	82	73	66	60	55	50	46	42
	f _p	0,14	0,20	0,27	0,35	0,44	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
30 x 2	F _v	4385	3045	2237	1713	1353	1058	795	612	482	386	314	258	215	181	154	132	114	99	87	77	68
	f _v	0,13	0,19	0,25	0,33	0,42	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
	F _p	374	299	249	214	187	166	150	127	108	93	81	71	63	56	50	45	41	37	34	31	29
	f _p	0,12	0,17	0,23	0,29	0,37	0,45	0,54	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
30 x 3	F _v	6577	4568	3356	2569	2030	1587	1192	918	722	578	470	387	323	272	231	198	171	149	130	115	102
	f _v	0,13	0,19	0,25	0,33	0,42	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
	F _p	561	449	374	321	281	249	225	191	162	140	121	107	94	84	75	68	62	56	51	47	43
	f _p	0,12	0,17	0,23	0,29	0,37	0,45	0,54	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
30 x 4	F _v	8770	6090	4474	3426	2707	2116	1590	1224	963	771	627	517	431	363	309	265	229	199	174	153	135
	f _v	0,13	0,19	0,25	0,33	0,42	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
	F _p	748	599	499	428	374	333	299	254	216	186	162	142	126	112	101	91	82	75	69	63	58
	f _p	0,12	0,17	0,23	0,29	0,37	0,45	0,54	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
30 x 5	F _v	10960	7613	5593	4282	3383	2645	1987	1531	1204	964	784	646	538	454	386	331	286	248	217	191	169
	f _v	0,13	0,19	0,25	0,33	0,42	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
	F _p	935	748	624	535	468	416	374	318	270	233	202	178	157	140	126	113	103	94	86	79	72
	f _p	0,12	0,17	0,23	0,29	0,37	0,45	0,54	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
35 x 4	F _v	11940	8289	6090	4663	3684	2984	2466	1944	1529	1224	996	820	684	576	490	420	363	316	276	243	215
	f _v	0,11	0,16	0,22	0,28	0,36	0,44	0,54	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
	F _p	1010	808	673	577	505	449	404	367	337	293	255	224	198	177	158	143	130	118	108	99	91
	f _p	0,10	0,15	0,20	0,25	0,32	0,39	0,47	0,55	0,64	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
35 x 5	F _v	14920	10360	7613	5828	4605	3730	3083	2431	1912	1531	1244	1025	855	720	612	525	454	394	345	304	269
	f _v	0,11	0,16	0,22	0,28	0,36	0,44	0,54	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
	F _p	1262	1010	841	721	631	561	505	459	421	366	319	280	248	221	198	179	162	147	135	124	114
	f _p	0,10	0,15	0,20	0,25	0,32	0,39	0,47	0,55	0,64	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
40 x 2	F _v	7795	5413	3977	3045	2406	1949	1611	1353	1141	914	743	612	510	430	366	314	271	236	206	181	161
	f _v	0,10	0,14	0,19	0,25	0,31	0,39	0,47	0,56	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
	F _p	654	524	436	374	327	291	262	238	218	201	187	166	147	131	117	106	96	87	80	73	68
	f _p	0,09	0,13	0,17	0,22	0,28	0,34	0,41	0,48	0,56	0,65	0,74	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25

Legend on page 13

Bearing bar dimension [mm]		Span L [mm]																					
		500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	
40 x 3	F _v	11690	8120	5966	4568	3609	2923	2416	2030	1712	1371	1115	918	766	645	548	470	406	353	309	272	241	
	f _v	0,10	0,14	0,19	0,25	0,31	0,39	0,47	0,56	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	982	785	654	561	491	436	393	357	327	302	280	249	220	196	176	159	144	131	120	110	101	
	f _p	0,09	0,13	0,17	0,22	0,28	0,34	0,41	0,48	0,56	0,65	0,74	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
40 x 4	F _v	15590	10830	7954	6090	4812	3898	3221	2707	2283	1828	1486	1224	1021	860	731	627	542	471	412	363	321	
	f _v	0,10	0,14	0,19	0,25	0,31	0,39	0,47	0,56	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	1309	1047	872	748	654	582	524	476	436	403	374	331	293	261	235	212	192	175	160	147	135	
	f _p	0,09	0,13	0,17	0,22	0,28	0,34	0,41	0,48	0,56	0,65	0,74	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
40 x 5	F _v	19490	13530	9943	7613	6015	4872	4026	3383	2854	2285	1858	1531	1276	1075	914	784	677	589	515	454	401	
	f _v	0,10	0,14	0,19	0,25	0,31	0,39	0,47	0,56	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	1636	1309	1091	935	818	727	654	595	545	503	467	414	367	327	293	264	240	218	200	183	169	
	f _p	0,09	0,13	0,17	0,22	0,28	0,34	0,41	0,48	0,56	0,65	0,74	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
50 x 3	F _v	18270	12690	9322	7137	5639	4568	3775	3172	2703	2330	2030	1784	1495	1260	1071	918	793	690	604	532	470	
	f _v	0,08	0,11	0,15	0,20	0,25	0,31	0,38	0,45	0,53	0,61	0,70	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	1510	1208	1007	863	755	671	604	549	503	465	431	403	378	355	336	305	277	252	230	212	195	
	f _p	0,07	0,10	0,14	0,18	0,22	0,27	0,33	0,39	0,45	0,52	0,59	0,67	0,76	0,85	0,94	1,00	1,05	1,10	1,15	1,20	1,25	
50 x 4	F _v	24360	16920	12430	9516	7519	6090	5033	4229	3604	3107	2707	2379	1994	1680	1428	1224	1058	920	805	709	627	
	f _v	0,08	0,11	0,15	0,20	0,25	0,31	0,38	0,45	0,53	0,61	0,70	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	2013	1611	1342	1151	1007	895	805	732	671	620	575	537	503	474	447	407	369	336	307	282	260	
	f _p	0,07	0,10	0,14	0,18	0,22	0,27	0,33	0,39	0,45	0,52	0,59	0,67	0,76	0,85	0,94	1,00	1,05	1,10	1,15	1,20	1,25	
50 x 5	F _v	30450	21150	15540	11890	9398	7613	6291	5287	4504	3884	3383	2974	2492	2100	1785	1531	1322	1150	1006	886	784	
	f _v	0,08	0,11	0,15	0,20	0,25	0,31	0,38	0,45	0,53	0,61	0,70	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	2517	2013	1678	1438	1258	1119	1007	915	839	774	719	671	629	592	559	509	461	420	384	353	325	
	f _p	0,07	0,10	0,14	0,18	0,22	0,27	0,33	0,39	0,45	0,52	0,59	0,67	0,76	0,85	0,94	1,00	1,05	1,10	1,15	1,20	1,25	
60 x 4	F _v	35080	24360	17900	13700	10830	8770	7248	6090	5189	4474	3898	3426	3034	2707	2429	2116	1828	1590	1391	1224	1083	
	f _v	0,06	0,09	0,13	0,17	0,21	0,26	0,31	0,37	0,44	0,51	0,58	0,66	0,75	0,84	0,94	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	2850	2280	1900	1629	1425	1267	1140	1037	950	877	814	760	713	671	633	600	570	543	518	479	442	
	f _p	0,06	0,08	0,11	0,15	0,18	0,23	0,27	0,32	0,38	0,43	0,50	0,56	0,63	0,71	0,79	0,87	0,96	1,05	1,14	1,20	1,25	
60 x 5	F _v	43850	30450	22370	17130	13530	10960	9060	7613	6486	5593	4872	4282	3793	3383	3037	2645	2285	1987	1739	1531	1354	
	f _v	0,06	0,09	0,13	0,17	0,21	0,26	0,31	0,37	0,44	0,51	0,58	0,66	0,75	0,84	0,94	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	3563	2850	2375	2036	1782	1584	1425	1296	1188	1096	1018	950	891	838	792	750	713	679	648	599	552	
	f _p	0,06	0,08	0,11	0,15	0,18	0,23	0,27	0,32	0,38	0,43	0,50	0,56	0,63	0,71	0,79	0,87	0,96	1,05	1,14	1,20	1,25	

☒ Value of max. load with condition of carries capacity ($\gamma_f = 1,5$)

☐ Value of max. load with condition of operational use ($\gamma_f = 1,0$)

Legend:

F_v = Load data for uniformly distributed load [daN/m²]

f_v = Deflection in [cm] in case of load F_v

F_p = Load data for point load [daN] on 200x200 mm surface

f_p = Deflection in [cm] in case of load F_p

Overlap = height of bearing bar, but not less than 30 mm

Go to www.staco.pl to calculate the missing parameters automatically using our calculation module.

The load values of anti-slip versions decrease according to the following ratios:

versions S4, S5 & S6 (punch depth = 2,5 mm)	
at grating height 25 mm = 10,0%	
at grating height 30 mm = 8,3%	
at grating height 40 mm = 6,3%	
at grating height 50 mm = 5,0%	
at grating height 60 mm = 4,2%	

The load values of made up of stainless steel versions decrease according to the following ratios:

material	F _v /F _p	f _v /f _p
V2A (1.4301)	factor 0,81	factor 0,95
V4A (1.4571)	factor 0,85	factor 0,95

TYPE B

Material: steel
quality S235JR

mesh size:

30,1/38,1

} Load values
see table

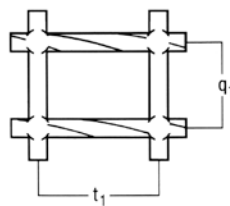
mesh size:

30,1/50,8

30 1/76 2

30,1/101,6

- Load values
- see table minus 3%



t_1 = Bearing bar spacing
(centre/centre)

q_1 = Cross bar spacing
(centre/centre)

Bearing bar dimension [mm]		Span L [mm]																				
		500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500
25 x 3	F _V	5205	3614	2656	2033	1436	1047	786	606	476	381	310	256	213	179	153	131	113	98	86	76	67
	f _v	0,16	0,22	0,30	0,40	0,45	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
	F _p	433	346	288	247	216	177	146	122	104	90	78	68	61	54	48	44	40	36	33	30	28
	f _p	0,14	0,20	0,27	0,35	0,44	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
25 x 5	F _V	8675	6024	4426	3389	2393	1744	1310	1009	794	636	517	426	355	299	254	218	188	164	143	126	112
	f _v	0,16	0,22	0,30	0,40	0,45	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
	F _p	721	577	481	412	360	296	243	204	174	149	130	114	101	90	81	73	66	60	55	51	47
	f _p	0,14	0,20	0,27	0,35	0,44	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
30 x 3	F _V	7495	5205	3824	2928	2313	1808	1359	1047	823	659	536	442	368	310	264	226	195	170	149	131	116
	f _v	0,13	0,19	0,25	0,33	0,42	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
	F _p	619	495	412	354	309	275	247	210	179	154	134	118	104	93	83	75	68	62	57	52	48
	f _p	0,12	0,17	0,23	0,29	0,37	0,45	0,54	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
30 x 5	F _V	12490	8675	6373	4880	3855	3014	2264	1744	1372	1098	893	736	614	517	439	377	325	283	248	218	193
	f _v	0,13	0,19	0,25	0,33	0,42	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
	F _p	1031	825	687	589	516	458	412	350	298	256	223	196	173	155	139	125	113	103	94	87	80
	f _p	0,12	0,17	0,23	0,29	0,37	0,45	0,54	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
40 x 3	F _V	13320	9253	6798	5205	4112	3331	2753	2313	1951	1562	1270	1047	873	735	625	536	463	403	352	310	274
	f _v	0,10	0,14	0,19	0,25	0,31	0,39	0,47	0,56	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
	F _p	1083	867	722	619	542	482	433	394	361	333	310	274	243	217	194	175	159	145	132	121	112
	f _p	0,09	0,13	0,17	0,22	0,28	0,34	0,41	0,48	0,56	0,65	0,74	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
40 x 5	F _V	22210	15420	11330	8675	6854	5552	4588	3855	3252	2604	2117	1744	1454	1225	1042	893	771	671	587	517	457
	f _v	0,10	0,14	0,19	0,25	0,31	0,39	0,47	0,56	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
	F _p	1806	1445	1204	1032	903	803	722	657	602	556	516	457	405	361	324	292	265	241	220	202	187
	f _p	0,09	0,13	0,17	0,22	0,28	0,34	0,41	0,48	0,56	0,65	0,74	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
50 x 5	F _V	34700	24100	17700	13550	10710	8675	7169	6024	5133	4426	3855	3389	2840	2393	2034	1744	1507	1310	1147	1009	893
	f _v	0,08	0,11	0,15	0,20	0,25	0,31	0,38	0,45	0,53	0,61	0,70	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25
	F _p	2782	2226	1855	1590	1391	1237	1113	1012	927	856	795	742	696	655	618	562	510	464	425	390	359
	f _p	0,07	0,10	0,14	0,18	0,22	0,27	0,33	0,39	0,45	0,52	0,59	0,67	0,76	0,85	0,94	1,00	1,05	1,10	1,15	1,20	1,25

☐ Value of max. load with condition of carries capacity ($\gamma_f = 1,5$)

☐ Value of max. load with condition of operational use ($\gamma_f = 1,0$)

Legend:

$$F_v = \text{Load data for uniformly distributed load [daN/m}^2\text{]}$$

f_v = Deflection in [cm] in case of load F_v

F_p = Load data for point load [daN] on 200x200 mm surface

f_p = Deflection in [cm] in case of load F_p

Overlap = height of bearing bar, but not less than 30 mm

Go to www.staco.pl to calculate the missing parameters automatically using our calculation module.

The load values of anti-slip versions decrease according to the following ratios:

versions S4, S5 & S6 (punch depth = 2,5 mm)
at grating height 25 mm = 10,0%
at grating height 30 mm = 8,3%
at grating height 40 mm = 6,3%
at grating height 50 mm = 5,0%
at grating height 60 mm = 4,2%

The load values of made up of stainless steel versions decrease according to the following ratios:

material	F_v/F_p	f_v/f_p
V2A (1.4301)	factor 0,81	factor 0,95
V4A (1.4571)	factor 0,85	factor 0,95

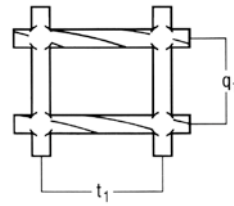
TYPE K

Material: steel
quality S235JR

mesh size:

22,1/24
22,1/38,1} Load values
see table

mesh size:

22,1/50,8
22,1/76,2
22,1/101,6} Load values
see table minus 3% t_1 = Bearing bar spacing
(centre/centre) q_1 = Cross bar spacing
(centre/centre)

Bearing bar dimension [mm]		Span L [mm]																					
		500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	
20 x 3	F _v	4537	3151	2128	1425	1001	730	548	422	332	266	216	178	149	125	106	91	79	69	60	53	47	
	f _v	0,19	0,28	0,35	0,40	0,45	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	354	283	236	183	144	116	96	80	68	59	51	45	40	35	32	29	26	24	22	20	18	
	f _p	0,18	0,25	0,34	0,40	0,45	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
25 x 2	F _v	4726	3282	2411	1846	1303	950	714	550	433	346	282	232	193	163	139	119	103	89	78	69	61	
	f _v	0,16	0,22	0,30	0,40	0,45	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	367	294	245	210	183	150	124	104	88	76	66	58	51	46	41	37	34	31	28	26	24	
	f _p	0,14	0,20	0,27	0,35	0,44	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
25 x 3	F _v	7089	4923	3617	2769	1955	1425	1071	825	649	519	422	348	290	244	208	178	154	134	117	103	91	
	f _v	0,16	0,22	0,30	0,40	0,45	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	550	440	367	314	275	226	186	156	132	114	99	87	77	69	62	56	50	46	42	39	36	
	f _p	0,14	0,20	0,27	0,35	0,44	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
25 x 4	F _v	9452	6564	4822	3692	2607	1900	1428	1100	865	693	563	464	387	326	277	238	205	179	156	138	122	
	f _v	0,16	0,22	0,30	0,40	0,45	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	734	587	489	419	367	301	248	208	177	152	132	116	103	92	82	74	67	61	56	51	47	
	f _p	0,14	0,20	0,27	0,35	0,44	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
30 x 2	F _v	6805	4726	3472	2658	2100	1642	1234	950	747	598	487	401	334	282	239	205	177	154	135	119	105	
	f _v	0,13	0,19	0,25	0,33	0,42	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	525	420	350	300	263	234	210	179	152	131	114	100	88	79	71	64	58	53	48	44	41	
	f _p	0,12	0,17	0,23	0,29	0,37	0,45	0,54	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
30 x 3	F _v	10210	7089	5208	3988	3151	2463	1850	1425	1121	898	730	601	501	422	359	308	266	231	202	178	158	
	f _v	0,13	0,19	0,25	0,33	0,42	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	788	631	525	450	394	350	315	268	228	196	171	150	133	118	106	96	87	79	72	66	61	
	f _p	0,12	0,17	0,23	0,29	0,37	0,45	0,54	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
30 x 4	F _v	13610	9452	6944	5317	4201	3284	2467	1900	1495	1197	973	802	668	563	479	411	355	308	270	238	210	
	f _v	0,13	0,19	0,25	0,33	0,42	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	1051	841	701	601	525	467	420	357	304	261	227	200	177	158	141	127	116	105	96	88	81	
	f _p	0,12	0,17	0,23	0,29	0,37	0,45	0,54	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
35 x 3	F _v	13890	9649	7089	5428	4288	3474	2871	2263	1780	1425	1159	955	796	671	570	489	422	367	322	283	250	
	f _v	0,11	0,16	0,22	0,28	0,36	0,44	0,54	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	1066	853	711	609	533	474	426	388	355	309	269	236	209	186	167	151	137	125	114	105	96	
	f _p	0,10	0,15	0,20	0,25	0,32	0,39	0,47	0,55	0,64	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
35 x 4	F _v	18530	12870	9452	7237	5718	4631	3828	3018	2374	1900	1545	1273	1061	894	760	652	563	490	429	377	334	
	f _v	0,11	0,16	0,22	0,28	0,36	0,44	0,54	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	1421	1137	948	812	711	632	569	517	474	412	359	315	279	249	223	201	182	166	152	139	128	
	f _p	0,10	0,15	0,20	0,25	0,32	0,39	0,47	0,55	0,64	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
40 x 2	F _v	12100	8402	6173	4726	3734	3025	2500	2100	1772	1418	1153	950	792	667	567	487	420	366	320	282	249	
	f _v	0,10	0,14	0,19	0,25	0,31	0,39	0,47	0,56	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	923	739	616	528	462	410	369	336	308	284	264	234	207	185	165	149	135	123	113	104	95	
	f _p	0,09	0,13	0,17	0,22	0,28	0,34	0,41	0,48	0,56	0,65	0,74	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
40 x 3	F _v	18150	12600	9259	7089	5601	4537	3750	3151	2657	2128	1730	1425	1188	1001	851	730	630	548	480	422	374	
	f _v	0,10	0,14	0,19	0,25	0,31	0,39	0,47	0,56	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	1385	1108	923	791	693	616	554	504	462	426	396	351	310	277	248	224	203	185	169	155	143	
	f _p	0,09	0,13	0,17	0,22	0,28	0,34	0,41	0,48	0,56	0,65	0,74	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
40 x 4	F _v	24200	16800	12350	9452	7468	6049	4999	4201	3543	2837	2306	1900	1584	1335	1135	973	841	731	640	563	498	
	f _v	0,10	0,14	0,19	0,25	0,31	0,39	0,47	0,56	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	1847	1477	1231	1055	923	821	739	672	616	568	528	468	414	369	331	299	271	247	225	207	191	
	f _p	0,09	0,13	0,17	0,22	0,28	0,34	0,41	0,48	0,56	0,65	0,74	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	

☒ Value of max. load with condition of carries capacity ($\gamma_f = 1,5$)

☐ Value of max. load with condition of operational use ($\gamma_f = 1,0$)

Legend on page 14

TYPE I

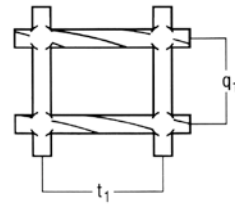
Material: steel
quality S235JR

mesh size:

14,8/76,2

14,8/101,6

} Load values see table



t_1 = Bearing bar spacing
(centre/centre)

q_1 = Cross bar spacing
(centre/centre)

Bearing bar dimension [mm]		Span L [mm]																					
		500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	
20 x 2	F _v	4517	3136	2118	1419	997	727	546	420	331	265	215	177	148	125	106	91	78	68	60	53	47	
	f _v	0,19	0,28	0,35	0,40	0,45	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	329	263	220	171	134	108	89	75	63	55	47	42	37	33	30	27	24	22	20	18	17	
	f _p	0,18	0,25	0,34	0,40	0,45	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
25 x 2	F _v	7057	4901	3601	2757	1946	1419	1066	821	646	517	420	346	289	243	207	177	153	133	117	103	91	
	f _v	0,16	0,22	0,30	0,40	0,45	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	513	410	342	293	256	210	173	145	123	106	92	81	72	64	57	52	47	43	39	36	33	
	f _p	0,14	0,20	0,27	0,35	0,44	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
25 x 3	F _v	10590	7351	5401	4135	2920	2128	1599	1232	969	776	631	520	433	365	310	266	230	200	175	154	136	
	f _v	0,16	0,22	0,30	0,40	0,45	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	769	615	513	439	384	315	260	218	185	159	139	122	108	96	86	78	70	64	59	54	50	
	f _p	0,14	0,20	0,27	0,35	0,44	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
30 x 2	F _v	10160	7057	5185	3970	3136	2452	1842	1419	1116	894	727	599	499	420	358	307	265	230	202	177	157	
	f _v	0,13	0,19	0,25	0,33	0,42	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	735	588	490	420	368	327	294	250	212	183	159	140	124	110	99	89	81	74	67	62	57	
	f _p	0,12	0,17	0,23	0,29	0,37	0,45	0,54	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
30 x 3	F _v	15240	10590	7777	5954	4705	3678	2763	2128	1674	1340	1090	898	749	631	536	460	397	345	302	266	235	
	f _v	0,13	0,19	0,25	0,33	0,42	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	1103	882	735	630	551	490	441	375	319	274	239	210	185	165	148	134	121	110	101	93	85	
	f _p	0,12	0,17	0,23	0,29	0,37	0,45	0,54	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	

Value of max. load with condition of carries capacity ($\gamma_f = 1,5$)

Value of max. load with condition of operational use ($\gamma_f = 1,0$)

Legend:

F_v = Load data for uniformly distributed load [daN/m²]

f_v = Deflection in [cm] in case of load F_v

F_p = Load data for point load [daN] on 200x200 mm surface

f_p = Deflection in [cm] in case of load F_p

Overlap = height of bearing bar, but not less than 30 mm

Go to www.staco.pl to calculate the missing parameters automatically using our calculation module.

TYPE M

Material: steel
quality S235JR

mesh size:

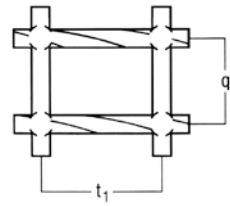
24,9/25
24,9/38,1

} Load values
see table

mesh size:

24,9/50,8
24,9/76,2
24,9/101,6

} Load values
see table minus 5%



t_1 = Bearing bar spacing
(centre/centre)

q_1 = Cross bar spacing
(centre/centre)

Bearing bar dimension [mm]		Span L [mm]																					
		500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	
20 x 2	F _v	2685	1864	1259	843	592	432	324	250	197	157	128	105	88	74	63	54	47	41	35	31	28	
	f _v	0,19	0,28	0,35	0,40	0,45	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	215	172	143	111	87	70	58	49	41	36	31	27	24	21	19	17	16	14	13	12	11	
	f _p	0,18	0,25	0,34	0,40	0,45	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
20 x 3	F _v	4027	2796	1888	1265	889	648	487	375	295	236	192	158	132	111	94	81	70	61	53	47	41	
	f _v	0,19	0,28	0,35	0,40	0,45	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	322	258	215	167	131	106	87	73	62	53	46	41	36	32	29	26	24	22	20	18	17	
	f _p	0,18	0,25	0,34	0,40	0,45	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
25 x 3	F _v	6292	4369	3210	2458	1735	1265	951	732	576	461	375	309	258	217	184	158	137	119	104	92	81	
	f _v	0,16	0,22	0,30	0,40	0,45	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	334	267	222	191	167	137	113	94	80	69	60	53	47	42	37	34	31	28	25	23	22	
	f _p	0,14	0,20	0,27	0,35	0,44	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
30 x 2	F _v	6040	4195	3082	2359	1864	1457	1095	843	663	531	432	356	297	250	213	182	157	137	120	105	93	
	f _v	0,13	0,19	0,25	0,33	0,42	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	478	382	318	273	239	212	191	162	138	119	103	91	80	72	64	58	52	48	44	40	37	
	f _p	0,12	0,17	0,23	0,29	0,37	0,45	0,54	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
30 x 3	F _v	9060	6292	4623	3539	2796	2186	1642	1265	995	797	648	534	445	375	319	273	236	205	180	158	140	
	f _v	0,13	0,19	0,25	0,33	0,42	0,50	0,55	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	716	573	478	409	358	318	287	243	207	178	155	136	120	107	96	87	79	72	66	60	55	
	f _p	0,12	0,17	0,23	0,29	0,37	0,45	0,54	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
40 x 3	F _v	16110	11190	8218	6292	4971	4027	3328	2796	2359	1888	1535	1265	1055	889	756	648	560	487	426	375	332	
	f _v	0,10	0,14	0,19	0,25	0,31	0,39	0,47	0,56	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	
	F _p	1257	1006	838	719	629	559	503	457	419	387	359	318	282	251	225	203	184	168	154	141	130	
	f _p	0,09	0,13	0,17	0,22	0,28	0,34	0,41	0,48	0,56	0,65	0,74	0,80	0,85	0,90	0,95	1,00	1,05	1,10	1,15	1,20	1,25	

 Value of max. load with condition of carries capacity ($\gamma_f = 1,5$)

 Value of max. load with condition of operational use ($\gamma_f = 1,0$)

Legend:

F_v = Load data for uniformly distributed load [daN/m²]

f_v = Deflection in [cm] in case of load F_v

F_p = Load data for point load [daN] on 200x200 mm surface

f_p = Deflection in [cm] in case of load F_p

Overlap = height of bearing bar, but not less than 30 mm

Go to www.staco.pl to calculate the missing parameters automatically using our calculation module.



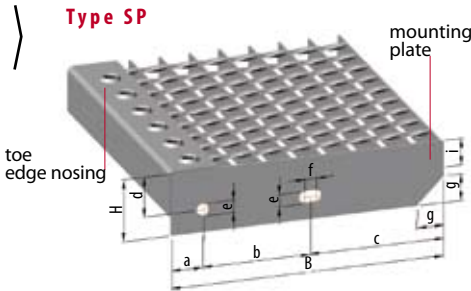
STAIR TREADS TYPE SP

Corresponding gratings stair treads are available for all SP types. The treads are fitted with a safe toe edge nosing and mounting plates as standard for fastening between the stringers.

The benefits of SP gratings:

- remains straight in the toughest conditions
- anti-slip effect created by the twisted cross bars, serrated bearing bars and safe toe edge nosing
- holes in mounting plates enable very fast and easy fastening between the stringers
- very stable, even in ungalvanized version

For anti-slip classes and mounting plate specifications, please refer to www.staco.pl



For dimensions of mounting plate see illustration

tread width [mm] B	[mm]								
	a	b	c	d	e	f	g	i	H
240	35	120	85	55	13	20	30	30	70
270	35	150	85	55	13	20	30	30	70
305	35	180	90	55	13	20	30	30	70

Other dimensions on request.

SPIRAL STAIRS WITH SP TREADS

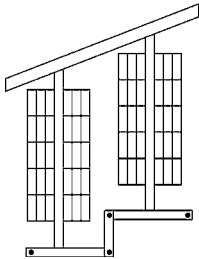
STACO offers spiral stairs with treads made up of SP grating. They are available in various versions of diameter from 1600 mm up to 3000 mm in either clockwise or anti-clockwise turns, also in self colour or galvanized steel. Spiral stairs are a perfect solution when you require a staircase in a confined or limited space where a conventional staircase is not possible and applying themselves to both indoor and outdoor applications.

The simplicity of their structure ensures fast and cost effective on site installation. All the elements like tube, treads, railing are tailor made.

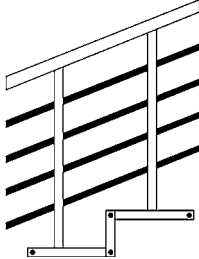
To order you must have the following data:

- height (difference between levels)
- outer diameter
- type of railing
- mesh size of grating
- location of entries and exits on the levels

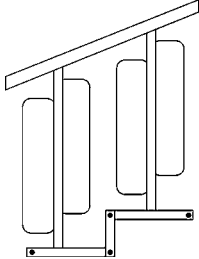
Railings with handrail of tube Ø 33,7 i Ø 42



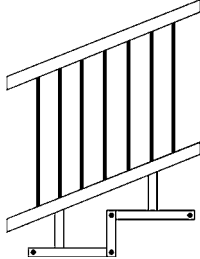
with grating panels



with horizontal bars/tubes

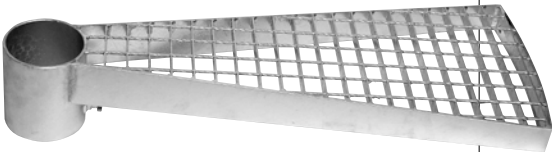


with rod panels



with vertical bars/tubes

Spiral tread with SP type grating



outer diameter D [mm]	N° of treads for one rotation
1600	15,16
1800	15, 16, 18
2000	15, 16, 18
2200	16,18, 20, 22, 24
2400	16,18, 20, 22, 24
2500	16,18, 20, 22
2600	18, 20, 22, 24
2800	18, 20, 22, 24, 26
3000	22, 24, 26, 28



Hot-dip galvanizing in accordance with EN ISO 1461:

For permanent protection of its products, the steel gratings, stair treads and fasteners are hot-dip galvanized in STACO's own workshops. For more information on hot-dip galvanizing, go to www.staco.pl

Process:

Norm	EN ISO 1461
Degreasing	degreasing bath
Etching	hydrochloric acid solution
Dipping	flux solution
Drying/preheating	approx 100° Celsius
Galvanising	445° Celsius

Thickness of layer in accordance with EN ISO 1461:

Material thickness in mm	Zinc coating thickness in µm
< 1,5	45
> 1,5 – 3	55
> 3 – 6	70
> 6	85

Finishing in accordance with EN ISO 1461:

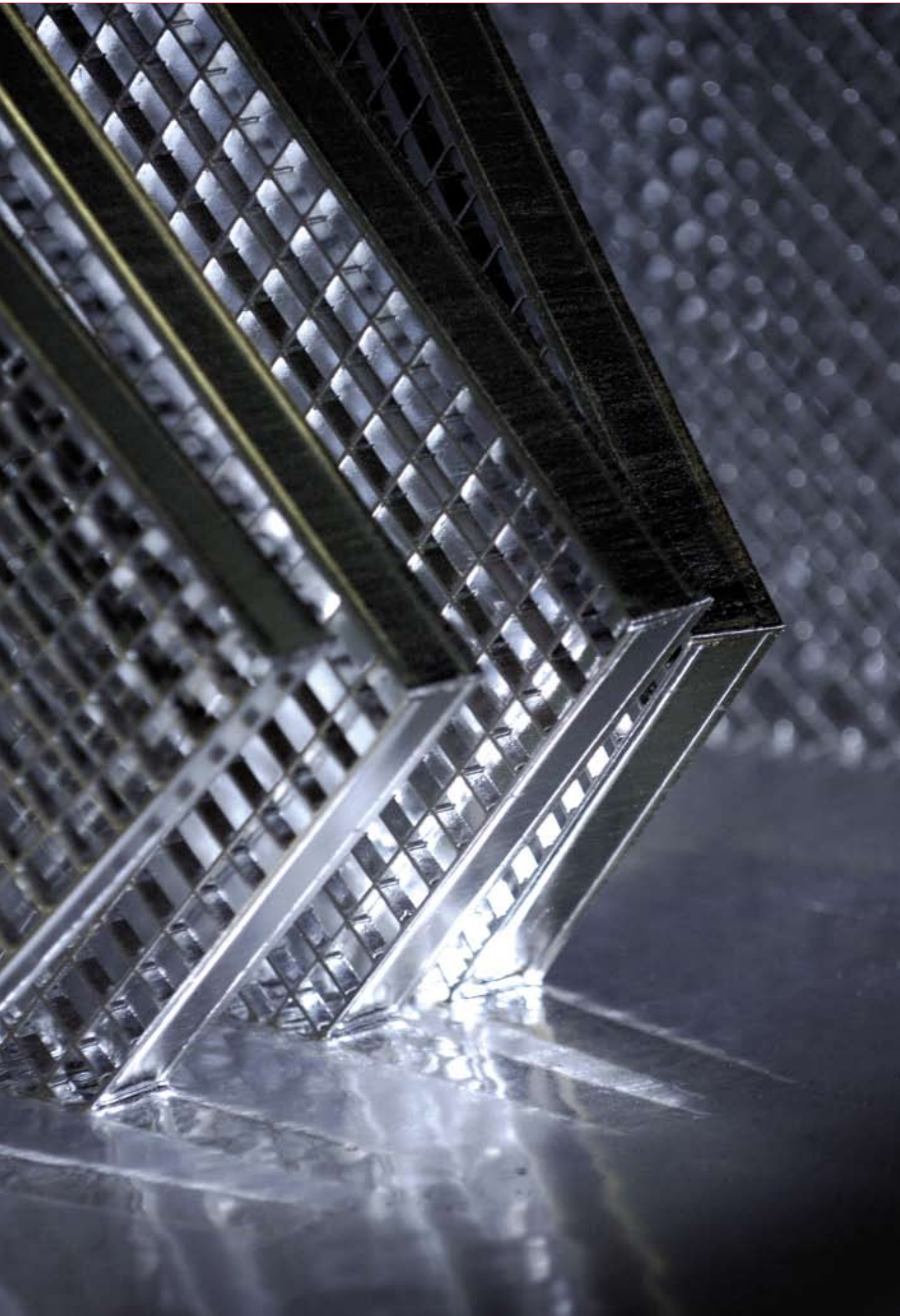
Any irregularities are manually removed and the material is free from projections such as:

- blisters
- sharp points
- rough spots

Colour differences:

After hot-dip galvanizing, the colour of the zinc coating may change. This is usually caused by zinc iron alloy elements coming through.

} HOT-DIP GALVANIZING



Electrostatic powder coating according to VISEM quality requirements

In order to ensure STACO products have an attractive appearance, and are therefore more likely to be used in architectural applications, we equip STACO's galvanized, stainless steel and aluminium products with any required RAL colour at our in-house powder-coating units.

STACO produces in compliance with the VISEM quality requirements for the industrial application of organic coatings on hot-dip galvanized steel. For more information on electrostatic powder coating, go to www.staco.pl

PROCESS

Coating applied in accordance with EN ISO 5254 warrants:

- no irregularities protruding through the coating
- steel splinters removed from visible surfaces
- no obvious irregularities visible from a distance of 3 metres, unless inherent to the hot-dip galvanizing process

Chemical pre-treatment

Drying where necessary

Application of coating

Enamelling

Advice:

In order to ensure the best result, STACO always advises applying a double-layered coating to its products.

Maintenance:

It is important that the coating is cleaned regularly to prevent chlorides from adhering to the coating and shortening its working life.

} ELECTROSTATIC POWDER COATING

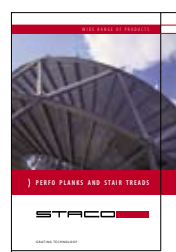


STACO also publishes
the following brochures

PRESSED GRATINGS,
STAIR TREADS
AND GRP GRATINGS



PERFO PLANKS
AND STAIR TREADS



ARCHITECTURAL
GRATINGS



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STACO

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