



LICHTGITTER COMBI-DECK

COMBINES PERFECTLY THE ADVANTAGES

OF GRATINGS AND CHEQUER PLATES

COMBI-DECKS AND CHEQUER PLATES FOR YOUR APPLICATION:

+ Platforms

+ Working platforms

+ Mounting platforms

+ Floor coverings

+ Entrances
and Crossings

+ Ramps

+ Design Elements

LICHTGITTER-COMBI-DECK

COMBI-DECK – GRATINGS WITH ON TOP WELDED CHEQUER PLATES COMBINE IDEALLY THE ADVANTAGES OF BOTH PRODUCTS. IN ADDITION TO CUTTING CHEQUER PLATES INCLUDING COUNTERSUNK HOLES, FURTHER PROCESSING AND COMPLETE TECHNICAL DOCUMENTATION, GREAT SPANS CAN NOW ALSO BE BRIDGED WITH RELATIVELY LOW NET WEIGHT AND WITH ONLY FOUR SUFFICIENT FIXING POINTS.

YOU CAN BENEFIT FROM OUR EXPERIENCE OF VARIOUS PROJECTS WITH SEVERAL THOUSAND SQUARE METERS. THE POSITIVE FEEDBACK OF OUR CLIENTS SPEAKS FOR ITSELF AND FOR THE UNBEATABLE ADVANTAGES OF THE LICHTGITTER-COMBI-DECK.

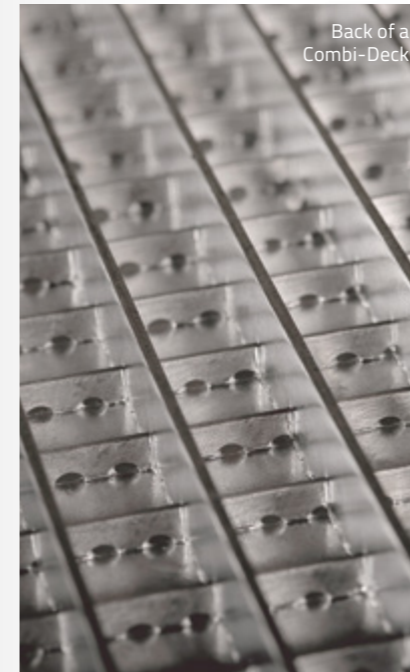
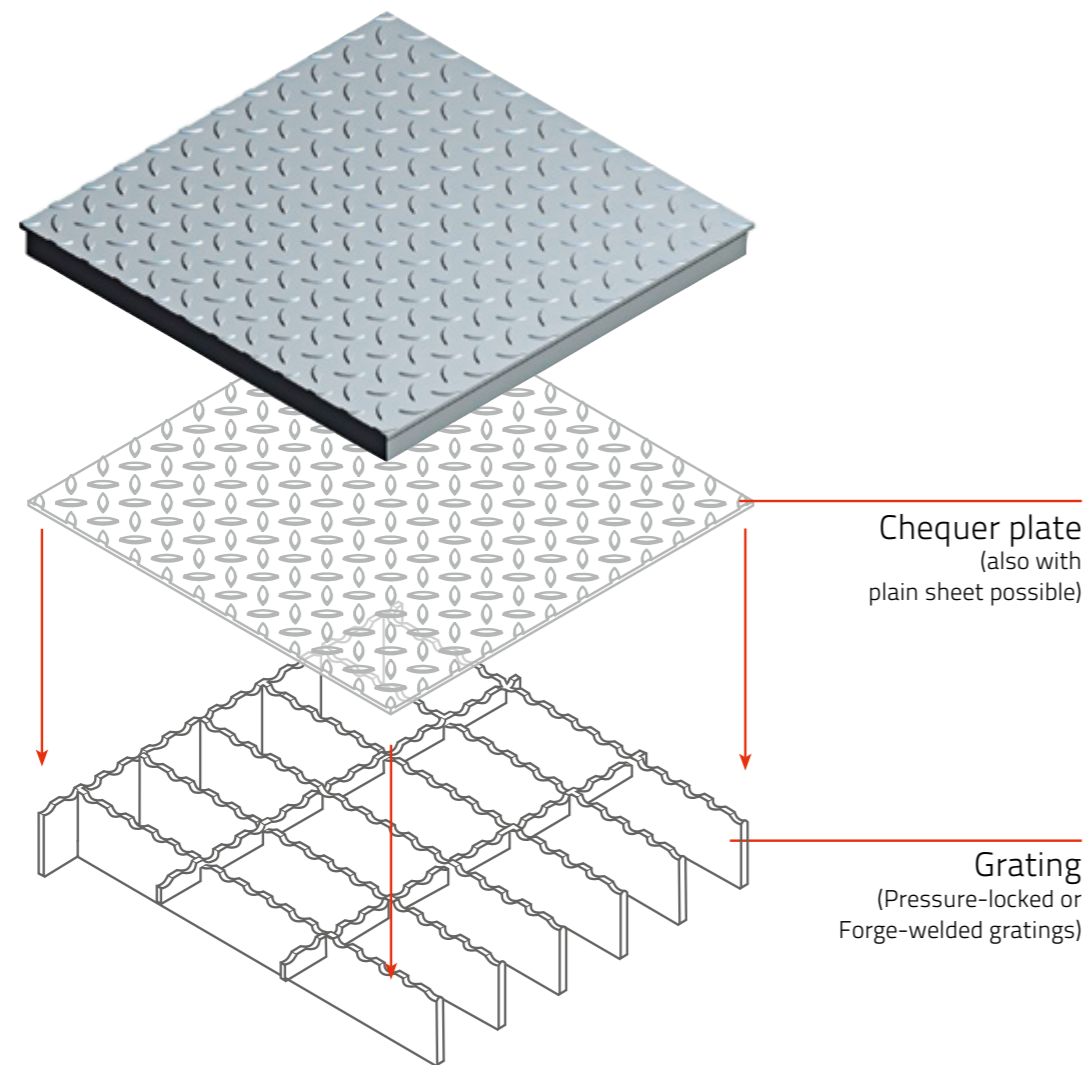
CHARACTERISTICS

Chequer plates combine a closed surface with a slip-resistant effect. Due to different versions rating group R11 is reached, which is approved by the German professional association.

Gratings, on the other hand, have a high load capacity with a low tare weight and can be mounted very easily. The advantages of the combination with welded chequer plates on top are unbeatable and can not be achieved by another closed industrial flooring.

TYPICAL APPLICATIONS

- + platforms for the industrial sector, e.g. chemical/petrochemical industry, power plants and cement industry as well as for bulk material and offshore applications
- + working platforms, ramps, entrances and crossings
- + applications where a special design effect is desired



Crossing from gratings to combi decks with plain sheets

SO MANY ADVANTAGES –

ONLY ACHIEVABLE BY THE LICHTGITTER COMBI-DECK

- + Bridge-over of large spans at relatively low net weight, therefore lower assembly costs
- + Increase of the clear span by 30%
- + Saving of secondary carrier and lower dimensioning of the primary steel construction
- + Easy assembly of the fixings (only 4 fixings per grating are necessary)
- + Elaboration of verifiable statical calculations for walkable and accessible coverings (due to the high loading capacity of combi-decks special loads are possible)
- + Individual solutions for every statical requirement
- + Tolerances acc. to RAL GZ 638. Hereby a high level of accuracy is guaranteed
- + Lichtgitter Combi-Deck can be produced in every height, so that a possible difference in height with neighboring floorings can be avoided.
- + Due to the production possibilities regarding the different combi-decks, the system can be specially adapted to your statical requirements
- + no interface-problems: complete range of industrial floor coverings: „Lichtgitter - Everything from one source“

LOAD TABLE COMBI-DECK

Grating Type	Bearing Bar	approx. galv. weight kg/sqm	Clear span in mm																	
			500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000		
Combi-Deck XP 225-33/66-2, chequer plate 3/5	25 x 2 mm	42	F_v	58,10	40,35	29,64	22,69	17,93	14,52	12,00	10,09	8,59	7,41	6,46	5,67	5,03	4,48	4,02	3,63	
			f_{v1}	0,89	1,28	1,74	2,28	2,88	3,56	4,31	5,13	6,02	6,98	8,01	9,11	10,29	11,53	12,85	14,24	
			F_p	4,94	3,95	3,29	2,82	2,47	2,20	1,98	1,80	1,65	1,52	1,41	1,32	1,24	1,16	1,10	1,04	
			f_{p1}	0,83	1,17	1,57	2,02	2,53	3,10	3,73	4,41	5,15	5,95	6,81	7,72	8,68	9,71	10,79	11,93	
Combi-Deck XP 230-33/66-2, chequer plate 3/5	30 x 2 mm	45	F_v	80,68	56,03	41,16	31,52	24,90	20,17	16,67	14,01	11,93	10,29	8,96	7,88	6,98	6,23	5,59	5,04	
			f_{v1}	0,77	1,11	1,50	1,96	2,49	3,07	3,71	4,42	5,19	6,02	6,91	7,86	8,87	9,95	11,08	12,28	
			F_p	6,82	5,45	4,54	3,89	3,41	3,03	2,73	2,48	2,27	2,10	1,95	1,82	1,70	1,60	1,51	1,43	
			f_{p1}	0,71	1,01	1,35	1,74	2,19	2,68	3,22	3,81	4,45	5,13	5,87	6,66	7,49	8,38	9,31	10,29	
Combi-Deck XP 330-33/66-3, chequer plate 3/5	30 x 3 mm	53	F_v	113,74	78,99	58,03	44,43	35,11	28,44	23,50	19,75	16,83	14,51	12,64	11,11	9,84	8,78	7,88	7,11	
			f_{v1}	0,82	1,18	1,61	2,10	2,66	3,28	3,97	4,72	5,55	6,43	7,38	8,40	9,48	10,63	11,85	13,12	
			F_p	9,61	7,69	6,41	5,49	4,80	4,27	3,84	3,49	3,20	2,96	2,75	2,56	2,40	2,26	2,14	2,02	
			f_{p1}	0,76	1,08	1,44	1,86	2,34	2,86	3,44	4,07	4,75	5,49	6,27	7,11	8,01	8,95	9,95	11,00	
Combi-Deck XP 240-33/66-2, chequer plate 3/5	40 x 2 mm	50	F_v	135,84	94,34	69,31	53,06	41,93	33,96	28,07	23,58	20,10	17,33	15,09	13,27	11,75	10,48	9,41	8,49	
			f_{v1}	0,61	0,88	1,19	1,56	1,97	2,43	2,94	3,50	4,11	4,77	5,47	6,23	7,03	7,88	8,78	9,73	
			F_p	11,32	9,06	7,55	6,47	5,66	5,03	4,53	4,12	3,77	3,48	3,23	3,02	2,83	2,66	2,52	2,38	
			f_{p1}	0,56	0,80	1,07	1,38	1,73	2,12	2,55	3,02	3,52	4,07	4,65	5,27	5,94	6,64	7,38	8,15	
Combi-Deck XP 340-33/66-3, chequer plate 3/5	40 x 3 mm	61	F_v	190,13	132,04	97,01	74,27	58,68	47,53	39,28	33,01	28,13	24,25	21,13	18,57	16,45	14,67	13,17	11,88	
			f_{v1}	0,65	0,94	1,28	1,67	2,11	2,61	3,16	3,76	4,41	5,12	5,87	6,68	7,54	8,46	9,42	10,44	
			F_p	15,84	12,68	10,56	9,05	7,92	7,04	6,34	5,76	5,28	4,88	4,53	4,23	3,96	3,73	3,52	3,34	
			f_{p1}	0,61	0,86	1,15	1,48	1,86	2,28	2,74	3,24	3,78	4,36	4,99	5,66	6,37	7,12	7,91	8,75	

KEY TO SYMBOLS

F_v uniformly distributed load in kN/sqm
 f_{v1} deflection in mm at load F_v
 F_p concentrated load in kN uniformly distributed over an area of 200 x 200 mm
 f_{p1} deflection values in mm at load F_p

1 kN = 1000 N = approx. 100 kg

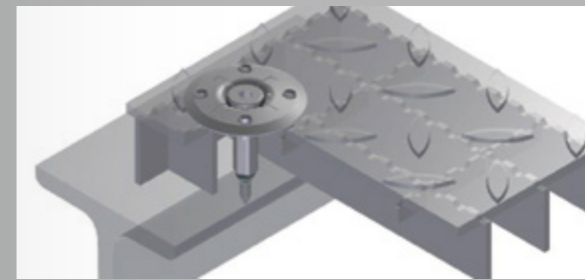
DATA

Material S 235 JR
 part factor of safety according to RAL-GZ 638
 side of load $\gamma_Q = 1,5$
 side of stress $\gamma_M = 1,0$

PEDESTRIAN TRAFFIC

Gray Gratings manufactured in accordance with the requirements of instruction sheet BGI 588 of the professional association and to quality instruction RAL-GZ 638, are considered suitable for pedestrian traffic when they meet the following design criteria: The maximum permissible deflection 'f', does not exceed 1/200th of the span 'L' or 4 mm whichever is the lesser, under a concentrated load of 1,5 kN applied in the most unfavourable position, over a concentrated load of 200 x 200 mm.

FIXING MATERIAL



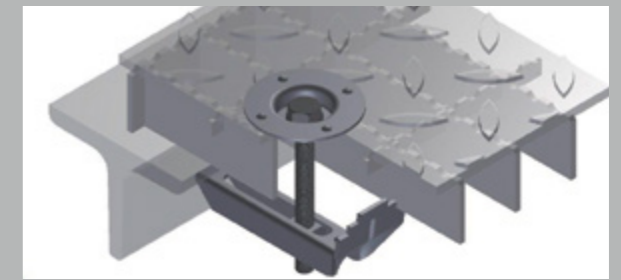
1. FIXING MATERIAL B433T

This type of fixing can be installed from above and prevents slippage of gratings from the support, even when the screw loosens. This fixing is suitable for pitches from 25 mm.

Consisting of:

- top clamp with fixed, connected, threaded bush
- threaded bolts

This entire fixing unit can be supplied in stainless steel.



2. FIXING MATERIAL B133T

(NOT PREMOUNTED)

This fixing can be assembled from above for pitches of 33 mm (and over) and upon request it can be supplied with a raised 'beard'. According to the instructions of the German Employer's Liability Insurance Association only permissible, if an additional locking device preventing a displacement on site is available.

Consisting of:

- top plate
- under part
- screw, nut and washer

This fixing can be delivered in stainless steel. The length of screw should be at least the height of the grating, plus 30 mm.

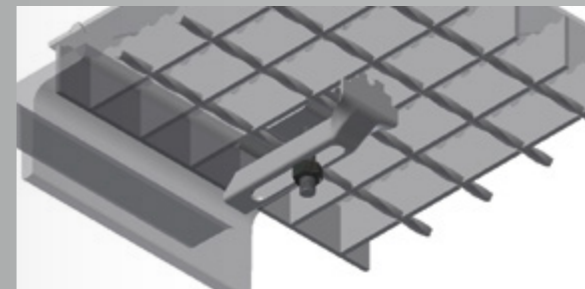
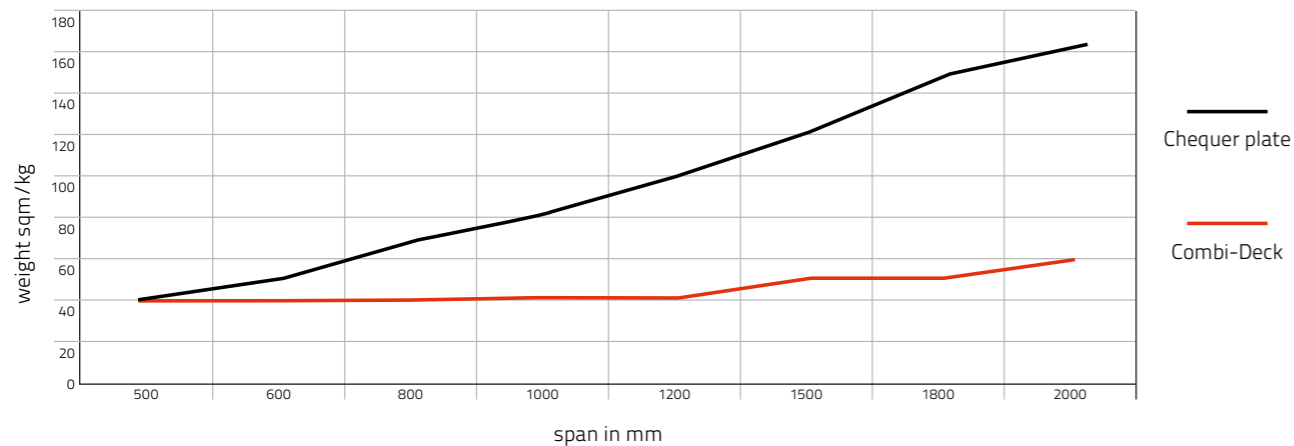
WEIGHT COMPARISON

Weight comparison of the products chequer plates and combi deck in relation to the respective span.

Basis of calculation:

Combi-Deck: Accessibility acc. to EN ISO 14122 = 1,5 kN to 200 x 200 mm; deflection 4 mm

Chequer plate: applied system, without reinforcement ribs 5 kN/sqm; deflection 1/200

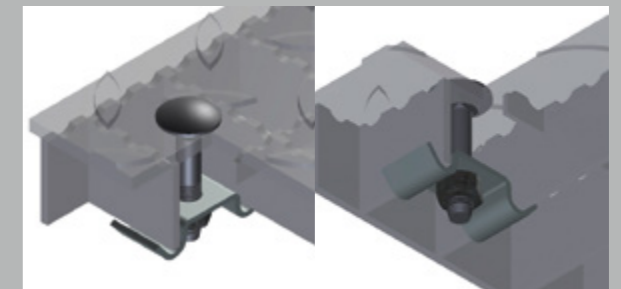


3. FIXING MATERIAL TB13441

By using this type of fixing no bores from above in the chequer plate are necessary. Due to the turned grating (forge-welded-grating) the combi-deck can be installed from below. This fixing material has a lot of fields of applications for example hiding of cables.

Consisting of:

- top clamp XOK13441
- under part X1133
- hammer-head bolt M8

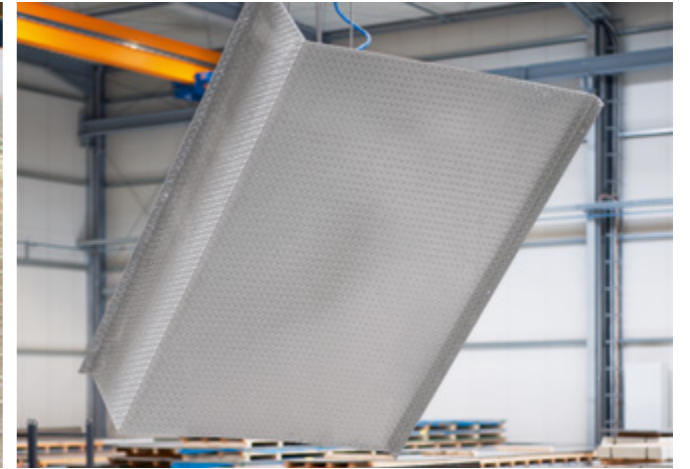
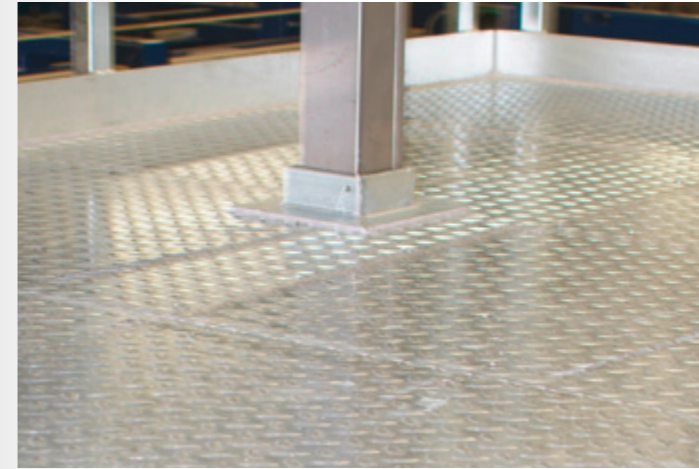
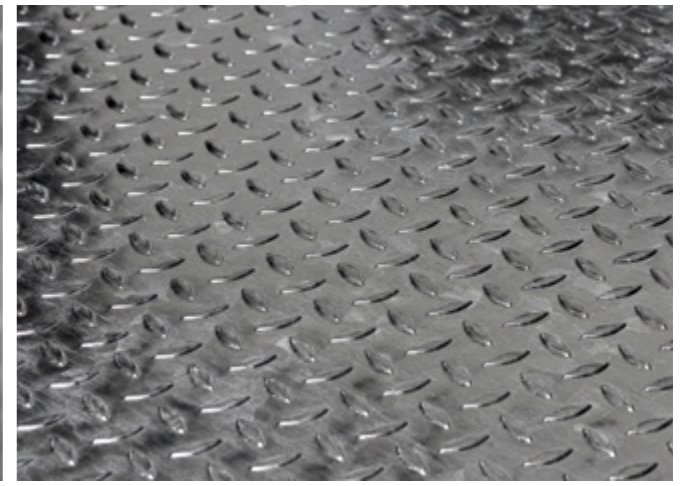
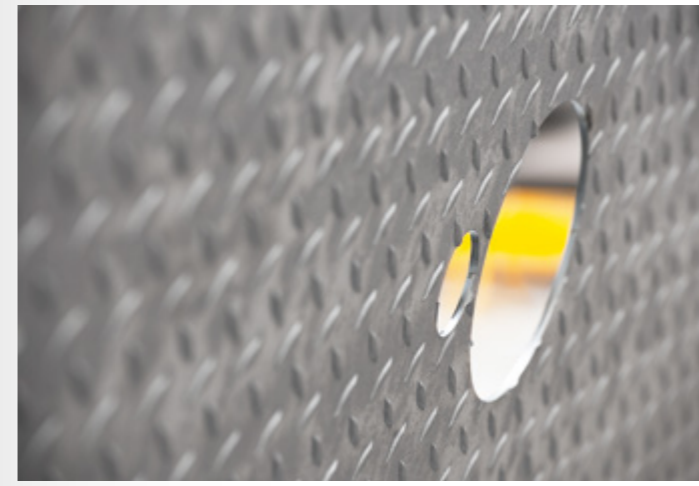


4. TOP CLAMP XOK 133

This fixing material is used in case the gratings and plates are mounted separately.

Consisting of:

- top clamp XOK 133
- pan head screw M8 and nut M8



LICHTGITTER - CHEQUER PLATES

CHEQUER PLATES OFFER AN EASY ACCESS FOR VEHICLES AND COMBINE A CLOSED SURFACE WITH AN ANTI SLIP EFFECT (RATING GROUP R11). THEY ARE IDEALLY SUITED FOR PLATFORMS OR AS A DESIGN ELEMENT. TRUE TO THE MOTTO "EVERYTHING FROM ONE SOURCE" WE ALSO OFFER YOU FOR YOUR INDIVIDUAL CHEQUER PLATE PROJECT AN ALL-INCLUSIVE PACKAGE IN APPROVED LICHTGITTER-QUALITY.

CHARACTERISTICS

- Closed, resistant and serrated surface, classification R11 acc. to German Instruction Sheet BGR 181
- Closed structure of the chequer plates allows a good roll-off behavior of wheels (even smaller diameters are unproblematic)
- Closed surfaces offer a high level of protection for people and objects of value against small parts which can fall down
- Closed surfaces are opaque.
- Perfect standard corrosion protection due to the galvanizing acc. to DIN EN ISO 1461, Duplex system is also possible

ADVANTAGES

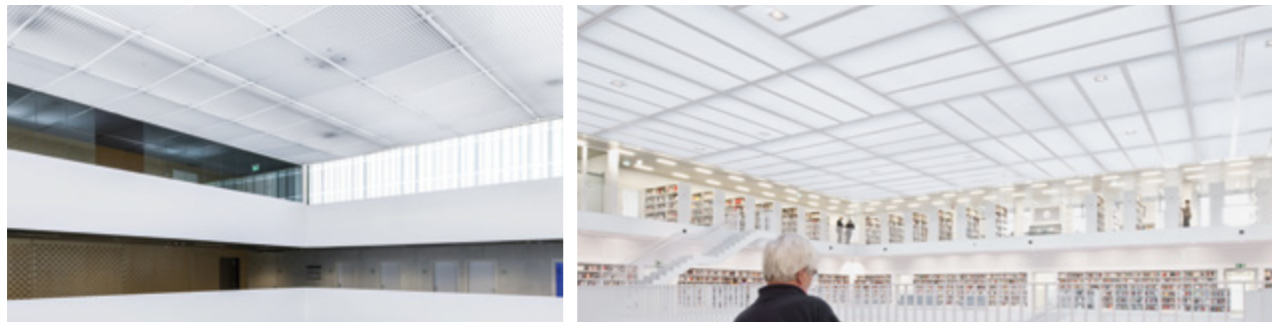
- + **No risk of waste** – We deliver custom-made products.
- + **Installation plans, technical documentation** as well as project planning assistance and static support - everything from one source in perfect quality!
- + **Countersunk boreholes/Fixing material** – We will place the countersunk boreholes directly in the plate or inform you about other fixing options.
- + **Lettering/Positioning** is done according to your specifications.
- + **Short delivery times / reduced warehousing** – We stock the most common versions for you.
- + **Precision** High production quality and modern systems.
- + **Optimal use of your production plant** for your core products.
- + **No interface-problems** – Complete range of industrial floor coverings: „Lichtgitter - Everything from one source“.

REFERENCES

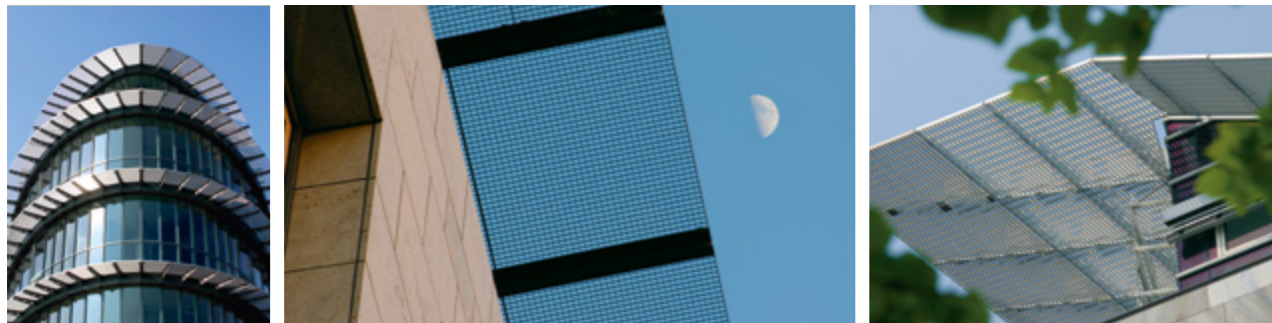
FACADES



CEILING COVERINGS



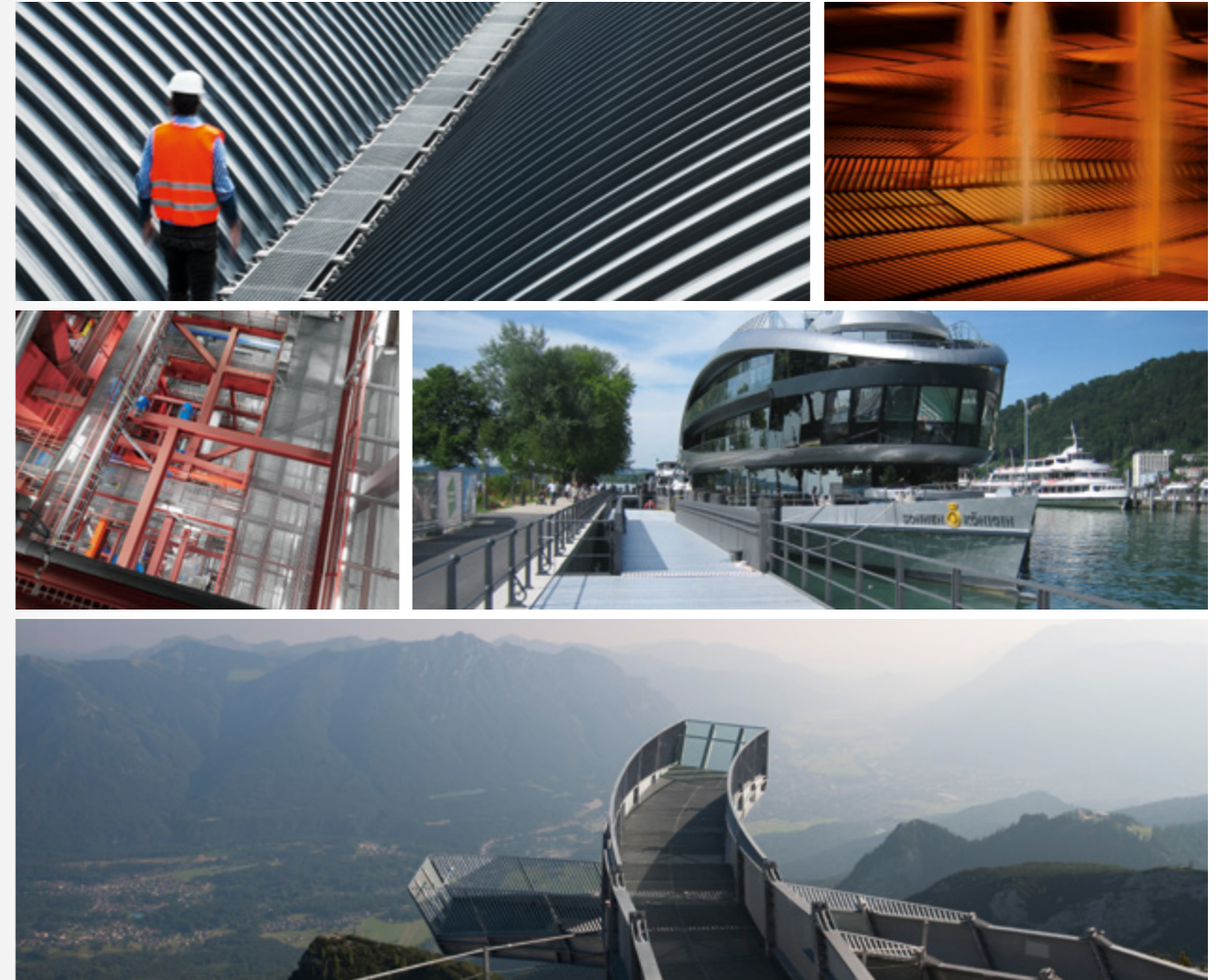
SUN PROTECTION



STAIRS AND RAILINGS



FLOOR COVERINGS/WALKWAYS



LICHTGITTER – ABOUT US

A BRIGHT OUTLOOK SINCE 1929

Lichtgitter was established in 1929 in order to carry out the specialized manufacturing of gratings. By the continuous monitoring of our performance, and quality systems, together with innovation in manufacturing techniques, we have ensured Lichtgitter's place in the forefront of manufacturers of industrial floor coverings with subsidiaries all over the world. Besides the production of pressure-locked

gratings, forge-welded gratings and perforated metal planks, a various offer of GRP products are part of the production range. Our current product range also includes profiled chequer plates, spiral staircases, stairtreads and ladder rungs. Together with our steel slitting service centre and hot dip galvanizing plants we provide a complete fabrication facility to our customers.

EVERYTHING FROM ONE SOURCE:

forge-welded gratings, pressure-locked gratings,
perforated metal planks, GRP-gratings, combi-deck,
chequer plates, spiral staircases, stairtreads,
ladder rungs, hot-dip galvanisation, steel service

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