

**Characteristic**

Graepel-Stabil Xtrem has upward formations. The perforation is an enlarged version of Graepel-Stabil. Its surface has 70 mm long, raised holes in olive shape with serrated edges. The profile height is 19 mm. With approx. 43 %, the open area is a bit smaller than the one of Graepel-Stabil. Graepel-Stabil Xtrem is highly resistant. The perforation has a high anti-skid effect and drainage as well as a large displacement space. Thanks to an excellent level of rigidity, large grating widths are possible without additional support. Embossed field widths of up to 776 mm are possible.

**Application**

Graepel-Stabil Xtrem is recommended for onshore and offshore use in places characterized by extreme weather and environmental conditions. It provides for underfoot safety even in the case of precipitation, sediments, oils, grease, or lubricants. Graepel-Stabil Xtrem can be used in catwalks, over sluices, fish farms, landing docks, maintenance platforms of cableways or wind power plants, or as inspection areas on oil platforms.

**Options**

- This perforation is program controllable. Thus, individual embossments can be created.
- The standard edge perforation may be omitted.

Dimensions		Graepel-Stabil Xtrem
Material thickness	DD 11 raw	2.5   3.0   3.5 mm
	DD 11 hot-dip galvanized	2.5   3.0   3.5 mm
Dimensions	Stainless steel	2.0 mm
	EN AW-5754	2.5   3.0 mm
	Lengths (L) up to Length divider	6,000 mm 50 mm
	Standard grating widths <sup>1</sup> (B) DD 11   DX 51 D   Stainless steel   EN AW-5754 Width divider <sup>1</sup>	300 to 800 mm in steps of 100 mm 100 mm
Heights (H)		50   75   100 mm

<sup>1</sup> Grating length and width: please order standard dimensions which are divisible by the dividers mentioned in each case.

Anti-slip values		
Material	Evaluation of anti-slip	Displacement
DD 11 hot-dip galvanized	R 12	V 10



Further details on the perforation on our website

Weight per meter for Graepel-Stabil Xtrem for material thickness D [in kg/m]																		
Grating width [mm]	2.0			2.5			3.0			3.5								
	Stainless steel Height [mm]			DD 11 Height [mm]			EN AW-5754 Height [mm]			DD 11 Height [mm]								
	50	75	100	50	75	100	50	75	100	50	75	100						
300	6.2	7.0	7.8	7.7	8.7	9.7	2.6	3.0	3.3	9.1	10.3	11.5	3.1	3.6	4.0	10.5	11.9	13.3
400	7.6	8.4	9.2	9.4	10.4	11.4	3.2	3.6	3.9	11.1	12.3	13.5	3.8	4.2	4.7	12.9	14.3	15.7
500	8.9	9.7	10.5	11.0	12.0	13.0	3.8	4.1	4.5	13.1	14.3	15.5	4.5	4.9	5.3	15.2	16.6	18.0
600	10.3	11.1	11.9	12.7	13.7	14.7	4.4	4.7	5.1	15.2	16.4	17.6	5.2	5.6	6.0	17.6	19.0	20.4
700	11.6	12.4	13.2	14.4	15.4	16.4	5.0	5.3	5.6	17.2	18.4	19.6	5.9	6.3	6.7	20.0	21.4	22.8
800	12.9	13.7	14.5	16.1	17.1	18.1	5.5	5.9	6.2	19.2	20.4	21.6	6.6	7.0	7.4	22.3	23.7	25.1

Material	H [mm]	D [mm]	Uniformly distributed load										Concentrated load											
			Replacement load F <sub>q</sub> [in kN] for uniformly distributed load (numerical values apply for single grating)										Load F <sub>q</sub> [in kN] for concentrated load (numerical values apply for single grating)											
			Support length L [mm]		500		750		1000		1250		Support length L [mm]		500		750		1000		1250			
DD 11, DX 51 D	50	2.5	10.885	7.257	5.443	4.354	3.628	3.110	2.673	2.112	1.711	1.414	1.188	6.803	4.187	3.024	2.366	1.944	1.649	1.432	1.266	1.073	0.886	0.744
	50	3.0	12.544	8.363	6.272	5.018	4.181	3.584	3.083	2.436	1.973	1.631	1.370	7.840	4.825	3.484	2.727	2.240	1.901	1.651	1.459	1.237	1.022	0.858
	50	3.5	13.406	8.937	6.703	5.362	4.469	3.830	3.306	2.612	2.116	1.749	1.469	8.379	5.156	3.724	2.914	2.394	2.031	1.764	1.559	1.327	1.096	0.920
	75	2.5	20.650	13.767	10.325	8.260	6.883	5.900	5.162	4.589	4.130	3.755	3.284	12.906	7.942	5.736	4.489	3.687	3.129	2.717	2.401	2.151	1.948	1.780
	75	3.0	24.044	16.029	12.022	9.617	8.015	6.870	6.011	5.343	4.809	4.372	3.826	15.027	9.248	6.679	5.227	4.294	3.643	3.164	2.796	2.505	2.268	2.073
	75	3.5	26.227	17.485	13.114	10.491	8.742	7.493	6.557	5.828	5.245	4.769	4.183	16.392	10.087	7.285	5.702	4.683	3.974	3.451	3.050	2.732	2.474	2.261
EN AW-5754	100	2.5	32.956	21.970	16.478	13.182	10.985	9.416	8.239	7.323	6.591	5.992	5.493	20.597	12.675	9.154	7.164	5.885	4.993	4.336	3.832	3.433	3.109	2.841
	100	3.0	38.595	25.730	19.297	15.438	12.865	11.027	9.649	8.577	7.719	7.017	6.432	24.122	14.844	10.721	8.390	6.892	5.848	5.078	4.488	4.020	3.641	3.327
	100	3.5	42.022	28.014	21.011	16.809	14.007	12.006	10.505	9.338	8.404	7.640	7.004	26.630	16.388	11.836	9.263	7.609	6.456	5.606	4.954	4.438	4.020	3.673
	100	2.0	9.476	6.317	4.738	3.790	3.159	2.707	2.225	1.424	0.524	1.177	0.989	5.923	3.645	2.632	2.060	1.692	1.436	1.247	1.102	0.893	0.737	0.619
Stainless steel	75	2.0	17.795	11.863	8.897	7.118	5.932	5.084	4.449	3.954	3.559	3.220	2.706	11.122	6.844	4.943	3.868	3.178	2.696	2.341	2.069	1.854	1.679	1.534
	75	2.0	28.237	18.825	14.119	11.295	9.412	8.068	7.059	6.275	5.647	5.134	4.706	17.648	10.860	7.844	6.138	5.042	4.278	3.715	3.283	2.941	2.664	2.434

Grating width B [mm]	Maximum possible lump load F [in kN] (numerical values apply for DD 11)		
	Load area 200 x 200 mm		
	Material thickness [mm]		
	2.5	3.0	3.5
300	7.91	9.08	10.14
400	6.12	7.03	7.85
500	5.23	6.01	6.70
600	4.70	5.39	6.02
700	4.34	4.98	5.56
800	4.08	4.69	5.23

Maximum possible lump load F [in kN]		
Grating without surface profile	Grating with round perforation***	Safety grating Graepel-Stabil Xtrem***
0.22 kN	0.45 kN	4.7 kN

Example: Grating width 600 mm, material thickness 2.5 mm, load area 200 x 200 mm, material DD 11 (StW 22)

Available at short notice from stock				L = 3,000 mm
Material	H [mm]	D [mm]	B [mm]	Order number
DD11 hot-dip galvanized	75	2.5	400	60 1901 1148 002
	75	2.5	500	60 1901 1149 002
	75	3.0	600	60 1901 1150 002
	75	3.0	800	60 1901 1151 002

Available up to L = 6,000 mm  
Please consider the notes concerning the perforated edges.

**Note concerning lump load**

The values are calculated for gratings which are supported over their whole length. For a given span width, the values stated in this lump load table must not exceed those given in the concentrated load table.

For stainless steel, the values in the table must be multiplied by a factor of 1.04 or for EN AW-5754 by a factor of 0.75.

**Ten times the lump load-bearing capacity than e.g. gratings with round perforations**

The safety grating Graepel-Stabil Xtrem obtains its load-bearing capacity from the strong surface profiling which has a height of 20 mm. Depending on grating width (B), material thickness (D), load area (a1 x a2) and material, a factor of 10 and higher may result.

**Order information**

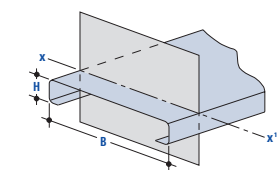
Graepel-Stabil Xtrem is available up to a length of 6,000 mm. Please note that grating lengths over 3,000 mm are difficult to handle and cost intensive due to their high weight.

Upon request, the gratings are cut to length. Please specify the required length when ordering. Please take account of the length divider of 50 mm.

Hot-dip galvanized gratings are hot-dip galvanized after sawing to ensure optimum corrosion protection.

**Moments of inertia and section modulus**

Grating cross-sections (axis X-X)



Bend height H [mm]	Material thickness D [mm]	Moment of inertia I <sub>x</sub> [mm <sup>4</sup> ]	Minimum section modulus W <sub>y</sub> [mm <sup>3</sup> ]
50	2.0	110363.15	3849.67
	2.5	132611.75	4623.0
	3.0	152910.47	5327.56
75	3.5	163997.66	5693.80
	2.0	301979.87	7229.12
	2.5	366531.70	8770.33
100	3.0	426976.13	10211.75
	3.5	466797.08	11139.13
	2.0	626881.88	11471.31
100	2.5	765162.16	13996.76
	3.0	896419.21	16391.89
	3.5	981264.23	17847.26

**Conversion of the replacement load F<sub>q</sub> from the table into a distributed load Q**

$$Q = \frac{10^6 \times F_q}{B \times L}$$

with:  
 Q = Distributed load for a grating [kN/m<sup>2</sup>]  
 F<sub>q</sub> = Replacement load from table with reference to the support width [kN]  
 B = Grating width [mm]  
 L = Support length [mm]