

	Dimensions	Graepel-Stabil
Material thickness	DD 11 raw	1.5   2.0   2.5   3.0 mm
	DD 11 hot-dip galvanized	1.5   2.0   2.5   3.0 mm
Dimensions	Stainless steel	1.5   2.0   2.5 mm
	EN AW-5754	2.0   2.5   3.0 mm
Dimensions	Lengths (L) up to length divider	12,000 mm*** 30 mm
	Standard grating widths <sup>1</sup> (B) DD 11   DX 51 D   Stainless steel   EN AW-5754 Width divider <sup>1</sup>	120 to 886 mm in steps of 60 mm 60 mm
	Heights (H)	40   50   75 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 11	V 10	
DX 51 D pre-galvanized	R 13	V 10	
Stainless steel	R 13	V 10	
EN AW-5754	R 13	V 10	



Weight per meter for Graepel-Stabil for material thickness D [in kg/m]																
Grating width [mm]	2.0					2.5					3.0					
	DD 11** / Stainless steel Height [mm]	40	50	75	40	50	75	40	50	75	40	50	75	40	50	75
120	3.4	3.7	4.5	4.2	4.6	5.6	1.4	1.6	1.9	4.9	5.4	6.6	1.7	1.8	2.3	
180	4.2	4.5	5.3	5.1	5.5	6.5	1.8	1.9	2.2	6.1	6.6	7.8	2.1	2.3	2.7	
240	5.0	5.3	6.1	6.1	6.5	7.5	2.1	2.2	2.6	7.3	7.7	8.9	2.5	2.7	3.1	
300	5.8	6.1	6.9	7.1	7.5	8.5	2.4	2.6	2.9	8.4	8.9	10.1	2.9	3.1	3.5	
360	6.5	6.9	7.7	8.1	8.5	9.5	2.8	2.9	3.3	9.6	10.1	11.3	3.3	3.5	3.9	
420	7.3	7.7	8.5	9.1	9.5	10.5	3.1	3.3	3.6	10.8	11.3	12.5	3.7	3.9	4.3	
480	8.1	8.4	9.2	10.1	10.5	11.5	3.5	3.6	3.9	12.0	12.5	13.7	4.1	4.3	4.7	

**Characteristic**

Graepel-Stabil has upward formations. Its surface is characterized by 45 mm long, raised holes in olive shape with serrated edges. The profile height is 13 mm, the open area amounts to approx. 50 %. Despite its wide displacement space and an enormous drainage effect, this perforation has a 15-mm barrier. (A ball ≥ 15 mm will not drop through.) Graepel-Stabil has been certified the highest slip resistance class. Due to the large embossment height, Graepel-Stabil has a high transverse stiffness of the grating surface which makes embossed field widths of up to 886 mm possible.

**Application**

This perforation is universally used as safety grating on surfaces, walkways and platforms. It is designed for outdoor applications as its slip resistance is little affected by snow and slush. The use of Graepel-Stabil is advisable in the field of renewable energies as well as in the onshore and offshore sectors. Steps and ladder rungs are also available with Graepel-Stabil perforation.

**Options**

- This perforation is program controllable. Thus, individual embossments can be created.
- An embossed field of up to 886 mm is possible.
- The standard edge perforation may be omitted.
- Beveled skirting board possible.

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]										Support length L [mm]												
		500	750	1000	1250	1500	1750	2000	2250	2500	2750	3000	500	750	1000	1250	1500	1750	2000	2250	2500	2750	3000	
DD 11, DX 51 D	40	2.0	4.794	3.196	2.397	1.918	1.598	1.370	1.074	0.849	0.688	0.568	0.477	2.997	1.844	1.332	1.042	0.856	0.726	0.631	0.533	0.431	0.356	0.299
	40	2.5	5.684	3.789	2.842	2.274	1.895	1.624	1.275	1.007	0.816	0.674	0.567	3.552	2.186	1.579	1.236	1.015	0.861	0.748	0.632	0.512	0.423	0.355
	40	3.0	6.463	4.309	3.232	2.585	2.154	1.847	1.451	1.147	0.929	0.768	0.645	4.040	2.486	1.795	1.405	1.154	0.979	0.850	0.719	0.582	0.481	0.404
	50	2.0	6.937	4.625	3.469	2.775	2.312	1.982	1.734	1.498	1.213	1.003	0.843	4.336	2.668	1.927	1.508	1.239	1.051	0.913	0.807	0.723	0.628	0.528
	50	2.5	8.293	5.528	4.146	3.317	2.764	2.369	2.073	1.793	1.452	1.200	1.008	5.183	3.189	2.304	1.803	1.481	1.256	1.091	0.964	0.864	0.752	0.632

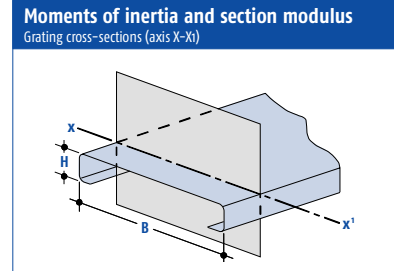
H [mm]	D [mm]	Uniformly distributed load										Concentrated load												
		Replacement load F <sub>q</sub> [in kN] for uniformly distributed load (numerical values apply for single grating)										Load F <sub>q</sub> [in kN] for concentrated load (numerical values apply for single grating)												
		Support length L [mm]										Support length L [mm]												
		500	750	1000	1250	1500	1750	2000	2250	2500	2750	3000	500	750	1000	1250	1500	1750	2000	2250	2500	2750	3000	
EN AW-5754	40	2.0	3.543	2.304	1.296	0.830	0.576	0.423	0.324	0.256	0.207	0.171	0.144	2.214	1.363	0.826	0.525	0.363	0.266	0.204	0.161	0.130	0.107	0.090
	40	2.5	4.191	2.729	1.535	0.982	0.682	0.501	0.384	0.303	0.246	0.203	0.171	2.619	1.612	0.978	0.622	0.430	0.315	0.241	0.190	0.154	0.127	0.107
	40	3.0	4.754	3.099	1.743	1.116	0.775	0.569	0.436	0.344	0.279	0.231	0.194	2.971	1.829	1.111	0.706	0.488	0.358	0.274	0.216	0.175	0.144	0.121
	50	2.0	5.169	3.446	2.304	1.475	1.024	0.752	0.576	0.455	0.369	0.305	0.256	3.231	1.988	1.436	0.933	0.646	0.473	0.362	0.286	0.231	0.191	0.160
	50	2.5	6.169	4.113	2.753	1.762	1.224	0.899	0.688	0.544	0.440	0.364	0.306	3.856	2.373	1.714	1.115	0.771	0.565	0.432	0.341	0.276	0.228	0.192

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]										Support length L [mm]												
		500	750	1000	1250	1500	1750	2000	2250	2500	2750	3000	500	750	1000	1250	1500	1750	2000	2250	2500	2750	3000	
Stainless steel	40	2.0	5.251	3.501	2.626	2.100	1.750	1.403	1.074	0.849	0.688	0.568	0.477	3.282	2.020	1.459	1.142	0.938	0.796	0.675	0.533	0.431	0.356	0.299
	40	2.5	6.225	4.150	3.113	2.490	2.075	1.665	1.275	1.007	0.816	0.674	0.567	3.891	2.394	1.729	1.353	1.112	0.943	0.801	0.632	0.512	0.423	0.355
	40	3.0	7.598	5.065	3.799	3.039	2.533	2.171	1.896	1.498	1.213	1.003	0.843	4.749	2.922	2.111	1.652	1.357	1.151	1.000	0.883	0.761	0.628	0.528
	50	2.5	9.082	6.055	4.541	3.633	3.027	2.595	2.269	1.793	1.452	1.200	1.008	5.677	3.493	2.523	1.974	1.622	1.376	1.195	1.056	0.910	0.752	0.632
	75	2.0	15.019	10.013	6.008	5.006	4.291	3.755	3.338	3.779	3.004	2.731	2.393	9.387	5.776	4.172	3.265	2.682	2.276	1.976	1.746	1.564	1.417	1.295

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]		
	2.0	2.5	3.0
120****	17.57	20.60	23.18
180****	8.87	10.41	11.71
240	5.75	6.74	7.59
300	4.46	5.23	5.88
360	3.76	4.41	4.96
420	3.32	3.90	4.39
480	3.03	3.55	3.99

**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**.



Bend height H [mm]	Material thickness D [mm]	Moment of inertia I <sub>y</sub> [mm <sup>4</sup> ]	Minimum section modulus W <sub>y</sub> [mm <sup>3</sup> ]
40	2.0	53285.69	2133.24
	2.5	63235.29	2528.98
	3.0	71984.66	2875.85
50	2.0	94048.85	3086.61
	2.5	112537.08	3689.74
	3.0	129197.16	4231.67
75	2.0	267091.69	6101.38
	2.5	323383.88	7381.86
	3.0	375747.85	8570.70

**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]

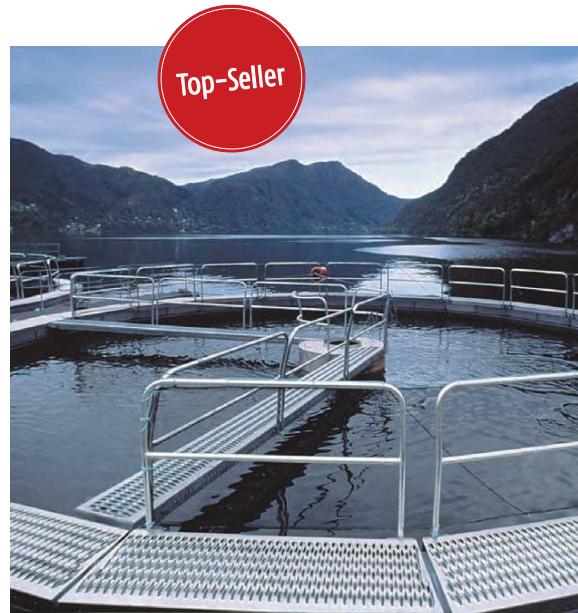
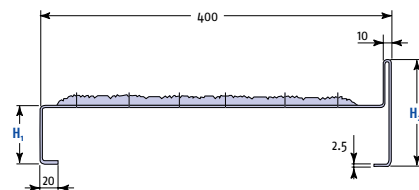
Available at short notice from stock				L = 3,000 mm
Material	H [mm]	D [mm]	B [mm]	Order number
<b>DD11 raw</b>	40	2.5	120*	60 2100 3066 001
	40	2.5	180	60 2100 3067 001
	40	2.5	240	60 2100 3068 001
	40	2.5	300	60 2100 3069 001
	40	2.5	360	60 2100 3070 001
	40	2.5	420	60 2100 3071 001
	40	2.5	480	60 2100 3072 001
<b>DD 11 hot-dip galvanized</b>	40	2.0	120*	60 2100 0071 002
	40	2.0	180	60 2100 0185 002
	40	2.0	240	60 2100 0300 002
	40	2.0	300	60 2100 3062 002
	40	2.0	360	60 2100 3063 002
	40	2.0	420	60 2100 3064 002
	40	2.0	480	60 2100 3065 002
	40	2.5	120*	60 2100 3066 002
	40	2.5	180	60 2100 3067 002
	40	2.5	240	60 2100 3068 002
	40	2.5	300	60 2100 3069 002
	40	2.5	360	60 2100 3070 002
	40	2.5	420	60 2100 3071 002
	40	2.5	480	60 2100 3072 002
	50	2.5	120*	60 2100 3080 002
	50	2.5	180	60 2100 3081 002
	50	2.5	240	60 2100 3082 002
	50	2.5	300	60 2100 3083 002
	50	2.5	360	60 2100 3084 002
	50	2.5	420	60 2100 3085 002
	50	2.5	480	60 2100 3086 002
75	2.5	120*	60 2100 1044 002	
75	2.5	180	60 2100 1043 002	
75	2.5	240	60 2100 1033 002	
75	2.5	300	60 2100 1040 002	
75	2.5	360	60 2100 1042 002	
75	2.5	420	60 2100 3257 002	
75	2.5	480	60 2100 3036 002	
<b>Aluminum EN AW-5754</b>	40	2.5	180	60 2100 3067 003
	40	2.5	240	60 2100 3068 003
	40	2.5	300	60 2100 3069 003
	40	2.5	400**	60 2100 3206 003
	50	2.5	300	60 2100 3083 003
	50	2.5	400**	60 2100 3047 003
75	2.5	120*	60 2100 0044 003	
75	2.5	300	60 2100 1040 003	
75	2.5	420	60 2100 3257 003	
75	2.5	480	60 2100 3036 003	
<b>Stainless steel Material no. 1.4301</b>	40	2.0	120*	60 2101 2952 004
	40	2.0	180	60 2100 0185 004
	40	2.0	240	60 2100 0300 004
	40	2.0	300	60 2100 3062 004
<b>Stainless steel Material no. 1.4404</b>	40	2.0	120*	60 2100 2952 007
	40	2.0	180	60 2100 0185 007
	40	2.0	240	60 2100 0300 007
	40	2.0	300	60 2100 3062 007

Available up to L = 12,000 mm  
Please consider the notes concerning the perforated edges.

Skirting board grating

Available at short notice from stock				L = 6,000 mm	
Material	H1 [mm]	H2 [mm]	D [mm]	B [mm]	Order number
<b>Aluminum EN AW-5754</b>	50	100	2.5	400	60 2100 2532 003
	65	121	2.5	400	60 2100 1971 003

Standard version: Graepel-Stabil  
Other perforations on request.



**Order information**  
Graepel-Stabil (except for DD 11 hot-dip galvanized) is available up to a length of 12,000 mm. Please note that grating lengths over 6,000 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 30 mm.

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