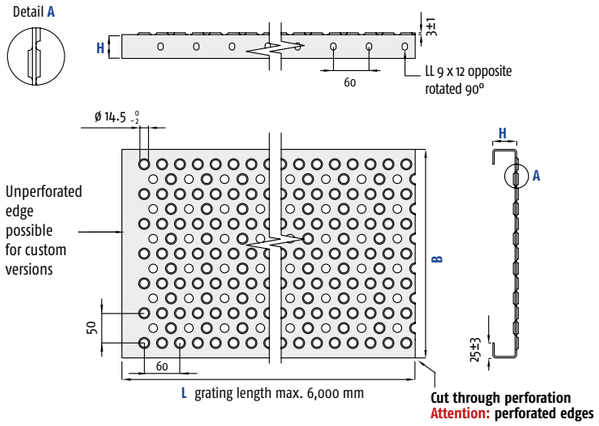
Graepel-Special 14-14 (formerly Graepel-Round)



Characteristics

Graepel-Special 14-14 has a C-shaped, canted contour. The surface has embossed and debossed holes of the same size (d = 14.5 mm) with more embossed holes that offer excellent slip resistance. The open area for standard grating widths is approximately 20 %. Graepel-Special 14-14 offers an excellent anti-skid effect and displacement as well as a good drainage effect. The maximum embossed field is 540 mm.

Application

This special perforation is mainly used in the industrial and commercial sector. It is frequently used for pre-assembled parts, such as scaffolding planks or treads and ladder rungs for industrial vehicles.

Options

- The standard edge perforation may be omitted.

Dimensions	Graepel-Special 14-14
Material thickness	
DD 11 raw	2.0 | 2.5 mm[1]
DD 11 hot-dip galvanized | DX 51 D pre-galvanized	2.0 | 2.5 mm
Stainless steel	2.0 | 2.5 mm
EN AW-5754	2.0 | 2.5 mm
Dimensions	
Lengths (L) up to	6,000 mm
Length divider	60 mm
Standard grating widths[1] (B)	
DD 11 | DX 51 D | Stainless steel | EN AW-5754	150 to 300 mm in steps of 50 mm
Width divider	50 mm
Heights (H)	40 | 50 | 75 mm

[1] Other dimensions on request.

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-Special 14-14 for material thickness D [in kg/m]

Grating width [mm]	2.0 DD 11**/ Stainless steel Height [mm]			2.0 EN AW-5754 Height [mm]			2.5 DD 11**/ Stainless steel Height [mm]			2.5 EN AW-5754 Height [mm]			3.0 DD11** Height [mm]		
	40	50	75	40	50	75	40	50	75	40	50	75	40	50	75
150	3.7	4.0	4.8	1.3	1.4	1.7	4.6	5.0	6.0	1.6	1.7	2.1	5.4	5.9	7.0
200	4.5	4.8	5.6	1.6	1.7	1.9	5.5	5.9	6.9	1.9	2.0	2.4	6.6	7.0	8.2
250	5.3	5.6	6.4	1.8	1.9	2.2	6.5	6.9	7.9	2.2	2.4	2.7	7.7	8.2	9.4
300	6.1	6.3	7.1	2.0	2.2	2.5	7.4	7.8	8.8	2.6	2.7	3.0	8.8	9.3	10.5

Graepel gratings

Graepel-Special 14-14 (formerly Graepel-Round)

	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
DD 11, DX 51 D	40	2.0	7.606	5.071	3.803	3.042	2.535	1.942	1.487	1.175	0.951	0.786	0.661	4.754	2.925	2.113	1.653	1.358	1.152	0.934	0.737	0.596	0.493	0.414
	40	2.5	9.103	6.069	4.552	3.641	3.034	2.324	1.780	1.406	1.139	0.941	0.791	5.690	3.501	2.529	1.979	1.626	1.379	1.118	0.882	0.714	0.590	0.495
	50	2.0	10.445	6.963	5.223	4.178	3.482	2.984	2.530	1.999	1.619	1.338	1.124	6.528	4.017	2.901	2.271	1.865	1.583	1.374	1.215	1.015	0.838	0.704
	50	2.5	12.581	8.387	6.290	5.032	4.194	3.595	3.048	2.408	1.951	1.612	1.355	7.863	4.839	3.495	2.735	2.247	1.906	1.655	1.463	1.223	1.010	0.848
	75	2.0	18.903	12.602	9.451	7.561	6.301	5.401	4.726	4.201	3.781	3.437	3.004	11.814	7.270	5.251	4.109	3.375	2.864	2.487	2.198	1.969	1.783	1.630
	75	2.5	22.978	15.319	11.489	9.191	7.659	6.565	5.745	5.106	4.596	4.178	3.653	14.362	8.838	6.383	4.995	4.103	3.482	3.023	2.672	2.394	2.168	1.981
EN AW-5754	40	2.0	5.742	3.247	1.826	1.169	0.812	0.596	0.457	0.292	0.911	0.241	0.203	3.589	2.099	1.164	0.740	0.512	0.375	0.287	0.226	0.183	0.151	0.127
	40	2.5	6.865	3.883	2.184	1.398	0.971	0.713	0.546	0.431	0.349	0.289	0.243	4.291	2.510	1.391	0.884	0.612	0.449	0.343	0.271	0.219	0.181	0.152
	50	2.0	7.914	5.276	3.118	1.995	1.386	1.018	0.779	0.616	0.499	0.412	0.346	4.946	3.044	1.986	1.263	0.873	0.640	0.490	0.386	0.313	0.258	0.217
	50	2.5	9.524	6.349	3.753	2.402	1.668	1.225	0.938	0.741	0.600	0.496	0.417	5.952	3.663	2.391	1.520	1.052	0.771	0.589	0.465	0.376	0.311	0.261
	75	2.0	14.410	9.607	7.205	5.361	3.723	2.735	2.094	1.655	1.340	1.108	0.931	9.006	5.542	4.003	3.133	2.347	1.720	1.315	1.038	0.840	0.694	0.583
	75	2.5	17.507	11.671	8.754	6.515	4.524	3.324	2.545	2.011	1.629	1.346	1.131	10.942	6.734	4.863	3.806	2.852	2.091	3.1.598	1.262	1.021	0.843	0.708
Stainless steel	40	2.0	8.330	5.554	4.165	3.332	2.643	1.942	1.487	1.175	0.951	0.786	0.661	5.207	3.204	2.314	1.811	1.488	1.221	0.934	0.737	0.596	0.493	0.414
	40	2.5	9.970	6.647	4.985	3.988	3.164	2.324	1.780	1.406	1.139	0.941	0.791	6.231	3.835	2.770	2.167	1.780	1.462	1.118	0.882	0.714	0.590	0.495
	50	2.0	11.440	7.627	5.720	4.576	3.813	3.269	2.530	1.999	1.619	1.338	1.124	7.150	4.400	3.178	2.487	2.043	1.733	1.505	1.254	1.015	0.838	0.704
	50	2.5	13.779	9.186	6.889	5.512	4.593	3.937	3.048	2.408	1.951	1.612	1.355	8.612	5.300	3.827	2.995	2.461	2.088	1.813	1.511	1.223	1.010	0.848
	75	2.0	20.703	13.802	10.351	8.281	6.901	5.915	5.176	4.601	4.141	3.575	3.004	12.939	7.963	5.751	4.501	3.697	3.137	2.724	2.407	2.157	1.953	1.785
	75	2.5	25.167	16.778	12.583	10.067	8.389	7.191	6.292	5.593	5.033	4.347	3.653	15.729	9.680	6.991	5.471	4.494	3.813	3.311	2.926	2.622	2.374	2.170

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
150***	1.48	2.06
200***	0.92	1.28
250***	0.67	0.94
300	0.55	0.77

Available at short notice from stock				L = 3,000 mm
Material	H [mm]	D [mm]	B [mm]	Order number
DD 11 hot-dip galvanized	40	2.5	150*	60 2200 0094 002
	40	2.5	200	60 2200 0095 002
	40	2.5	250*	60 2200 0096 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**.

Order information

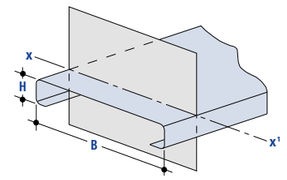
The gratings are available up to a **length of 6,000 mm.**

Upon request, the gratings are cut to length. Please specify the required length when ordering. Please take account of the length divider of 60 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)



Bend height H [mm]	Material thickness D [mm]	Moment of inertia I_x [mm⁴]	Minimum section modulus W_x [mm³]
40	2.0	73736.86	3384.26
	2.5	88271.11	4050.45
50	2.0	125476.56	4647.41
	2.5	151174.21	5597.72
75	2.0	335261.55	8410.55
	2.5	407647.73	10224.02

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]

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