65 YEARS
Since 1959
Graepels®

Graepels Lightprofile Grating

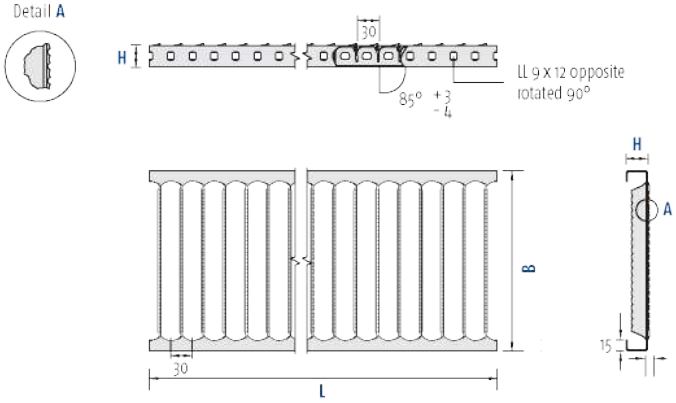
Shaping the Future, Safety for People & Machines | Graepels

CNC Perforating | Wire Weaving | Laser Cutting | Metal Fabrication

ISO 9001 Accredited by NSAI & UKAS | CE Accredited EN 1090

Servicing the Industry Since 1889 Est. 1959

Graepel-Lightprofile



Characteristic

Graepel-Lightprofile has a unique cut and rotated formation. Its surface is characterized by almost vertical bars with serrated edges which allow for an almost unlimited view through the grating. Depending on the grating width, the open area is between 74 and 80 %, thus reaching the highest value of all Graepel perforations.
Graepel-Lightprofile offers an extreme drainage effect, excellent slip resistance and displacement as well as a high transverse stiffness. The maximum embossed field is 370 mm.

Application

Graepel-Lightprofile is essential in machine and plant manufacture wherever precipitation or high dirt volumes put underfoot safety at risk. They are used as walking surfaces on crushers and agricultural machines, as coverings capable of being walked on for bunkers and pits with cohesive loose goods such as grains or ground particles. Also as walkways in areas with extreme precipitation, e.g. for ski lifts, and wherever it is extremely windy, for instance on crane arms etc. Platforms made of Graepel-Lightprofile ensure underfoot safety for maintenance purposes without obstructing visibility to the work area. As an alternative to open mesh flooring, Graepel-Lightprofile provides wider support widths and additional slip resistance with a similar open surface.

Options

- The standard edge perforation may be omitted.

Dimensions		Graepel-Lightprofile
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 2.5 | 3.0 mm 2.5 | 3.0 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 30 mm 200 to 400 mm in steps of 50 mm 200 | 250 mm 50 mm 40 | 50 | 75 mm

[1] Other dimensions on request.

Anti-slip values

Material	Evaluation of anti-slip	Displacement
DD 11 hot-dip galvanized	R 11	V 10
Stainless steel	R 13	V 10
EN AW-5754	R 13	V 10

Further details on the perforation on our website

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

Grating width [mm]	2.0			2.5							3.0						
	DD 11** Height [mm]			DDD 11**/ Stainless steel Height [mm]				EN AW-5754 Height [mm]			DDD 11**/ Stainless steel Height [mm]				EN AW-5754 Height [mm]		
	40	50	75	30	40	50	75	40	50	75	30	40	50	75	40	50	75
200	3.5	4.2	4.6	4.3	4.3	5.1	6.1	1.5	1.8	2.1	5.1	5.1	6.1	7.2	1.8	2.1	2.5
250	4.1	4.8	5.6	5.1	5.1	5.9	6.9	1.8	2.1	2.4	6.0	6.0	7.0	8.1	2.1	2.4	2.9
300	4.7	5.4	6.2	5.9	5.9	6.6	7.6	–	–	–	6.9	6.9	7.9	9.1	–	–	–
350	5.4	6.0	6.8	6.6	6.6	7.4	8.4	–	–	–	7.8	7.8	9.8	10.0	–	–	–
400	6.0	6.6	7.4	7.3	7.4	8.2	9.1	–	–	–	8.8	8.6	9.7	10.9	–	–	–

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

	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
DD11, DX 51 D	30	2.0	4.095	2.731	2.048	1.423	0.988	0.726	0.556	0.493	0.356	0.294	0.247	2.560	1.575	1.138	0.890	0.623	0.457	0.346	0.276	0.223	0.184	0.155
	30	2.5	4.823	3.215	2.411	1.676	1.164	0.855	0.655	0.517	0.419	0.346	0.291	3.014	1.855	1.340	1.048	0.734	0.538	0.411	0.324	0.263	0.217	0.182
	30	3.0	5.448	3.632	2.724	1.893	1.314	0.966	0.739	0.584	0.473	0.391	0.329	3.405	2.095	1.513	1.184	0.829	0.607	0.464	0.367	0.297	0.245	0.206
	40	2.0	6.198	4.132	3.099	2.479	1.991	1.463	1.120	0.885	0.717	0.593	0.498	3.874	2.384	1.722	1.347	1.107	0.920	0.704	0.555	0.449	0.371	0.312
	40	2.5	7.379	4.919	3.690	2.952	2.371	1.742	1.334	1.054	0.854	0.705	0.593	4.612	2.838	2.050	1.604	1.318	1.096	0.838	0.661	0.535	0.442	0.371
	40	3.0	8.429	5.619	4.215	3.372	2.709	1.990	1.524	1.204	0.975	0.806	0.667	5.268	3.242	2.341	1.832	1.505	1.252	0.957	0.755	0.611	0.505	0.424
	50	2.0	8.603	5.735	4.301	3.441	2.868	2.458	1.942	1.534	1.243	1.027	0.863	5.377	3.309	2.390	1.870	1.536	1.303	1.132	0.963	0.779	0.644	0.541
	50	2.5	10.315	6.877	5.157	4.126	3.438	2.947	2.328	1.840	1.490	1.231	1.035	6.447	3.967	2.865	2.242	1.842	1.563	1.357	1.154	0.934	0.772	0.648
	50	3.0	11.868	7.912	5.934	4.474	3.956	3.391	2.679	2.117	1.714	1.417	1.191	7.417	4.564	3.297	2.580	2.119	1.798	1.562	1.328	1.075	0.888	0.746
	75	2.0	15.931	10.621	7.965	6.372	5.310	4.552	3.983	3.540	3.186	2.848	2.393	9.957	6.127	4.425	3.463	2.845	2.414	2.096	1.852	1.659	1.503	1.373
	75	2.5	19.302	12.868	9.650	7.721	6.434	5.515	4.826	4.289	3.860	3.451	2.900	12.064	7.424	5.362	4.196	3.447	2.925	2.540	2.244	2.011	1.821	1.664
	75	3.0	22.444	14.962	11.222	8.977	7.481	6.413	5.611	4.988	4.489	4.013	3.372	14.028	8.632	6.235	4.879	4.008	3.401	2.953	2.610	2.338	2.117	1.935
EN AW-5754	30	2.5	3.149	1.400	0.787	0.504	0.350	0.257	0.197	0.156	0.126	0.104	0.087	2.121	0.925	0.502	0.319	0.221	0.162	0.124	0.098	0.079	0.065	0.055
	30	3.0	3.549	1.577	0.887	0.568	0.394	0.290	0.222	0.175	0.142	0.117	0.097	2.390	1.020	0.565	0.359	0.249	0.182	0.139	0.110	0.089	0.074	0.062
	40	2.5	5.503	2.872	1.616	1.034	0.718	0.528	0.404	0.319	0.259	0.214	0.180	3.439	1.857	1.029	0.654	0.453	0.332	0.254	0.200	0.162	0.134	0.112
	40	3.0	6.275	3.276	1.843	0.179	0.819	0.602	0.461	0.364	0.295	0.434	0.205	3.922	2.118	1.174	0.746	0.516	0.378	0.289	0.228	0.185	0.135	0.128
	50	2.5	7.735	5.041	2.836	1.815	1.260	0.926	0.709	0.560	0.454	0.375	0.315	4.833	2.974	1.807	1.148	0.795	0.582	0.445	0.351	0.284	0.235	0.197
	50	3.0	8.885	5.792	3.258	2.085	1.448	1.064	0.815	0.644	0.521	0.431	0.362	5.553	3.417	2.076	1.320	0.913	0.669	0.512	0.404	0.327	0.270	0.227
	75	2.5	14.605	9.737	7.303	5.133	3.564	2.619	2.005	1.584	1.283	1.060	0.891	9.128	5.617	4.057	3.175	2.247	1.647	1.259	0.994	0.805	0.665	0.558
	75	3.0	16.986	11.312	8.484	5.963	4.141	3.042	2.329	1.841	1.491	1.232	1.035	10.605	6.526	4.713	3.689	2.611	1.914	1.463	1.155	0.935	0.772	0.648
Stainless steel	30	2.0	4.486	2.991	2.224	1.423	0.688	0.726	0.556	0.439	0.356	0.294	0.247	2.804	1.725	1.246	0.900	0.623	0.457	0.349	0.276	0.223	0.184	0.155
	30	2.5	5.282	3.521	2.618	1.676	1.164	0.855	0.655	0.517	0.419	0.346	0.291	3.301	2.032	1.467	1.060	0.734	0.538	0.411	0.324	0.263	0.217	0.182
	30	3.0	5.966	3.978	2.958	1.893	1.314	0.966	0.739	0.584	0.473	0.391	0.329	3.729	2.295	1.657	1.198	0.829	0.607	0.464	0.367	0.297	0.245	0.206
	40	2.0	6.788	4.526	3.394	2.713	1.991	1.463	1.120	0.885	0.717	0.593	0.498	4.234	2.611	1.886	1.476	0.212	0.920	0.704	0.555	0.449	0.371	0.312
	40	2.5	8.082	5.388	4.041	3.233	2.371	1.742	1.334	1.054	0.854	0.705	0.593	5.051	3.108	2.245	1.757	1.443	1.096	0.838	0.661	0.535	0.442	0.371
	40	3.0	9.232	6.155	4.616	3.369	2.709	1.990	1.524	1.204	0.975	0.806	0.677	5.770	3.551	2.564	2.007	1.649	1.252	0.957	0.755	0.611	0.504	0.424
	50	2.0	9.422	6.281	4.711	3.769	3.141	2.536	1.942	1.534	1.234	1.027	0.863	5.889	3.624	2.617	2.048	1.683	1.428	1.220	0.963	0.779	0.644	0.541
	50	2.5	11.297	7.531	5.649	4.519	3.766	3.041	2.328	1.840	1.490	1.231	1.035	7.061	4.345	3.138	2.456	2.017	1.712	1.462	1.154	0.934	0.772	0.648
	50	3.0	12.998	8.665	6.499	5.199	4.333	3.499	2.679	2.117	1.714	1.462	1.191	8.124	4.999	3.610	2.826	2.321	1.969	1.682	1.328	1.075	0.888	0.745
	75	2.0	17.448	11.632	8.724	6.979	5.816	4.985	4.362	3.877	3.447	2.848	2.393	10.905	6.711	4.847	3.793	3.116	2.644	2.296	2.029	1.818	1.646	1.499
	75	2.5	21.140	14.094	10.570	8.456	7.047	6.040	5.285	4.698	4.176	3.451	2.900	13.213	8.131	5.872	4.596	3.775	3.203	2.782	2.458	2.202	1.994	1.816
	75	3.0	24.582	16.388	12.291	9.833	8.194	7.023	6.145	5.463	4.856	4.013	3.372	15.364	9.455	6.828	5.344	4.390	3.752	3.234	2.858	2.561	2.319	2.112

Available at short notice from stock	H [mm]	D [mm]	B [mm]	L = 3,000 mm Order number
DD 11 raw	40	2.5	200	60 4900 0029 001
	40	2.5	250	60 4900 0030 001
	40	2.5	300	60 4900 0031 001
	40	2.5	350	60 4900 0032 001
	40	2.5	400	60 4900 0033 001
DD11 hot-dip galvanized	30	2.5	200	60 4900 0024 002
	30	2.5	250	60 4900 0025 002
	30	2.5	300	60 4900 0026 002
	30	2.5	350	60 4900 0027 002
	30	2.5	400	60 4900 0028 002
	40	2.5	200	60 4900 0029 002
	40	2.5	250	60 4900 0030 002
	40	2.5	300	60 4900 0031 002
	40	2.5	350	60 4900 0032 002
	40	2.5	400	60 4900 0033 002
	75	2.5	200	60 4900 0034 002
	75	2.5	250	60 4900 0035 002
	75	2.5	300	60 4900 0036 002
	75	2.5	350	60 4900 0037 002
	75	2.5	400	60 4900 0038 002
Aluminum EN AW-5754	40	2.5	200	60 4900 0029 003
	40	2.5	250	60 4900 0030 003
Stainless steel Material no. 1.4404	40	2.0	200*	60 4900 0043 007
	40	2.0	250*	60 4900 0047 007
	40	2.0	300	60 4900 0048 007

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**.

Available up to L = 6,000 mm

Please consider the notes concerning the perforated edges.

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 30 mm.

Hot-dip galvanized gratings are hot-dip galvanized after sawing to ensure optimum corrosion protection.

Lump load	Maximum possible lump load F [in kN] (numerical values apply for DD 11)		
	Load area 200 x 200 mm		
Grating width B [mm]	Material thickness [mm] 2.0	2.5	3.0
200	6.345	7.932	9.518
250	4.230	5.288	6.345
300	3.173	3.966	4.749
350	2.538	3.173	3.807
400	2.115	2.644	3.173

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]
30	2.0	27574	1822
	2.5	32468	2146
	3.0	36676	2424
40	2.0	55566	2758
	2.5	66157	3283
	3.0	75575	3750
50	2.0	96315	3828
	2.5	115488	4589
	3.0	132879	5280
75	2.0	267121	7088
	2.5	323656	8588
	3.0	376355	9986

Case Study

The Museum of Military

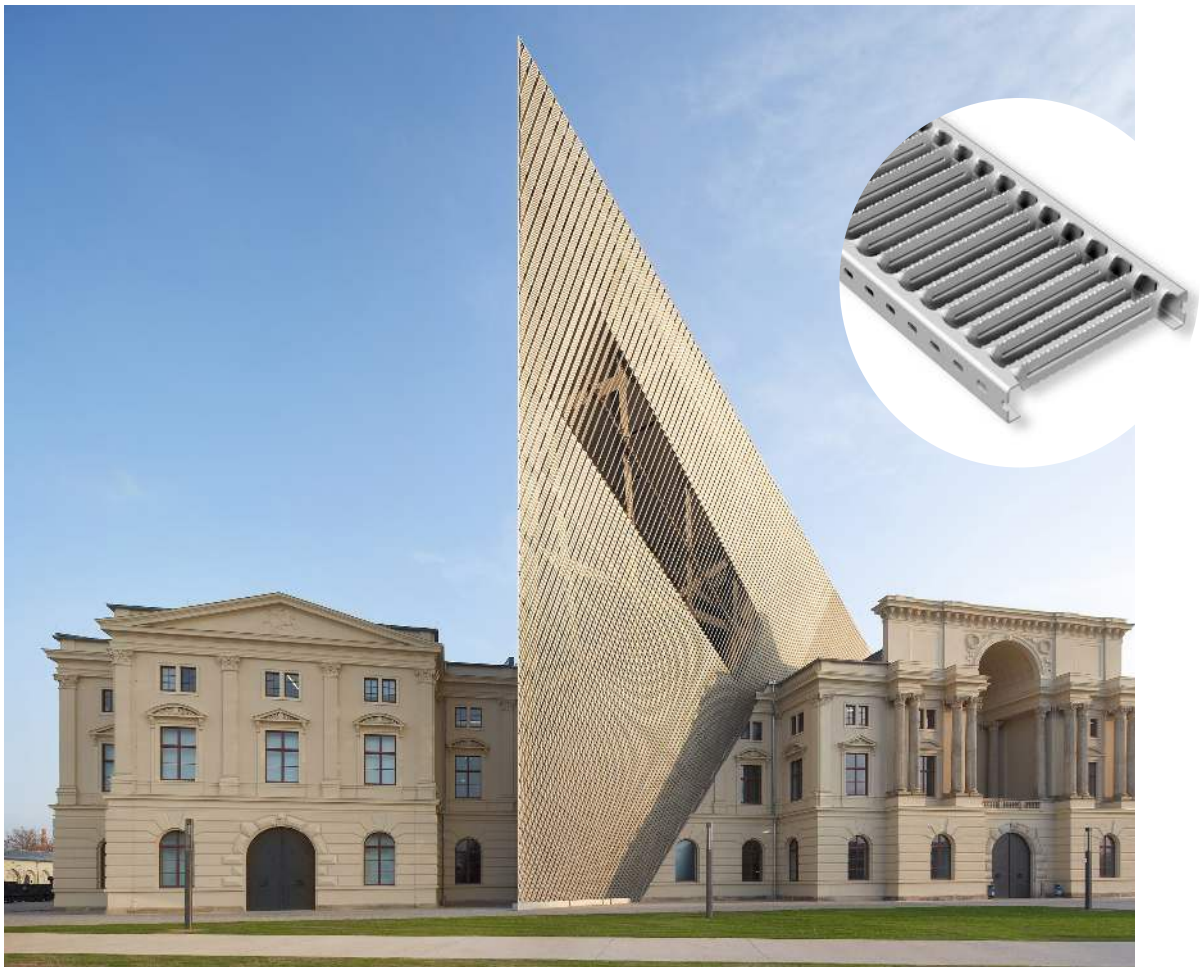
The Museum of Military History in Dresden, designed by Daniel Libeskind, stands as a remarkable example of deconstructivist architecture. Its striking angular facade and dramatic protrusions are achieved using innovative materials and techniques, one of which is the Graepel metal light profile.

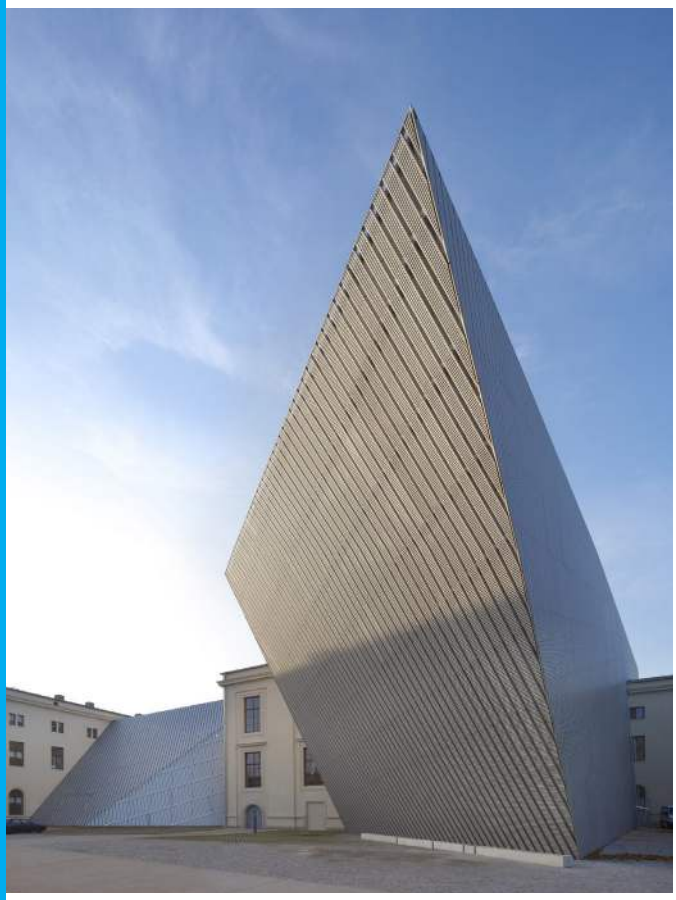
Graepel's perforated metal profiles are ideal for architectural applications requiring aesthetic appeal, structural integrity, and functionality. In this project, the metal panels contribute to the building's dynamic appearance while maintaining practicality. The perforations play with light and shadow, adding texture to the museum's facade. They also align with Libeskind's intent to convey complexity and provoke thought about the contradictions of war.

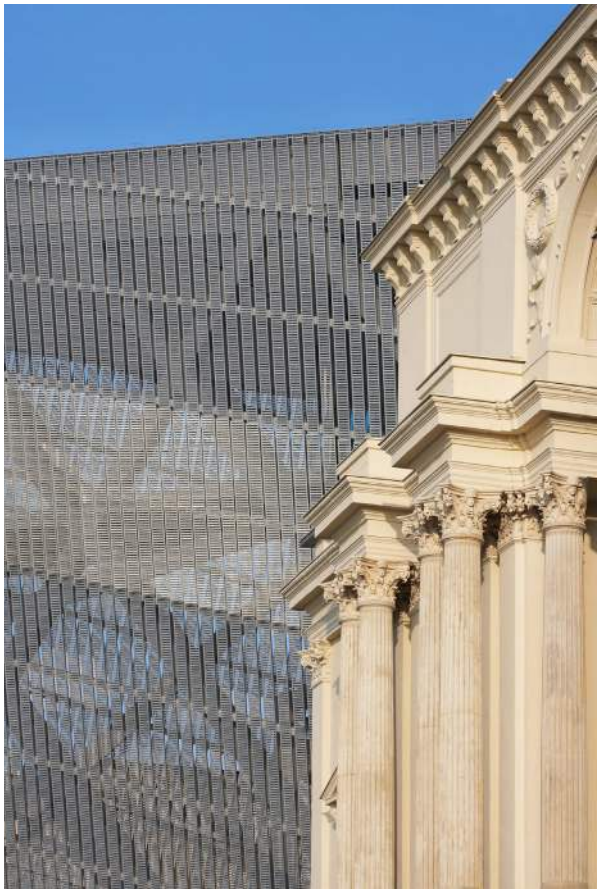
Additionally, Graepel profiles support the building's environmental goals by reducing material usage without compromising strength. Their durability ensures longevity, and the perforations facilitate ventilation and light diffusion, which are particularly relevant in cultural and public buildings.

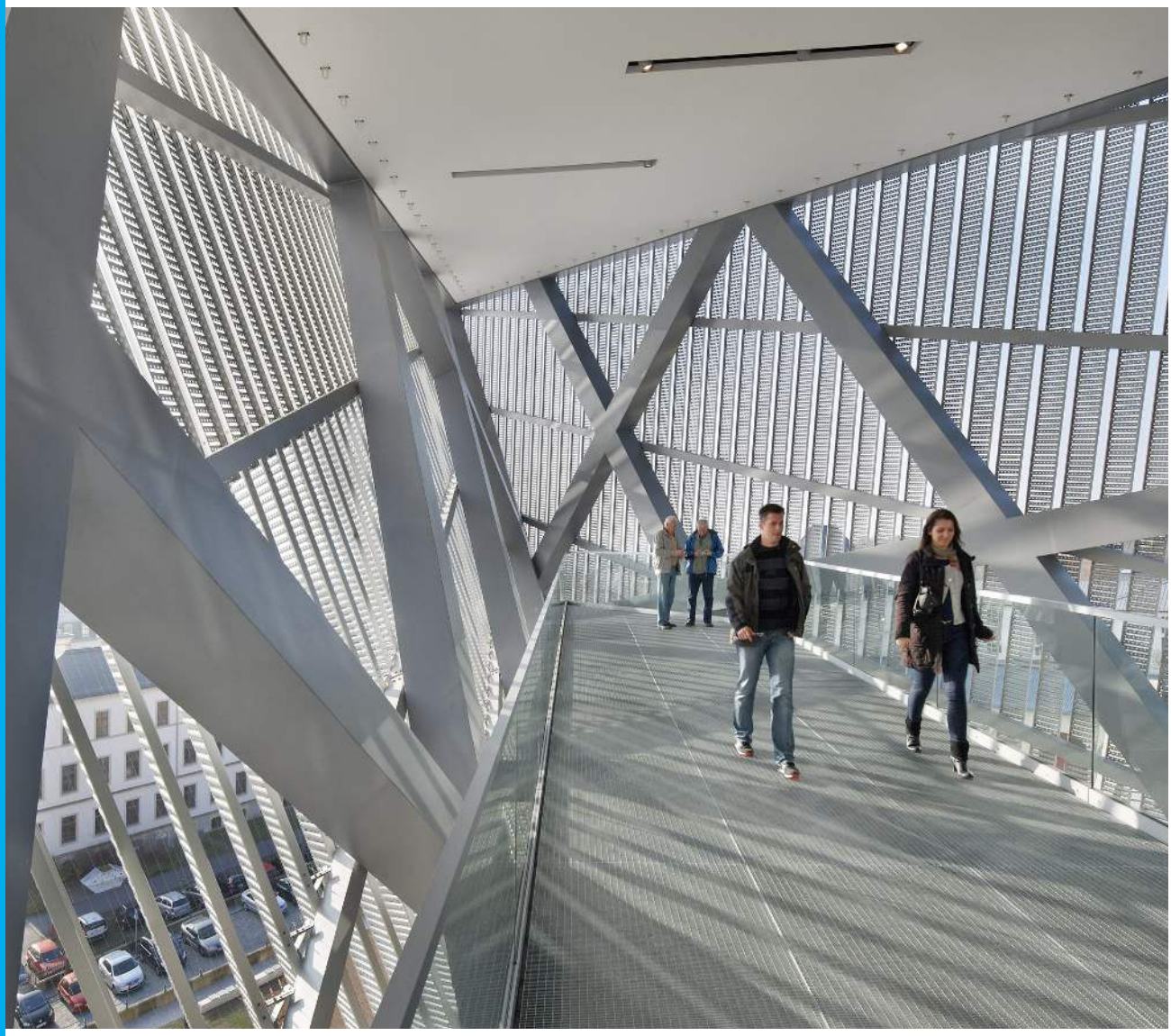
The use of Graepel's metal profiles in the Museum of Military History underscores their versatility, blending cutting-edge architectural aesthetics with functional excellence. This project highlights how Graepel's products can enhance iconic modern designs, reinforcing their role in architectural innovation.

Note this project was undertook between Graepel Germany supplier and manufacture for Graepels UK and Ireland.









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