



**Characteristic**

Graepel-Perl has a rounded, bead-shaped formation. The surface is closed. The name derives from the pearly, hemispherical upward perforations. They are arranged in staggered rows and have a diameter of 5 mm. The perforation offers a certain anti-skid effect and displacement, but no drainage. The maximum embossed field is 475 mm for program-controlled perforation groups and 625 mm for perforation groups without program control.

**Application**

Graepel gratings with Graepel-Perl perforation are especially suitable as covering for surfaces and platforms in public and industrial areas where closed surfaces are required. Especially recommended is the indoor use. This perforation is ideal for places where nothing should drop through and where finer (non-industrial) shoes are worn.

This perforation is even suitable for barefoot walking. The stainless steel type is suitable for use in swimming pools. Steps and ladder rungs are also available in the Graepel-Perl perforation.

**Options**

- This perforation is program controllable. Each bead can be left out and thus an individual embossing can be created.
- On request, Graepel-Perl can also be supplied with drain holes (d = 5 mm).
- The standard edge perforation may be omitted.

Dimensions		Graepel-Perl
<b>Material thickness</b>	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
<b>Lengths (L) up to</b>	Length divider	6,000 mm
<b>Standard grating widths<sup>1</sup> (B)</b>	DD 11   DX 51 D   Stainless steel   EN AW-5754	120 to 300 mm in steps of 10 mm
<b>Widths (B)</b>	Width divider	10 mm
<b>Heights (H)</b>		40   50   75 mm

<sup>1</sup>Other dimensions on request.

Anti-slip values	
Material	Evaluation of anti-slip
DD 11 hot-dip galvanized	R 10
DX 51 D pre-galvanized	R 12
Stainless steel	R 11
EN AW-5754	R 11



Further details on the perforation on our website

Grating width [mm]	2.0						2.5						3.0					
	Stainless steel Height [mm]		EN AW-5754 Height [mm]				Stainless steel Height [mm]		EN AW-5754 Height [mm]				Stainless steel Height [mm]		EN AW-5754 Height [mm]			
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	1.8	2.0	2.4
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	2.1	2.2	2.7
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	2.3	2.5	2.9
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	2.6	2.7	3.1
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	2.8	3.0	3.4
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	3.1	3.2	3.6
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	3.3	3.5	3.9
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	3.6	3.8	4.2
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	3.9	4.0	4.4
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	4.1	4.3	4.7
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	4.3	4.5	4.9
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	4.6	4.8	5.2
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	4.8	5.0	5.4

Available at short notice from stock				l = 3,000 mm	Order number
Material	H [mm]	D [mm]	B [mm]		
DX 51 D pre-galvanized	40	2.0	120*	60 1800 0186 005	
	40	2.0	180*	60 1800 0187 005	
	40	2.5	240	60 1800 0188 005	
DD 11 hot-dip galvanized	40	2.5	240*	60 1800 0101 005	
	40	2.5	180	60 1800 0771 002	
	75	2.5	240	60 1800 0772 002	



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]	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 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]	Minimum section modulus	
		Moment of inertia I <sub>x</sub> [mm <sup>4</sup> ]	W <sub>y</sub> [mm <sup>3</sup> ]
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

**Conversion of the replacement load F<sub>q</sub> from the table into a distributed load Q**

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]

$$Q = \frac{10^6 \times F_q}{B \times L}$$

**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.