

Characteristics

Graepel-Special 4-18 has a C-shaped, canted contour. The surface has embossed (d = 4.5 mm) and debossed (d = 18 mm) holes that are arranged in staggered rows. The open area for standard grating widths is approximately 21 %. Graepel-Special 4-18 has high anti-skid values as well as a large displacement space and a good drainage effect. The maximum embossed field is 460 mm.

Application

This special perforation is suitable for very different purposes, e.g. as indoor walking surfaces in industrial plants. As facade cladding, it provides light transmission and good ventilation while protecting against excessive sunlight.

Options

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

Dimensions		Graepel-Special 4-18
Material thickness	DD 11 raw	2.0 2.5 mm
	DD 11 hot-dip galvanized DX 51 D pre-galvanized	2.0 2.5 mm
Dimensions	Stainless steel	2.0 mm
	EN AW-5754	2.0 2.5 3.0 mm
	Lengths (L) up to Length divider	6,000 mm
	Standard grating widths ¹ (B) Width divider	182 to 356 mm in steps of 22.5 mm
	Heights (H)	30 50 75 mm

¹Other dimensions on request.

Anti-slip values		
Material	Evaluation of anti-slip	Displacement
DD 11 hot-dip galvanized	R 11	V 10
Stainless steel	R 12	V 10
EN AW-5754	R 12	V 10



Further details on the perforation on our website

Grating width [mm]	Weight per meter for Graepel-Special 4-18 for material thickness D [in kg/m]														
	2.0						2.5						3.0		
	DD 11** / Stainless steel Height [mm]			EN AW-5754 Height [mm]			DD 11** Height [mm]			EN AW-5754 Height [mm]			EN AW-5754 Height [mm]		
182	3.9	4.6	5.4	1.4	1.6	1.9	4.9	5.7	6.7	1.7	2.0	2.3	2.0	2.4	2.8
240	4.7	5.4	6.2	1.6	1.9	2.1	5.9	6.7	7.7	2.0	2.3	2.7	2.4	2.8	3.2
298	5.6	6.3	7.1	1.9	2.2	2.4	7.1	7.9	8.9	2.4	2.7	3.0	2.9	3.2	3.8
330	6.0	6.6	7.4	2.1	2.3	2.6	7.5	8.3	9.3	2.6	2.8	3.2	3.1	3.4	3.8
356	6.4	7.0	7.8	2.2	2.4	2.7	8.0	8.8	9.8	2.8	3.0	3.4	3.3	3.6	4.0

Legend * Available only up to a length of 3,000 mm ** Values also apply for DX 51 D

*** For gratings smaller than 200 mm, the lump load is added to the neighboring gratings corresponding to the portion of the load area.

H [mm]	D [mm]	Uniformly distributed Replacement load F _q [in kN] for uniformly distributed load (numerical values apply for single grating)												Concentrated load Load F _q [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	30	2.0	5.676	3.784	2.838	2.009	1.395	1.025	0.785	0.620	0.502	0.415	0.349	3.548	2.183	1.577	1.234	0.879	0.645	0.493	0.389	0.315	0.260	0.218
	30	2.5	6.732	4.488	3.366	2.382	1.654	1.215	0.931	0.735	0.596	0.492	0.414	4.208	2.589	1.870	1.464	1.043	0.765	0.584	0.461	0.373	0.308	0.259
	50	2.0	11.407	7.605	5.703	4.563	3.802	3.259	2.614	2.065	1.673	1.382	1.162	7.129	4.387	3.169	2.480	2.037	1.853	1.501	1.296	1.049	0.866	0.728
	50	2.5	13.751	9.168	6.876	5.501	4.584	3.929	3.151	2.490	2.017	1.667	1.400	8.595	5.289	3.820	2.989	2.456	2.084	1.809	1.562	1.264	1.044	0.877
	75	2.0	20.283	13.522	10.141	8.113	6.761	5.795	5.071	4.507	4.057	3.671	3.084	12.677	7.801	5.634	4.409	3.622	3.073	2.669	2.358	2.113	1.913	1.749
	75	2.5	24.671	16.447	12.336	9.868	8.224	7.049	6.168	5.482	4.934	4.465	3.752	15.419	9.489	6.853	5.363	4.406	3.975	3.246	2.869	2.570	2.327	2.127
EN AW-5754	30	2.0	4.005	1.780	1.001	0.641	0.445	0.327	0.250	0.198	0.160	0.132	0.111	2.697	1.151	0.638	0.406	0.281	0.206	0.157	0.124	0.100	0.083	0.070
	30	2.5	4.751	2.111	1.188	0.760	0.528	0.388	0.297	0.235	0.190	0.157	0.132	3.199	1.365	0.757	0.481	0.333	0.244	0.186	0.147	0.119	0.098	0.083
	30	3.0	5.181	2.303	1.295	0.829	0.576	0.423	0.324	0.256	0.207	0.171	0.144	3.489	1.489	0.825	0.525	0.363	0.266	0.203	0.161	0.130	0.107	0.090
	50	2.0	8.963	5.930	3.336	2.135	1.482	1.089	0.834	0.659	0.534	0.441	0.371	5.602	3.447	2.125	1.351	0.935	0.685	0.524	0.413	0.335	0.276	0.232
	50	2.5	10.805	7.149	4.021	2.574	1.787	1.313	1.005	0.794	0.643	0.532	0.447	6.753	4.156	2.562	1.629	1.127	0.826	0.631	0.498	0.403	0.333	0.280
	50	3.0	12.064	7.986	4.492	2.875	1.997	1.467	1.123	0.887	0.719	0.594	0.499	7.540	4.640	2.862	1.819	1.259	0.923	0.705	0.557	0.451	0.372	0.313
Stainless steel	75	2.0	15.936	10.624	7.968	5.668	3.936	2.892	2.214	1.749	1.417	1.171	0.984	9.960	6.129	4.427	3.464	2.481	1.819	1.391	1.098	0.888	0.734	0.616
	75	2.5	19.384	12.923	9.692	6.895	4.788	3.518	2.693	2.128	1.724	1.425	1.197	12.115	7.456	5.385	4.214	3.019	2.213	1.692	1.335	1.081	0.893	0.750
	75	3.0	21.968	14.645	10.984	7.817	5.428	3.988	3.053	2.413	1.954	1.615	1.357	13.730	8.449	6.102	4.776	3.422	2.508	1.918	1.514	1.225	1.012	0.850

Grating width B [mm]	Lump load Maximum possible lump load F [in kN] (numerical values apply for DD 11)		
	Load area 200 x 200 mm		
	Material thickness [mm]		
182***	1.89	2.49	3.18
240	1.25	1.65	2.10
298	0.97	1.28	1.63
330	0.88	1.16	1.48
356	0.82	1.09	1.38

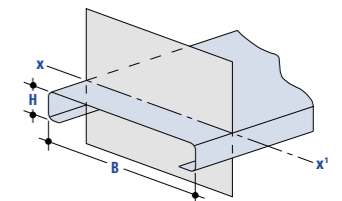
Note concerning lump load

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.

Moments of inertia and section modulus

Grating cross-sections (axis X-X')



Bend height H [mm]	Material thickness D [mm]	Moment of inertia I _x [mm ⁴]	Minimum section modulus W _y [mm ³]
30	2.0	38918.66	2525.54
	2.5	46161.04	2995.52
	3.0	50344.74	3264.69
50	2.0	129645.30	5075.43
	2.5	156300.69	6118.51
	3.0	174605.86	6831.59
75	2.0	344236.50	9024.56
	2.5	418745.73	10977.18
	3.0	474710.43	12440.09

Conversion of the replacement load F_q 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/m²]
 F_q = Replacement load from table with reference to the support width [kN]
 B = Grating width [mm]
 L = Support length [mm]