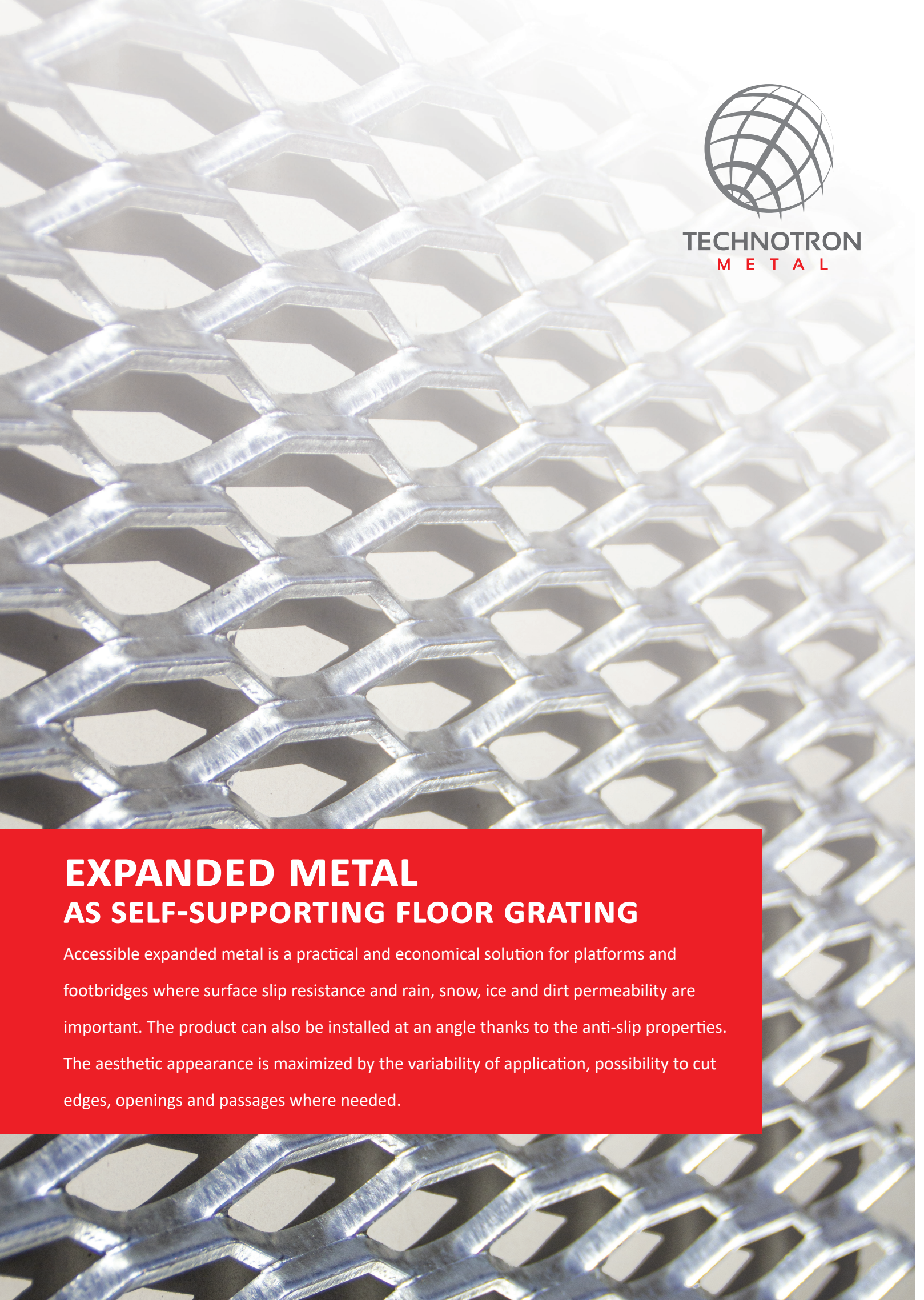


TECHNOTRON
METAL

EXPANDED METAL
AS SELF-SUPPORTING FLOOR GRATING

Accessible expanded metal is a practical and economical solution for platforms and footbridges where surface slip resistance and rain, snow, ice and dirt permeability are important. The product can also be installed at an angle thanks to the anti-slip properties. The aesthetic appearance is maximized by the variability of application, possibility to cut edges, openings and passages where needed.

LOAD CAPACITY IN RELATION TO THE LOAD-BEARING LENGTH

Expanded metal attached to the support with a clamp		Spacing of supports LWN [mm]									
		300	400	500	600	700	800	900	1000	1100	1200
TR 85x35x7x6	Pu [N/m²]	6927	4525	3000	2100	1440	1245	798	592	502	-
hexagon	Pc [N]	960	822	790	620	572	490	394	378	340	-
TR 125x40x9x6	Pu [N/m²]	6360	5265	3416	2640	2206	1818	1060	882	722	552
hexagon	Pc [N]	1040	1016	850	694	630	620	520	398	390	356

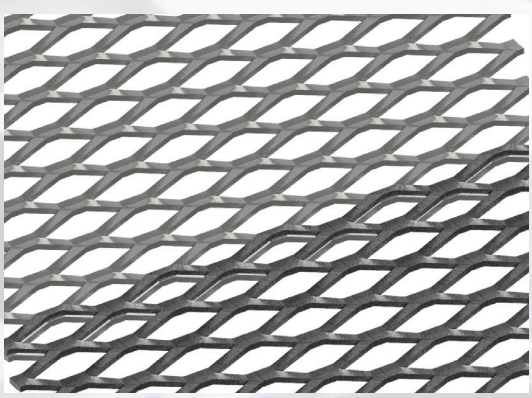
Expanded metal welded to the support		Spacing of supports LWN [mm]									
		300	400	500	600	700	800	900	1000	1100	1200
TR 85x35x7x6	Pu [N/m²]	10033	7000	4668	4360	2720	1750	1436	1260	884	-
hexagon	Pc [N]	1906	1370	1078	942	794	580	576	546	516	-
TR 125x40x9x6	Pu [N/m²]	11947	9655	6128	3643	3971	3268	2156	1554	1187	895
hexagon	Pc [N]	2248	1680	1476	1124	1014	934	822	690	586	522

Pu - Continuously distributed load in N/m²
Pc - Bearing concentrated load on an area of 200x200 mm in N

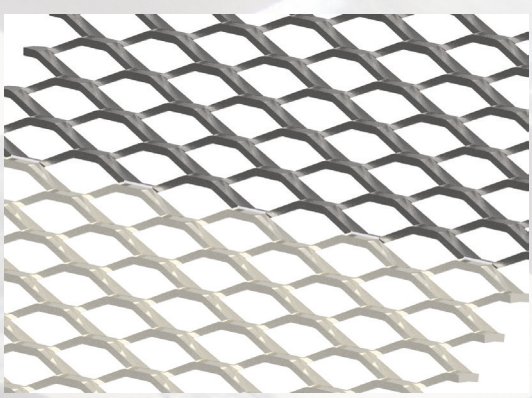
CSN EN ISO 14122-2, Art. 4.2.5 prescribes the maximum permitted deformation of 1/200 in the support spacing; the load values in the table correspond with the stated deformation.
The same standard stipulates that the deformation must not be exceeded at a load of 1.5kN, the green values correspond with that.

Furthermore, the difference between the deformation of the loaded and unloaded area must not exceed 4 mm. Therefore, individual expanded metal laths must be connected, for example, by welding.

Weld connection with overlapping



Butt weld connection



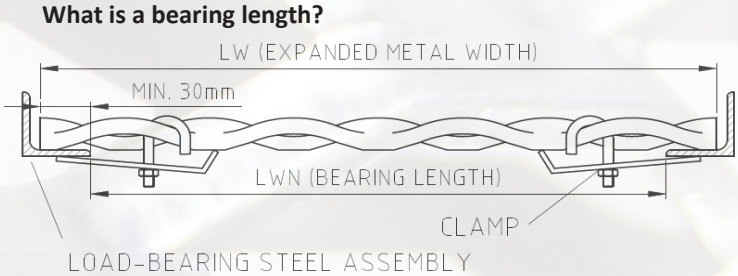
EXAMPLES OF LOAD UNDER CSN EN 1991-1-1

	APPLICATION			Pu kN/m² from	Pu kN/m² to	PC kN from	PC kN to
A	living spaces and areas for domestic activities		ceilings	1,5	2,0	2,0	3,0
			staircases	2,0	4,0	2,0	4,0
			balconies	2,5	4,0	2,0	3,0
B	office spaces			2,0	3,0	1,5	4,5
C	areas where people might gather	C1	with tables	2,0	3,0	3,0	4,0
		C2	with seats	3,0	4,0	2,5	7,0 (4)
		C3	clear areas	3,0	5,0	4,0	7,0
		C4	physical activity	4,5	5,0	3,5	7,0
		C5	high concentrations of people	5,0	7,5	3,5	4,5
D	commercial premises	D1	small shops	4,0	5,0	3,5	7,0 (4)
		D2	department stores	4,0	5,0	3,5	7,0
E1	warehouses			7,5		7,0	
E2	production activity						
FL1-FL6	forklift trucks					26,0	170,0
F	light vehicles						30,0
G	medium-sized vehicles					30,0	160,0

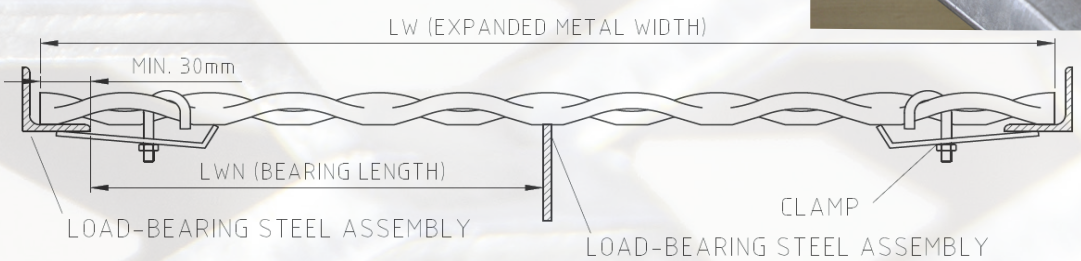
Clamps

To use the expanded metal as grating, clamps are manufactured, consisting of lug bolts and support plates. They are available in two sizes (M8 and M6) and can be used to anchor almost all expanded metal with a mesh through which Ø6 mm can pass. The lug bolt is installed onto the bridge of the lug so as not to exceed the top stepping level of the expanded metal and interfere with walking. The bolts are spaced at about 400-600 mm. This type of clamp prevents moving of the expanded metal along the load area of the load-bearing structure but as indicated in the tables of load-bearing capacity and bending deflection, it does not improve the load-bearing capacity of the area. That can be achieved by welding the expanded metal to the foundation and creating fixed anchorage.

What is a bearing length?

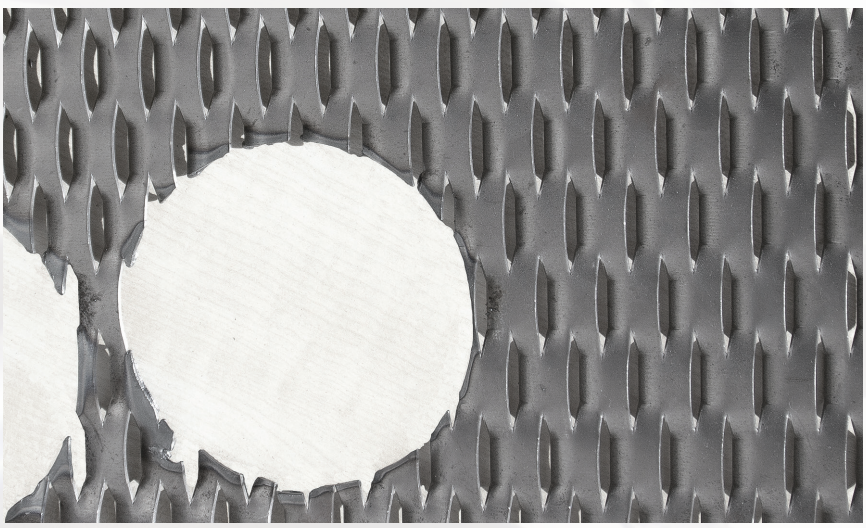


Galvanized grating with a clamp, bottom view



THE PRODUCT CAN BE SHAPED DIRECTLY ON THE SITE

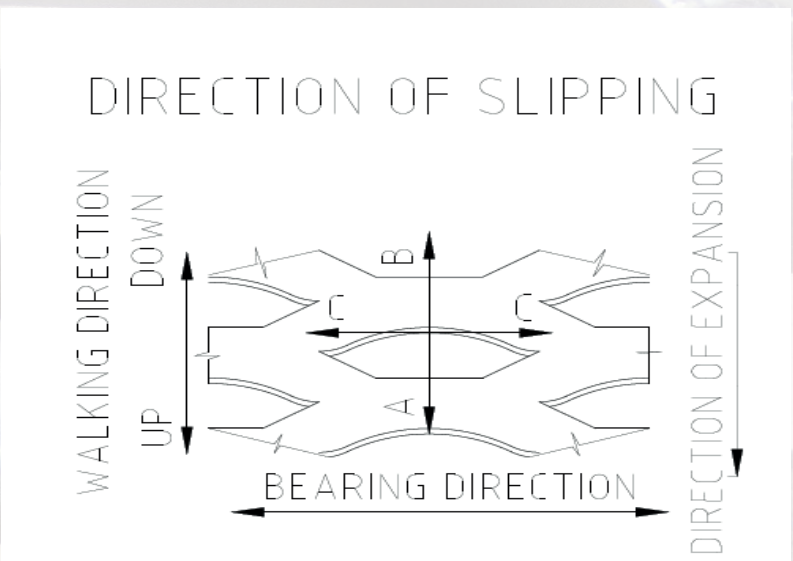
Examples of easy cutting



Slipperiness

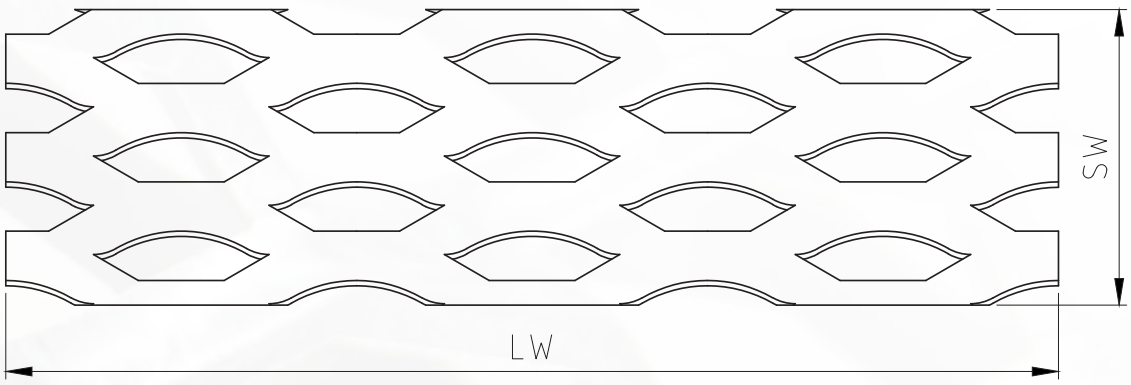
Some of the expanded metal we manufacture is tested for slipperiness at the Plzeň branch of the Prague Technical and Test Institute for Construction.

Below is an example and table of attested values regarding the orientation of directions of the expanded metal. Generally, the highest safety is in the direction against the expansion direction and that is how the expanded metal should be oriented on stairs and landing.

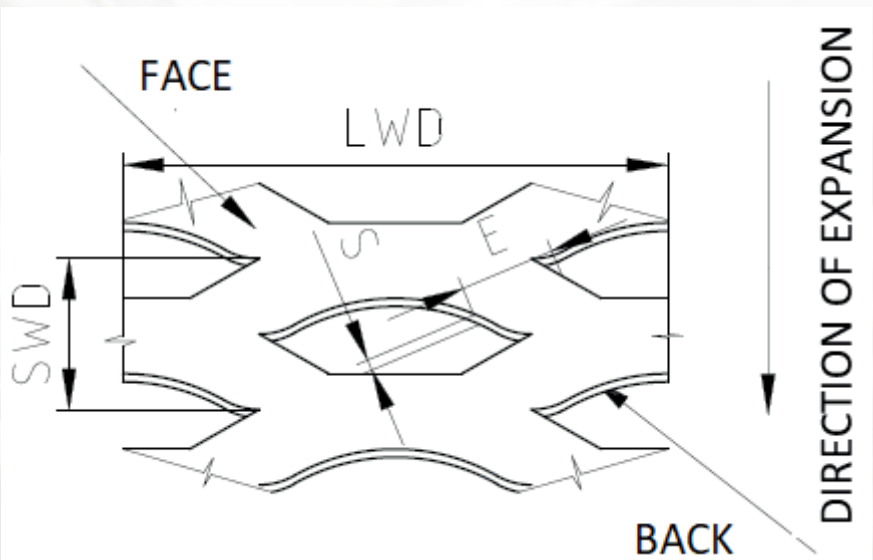


HOW ARE EXPANDED METAL DIMENSIONS DEFINED?

EXPANDED METAL DIMENSIONS



LUG DIMENSIONS



Tolerance

All the stated dimensions of the expanded metal are for information only and they are subject to production tolerances under DIN 791. Even though the internal tolerance standards by Technotron-Metal are stricter than DIN, the expanded metal production technology cannot guarantee zero deviations and tolerances must be considered when building the platform or footbridge. Technotron-Metal also reserves the right to changes for the sake of technological development.

ADVANTAGES OF STEPPING EXPANDED METAL MANUFACTURED BY TECHNOTRON-METAL

- Production quality guarantee: Technotron-Metal is a holder of the EN ISO 9001 certificate
- Technical assistance for your projects
- The subsequent processing of expanded metal is certified according to EN ISO 3834-2, EN 15085-2 CL2, CSN EN 1090-1+A1, EXC2, CSN EN 1090-2+A1, EXC2, CSN EN 1090-3+A1, EXC2
- The subsequent processing also includes forming by shears or saw
- Plasma is used for arches and cut-out shapes
- The product can be shaped directly on the site
- Economical solution for platforms and footbridges
- Tested load-bearing capacity
- Tested slip resistance
- Option to anchor expanded metal to a steel structure using clamps or welds
- High load-bearing capacity at low weight
- Maintenance-free operation

Typical Applications

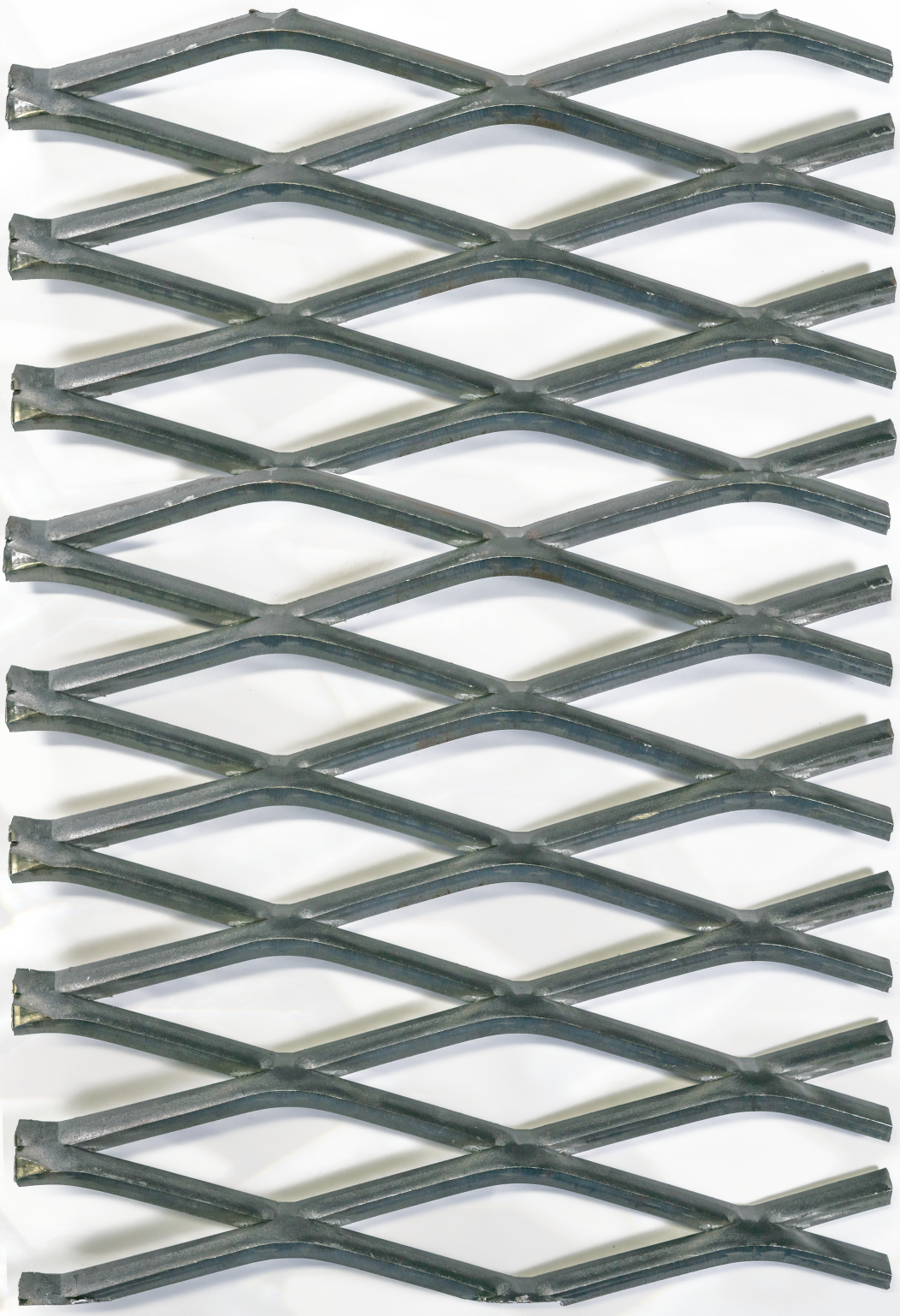
- Service platforms
- Access walkways
- Decks
- Platforms for wheelchair access
- Maritime sector
- Drilling rigs
- Ship bridges
- Docks
- Airports
- Service platforms for chair lifts
- Accessibility ramps
- Energy equipment bridges
- Processing industry
- Mining industry
- Agricultural production
- Chemical industry
- Parts of rail vehicles
- Parts of road vehicles
- Sport facilities
- Emergency exit staircases
- Technical platforms in theatres and stadiums
- Dams and weirs
- Production businesses and service centres
- Safety bridges
- Escape bridges
- Fire bridges

Expanded metal portfolio

Expanded metal marking	LWD	SWD	E	S	kg/m²	open area %	corrected height mm	manufacturable format mm	format in stock
TR 85x35x7x6 kosočtverec	85	35	7	6	18,84	60	14,5	1500x2000	
TR 125x40x9x6 kosočtverec	125	40	9	6	21,2	77	15,5	2000x1600	2000x1600

TECHNOTRON-METAL is a specialist in the production of expanded metal and its largest producer in the Czech Republic

TR 125x40x9x6



TECHNOTRON-METAL can offer the modification of expanded metal according to your requirements based on documentation. Your specific needs are not a problem for us. After consultation, we can meet your requirements of tailor-made materials. Contact our sales team.

EN 15085-2

ISO 9001

ISO 3834-2

EN 1090-1

EN 1090-2

EN 1090-3

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