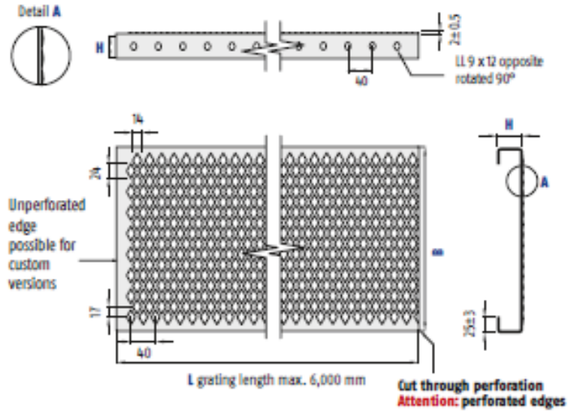


Characteristic

Graepel-Rhombus has upward shaped formations. The surface is closed. It owes its name to the rhombus-shaped upward perforations which extend only a maximum of 4 mm upwards. The staggered rhombuses look like flat pyramids and have a size of 24 x 14 mm. They form a visually attractive surface since the light is reflected differently on all four sides of the rhombus. The maximum embossed field is 620 mm.

Application

Graepel-Rhombus is especially suitable as covering for surfaces and platforms in public and industrial areas where closed surfaces are required. It is especially recommended for indoor use. It is ideal for places where nothing should drop through and where finer (non-industrial) shoes are worn. Graepel-Rhombus, like Graepel-Perl, is also suitable for barefoot walking.

Options

- This perforation is program controllable. Each rhombus can be left out and thus an individual embossing can be created.
- The standard edge perforation may be omitted.

	Dimensions	Graepel-Rhombus
Material thickness	DD 11 raw DD 11 hot-dip galvanized | DX 51 D pre-galvanized Stainless steel EN AW-5754	2.0 | 2.5 | 3.0 mm 2.0 | 2.5 | 3.0 mm 2.0 | 2.5 | 3.0 mm 2.0 | 2.5 mm
Dimensions	**Lengths (L)** up to Length divider **Standard grating widths[1] (B)** DD 11 | DX 51 D | Stainless steel | EN AW-5754 Width divider **Heights (H)**	6,000 mm 40 mm 120 to 300 mm in steps of 17 mm 17 mm 40 | 50 | 75 mm

[1] Other dimensions on request.

Anti-slip values

Material	Evaluation of anti-slip
DX 51 D pre-galvanized	R 10

Further details on the perforation on our website

Weight per meter for Graepel-Rhombus for material thickness D [in kg/m]

Grating width [mm]	2.0 DD 11**/ Stainless steel Height [mm]			2.0 ENAW 5754 Height [mm]			2.5 DD 11**/ Stainless steel Height [mm]			2.5 ENAW 5754 Height [mm]			3.0 DD 11**/ Stainless steel Height [mm]		
	40	50	75	40	50	75	40	50	75	40	50	75	40	50	75
120	3.7	4.0	4.8	1.3	1.4	1.6	4.5	4.9	5.9	1.6	1.7	2.0	5.3	5.8	7.0
150	4.2	4.5	5.3	1.4	1.5	1.8	5.1	5.5	6.5	1.8	1.9	2.2	6.0	6.5	7.7
180	4.6	5.0	5.8	1.6	1.7	2.0	5.7	6.1	7.1	2.0	2.1	2.4	6.8	7.2	8.4
210	5.1	5.4	6.2	1.8	1.9	2.1	6.3	6.7	7.7	2.2	2.3	2.7	7.5	8.0	9.2
240	5.6	5.9	6.7	1.9	2.0	2.3	6.9	7.3	8.3	2.4	2.5	2.9	8.2	8.7	9.9
270	6.1	6.4	7.2	2.1	2.2	2.5	7.5	7.9	8.9	2.6	2.7	3.1	8.9	9.4	10.6
300	6.6	6.9	7.7	2.3	2.4	2.6	8.1	8.5	9.5	2.8	2.9	3.3	9.6	10.1	11.3
330	7.0	7.4	8.1	2.4	2.6	2.8	8.7	9.1	10.1	3.0	3.2	3.5	10.4	10.8	12.0
360	7.5	7.8	8.6	2.6	2.7	3.0	9.3	9.7	10.7	3.2	3.4	3.7	11.1	11.6	12.8
390	8.0	8.3	9.1	2.8	2.9	3.2	9.9	10.3	11.3	3.4	3.6	3.9	11.8	12.3	13.5
420	8.5	8.8	9.6	2.9	3.1	3.3	10.5	10.9	11.9	3.7	3.8	4.1	12.5	13.0	14.2
450	9.0	9.3	10.1	3.1	3.2	3.5	11.1	11.5	12.5	3.9	4.0	4.3	13.2	13.7	14.9
480	9.4	9.8	10.5	3.3	3.4	3.7	11.7	12.1	13.1	4.1	4.2	4.5	14.0	14.4	15.6

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.
■ | ■ | ■ = Color coding for load values of stock items

	H [mm]	D [mm]	Uniformly distributed load – Replacement load Fq [in kN] for uniformly distributed load (numerical values apply for single grating) – Support length L [mm] 500	750	1000	1250	1500	1750	2000	2250	2500	2750	3000	Concentrated load – Load Fq [in kN] for concentrated load (numerical values apply for single grating) – Support length L [mm] 500	750	1000	1250	1500	1750	2000	2250	2500	2750	3000
DDn, DX 51 D	40	2.0	9.304	6.203	4.652	3.722	3.001	2.205	1.688	1.334	1.080	0.893	0.750	5.815	3.578	2.584	2.023	1.661	1.387	1.060	0.837	0.677	0.560	0.470
	40	2.5	11.796	7.864	5.898	4.718	3.932	2.911	2.229	1.761	1.426	1.179	0.991	7.372	4.537	3.277	2.564	2.106	1.787	1.400	1.105	0.894	0.739	0.620
	40	3.0	13.949	9.299	6.975	5.580	4.650	3.627	2.777	2.194	1.777	1.469	1.234	8.718	5.365	3.875	3.032	2.491	2.114	1.744	1.377	1.114	0.920	0.773
	50	2.0	12.569	8.379	6.285	5.028	4.190	3.591	2.848	2.250	1.822	1.506	1.266	7.856	4.834	3.491	2.732	2.244	1.904	1.654	1.412	1.143	0.944	0.793
	50	2.5	16.014	10.676	8.007	6.406	5.338	4.576	3.765	2.975	2.410	1.991	1.673	10.009	6.159	4.448	3.481	2.860	2.426	2.107	1.862	1.511	1.248	1.048
	50	3.0	19.075	12.717	9.537	7.630	6.358	5.450	4.708	3.720	3.013	2.490	2.092	11.922	7.336	5.299	4.147	3.406	2.890	2.510	2.218	1.889	1.560	1.311
	75	2.0	22.056	14.704	11.028	8.822	7.352	6.302	5.514	4.901	4.411	3.956	3.324	13.785	8.483	6.127	4.795	3.938	3.342	2.902	2.565	2.297	2.081	1.901
	75	2.5	28.254	18.836	14.127	11.302	9.418	8.073	7.064	6.279	5.651	5.137	4.390	17.659	10.867	7.848	6.142	5.045	4.281	3.718	3.285	2.943	2.666	2.436
	75	3.0	33.997	22.665	16.999	13.599	11.332	9.713	8.499	7.555	6.799	6.181	5.502	21.248	13.076	9.444	7.391	6.071	5.151	4.473	3.953	3.541	3.207	2.931
EN AW-5754	40	2.0	7.070	3.705	2.084	1.334	0.926	0.681	0.521	0.412	0.333	0.276	0.232	4.419	2.395	1.328	0.844	0.584	0.428	0.327	0.258	0.209	0.173	0.145
	40	2.5	8.977	4.903	2.758	1.765	1.226	0.901	0.689	0.545	0.441	0.365	0.306	5.611	3.169	1.757	1.117	0.773	0.566	0.433	0.342	0.277	0.229	0.192
	40	3.0	10.622	6.117	3.441	2.202	1.529	1.123	0.860	0.680	0.550	0.455	0.382	6.638	3.954	2.192	1.393	0.964	0.707	0.540	0.426	0.345	0.285	0.239
	50	2.0	9.575	6.265	3.524	2.255	1.566	1.151	0.881	0.696	0.564	0.466	0.392	5.984	3.683	2.245	1.427	0.987	0.724	0.553	0.437	0.354	0.292	0.245
	50	2.5	12.217	8.144	4.669	2.988	2.075	1.525	1.167	0.922	0.747	0.617	0.519	7.635	4.699	2.975	1.891	1.308	0.959	0.733	0.579	0.468	0.387	0.325
	50	3.0	14.560	9.707	5.846	3.741	2.598	1.909	1.461	1.155	0.935	0.773	0.650	9.100	5.600	3.724	2.367	1.638	1.201	0.918	0.724	0.586	0.484	0.407
	75	2.0	16.877	11.251	8.439	5.951	4.132	3.036	2.324	1.837	1.488	1.229	1.033	10.548	6.491	4.688	3.669	2.605	1.910	1.460	1.152	0.933	0.770	0.647
	75	2.5	21.647	14.431	10.823	7.871	5.466	4.016	3.074	2.429	1.968	1.626	1.366	13.529	8.326	6.013	4.706	3.446	2.526	1.931	1.524	1.234	1.019	0.856
	75	3.0	26.063	17.375	13.032	9.876	6.859	5.039	3.858	3.048	2.469	2.041	1.715	16.289	10.024	7.240	5.666	4.324	3.169	2.423	1.913	1.548	1.279	1.074
Stainless steel	40	2.0	10.190	6.793	5.095	4.076	3.001	2.205	1.688	1.334	1.080	0.893	0.750	6.369	3.919	2.831	2.215	1.820	1.387	1.060	0.837	0.677	0.560	0.470
	40	2.5	12.919	8.613	6.460	5.168	3.962	2.911	2.229	1.761	1.426	1.179	0.991	8.075	4.969	3.589	2.809	2.307	1.831	1.400	1.105	0.894	0.739	0.620
	40	3.0	15.278	10.185	7.639	6.111	4.936	3.627	2.777	2.194	1.777	1.469	1.234	9.549	5.876	4.244	3.321	2.728	2.281	1.744	1.377	1.114	0.920	0.773
	50	2.0	13.766	9.177	6.883	5.506	4.589	3.719	2.848	2.250	1.822	1.506	1.266	8.604	5.295	3.824	2.993	2.458	2.086	1.788	1.412	1.143	0.944	0.793
	50	2.5	17.539	11.693	8.770	7.016	5.846	4.918	3.765	2.975	2.410	1.991	1.673	10.962	6.746	4.872	3.813	3.132	2.657	2.308	1.867	1.511	1.248	1.048
	50	3.0	20.891	13.928	10.446	8.357	6.964	5.969	4.708	3.720	3.013	2.490	2.092	13.057	8.035	5.803	4.542	3.731	3.165	2.749	2.334	1.889	1.560	1.311
	75	2.0	24.156	16.104	12.078	9.662	8.052	6.902	6.039	5.368	4.787	3.956	3.324	15.098	9.291	6.710	5.251	4.314	3.660	3.178	2.809	2.516	2.279	2.082
	75	2.5	30.945	20.630	15.473	12.378	10.315	8.842	7.736	6.877	6.189	5.224	4.390	19.341	11.902	8.596	6.727	5.526	4.689	4.072	3.598	3.223	2.919	2.668
	75	3.0	37.235	24.823	18.617	14.894	12.412	10.639	9.309	8.274	7.447	6.548	5.502	23.272	14.321	10.343	8.095	6.649	5.642	4.899	4.330	3.879	3.513	3.210

Lump load

Maximum possible lump load F [in kN] (numerical values apply for DD 11)

Grating width B [mm]	Load area 200 x 200 mm – Material thickness [mm] 2.0	2.5	3.0
120***	2.86	4.47	6.44
150***	1.96	3.05	4.40
180***	1.45	2.26	3.25
240	0.94	1.46	2.11
270	0.81	1.27	1.83
300	0.73	1.13	1.63

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 **EN AW-5754**, the values in the table must be multiplied by a factor of **0,74**.

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

Order information

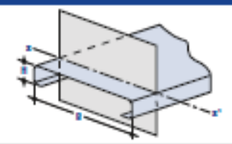
The gratings are available **up to a length of 6,000 mm.**

Upon request, the gratings are cut to length. Please specify the required length when ordering. Please take account of the length divider of 40 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-X1)



Note: Only the unperforated area of the two sides is taken into account for the static cross section values for the longitudinal direction of the grating *(shaded area)*.

Bend height H [mm]	Material thickness D [mm]	Moment of inertia I_x [mm⁴]	Minimum section modulus W_x [mm³]
40	2.0	83738.15	4139.69
	2.5	110555.85	5248.44
	3.0	137733.97	6206.58
50	2.0	141251.66	5592.51
	2.5	186763.37	7125.41
	3.0	233509.75	8487.17
75	2.0	371031.28	9813.41
	2.5	489947.64	12571.54
	3.0	614101.80	15126.67