



Characteristic

Graepel-Quattro is a metal profile grating whose surface is characterized by large square openings (15 x 15 mm) with upwardly punched teeth in reticular arrangement. The perforation extends only slightly upwards. The open area is approx. 35%. Graepel-Quattro offers displacement space, drainage and slip resistance. The maximum embossed field is 465 mm.

Application

Graepel-Quattro is particularly suitable for use as catwalks and platforms for roofed or indoor areas in the industrial sector. Moreover, it is used as a covering capable of being walked on in vehicle construction. Graepel-Quattro is also applicable as catwalk on fairground rides and carnival attractions.

Options

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

Dimensions		Graepel-Quattro	
Material thickness	DD 11 raw	2.0 2.5 3.0 mm	
	DD 11 hot-dip galvanized DX 51 D pre-galvanized	2.0 2.5 3.0 mm	
	Stainless steel	2.0 2.5 3.0 mm	
	EN AW-5754	2.0 2.5 3.0 mm	
Dimensions	Lengths (L) up to Length divider	6,000 mm	
	Standard grating widths ¹ (B) DD 11 DX 51 D Stainless steel EN AW-5754 Width divider	100 to 500 mm in steps of 25 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
Stainless steel	R 11	V 10
EN AW-5754	R 13	V 10



Grating width [mm]	Weight per meter for Graepel-Quattro for material thickness D [in kg/m]																	
	2.0						2.5						3.0					
	DD 11** Height [mm]	EN AW-5754 Height [mm]	DD 11** Height [mm]	EN AW-5754 Height [mm]	DD 11** Height [mm]	EN AW-5754 Height [mm]	DD 11** Height [mm]	EN AW-5754 Height [mm]	DD 11** Height [mm]	EN AW-5754 Height [mm]	DD 11** Height [mm]	EN AW-5754 Height [mm]	DD 11** Height [mm]	EN AW-5754 Height [mm]	DD 11** Height [mm]	EN AW-5754 Height [mm]		
100	2.9	3.2	4.0	1.0	1.1	1.4	3.5	3.9	4.9	1.2	1.4	1.7	4.2	4.6	5.8	1.5	1.6	2.0
150	3.5	3.8	4.6	1.2	1.3	1.6	4.2	4.6	5.6	1.5	1.6	2.0	5.0	5.5	6.6	1.8	1.9	2.3
200	4.0	4.3	5.1	1.4	1.5	1.8	4.9	5.3	6.3	1.7	1.9	2.2	5.8	6.3	7.5	2.0	2.2	2.6
250	4.6	4.9	5.7	1.6	1.7	2.0	5.6	6.0	7.0	2.0	2.1	2.5	6.7	7.1	8.3	2.3	2.5	2.9
300	5.1	5.4	6.2	1.8	1.9	2.2	6.3	6.7	7.7	2.2	2.4	2.7	7.5	8.0	9.2	2.6	2.8	3.2
350	5.7	6.0	6.8	2.0	2.1	2.4	7.0	7.4	8.4	2.5	2.6	2.9	8.3	8.8	10.0	2.9	3.1	3.5
400	6.2	6.6	7.3	2.2	2.3	2.6	7.7	8.1	9.1	2.7	2.8	3.2	9.2	9.7	10.8	3.2	3.4	3.8
450	6.8	7.1	7.9	2.4	2.5	2.8	8.4	8.8	9.8	3.0	3.1	3.4	10.0	10.5	11.7	3.5	3.7	4.1
500	7.4	7.7	8.5	2.6	2.7	3.0	9.1	9.5	10.5	3.2	3.3	3.7	10.9	11.3	12.5	3.8	4.0	4.4

H [mm]	D [mm]	Uniformly distributed load												Concentrated load											
		Replacement load F _q [in kN] for uniformly distributed load (numerical values apply for single grating)												Load F _q [in kN] for concentrated load (numerical values apply for single grating)											
		Support length L [mm]				Support length L [mm]				Support length L [mm]				Support length L [mm]											
DD 11, DX 51 D	40	2.0	7.511	5.007	3.755	3.004	2.504	1.926	1.474	1.165	0.944	0.780	0.655	4.694	2.889	2.086	1.633	1.341	1.138	0.926	0.731	0.592	0.489	0.410	
	40	2.5	8.987	5.992	4.494	3.595	2.996	2.305	1.765	1.394	1.129	0.933	0.784	5.617	3.457	2.497	1.954	1.605	1.362	1.108	0.875	0.708	0.585	0.491	
	40	3.0	10.320	6.880	5.160	4.128	3.440	2.647	2.027	1.601	1.297	1.072	0.901	6.450	3.969	2.867	2.244	1.843	1.564	1.273	1.005	0.813	0.672	0.564	
	50	2.0	10.326	6.884	5.163	4.130	3.442	2.950	2.510	1.984	1.607	1.328	1.116	6.454	3.971	2.868	2.245	1.844	1.565	1.359	1.201	1.007	0.832	0.699	
	50	2.5	12.435	8.290	6.218	4.974	4.145	3.553	3.024	2.389	1.935	1.600	1.344	7.772	4.783	3.454	2.703	2.221	1.884	1.636	1.446	1.213	1.002	0.842	
	50	3.0	14.372	9.581	7.186	5.749	4.791	4.106	3.496	2.762	2.238	1.849	1.554	8.982	5.528	3.992	3.124	2.566	2.178	1.891	1.671	1.403	1.159	0.973	
	75	2.0	18.726	12.484	9.363	7.490	6.242	5.350	4.681	4.161	3.745	3.405	2.985	11.704	7.202	5.202	4.071	3.344	2.837	2.464	2.177	1.951	1.767	1.614	
	75	2.5	22.761	15.174	11.380	9.104	7.587	6.503	5.690	5.058	4.552	4.138	3.629	14.226	8.754	6.322	4.948	4.064	3.449	2.995	2.647	2.371	2.147	1.962	
	75	3.0	26.553	17.702	13.277	10.621	8.851	7.587	6.638	5.929	5.311	4.828	4.235	16.596	10.213	7.376	5.722	4.742	4.022	3.494	3.088	2.766	2.505	2.289	

H [mm]	D [mm]	Uniformly distributed load												Concentrated load											
		Replacement load F _q [in kN] for uniformly distributed load (numerical values apply for single grating)												Load F _q [in kN] for concentrated load (numerical values apply for single grating)											
		Support length L [mm]				Support length L [mm]				Support length L [mm]				Support length L [mm]											
EN AW-5754	40	2.0	5.668	3.219	1.811	1.159	0.805	0.591	0.453	0.358	0.290	0.239	0.201	3.542	2.081	1.154	0.733	0.507	0.372	0.284	0.224	0.182	0.150	0.126	
	40	2.5	6.775	3.849	2.165	1.385	0.962	0.707	0.541	0.428	0.346	0.286	0.241	4.234	2.488	1.379	0.877	0.607	0.445	0.340	0.268	0.217	0.179	0.151	
	40	3.0	7.771	4.416	2.484	1.590	1.104	0.811	0.621	0.491	0.397	0.328	0.276	4.857	2.854	1.582	1.006	0.696	0.505	0.390	0.308	0.249	0.206	0.173	
	50	2.0	7.820	5.214	3.093	1.980	1.375	1.010	0.773	0.611	0.495	0.409	0.344	4.888	3.008	1.971	1.253	0.867	0.635	0.486	0.383	0.310	0.256	0.215	
	50	2.5	9.410	6.273	3.723	2.383	1.655	1.216	0.931	0.735	0.596	0.492	0.414	5.881	3.619	2.372	1.508	1.043	0.765	0.585	0.461	0.373	0.308	0.259	
	50	3.0	10.865	7.244	4.300	2.752	1.911	1.404	1.075	0.849	0.688	0.569	0.478	6.791	4.179	2.740	1.741	1.205	0.883	0.675	0.533	0.431	0.356	0.299	
	75	2.0	14.272	9.514	7.136	5.326	3.699	2.717	2.080	1.644	1.332	1.100	0.925	8.920	5.489	3.964	3.103	2.332	1.709	1.307	1.031	0.835	0.690	0.579	
	75	2.5	17.337	11.558	8.669	6.472	4.494	3.302	2.528	1.997	1.618	1.337	1.124	10.836	6.668	4.816	3.769	2.833	2.077	1.588	1.253	1.014	0.838	0.704	
	75	3.0	20.213	13.476	10.107	7.547	5.241	3.851	2.948	2.301	1.887	1.559	1.310	12.633	7.774	5.615	4.394	3.242	2.422	1.852	1.462	1.183	0.977	0.821	

H [mm]	D [mm]	Uniformly distributed load												Concentrated load											
		Replacement load F _q [in kN] for uniformly distributed load (numerical values apply for single grating)												Load F _q [in kN] for concentrated load (numerical values apply for single grating)											
		Support length L [mm]				Support length L [mm]				Support length L [mm]				Support length L [mm]											
Stainless steel	40	2.0	8.226	4.805	4.113	3.290	2.621	1.926	1.474	1.165	0.944	0.780	0.655	5.141	3.164	2.285	1.788	1.469	1.211	0.926	0.731	0.592	0.489	0.410	
	40	2.5	9.843	5.738	4.922	3.937	3.137	2.305	1.765	1.394	1.129	0.933	0.784	6.152	3.786	2.734	2.140	1.758	1.450	1.108	0.875	0.708	0.585	0.491	
	40	3.0	11.303	6.574	5.652	4.521	3.603	2.647	2.027	1.601	1.297	1.072	0.901	7.065	4.347	3.140	2.457	2.018	1.665	1.273	1.005	0.813	0.672	0.564	
	50	2.0	11.309	7.539	5.655	4.524	3.770	3.231	2.510	1.984	1.607	1.328	1.116	7.068	4.350	3.141	2.459	2.019	1.714	1.488	1.245	1.007	0.832	0.699	
	50	2.5	13.619	9.080	6.810	5.448	4.540	3.891	3.024	2.389	1.935	1.600	1.344	8.512	5.238	3.783	2.961	2.432	2.064	1.792	1.499	1.213	1.002	0.842	
	50	3.0	15.741	10.494	7.870	6.296	5.247	4.497	3.496	2.762	2.238	1.849	1.554	9.838	6.054	4.372	3.422	2.811	2.383	2.071	1.733	1.403	1.159	0.973	
	75	2.0	20.509	13.673	10.255	8.204	6.836	5.860	5.127	4.558	4.102	3.552	2.985	12.818	7.888	5.697	4.459	3.662	3.107	2.699	2.385	2.136	1.935	1.768	
	75	2.5	24.929	16.619	12.464	9.971	8.310	7.122	6.232	5.540	4.986	4.319	3.629	15.580	9.588	6.925	5.419	4.452	3.777	3.280	2.899	2.597	2.352	2.149	
	75	3.0	29.082	19.388	14.541	11.633	9.694	8.309	7.270	6.463	5.816	5.040	4.235	18.176	11.185	8.078	6.322	5.193	4.406	3.827	3.382	3.029	2.744	2.507	

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]		
	2.0	2.5	3.0
100***	1.54	2.41	3.47
150***	0.77	1.20	1.73
200	0.48	0.75	1.07
250	0.35	0.54	0.78
300	0.28	0.44	0.64
350	0.25	0.38	0.55
400	0.22	0.34	0.50
450	0.20	0.32	0.45
500	0.19	0.29	0.42

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]
40	2.0	73128.63	3341.79
	2.5	87528.25	3998.88
50	2.0	124525.93	4594.34
	3.0	150007.61	5532.91
75	2.0	173421.48	6394.65
	2.5	388947.21	10176.56
75	3.0	473878.60	12398.00
	3.0	554173.06	14497.85