

PERFORATED METAL SHEETS EXPANDED METAL STEEL GRATINGS

Applications of perforated metal sheets

Perforated metal sheets **PERFO LINEA** have a wide range of applications in various industries, particularly in

Mechanical Engineering: machine and equipment components, bracing and reinforcements, shelving, etc.

Building: casting, jacketing, facade systems, decorative false ceilings, balustrades, balcony panels, arcades and awnings, roller blinds and shutters, gates, fences, screens, grates, safety coverings, grills, acoustic panels, ventilation and air-conditioning systems, diffusers and ventilation outlets, cable trays, heaters, and the like.

Car-production and aerospace & transportation industries: lorries, buses, trains, subway trains, ships, airbag traps, loud speaker covers and car tuning, and the like.

Processing industries: pastry and pizza baking sheets, sugar refineries, dairies, malting plants, flour mills, roasting plants, electric energy generators, filtering systems, food production, gas turbines, breaking and crushing plants, grinding mills, mining industry, crude oil wells, paper industry, cement plants, pharmacies, petrochemical, chemical and steel industries, recycling.

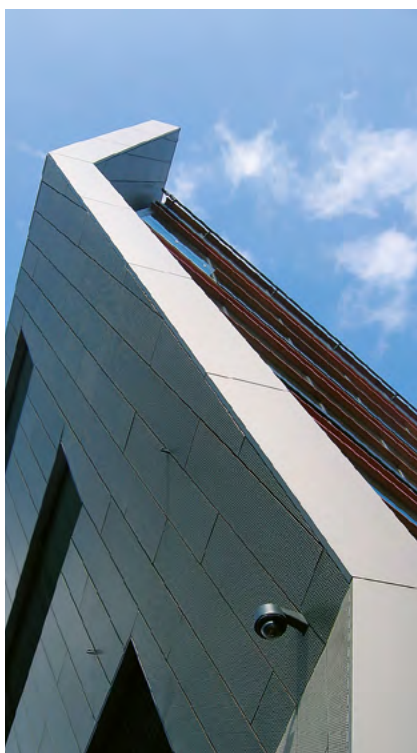
Electrotechnical industry: electronic boards, sheet metal cases for computers, videos, satellite receivers and transmitters, set-top boxes, casings for house service boards, etc.

Modern Architecture & Design: street furniture and amenities for public spaces (i.e. park benches, bus stop shelters, trash receptacles, banisters, etc.), outdoor furniture, billboards, message and notice boards, modern furniture decorations, shelf systems, covers for lighting

fixtures and heating units, decorative grilles, litter baskets, household appliances, etc.

Components for Appliances and Kitchen Equipment: coolers, draining boards, washing machine filters, doors for microwaves, drums for washing machines, centrifugal vessels, grills for kitchen stove vents and range vent hoods, grill racks, supplementary graters for meat-grinding machines, perforated lids for pots and pans and the like.

Applications in Agriculture: farm machines and equipment, grain dryers, grills for tractors, floor grills for stables and cowsheds, drying and separating sieves, grain silos, enclosures for shipping of cattle, hoppers for grain and vegetable by-products, potato separators, chaff shredders and the like.



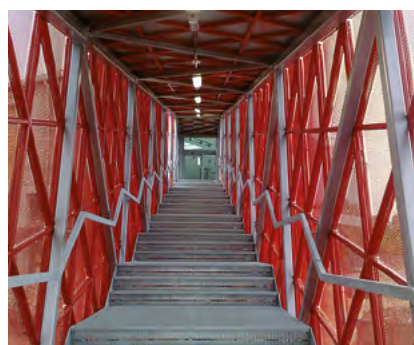
acoustic facade



BB centrum Prague



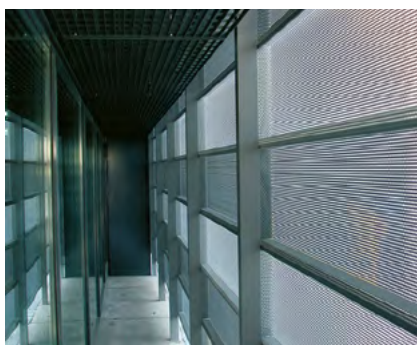
sorting screens



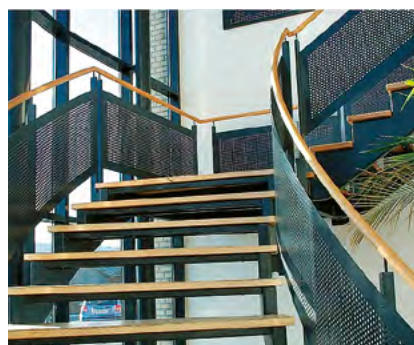
jacketing of perforated sheet



grain sorters – trieur sheets



air facade made of perforated sheet



banisters panels



baking sheets

Perforated sheet metal and material

Main advantage of the PERFO LINEA brand is its own **custom manufacturing** and the **largest direct sales warehouse of perforated metal sheets** in the Czech Republic. We have modern machinery and a wide range of

production tools at our disposal. That's why we are very flexible in both, the custom and standard production. We perforate metal plates or metal coils. We are able to straighten metal sheets and to do surface finish on

them. There are several types of perforation – round, square, oval, ornamental, antislip than standard and special. There are no limits to imagination and we will gladly implement your idea.

MATERIALS

- **Structural (mild) steel (DC01, S235 + S355)**

It's the most cost-effective material and its surface can be done in a variety of finishes – powder painting, galvanizing, hot dip galvanizing, painting, etc.

- **Stainless steel (AISI 304, AISI 321, AISI 316L, AISI 316Ti etc.)**

It guarantees a long working life and it does not corrode. It is mainly used in pharmaceutical, food processing and chemical industries production lines that are required to observe strict sanitary regulations, but they are also used in modern architecture.

- **Galvanized steel (DX51D + Z)**

It's used for structural steel that is coated with zinc. Its surface can be done in a variety of finishes such as powder paint and other coatings. It is commonly used for ventilation and air-conditioning devices, in manufacturing soundproof rooms and walls.

- **Aluminium (ENAW 1050)**

It's used when lightweight materials are required. It has a long working life and it does not corrode. It can be anodized painted with powder paint for an attractive look and a permanent gloss.

- **Other Metals and Materials**

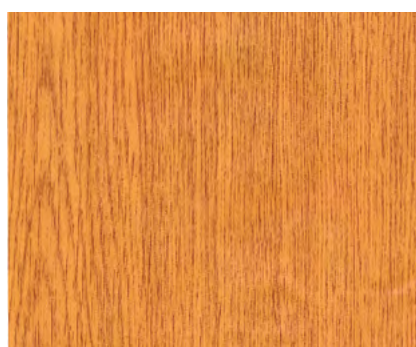
We are able to perforate copper, brass, aluminium alloys, paper, cardboard and PVC.

- **Decorative metal sheets coated with PVC film**

They are manufactured in various finishes: Imitation wood, marble, stone, stainless steel, copper or brass. Thus coated metal sheets are suitable for interior as well as exterior uses. They are manufactured from structural steel, galvanized steel and aluminium. They are distinguished for their re-



laser and punching machine



steel sheet with plastic film – oak imitation



structured stainless steel sheet



coil of galvanized steel sheet

sistance to corrosion, damage caused by chemicals and UV radiation. They are available in coils whose widths range from 20 mm to 1,500 mm or sheets whose maximum width is 1,500 mm and maximum length is 5,000 mm. Their thickness ranges from 0.3 mm to 2 mm. Perforation of decorative metal sheets makes an attractive finish. You can choose the type of the tool from more than 1,200 kinds or we will custom-make a tool for you according to your requirements.

- **Structured stainless steel sheets**

Structured stainless steel sheets come in two

grades – AISI 430 (1.4016) or AISI 304 (1.4301). The surface consists of several layers of titanium that guarantees great hardness of the surface, resistance to scratching, finger prints, and mineral deposits left after vapourized water. Various shades, reliefs and patterns can be produced by application of several layers of titanium. The sheets are available in the standard size of 1,219 mm by 2,438 mm and in thickness of 0.8 mm. They are also custom made in the size of 1,250 mm by 2,500 mm and in thicknesses from 0.6 mm to 2.0 mm.

Basic data

TYPES OF PERFORATION

Rv	round hole staggered pitch
Rg	round hole square pitch
Rpv	countersunk round hole staggered pitch
Rpg	countersunk round hole square pitch
Qg	square hole square pitch
Qv	square hole staggered pitch
Lv	slot hole staggered pitch
Lg	slot hole square pitch
Ss	decorative holes

THICKNESS

Mild steel: max thickness 12 mm

Stainless steel: max thickness 8 mm

We perforate nonferrous metals such as aluminum, copper, brass, and other materials such as plastic substances, PVC, cardboard, paper after testing their samples.

SIZES OF METAL SHEETS

Small size: 1,000 mm x 2,000 mm (W x L)

Medium size: 1,250 mm x 2,500 mm (W x L)

Large size: 1,500 mm x 3,000 mm (W x L)

We will adjust sizes of metal sheets according to your needs or drawings that you provide.

COILS

widths: 1000 mm / 1250 mm / 1500 mm

lengths: up to the weight of 5 metric tons

REGULARLY STOCKED ITEMS

We offer more than 600 types of perforated sheets for immediate delivery in our retail warehouses in Chrudim and Prostějov. Please see page 8 for samples of regularly stocked items.

CUSTOM MANUFACTURING

To order we can produce a wide spectrum of products. We recommend sending a drawing or a sketch.

For examples of manufacturing options please see pages 9, 10, and 11.

PRODUCTION METHODS

Press punching, laser cutting, cutting, bending, straightening. Examples of manufacturing options are listed on pages 9, 10, and 11.

FURTHER PROCESSING

In cooperation with other partners, we can arrange for further processing or surface finishing of materials.

- Hot-dip / electrolytic galvanizing
- Powder coating
- Painting
- Anodizing, etc.

TRANSPORTATION AND DISTRIBUTION

You can either pick up. The items you ordered at our retail warehouses in Chrudim or Prostějov or we can usually expedite the goods within three working days - or we can arrange for express delivery within 24 hours after ordering anywhere in the country.

FORMULAS, CALCULATIONS

In the table on page 12 you will find comprehensive instructions for the calculation of open area. We recommend using our [on-line calculator](http://www.perfolinea.cz) at www.perfolinea.cz

TECHNICAL ABBREVIATIONS

Shape of the hole, type of perforation, size of the hole, spacing example: Rv 0.8-1.8

R = round, v = staggered, 0.8 diameter of holes in millimetres, 1.8 spacing in millimetres

Solid material between holes is called "bridge".

Types of perforation

EXAMPLES

We can perform these types of perforation: round, square, oval (slot), special and decorative. The most used perforation method is punching. All standard perforations of diameters between 0.5 mm and 90 mm are made this way. Spe-

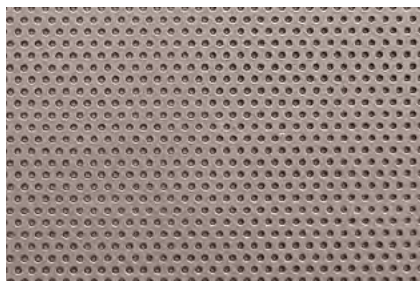
cial perforations that are smaller than 0.5 mm in diameter are made by chemical processes. Round apertures of diameters that are smaller than the thickness of material are drilled. At present, we are able to make apertures and bridges

between them that are smaller than the thickness of the material. This is possible because of new modern materials from which tools are made and thermic and chemical treatment of the surface of individual punches.

Examples of perforations

More than 1,200 kinds of production tools for making perforations at our disposal.
New tools can be made according to your requirements.

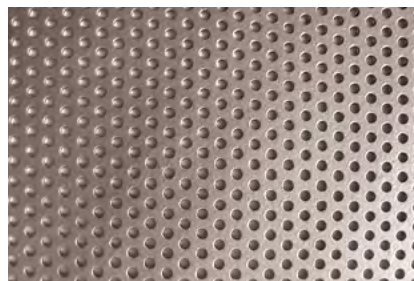
Rv – round, in staggered rows



Rv 0,8–1,8



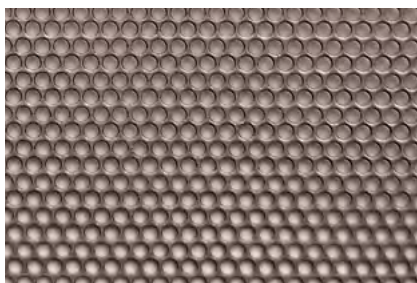
Rv 1–2



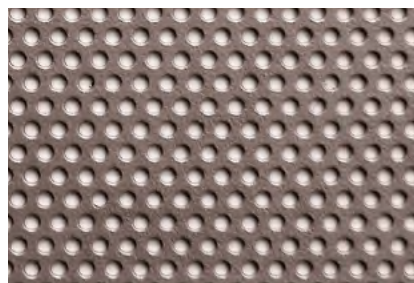
Rv 1,25–2,4



Rv 1,5–3



Rv 2–2,5



Rv 2–3,5



Rv 3–5



Rv 4–6



Rv 5–8



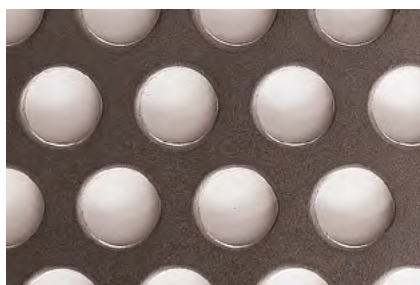
Rv 6–9



Rv 8–11



Rv 10–13



Rv 10–15



Rv 20–27

Rg - round, in straight rows



Rg 4-7



Rg 5,5-8



Rg 8-12



Rg 12-16

Rpv - countersunk, in staggered rows, Rpg - countersunk, in straight rows

Countersunk perforations made for anti slip surfaces on access or load-bearing ramps of towing or transport vehicles, semitrailers and in sorting machines; their function is the same as that of oval perforations (Lv, Lg) on page 7.



Rpg 4-15 bottom side



Rpg 5,5-15 upper side

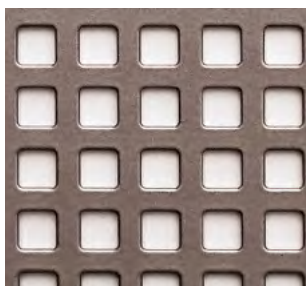


Rpg 20-30 upper side

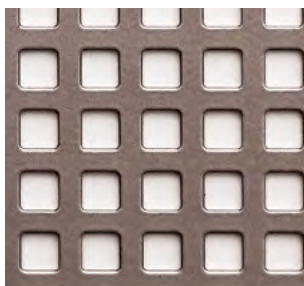


Rpg 20-30 bottom side

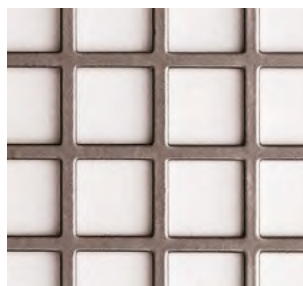
Qg - square, in straight rows



Qg 5-8



Qg 6-9



Qg 10-12

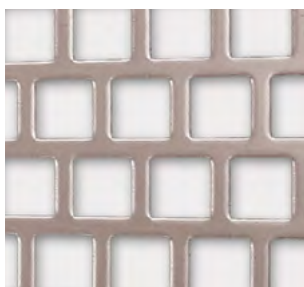


Qg 10-14

Qv - square, in staggered rows



Qv 5-7



Qv 10-13

Modern machines and a wide assortment of production tools is offered. We can make apertures and bridges smaller than the thickness of metal sheets.

Lv - oval (slot), in staggered rows



Lv 1 x 20 mm



Lv 5 x 25 mm



special oval



Lv 16 x 40 mm countersunk

Lg - oval (slot), in straight rows



Lg 3 x 25 mm



Lg 5 x 15 mm



Lg "chessboard"



Lg 26 x 60 mm, countersunk

Ss - ornamental



structured oval



detail - ventilation vent "Venetian blind"



small cross



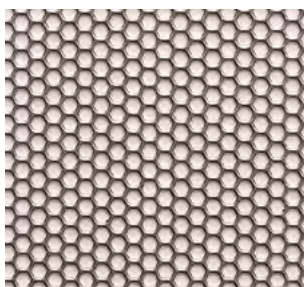
EURO perforation



flower



hexagon



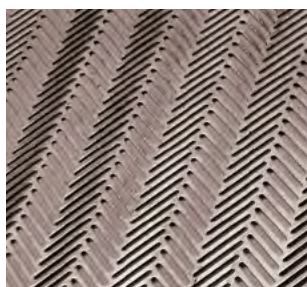
hexagon



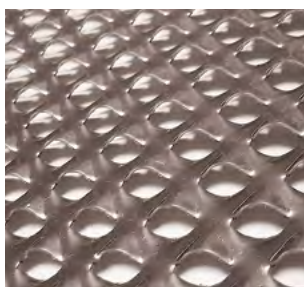
rhombus



pyramid



special oval



"nose" perforation



dot - cross

Regular stock items

PERFO LINEA company operates **the largest warehouse of perforated metal sheets** in the Czech Republic.

We offer more than **600 items** in our retail warehouses in Chrudim and Prostějov in various formats.

Here are few examples of the most frequently purchased items that are available **for immediate delivery**.

Metal sheet quality	Perforation	Type	Abbreviation	Hole (in millimetres)	Spacing (in millimetres)	Open area (%)	th 0,6	th 0,8	th 1,0	th 1,5	th 2,0	th 3,0	th 5,0
mild steel grade 11 DC 01	square	in straight rows	Qg	5,00	8,00	39			•	•	•		
	square	in straight rows	Qg	6,00	9,00	44		•	•	•			
	square	in straight rows	Qg	8,00	11,00	53		•	•	•			
	square	in straight rows	Qg	8,00	12,00	44				•	•		
	square	in straight rows	Qg	10,00	12,00	69			•	•	•		
	square	in straight rows	Qg	10,00	15,00	44				•	•		
	round	in staggered rows	Rv	0,8	1,80	18		•					
	round	in staggered rows	Rv	1,00	2,00	23		•	•				
	round	in staggered rows	Rv	1,50	3,00	23		•		•			
	round	in staggered rows	Rv	2,00	2,50	58			•				
	round	in staggered rows	Rv	2,00	3,50	30	• th 0,5	•	•	•	•		
	round	in staggered rows	Rv	2,50	4,00	35				•	•		
	round	in staggered rows	Rv	3,00	5,00	33		•	•	•	•	•	
	round	in staggered rows	Rv	4,00	6,00	40			•	•	•	•	
	round	in staggered rows	Rv	5,00	8,00	35		•	•	•	•	•	•
	round	in staggered rows	Rv	6,00	9,00	40		•	•	•	•	•	
	round	in staggered rows	Rv	8,00	11,00	48			•	•	•	•	
	round	in staggered rows	Rv	10,00	13,00	54			•	•			
	round	in staggered rows	Rv	10,00	15,00	40					•	•	•
	round	in staggered rows	Rv	20,00	27,00	50			•	•			
	oval	in staggered rows	Lv	5,00	25,00	40			•				
	dot	cross							•				
	cross	cross							•				
stainless steels 1.4301 (AISI 304)	square	in straight rows	Qg	5,00	8,00	39			•				
	square	in straight rows	Qg	10,00	14,00	51			•	•	•		
	round	in staggered rows	Rv	0,50	1,09	51	• th 0,5						
	round	in staggered rows	Rv	0,75	1,50	23	•						
	round	in staggered rows	Rv	0,80	1,80	18	•						
	round	in staggered rows	Rv	1,00	2,00	23	•		•				
	round	in staggered rows	Rv	1,25	2,50	25			•				
	round	in staggered rows	Rv	1,50	2,60	30			•				
	round	in staggered rows	Rv	1,50	3,00	23				•			
	round	in staggered rows	Rv	2,00	3,50	30			•	•			
	round	in staggered rows	Rv	2,00	4,00	23					•		
	round	in staggered rows	Rv	3,00	5,00	33		•	•	•	•		
	round	in staggered rows	Rv	4,00	6,00	33			•				
	round	in staggered rows	Rv	5,00	8,00	35		•	•	•	•		
	round	in staggered rows	Rv	8,00	11,00	48			•	•	•		
	round	in staggered rows	Rv	10,00	15,00	48			•		•		
	round	in staggered rows	Rv	25,00	30,00	63			•				
aluminium ENAW1050	square	in straight rows	Qg	10,00	14,00	51			•				
	round	in staggered rows	Rv	1,00	2,00	23			•				
	round	in staggered rows	Rv	2,00	4,00	23	•						
	round	in staggered rows	Rv	3,00	5,00	33			•	•	•		
	round	in staggered rows	Rv	5,00	8,00	35			•	•	•		
galvanized DX51D	square	in straight rows	Qg	10,00	14,00	51		•	•				
	round	in staggered rows	Rv	3,00	5,00	33		th 0,75	•	•			
	round	in staggered rows	Rv	5,00	8,00	35		th 0,75	•	•			
	round	in staggered rows	Rv	8,00	11,00	48	• th 0,55		•				

Examples of production options

In the following tables, you can find examples of other production options. These are custom made products.

Delivery term acc. mutual agreement, usually in 1 to 4 weeks.

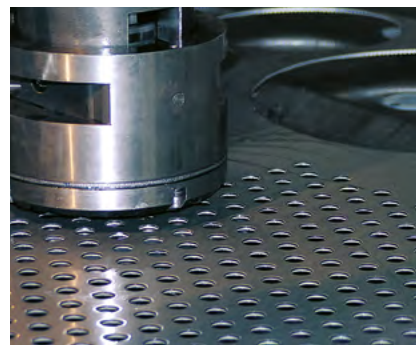
Material	Length	Width	Thickness	Type of perforation	Size of holes	Spacing
galvanized (DX51 D)	2500	1250	0,70	Rv	2	3,5
	2500	1250	0,70	Rv	3	5
	2500	1250	0,70	Rv	5	8
	2500	1250	0,70	Rv	8	10
	2500	1250	0,75	Rv	5	8
	2000	1000	0,75	Rv	5	7
	2500	1250	1,00	Rv	2	3,5
	2500	1250	1,00	Rv	3	5
	3000	1500	1,00	Rv	3	5
	2000	1000	1,00	Rv	3	6
	2500	1250	1,00	Rv	4	6
	3000	1500	1,00	Rv	4	6
	3000	1500	1,00	Rv	5	8
	2000	1000	1,00	Rv	5	7
	2500	1250	1,00	Rv	5	7
	3000	1500	1,00	Rv	5	7
	2000	1000	1,00	Rv	6	8
	2500	1250	1,00	Rv	6	8
	2000	1000	1,00	Rv	7	10
	2500	1250	1,00	Rv	8	10
	2000	1000	1,00	Rv	8	12
	2000	1000	1,00	Rv	10	14
	2000	1000	1,00	Rv	10	15
	2500	1250	1,00	Rv	10	15
	2000	1000	1,00	Qg	8	10
	2000	1000	1,00	Qg	10	12
	2500	1250	1,00	Qg	10	12
	2500	1250	1,00	Qg	10	14
	2000	1000	1,00	Qg	10	15
	2500	1250	1,00	Qg	10	15
	2000	1000	1,00	Qg	8	12
	2000	1000	1,00	Qg	5	8
	2500	1250	1,00	Qg	5	8
	2000	1000	1,50	Rv	2	3,5
	2000	1000	1,50	Rv	3	5
	2500	1250	1,50	Rv	3	5
	3000	1500	1,50	Rv	3	5
	2000	1000	1,50	Rv	4,5	15
	2500	1250	1,50	Rv	4,5	15
	2500	1250	1,50	Rv	5	8
	3000	1500	1,50	Rv	5	8
	2500	1250	1,50	Rv	5	7
	2000	1000	1,50	Rv	6	8
	2500	1250	1,50	Rv	6	8
	2000	1000	1,50	Rv	6	9
	2500	1250	1,50	Rv	8	10
	2000	1000	1,50	Rv	8	11
	2000	1000	1,50	Rv	8	12
	2500	1250	1,50	Rv	8	12
	2000	1000	1,50	Rv	10	14
	2500	1250	1,50	Rv	10	15

Material	Length	Width	Thickness	Type of perforation	Size of holes	Spacing
galvanized (DX51 D)	3000	1500	1,50	Rv	10	15
	2000	1000	1,50	Qg	8	10
	2000	1000	1,50	Qg	10	12
	2500	1250	1,50	Qg	10	12
	2000	1000	1,50	Qg	10	14
	2500	1250	1,50	Qg	10	14
	2000	1000	1,50	Qg	10	15
	2500	1250	1,50	Qg	10	15
	3000	1500	1,50	Qg	10	15
	2000	1000	1,50	Qg	8	12
	2000	1000	1,50	Qg	5	8
	2500	1250	1,50	Qg	5	8
	2000	1000	2,00	Rv	3	5
	2000	1000	2,00	Rv	5	8
	2500	1250	2,00	Rv	5	8
	3000	1500	2,00	Rv	5	8
	2500	1250	2,00	Rv	6	8
	2000	1000	2,00	Rv	8	11
	2000	1000	2,00	Rv	8	12
	2000	1000	2,00	Rv	10	14
	2000	1000	2,00	Rv	10	15
	2500	1250	2,00	Rv	10	15
	3000	1500	2,00	Rv	10	15
	2000	1000	2,00	Rv	10	20,78
	2000	1000	2,00	Rv	20	28
	2000	1000	2,00	Qg	8	10
	2000	1000	2,00	Qg	10	12
	2000	1000	2,00	Qg	10	14
	2000	1000	2,00	Qg	10	15
	2500	1250	2,00	Qg	10	15
	3000	1500	2,00	Qg	10	15
	2000	1000	2,00	Qg	8	12
	2000	1000	2,00	Qg	5	8
mild steel	2500	1250	1,50	Rv	2	3,5
	2500	1250	1,50	Rv	3	5
	3000	1500	1,50	Rv	3	5
	2000	1000	1,50	Rv	4	5
	2000	1000	1,50	Rv	4,5	15
	2500	1250	1,50	Rv	4,5	15
	3000	1500	1,50	Rv	4,5	15
	2000	1000	1,50	Rv	5	7,5
	2500	1250	1,50	Rv	5	7,5
	2500	1250	1,50	Rv	5	8
	3000	1500	1,50	Rv	5	8
	2000	1000	1,50	Rv	5	7
	2000	1000	1,50	Rv	6	8
	2500	1250	1,50	Rv	6	9
	2000	1000	1,50	Rv	7	10
	2000	1000	1,50	Rv	8	10
	2500	1250	1,50	Rv	8	11
	2000	1000	1,50	Rv	8	12

Material	Length	Width	Thickness	Type of perforation	Size of holes	Spacing
mild steel	2500	1250	1,50	Rv	8	12
	3000	1500	1,50	Rv	8	12
	2500	1250	1,50	Rv	10	14
	3000	1500	1,50	Rv	10	14
	2500	1250	1,50	Rv	10	15
	2000	1000	1,50	Rv	12	16
	2000	1000	1,50	Qg	8	10
	2000	1000	1,50	Qg	10	12
	2500	1250	1,50	Qg	10	12
	2500	1250	1,50	Qg	10	14
	2000	1000	1,50	Qg	10	15
	3000	1500	1,50	Qg	10	15
	2000	1000	1,50	Qg	15	20
	3000	1500	1,50	Qg	8	12
	2000	1000	1,50	Qg	5	7
	2500	1250	1,50	Qg	5	8
	3000	1500	1,50	Qg	5	8
	2500	1250	1,50	Qg	5	16
	2500	1250	2,00	Rv	3	5
	3000	1500	2,00	Rv	3	5
	2500	1250	2,00	Rv	4	6
	2500	1250	2,00	Rv	5	8
	3000	1500	2,00	Rv	5	8
	2500	1250	2,00	Rv	6	9
	2500	1250	2,00	Rv	8	11
	2000	1000	2,00	Rv	8	12
	2500	1250	2,00	Rv	8	12
	3000	1500	2,00	Rv	8	12
	2000	1000	2,00	Rv	10	14
	2500	1250	2,00	Rv	10	14
	3000	1500	2,00	Rv	10	14
	2500	1250	2,00	Rv	10	15
	3000	1500	2,00	Rv	10	15
	2000	1000	2,00	Rv	10	20,78
	2500	1250	2,00	Rv	10	20,78
	2000	1000	2,00	Rv	12	16
	2000	1000	2,00	Rv	15	21
	2000	1000	2,00	Rv	20	28
	2500	1250	2,00	Rv	20	28
	2000	1000	2,00	Rv	20	48,5
	2500	1250	2,00	Rv	30	40
	2000	1000	2,00	Qg	8	10
	2000	1000	2,00	Qg	10	14
	2500	1250	2,00	Qg	10	14
	2000	1000	2,00	Qg	10	15
	2500	1250	2,00	Qg	10	15
	3000	1500	2,00	Qg	10	15
	2000	1000	2,00	Qg	15	20
	2500	1250	2,00	Qg	15	20
	3000	1500	2,00	Qg	15	20
	2000	1000	2,00	Qg	10	30
	2500	1250	2,00	Qg	20	25
	2500	1250	2,00	Qg	20	50
	2500	1250	2,00	Qg	25	30
	2500	1250	2,00	Qg	25	35
	2500	1250	2,00	Qg	25	70
	2000	1000	2,00	Qg	8	12
	2500	1250	2,00	Qg	8	12

Material	Length	Width	Thickness	Type of perforation	Size of holes	Spacing
mild steel	3000	1500	2,00	Qg	8	12
	2500	1250	3,00	Rv	5	8
	3000	1500	3,00	Rv	5	8
	2500	1250	3,00	Rv	6	9
	2000	1000	3,00	Rv	7	10
	2000	1000	3,00	Rv	8	12
	2000	1000	3,00	Rv	10	14
	2500	1250	3,00	Rv	10	15
	2000	1000	3,00	Rv	12	16
	2000	1000	3,00	Rv	20	28
	2000	1000	3,00	Qg	10	15
	3000	1500	3,00	Qg	10	15
	2000	1000	0,75	Rv	1,5	2,5
	2000	1000	1,00	Rv	1,5	3
	2500	1250	1,00	Rv	1,5	3
	2500	1250	1,00	Rv	2	3,5
	2000	1000	1,00	Rv	2	3
	2000	1000	1,00	Rv	2,5	4
	2500	1250	1,00	Rv	3	5
	3000	1500	1,00	Rv	3	5
	2000	1000	1,00	Rv	3	4
	2500	1250	1,00	Rv	3	4
	2500	1250	1,00	Rv	4	6
	2000	1000	1,00	Rv	4	5
	2000	1000	1,00	Rv	4,5	15
	2500	1250	1,00	Rv	4,5	15
	3000	1500	1,00	Rv	5	8
	2000	1000	1,00	Rv	5	7
	2000	1000	1,00	Rv	6	8
	2000	1000	1,00	Rv	7	10
	2000	1000	1,00	Rv	8	10
	2000	1000	1,00	Rv	8	12
	2000	1000	1,00	Rv	10	14
	3000	1500	1,00	Rv	10	14
	2000	1000	1,00	Rv	10	15
	2000	1000	1,00	Rv	12	16
	2000	1000	1,00	Qg	8	10
	2000	1000	1,00	Qg	10	12
	2000	1000	1,00	Qg	10	14
	2500	1250	1,00	Qg	10	14
	2000	1000	1,00	Qg	10	15
	2500	1250	1,00	Qg	10	15
	2000	1000	1,00	Qg	8	12
	2500	1250	1,00	Qg	5	8
	2000	1000	1,00	Qg	7	10
	2000	1000	2,00	Rv	2	3,5
	2000	1000	0,50	Rv	1,5	2,5
	2000	1000	0,50	Rv	2	3,5
	2000	1000	0,80	Rv	3	5
	2500	1250	1,00	Rv	3	5
	2500	1250	1,00	Rv	4	6
	2500	1250	1,00	Rv	5	8
	3000	1500	1,00	Rv	5	8
	2000	1000	1,00	Rv	5	7
	2000	1000	1,00	Rv	6	8
	2000	1000	1,00	Rv	6	9
	2000	1000	1,00	Rv	8	10
	2000	1000	1,00	Rv	8	12
1.4301 (AISI 304) stainless steel	2000	1000	1,00	Rv	8	12

Material	Length	Width	Thickness	Type of perforation	Size of holes	Spacing
1.4301 (AISI 304) stainless steel	2500	1250	1,00	Rv	10	15
	2000	1000	1,00	Qg	8	10
	2000	1000	1,00	Qg	10	12
	2000	1000	1,00	Qg	10	15
	2000	1000	1,00	Qg	8	12
	2000	1000	1,00	Qg	5	8
	3000	1500	1,50	Rv	3	5
	2000	1000	1,50	Rv	4	6
	2000	1000	1,50	Rv	4,5	15
	2500	1250	1,50	Rv	5	8
	3000	1500	1,50	Rv	5	8
	2000	1000	1,50	Rv	5	7
	2000	1000	1,50	Rv	6	8
	2000	1000	1,50	Rv	6	9
	2000	1000	1,50	Rv	8	10
	2000	1000	1,50	Rv	8	12
	2500	1250	1,50	Rv	8	12
	2000	1000	1,50	Rv	10	14
	2000	1000	1,50	Rv	10	15
	2500	1250	1,50	Rv	10	15
	3000	1500	1,50	Rv	10	15
	2000	1000	1,50	Rv	15	21
	2000	1000	1,50	Rv	20	48,5
	2000	1000	1,50	Qg	8	24
	2000	1000	1,50	Qg	10	12
	2500	1250	1,50	Qg	10	12
	2000	1000	1,50	Qg	10	15
	2500	1250	1,50	Qg	10	15
	2000	1000	1,50	Qg	15	40
	2000	1000	1,50	Qg	20	50
	2000	1000	1,50	Qg	8	12
	2500	1250	1,50	Qg	8	12
	2500	1250	1,50	Qg	5	8
	2000	1000	2,00	Rv	4	6
	2500	1250	2,00	Rv	5	8
	3000	1500	2,00	Rv	5	8
	2000	1000	2,00	Rv	6	8
	2000	1000	2,00	Rv	8	11
	2000	1000	2,00	Rv	8	12
	2500	1250	2,00	Rv	8	12
	2000	1000	2,00	Rv	10	15
	2500	1250	2,00	Rv	10	15
	3000	1500	2,00	Rv	10	15
	2000	1000	2,00	Rv	20	28
	2500	1250	2,00	Rv	20	28
	2000	1000	2,00	Qg	10	15
	2500	1250	2,00	Qg	10	15
	2000	1000	2,00	Qg	8	12
	2000	1000	2,00	Qg	5	8
	2000	1000	3,00	Rv	8	12
	2000	1000	3,00	Rv	10	15



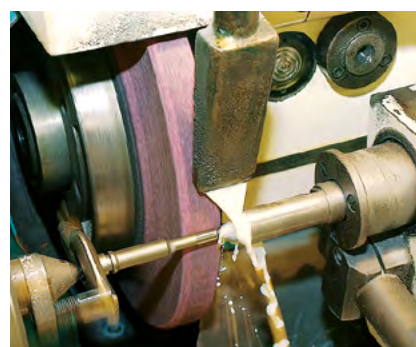
punching



laser cutting



production of baking metal sheets

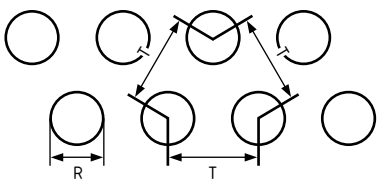
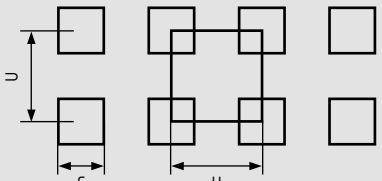
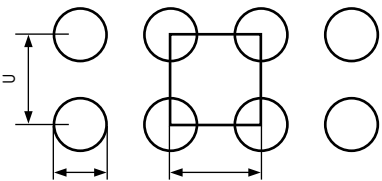
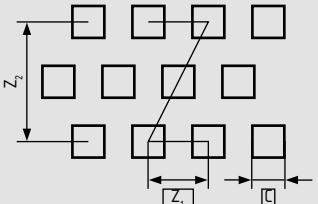
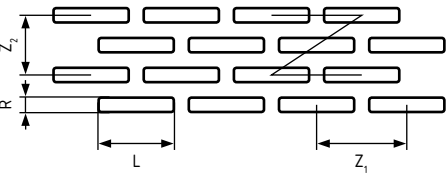
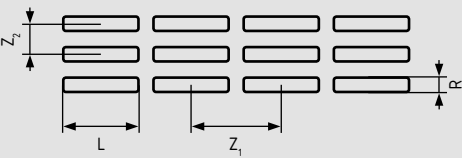

grinding and manufacturing
of new custom-made tools

We have modern machinery and a wide range of production tools.

We are able to make perforations and bridges that are smaller than the thickness of the metal sheet.

Formulas and Calculations

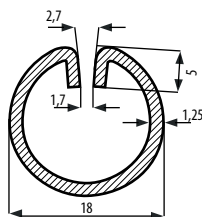
To calculate an open area and number of holes per square metre, you can use our [on-line calculator](http://www.perfolinea.cz) at www.perfolinea.cz.

Type of perforation	% open areas	number of holes per sq metre
<p>Rv Round, in staggered rows</p> 	$\frac{R^2 \times 90,69}{T^2}$	$\frac{1.154.700}{T^2}$
<p>Qg Square, in straight rows</p> 	$\frac{C^2 \times 100}{U^2}$	$\frac{1.000.000}{U^2}$
<p>Rg Round, in straight rows</p> 	$\frac{R^2 \times 78,5}{U^2}$	$\frac{1.000.000}{U^2}$
<p>Qv Square, in staggered rows</p> 	$\frac{C^2 \times 100}{0,5 \times (Z_1 \times Z_2)}$	$\frac{1.000.000}{0,5 \times (Z_1 \times Z_2)}$
<p>Lv Oval, in staggered rows</p> 	$\frac{(R \times L - 0,215R^2) \times 100}{0,5 \times (Z_1 \times Z_2)}$	$\frac{1.000.000}{0,5 \times (Z_1 \times Z_2)}$
<p>Lg Oval, in straight rows</p> 	$\frac{(R \times L - 0,215R^2) \times 100}{(Z_1 \times Z_2)}$	$\frac{1.000.000}{(Z_1 \times Z_2)}$

Hemming profiles

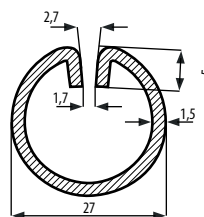
Profiles are used for hemming of expanded metal and perforated sheets usually supplied in 3-metre length. We can recommend suitable profiles and lengths for various uses and adjust dimensions to order.

Type A



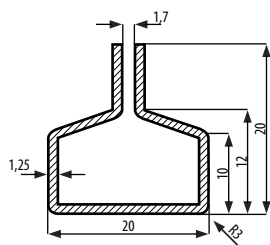
Material	Outside dimension (mm)	Thickness (mm)	Slot (mm)	Weight
mild	ø 18	1,25	1,70	0,46 kg/m
galvanized	ø 18	1,25	1,70	0,46 kg/m
aluminium	ø 18	1,25	1,70	0,16 kg/m
stainless	ø 18	1,25	1,70	0,46 kg/m

Type B



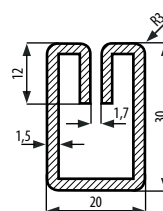
Material	Outside dimension (mm)	Thickness (mm)	Slot (mm)	Weight
mild	ø 27	1,50	1,70	1,15 kg/m
stainless	ø 27	1,50	1,70	1,15 kg/m
stainless brushed	ø 27	1,50	1,70	1,15 kg/m

Type C



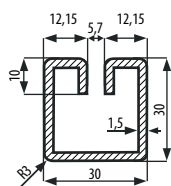
Material	Outside dimension (mm)	Thickness (mm)	Slot (mm)	Weight
mild	20 x 12 x 20	1,25	1,70	0,53 kg/m
aluminium	20 x 12 x 20	1,25	1,70	0,19 kg/m
stainless	20 x 12 x 20	1,25	1,70	0,53 kg/m

Type E

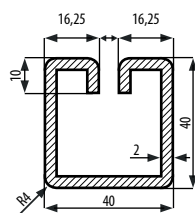


Material	Outside dimension (mm)	Thickness (mm)	Slot (mm)	Weight
mild	20 x 30	1,50	1,70	1,27 kg/m
aluminium	20 x 30	1,50	1,70	0,45 kg/m
stainless	20 x 30	1,50	1,70	1,27 kg/m

Type WG 30x30



Type WG 40x40



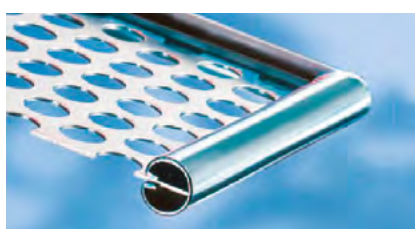
Material	Outside dimension (mm)	Thickness (mm)	Slot (mm)	Weight
WG 30 x 30 - mild	30 x 30	1,50	5,70	1,48 kg/m
WG 40 x 40 - mild	40 x 40	2,00	7,50	2,47 kg/m



hemming profiles on railings



type A



type B



type E

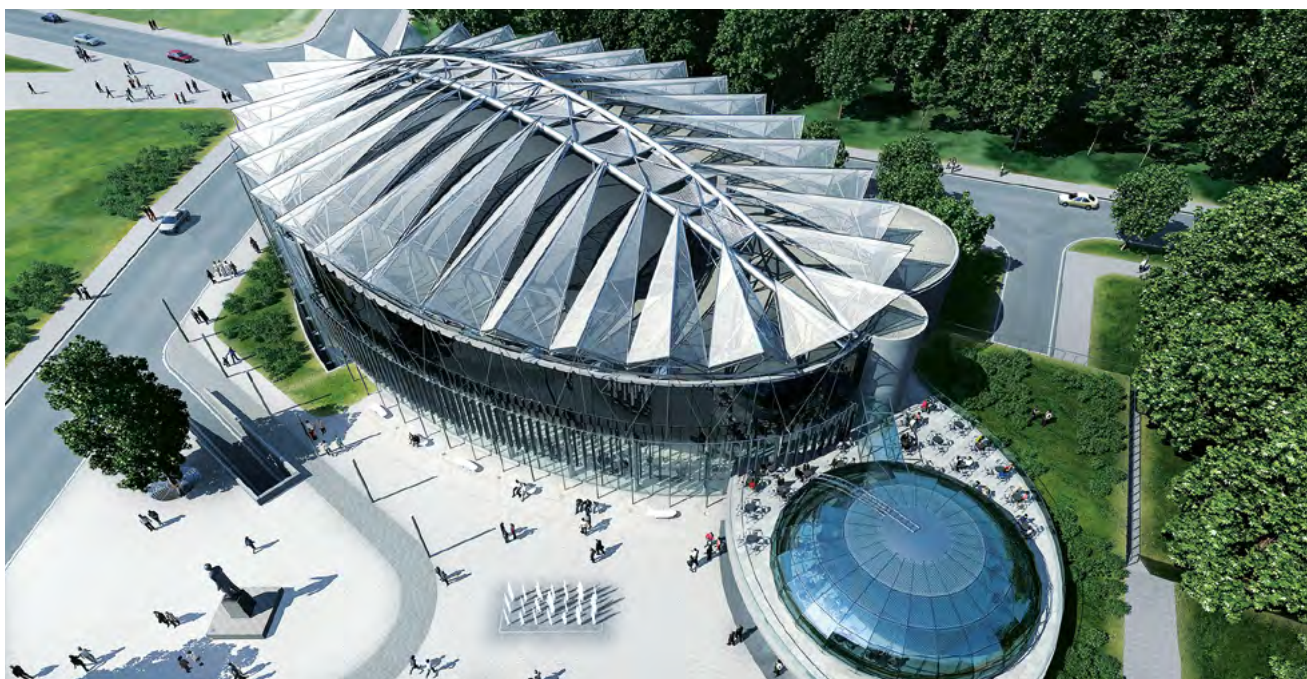
Use of expanded metal

EXPANDED METAL PERFO LINEA thanks to its strength and unique appearance is widely used in modern architecture, engineering, agriculture, transport and construction industries.

STANDARD PERFO LINEA expanded metal comes in many forms, i.e. noise barriers, ventilation and fire place grills, centrifugal drums, cover on luxury electronic devices, sorting screens or foot bridges.

PERFO LINEA micro expanded metal is suitable for manufacturing of various kinds of filters, strainers and protective grids.

PERFO LINEA decorative expanded metal is applied in original designs of interiors and exteriors where is used on facades, dividing walls, industrial ceilings, dividers, paneling for balconies and banisters/railings. It's also used in art.



decorative roof cover made of expanded metal designed by Ing. Arch. Eva Jiřičná



storage crates



fences, security fences



outdoor louvers



pre-facade of expanded metal Nisa shopping center in Liberec



screening for an exterior staircase

Expanded metal and material

Expanded metal is a material with cut-outs over the entire surface of a metal sheet or coil. There are at least five standard kinds of meshes that assume their unique shape

by expansion of the material without any loss of strength to the material. The meshes are therefore not created by braiding or welding as it may seem first. Sheets or

coils of expanded metal can be flattened to have a smooth surface or may retain their natural shape.

MATERIALS

- **Structural (mild) steel (DC01, DC04, S235JRG2 etc.)**

It's the most cost-effective, its surface can be variably treated with powder paints, galvanizing, coatings, and so on.

- **Stainless steel (AISI 304, AISI 316L, AISI 316Ti etc.)**

It guarantees a long working life and does not rust. It is mainly used in pharmaceutical, food processing and chemical plants that have to adhere to strict sanitary regulations, but it's also used in modern architecture.

- **Galvanized steel (DX51D)**

It is structural steel that was treated by galvanizing. It can also be powder paint coated or coated with other kinds of paints. It is commonly used in manufacturing of ventilation and air conditioning, and in manufacturing of noise barriers and walls.

- **Aluminium (ENAW1050)**

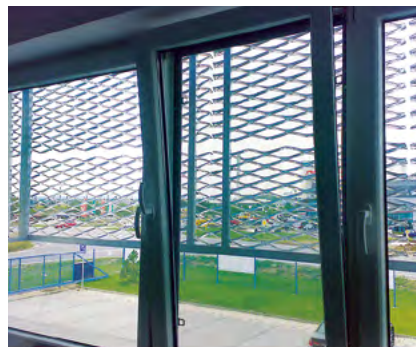
It is characterized by lightness of material and a long working life and it does not rust. To achieve an impressive finish and shine, it can be anodized or coated with powder paints

- **Other nonferrous metals**

E. g. copper, brass, aluminum alloys, etc. We are able to produce expanded metal and perforated materials even from these metals.



ceilings in a hall's interior



venetian blinds



safety bars made of expanded metal



safety bars made of expanded metal

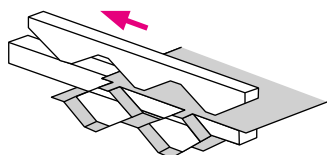
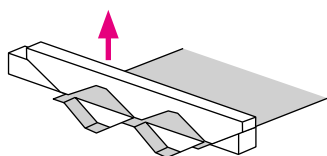
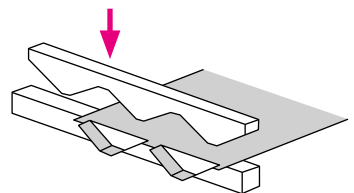
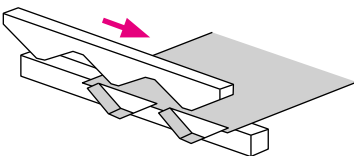
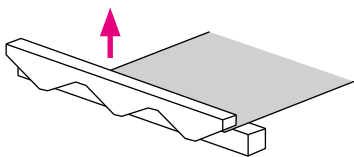
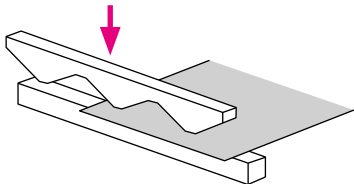


AZ Tower, Brno

Basic Terminology

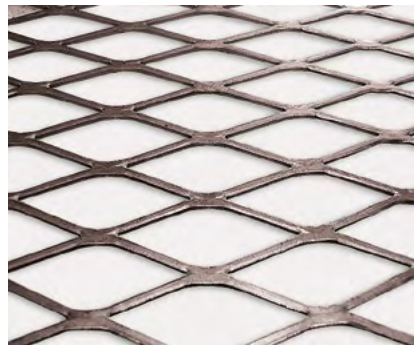
EXPANDED METAL

Expanded metal is a material that has cut-outs on its entire surface. These cut-outs are formed by mutual cutting without any loss of material as it is simultaneously being shaped by pulling.



1. TYPES OF MESHES

- TH hexagonal mesh
- TQ square mesh
- TE round mesh
- TR diamond-shaped (rhombic) mesh
- TD decorative mesh



2. MESH

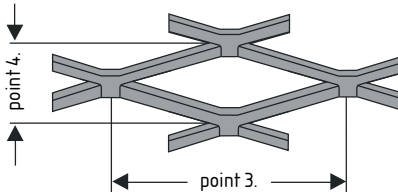
Basic element of expanded metal is the mesh. It consists of bridges and openings. Its size is defined by its length and width.

3. LENGTH OF THE MESH

It's a distance from the center of one knot to another knot, measured in the direction of the **longer diagonal** of the mesh.

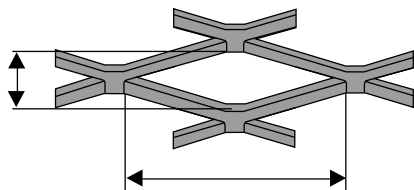
4. WIDTH OF THE MESH

It's the distance from the center of one knot to the center of another knot, measured in the direction of the **shorter diagonal** of the mesh.



5. SIZE OF THE MESH

Size of the mesh between the four bridges of the hole in the direction perpendicular to the plane of expanded metal.

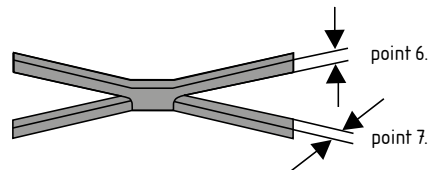


6. WIDTH OF THE BRIDGE = STRAND WIDTH

It's a width of the material that forms the bridges between individual meshes.

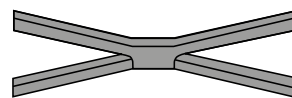
7. THICKNESS OF BRIDGES

It equals the thickness of the metal sheet used.



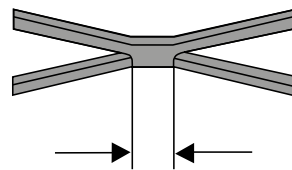
8. KNOT

It's an intersection of two mutually connecting bridges.



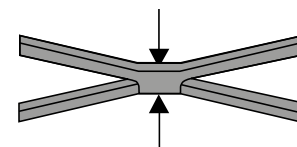
9. LENGTH OF THE KNOT

Distance between two long diagonals.



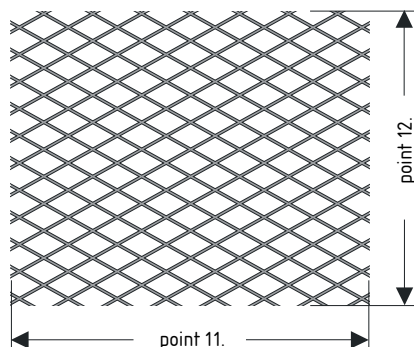
10. WIDTH OF THE KNOT

It's approximately twice the width of the bridge.



11. WIDTH OF EXPANDED METAL

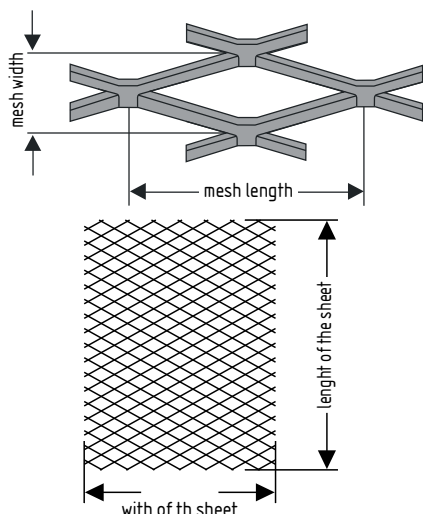
Overall width of expanded metal measured in the direction of the longer diagonal of the mesh.



12. LENGTH OF EXPANDED METAL

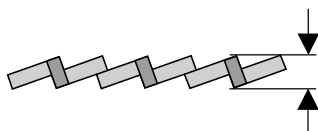
Total length of expanded metal measured in the direction of the shorter diagonal of the mesh.

13. DIRECTION OF THE MESH



14. THICKNESS OF EXPANDED METAL

Total thickness of expanded metal.

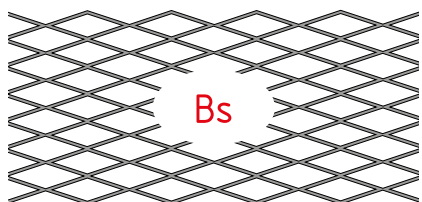


15. TYPES OF BLANKS

If blanks are formed from expanded metal it is necessary, according to individual types of blanks (symmetrical with open or closed meshes), to comply with special conditions. There are all together 5 types of blanks.

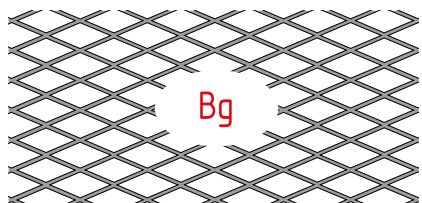
Type 1 – Bs blank

The blank is cut symmetrically (with the same overlap of not closed meshes in its width). In its length, the meshes are closed.



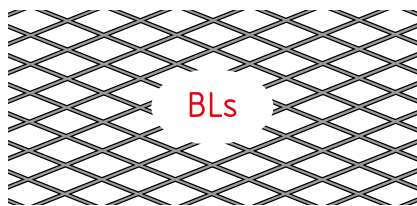
Type 2 – Bg blank

The blank is cut symmetrically in its width with closed meshes. In its length, the holes are not closed. This Type is realizable only in the case when the width of the blank is approximately equal to a multiple of the length of the mesh.



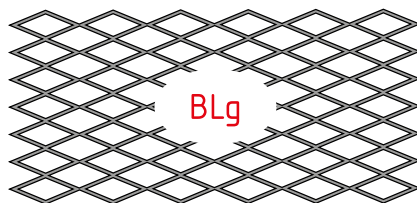
Type 3 – BLs blank

The blank that is cut symmetrically with not closed meshes along its width and length.



Type 4 – BLg blank

The blank that is cut symmetrically in its width and length with closed meshes. This Type of blank is realizable only in the case when its dimensions are approximately equal to multiples of the width and length of the meshes.



Type 5 – BLo cuts

It is possible to cut this blank arbitrarily in its width and length according to the specified dimensions and disregard the symmetry of the holes.

16. TOLERANCE

A) Normal sheet

width tolerance: $\pm 5\%$
length tolerance: $\pm 10\%$

B) Blanks

Tolerance Group I

width tolerance: $\pm 5\%$
length tolerance: $\pm 10\%$

Tolerance Group II

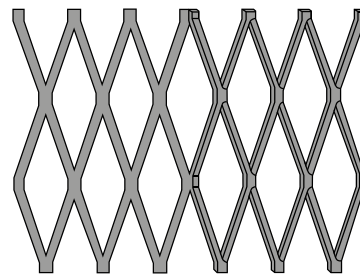
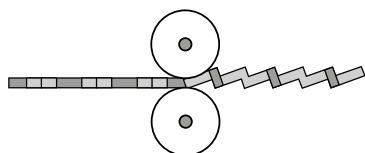
to a maximum thickness of 2 mm
to the width and length of 600 mm: ± 1 mm
to the width and length of 1000 mm: $\pm 1,5$ mm
over the width and length of 1000 mm: ± 2 mm

Tolerance Group II

over 2 mm
to the width and length of 600 mm: ± 2 mm
to the width and length of 1000 mm: ± 3 mm
over the width and length of 1000 mm: ± 5 mm

17. FLATTENING

Expanded metal can be flattened in width up to 1,400 mm. Flattening is marked by the letter "F" in the last position of the identification of the Type of the mesh.



TR 16 – "not flattened" design



TR 16F – "flattened" design "F"



TQ 20 – "not flattened design"



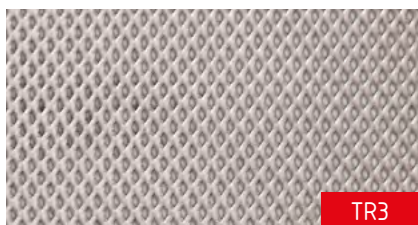
TQ 20 F – "flattened" design "F"

Regular stock items

Our retail warehouses in Chrudim and Prostějov offer more than 100 stock items for an immediate pick-up.

The photos of expanded metal are in actual size 1:1

TR diamond shaped (rhombic) mesh



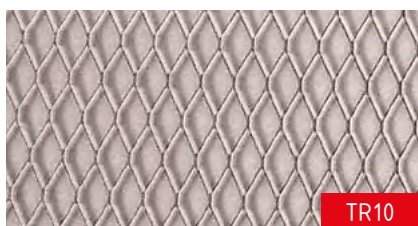
TR3

Type	Material	Length/Width of the mesh	Width of the bridge (strand width)	Format (in mm)	Weight
TR4	1.4301 (stainless steel)	4 x 2	0,5	coil in width 1000, th. 0,4	1,6 kg/pc



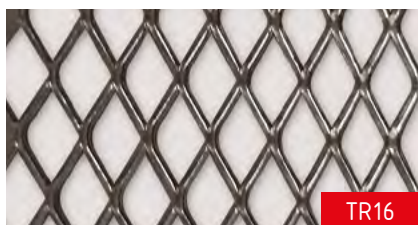
TR6

Type	Material	Length/Width of the mesh	Width of the bridge (strand width)	Format (in mm)	Weight
TR6	DC01 (steel)	6 / 3,7	0,5	0,5 x 1000 x 2000	4,0 kg/pc
TR6	DX51D (galvanized steel)	6 / 3,4	1,0	0,5 x 1000 x 2000	4,5 kg/pc
TR6	1.4301 (stainless steel)	6 x 3	0,8	coil in width 1000, th. 0,5	2,1 kg/pc



TR10

Type	Material	Length/Width of the mesh	Width of the bridge (strand width)	Format (in mm)	Weight
TR10	DC01 (steel)	10,0 / 4,5	1,5	1,0 x 1000 x 2000	10,66 kg/pc
TR10	DX51D (galvanized steel)	10,3 / 5,3	1,0	1,0 x 1250 x 2500	9,25 kg/pc
TR10	ENAW1050 (aluminium)	10,0 / 5,0	1,0	0,5 x 1000 x 2000	1,8 kg/pc
TR10	1.4301 (stainless steel)	10,0 / 5,0	1,0	0,5 x 1000 x 2000	3,15 kg/pc



TR16

Type	Material	Length/Width of the mesh	Width of the bridge (strand width)	Format (in mm)	Weight
TR16	DC01 (steel)	16 / 8	1,8	1,0 x 1000 x 2000	7,0 kg/pc
TR16	DC01 (steel)	16 / 8	1,8	1,0 x 1250 x 2500	10,8 kg/pc
TR16	DX51D (galvanized steel)	16 / 8	1,8	1,0 x 1000 x 2000	7,0 kg/pc
TR16	1.4301 (stainless steel)	16 / 8	1,4	0,8 x 1000 x 2000	5,0 kg/pc
TR16	DC01 (steel)	16 / 8	1,8	1,5 x 1000 x 2000	11,0 kg/pc
TR16	ENAW1050 (aluminium)	16 / 8	1,5	0,8 x 1000 x 2000	2,3 kg/pc



TR22

Type	Material	Length/Width of the mesh	Width of the bridge (strand width)	Format (in mm)	Weight
TR22	DC01 (steel)	22 / 12	1,6	1,0 x 1000 x 2000	4,20 kg/pc
TR22F	DX51D (galvanized steel) flattened/not flattened	22 / 12	2,0	0,7 x 1000 x 2000	4,00 kg/pc
TR22F	DX51D (galvanized steel) flattened	22 / 10,7	2,0	1,0 x 1250 x 2500	7,50 kg/pc
TR22	DC01 (steel)	22 / 12	1,6	1,0 x 1250 x 2500	6,60 kg/pc
TR22	1.4301 (stainless steel)	22 / 12	1,6	1,0 x 1000 x 2000	4,20 kg/pc
TR22	ENAW1050 (aluminium)	22 / 12	2,5	1,0 x 1000 x 2000	3,25 kg/pc
TR22	DC01 (steel)	22 x 12,5	2	1,5 x 1000 x 2000	7,80 kg/pc
TR22	DC01 (steel)	22 x 12,5	2,5	2,0 x 1000 x 2000	13,00 kg/pc



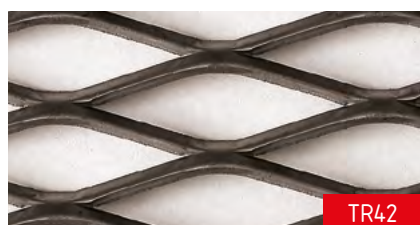
TR28

Type	Material	Length/Width of the mesh	Width of the bridge (strand width)	Format (in mm)	Weight
TR28	DC01 (steel)	28 / 9	2,5	1,0 x 1000 x 2000	8 kg/pc
TR28	DC01 (steel)	28 / 10	2,5	2,0 x 1250 x 2500	25 kg/pc
TR28	DC01 (steel)	28 / 17	1,5	1,5 x 1250 x 2000	6 kg/pc



TR42

Type	Material	Length/Width of the mesh	Width of the bridge (strand width)	Format (in mm)	Weight
TR42	DC01 (steel)	42 / 12	2,5	1,0 x 1000 x 2000	6,70 kg/pc
TR42	DC01 (steel)	42 / 12	2,5	1,5 x 1000 x 2000	10,05 kg/pc
TR42	DC01 (steel)	42 / 12	2,5	1,5 x 1250 x 2500	15,70 kg/pc
TR42	DC01 (steel)	42 / 12	3,0	2,0 x 1000 x 2000	14,80 kg/pc
TR42	DC01 (steel)	42 / 12	3,0	2,0 x 1250 x 2500	23,20 kg/pc
TR42	1.4301 (stainless steel)	42 / 12	3,0	2,0 x 1000 x 2000	14,80 kg/pc



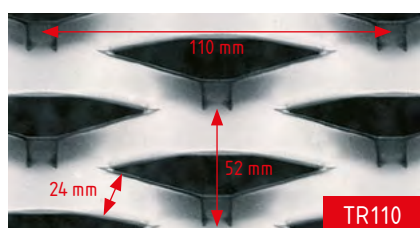
TR42

Type	Material	Length/Width of the mesh	Width of the bridge (strand width)	Format (in mm)	Weight
TR42	DC01 (steel)	42 / 12	2,5	1,5 x 2000 x 1000	10,05 kg/pc
TR42	DC01 (steel)	42 / 12	3,0	2,0 x 2000 x 1000	14,80 kg/pc



TR62

Type	Material	Length/Width of the mesh	Width of the bridge (strand width)	Format (in mm)	Weight
TR62	DC01 (steel)	62,5 / 21	2,5	1,5 x 1000 x 2000	4,8 kg/pc
TR62	DC01 (steel)	62,5 / 21	2,5	2 x 1000 x 2000	6,4 kg/pc
TR62	S235JRG2 (steel)	62,5 / 25	3,0	3 x 1000 x 2000	11,5 kg/pc
TR62	S235JRG2 (steel)	62,5 / 25	3,0	3 x 1250 x 2500	18,0 kg/pc
TR62	S235JRG2 (steel)	62,5 / 23	7,0	3 x 1000 x 2000	26,9 kg/pc



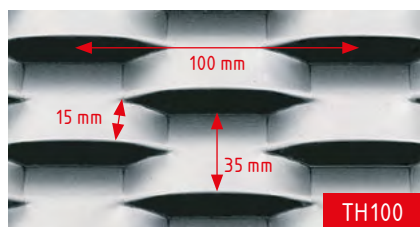
TR110

Ambrosia

Type	Material	Length/Width of the mesh	Width of the bridge (strand width)	Format (in mm)	Weight
TR110	DC01 (steel)	110 / 52	24	1,5 x 2000 x 1500	36,0 kg/pc

Open area 8 %

The picture does not show the real size.



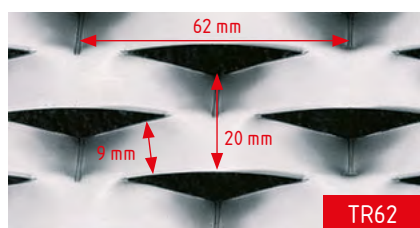
TH100

Expression

Type	Material	Length/Width of the mesh	Width of the bridge (strand width)	Format (in mm)	Weight
TH100	DC01 (steel)	100 / 35	15	1,5 x 2000 x 1500	30,0 kg/pc

Open area 12 %

The picture does not show the real size.



TR62

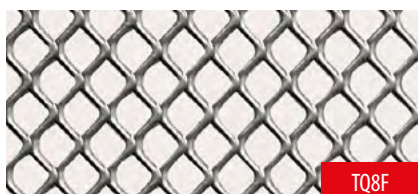
Airfield

Type	Material	Length/Width of the mesh	Width of the bridge (strand width)	Format (in mm)	Weight
TR62	DC01 (steel)	62,5 / 20	9	1,5 x 2000 x 1500	24,0 kg/pc

Open area 28 %

The picture does not show the real size.

TQ square mesh flattened



TQ8F

Type	Material	Length/Width of the mesh	Width of the bridge (strand width)	Format (in mm)	Weight
TQ8F	DC01 (steel) flattened	8 / 7	1,0	1 x 1000 x 2000	4,8 kg/pc
TQ8F	DC01 (steel) flattened	8 / 7	1,0	1 x 1250 x 2500	7,5 kg/pc



TQ16F

Type	Material	Length/Width of the mesh	Width of the bridge (strand width)	Format (in mm)	Weight
TQ14F	DC01 (steel) flattened	14 / 11,4	1,0	1 x 1250 x 2500	4,0 kg/pc
TQ16F	DC01 (steel) flattened	16 / 14	1,5	1 x 1000 x 2000	3,9 kg/pc
TQ16F	DC01 (steel) flattened	16 / 12	1,5	1,5 x 1000 x 2000	5,9 kg/pc



TQ20 F

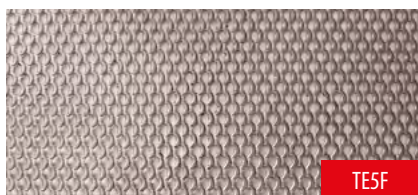
Type	Material	Length/Width of the mesh	Width of the bridge (strand width)	Format (in mm)	Weight
TQ20F	1.4301 (stainless steel) flattened	20 / 15	1,7	1,5 x 1000 x 2000	5,2 kg/pc
TQ20F	DC01 (steel) flattened	20 / 15	1,7	1,5 x 1000 x 2000	5,2 kg/pc
TQ20F	DC01 (steel) flattened	20 / 15	1,7	1,5 x 1250 x 2500	8,1 kg/pc
TQ20F	DX51D (galvanized metal) flattened	20 / 17	1,5	1 x 1000 x 2000	3,6 kg/pc
TQ20F	DX51D (galvanized metal) flattened	20 / 15	1,7	1,5 x 1000 x 2000	5,9 kg/pc



TQ50 F

Type	Material	Length/Width of the mesh	Width of the bridge (strand width)	Format (in mm)	Weight
TQ50F	DC01 (steel) flattened	50 / 37	4,5	3 x 1000 x 2000	11,5 kg/pc
TQ20F	DC01 (steel) flattened	50 / 37	4,5	3 x 1250 x 2500	17,9 kg/pc

TE round mesh – flattened



TESF

Type	Material	Length/Width of the mesh	Width of the bridge (strand width)	Format (in mm)	Weight
TESF	DX51D (galvanized metal) flattened	5 / 3,80 (ø2,5)	1,0	0,7 x 1000 x 2000	4,8 kg/pc



TE10F

Type	Material	Length/Width of the mesh	Width of the bridge (strand width)	Format (in mm)	Weight
TE10F	DX51D (galvanized metal) flattened	10 / 7,62 (ø5)	1,4	0,7 x 1000 x 2000	4,1 kg/pc
TE10F	DX51D (galvanized metal) flattened	10 / 7,62 (ø5)	1,4	0,7 x 1250 x 2500	6,4 kg/pc
TE10F	DX51D (galvanized metal) flattened	10 / 7,62 (ø5)	1,4	1,0 x 1250 x 2500	9,2 kg/pc

TH hexagonal mesh



TH47

Type	Material	Length/Width of the mesh	Width of the bridge (strand width)	Format (in mm)	Weight
TH47	S235JRG2 (steel)	hexagon 47 / 13	5	3 x 1000 x 2500	45 kg/pc
TH47	S235JRG2 (steel)	hexagon 47 / 13	5	3 x 1250 x 1600	36 kg/pc

Examples of manufacturing options

Below you can find examples of other manufacturing options. Examples of products that are listed in these tables are delivered to order. Frame delivery term is usually between 1 and 4 weeks or per agreement.

TR diamond shaped (rhombic) mesh

TR110–TR200 are suitable for facades, fences, for making of stair treads and grating (you can find more information in the part of catalogue Steel gratings and stair treads).

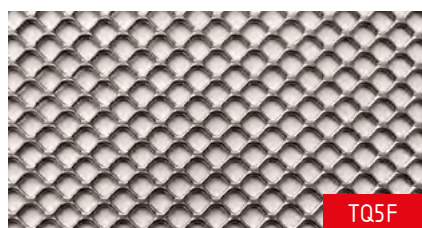
Table: Examples of manufacturing options TR diamond shaped (rhombic) mesh

Indication	Dimensions of meshes (in mm)				Weight (kg/m ²)	Overall thickness of expanded metal (in mm)	Open area (%)	Manufacturing from sheets		Manufacturing from coils	
	Length of mesh ± 5 %	Width of mesh ± 5 %	Width of bridge ± 5 %	Thickness of bridge ± 10 %				Maximum width (in mm)	Maximum length (in mm)	Maximum width (in mm)	Maximum length (in mm)
TR2	2,00	1,44	0,40	0,40	1,11	0,72	45,0	-	-	600	25000
TR3	3,00	1,75	0,50	0,50	2,25	0,80	42,0	-	-	600	25000
TR3	3,00	1,80	0,60	0,50	2,70	0,90	33,0	-	-	600	25000
TR3	3,00	2,05	0,60	0,50	2,35	0,90	42,0	-	-	600	25000
TR4	4,00	2,80	0,50	0,40	1,14	0,75	64,0	-	-	600	25000
TR4	4,75	2,33	0,60	0,40	1,64	0,93	49,0	1600	1800	-	-
TR5	5,80	2,75	1,00	0,70	1,38	1,80	28,0	1600	1250	-	-
TR5	5,80	2,75	1,00	0,70	1,38	1,80	28,0	-	-	1250	-
TR6	6,00	2,80	0,50	0,30	0,86	0,86	64,0	-	-	600	50000
TR6	6,00	2,90	0,70	0,80	3,00	1,70	52,0	-	-	600	50000
TR6	6,00	3,00	0,60	0,50	1,60	1,20	60,0	1000	2350	600	50000
TR6	6,00	3,10	0,50	1,00	2,50	1,00	68,0	1000	4400	600	50000
TR6	6,00	3,10	0,90	0,30	1,30	1,30	42,0	1000	-	600	50000
TR6	6,00	3,10	1,00	0,50	2,58	2,00	35,0	1000	1450	600	50000
TR6	6,00	3,40	1,00	0,80	3,70	2,10	41,0	1000	1500	600	50000
TR6	6,00	3,40	1,25	0,50	2,94	1,50	26,0	1000	1250	600	50000
TR6	6,00	3,60	1,00	0,50	2,22	2,00	44,0	1000	1500	600	50000
TR6	6,00	4,00	0,40	0,40	0,54	0,85	80,0	-	-	1000	50000
TR6	6,00	4,00	1,00	0,75	1,07	1,80	50,0	-	-	600	50000
TR8	8,00	6,50	1,00	1,00	2,40	2,00	68,0	1000	2000	-	-
TR9	9,00	2,05	0,70	0,30	1,64	1,10	32,0	-	-	600	50000
TR9	9,00	2,10	0,75	0,40	2,29	1,25	29,0	-	-	600	50000
TR9	9,00	2,30	0,75	0,40	2,09	1,25	35,0	-	-	600	50000
TR9	9,00	2,35	0,85	0,30	1,74	1,25	28,0	-	-	600	50000
TR10	10,00	3,00	0,75	0,50	2,00	1,80	50,0	1600	1800	1250	50000
TR10	10,00	3,80	0,75	0,50	1,58	1,50	60,0	1600	2300	1250	50000
TR10	10,00	4,40	1,50	0,30	1,64	2,00	32,0	-	-	1250	50000
TR10	10,00	4,40	1,50	0,40	2,18	2,10	32,0	-	-	1250	50000
TR10	10,00	4,50	1,50	1,00	5,33	3,10	33,0	1600	2100	1250	50000
TR10	10,00	4,80	2,00	0,30	2,00	2,40	17,0	-	-	1250	50000
TR10	10,00	4,80	2,00	0,50	3,33	2,40	17,0	1600	1100	1250	50000
TR10	10,00	5,00	2,00	0,40	2,56	2,40	20,0	-	-	1250	50000
TR10	10,00	6,50	1,25	0,50	1,54	1,90	62,0	1600	2400	1250	50000
TR10	10,00	8,30	1,50	1,00	-	-	-	500	600	-	-
TR10	10,30	3,30	0,75	1,00	3,64	1,50	55,0	-	-	600	50000
TR10	10,30	3,50	1,00	0,50	2,29	1,60	43,0	-	-	600	50000
TR10	10,30	4,15	0,60	0,50	1,16	1,20	71,0	-	-	600	50000
TR10	10,30	4,30	1,00	0,50	1,86	1,60	53,0	-	-	600	50000
TR10	10,30	4,60	1,50	0,50	2,61	2,15	35,0	-	-	600	50000
TR10	10,30	4,90	0,60	0,50	0,98	1,20	75,0	-	-	600	50000
TR10	10,30	5,30	1,50	1,00	5,33	3,00	43,0	1600	2500	1250	50000
TR10	10,30	5,40	1,00	0,50	1,48	1,60	63,0	1600	2500	1250	50000
TR10	10,30	5,40	1,25	0,50	1,85	2,00	54,0	1600	2000	1250	50000
TR10	10,30	6,10	1,65	1,20	5,19	3,50	46,0	-	-	1000	50000
TR12	12,70	5,60	1,10	0,50	1,57	1,50	61,0	-	-	600	50000
TR12	12,70	6,40	0,80	0,40	0,80	1,44	75,0	-	-	600	50000
TR12	12,70	5,60	1,30	0,40	1,49	1,45	53,0	-	-	600	50000
TR12	12,70	6,40	0,80	0,40	0,80	1,44	75,0	-	-	1250	-
TR13	13,50	5,10	1,00	1,00	3,14	2,00	61,0	-	-	600	50000
TR13	13,50	5,15	1,00	0,50	1,55	1,60	61,0	-	-	600	50000
TR13	13,50	5,40	0,60	0,50	0,89	1,20	78,0	-	-	600	50000
TR13	13,50	7,00	1,00	1,00	2,29	2,00	71,0	1600	5000	1250	50000
TR13	13,50	7,50	1,50	1,00	3,20	3,00	60,0	1600	3600	1250	50000
TR13	13,50	8,00	1,50	1,00	3,00	3,00	62,0	1600	3800	1250	50000
TR13	13,50	8,60	1,50	1,00	2,79	3,00	65,0	1600	4100	1250	50000
TR16	16,00	5,00	0,75	0,50	1,20	1,30	70,0	1600	3100	1250	50000
TR16	16,00	5,80	0,75	0,50	1,03	1,50	74,0	1600	3600	1250	50000
TR16	16,00	6,10	1,50	0,30	1,18	1,95	51,0	-	-	1250	50000
TR16	16,00	6,30	1,25	0,50	1,59	2,00	60,0	1600	2350	1250	50000
TR16	16,00	6,30	1,50	0,40	1,45	2,05	54,0	-	-	1250	50000
TR16	16,00	6,60	1,50	0,50	1,82	3,00	54,0	1600	3150	1250	50000
TR16	16,00	6,60	1,50	1,00	3,64	3,00	54,0	1600	3150	1250	50000
TR16	16,00	6,60	2,00	0,30	1,45	2,50	39,0	-	-	1250	50000
TR16	16,00	6,60	2,00	0,40	1,94	2,60	39,0	-	-	1250	50000
TR16	16,00	6,90	2,00	0,50	2,32	2,80	42,0	1600	1600	1250	50000
TR16	16,00	7,00	2,00	1,00	4,57	4,00	43,0	1600	2500	1250	50000
TR16	16,00	7,60	2,50	1,00	5,26	5,00	34,0	1600	2100	1250	50000
TR16	16,00	8,00	1,75	0,75	2,63	2,70	56,0	1600	2100	1250	50000
TR16	16,00	11,20	1,50	1,20	0,87	2,80	73,0	-	-	1000	50000
TR16	16,00	13,80	1,20	1,00	1,39	2,70	82,0	-	-	1250	50000
TR18	18,00	9,00	1,50	0,50	1,39	2,15	66,0	1600	2800	-	-
TR18	18,00	15,00	1,50	1,00	1,60	3,10	80,0	1600	7200	-	-
TR21	21,00	10,00	1,30	0,50	1,04	1,75	74,0	-	-	600	50000
TR22	22,00	5,10	0,75	0,50	1,18	1,50	70,0	-	-	600	50000
TR22	22,00	5,40	1,00	0,50	1,46	1,60	63,0	-	-	600	50000

Indication	Dimensions of meshes (in mm)				Weight (kg/m ²)	Overall thickness of expanded metal (in mm)	Open area (%)	Manufacturing from sheets		Manufacturing from coils	
	Length of mesh ± 5%	Width of mesh ± 5%	Width of bridge ± 5 %	Thickness of bridge ± 10 %				Maximum width (in mm)	Maximum length (in mm)	Maximum width (in mm)	Maximum length (in mm)
TR22	22,00	7,00	1,25	0,50	1,43	1,90	64,0	1600	2600	1250	50000
TR22	22,00	8,00	1,25	0,40	1,00	1,80	69,0	-	-	1250	50000
TR22	22,00	8,00	1,25	0,50	1,25	1,90	69,0	1600	3000	1250	50000
TR22	22,00	9,00	1,25	0,50	1,11	1,90	72,0	1600	3350	1250	50000
TR22	22,00	10,50	1,30	1,00	1,98	2,80	75,0	-	-	1250	50000
TR22	22,00	10,50	1,50	1,00	2,29	3,10	71,0	-	-	1250	50000
TR22	22,00	10,50	1,75	1,00	2,67	3,45	67,0	-	-	1250	50000
TR22	22,00	10,50	2,00	1,00	3,05	3,80	62,0	-	-	1250	50000
TR22	22,00	12,00	2,00	0,70	2,00	3,80	67,0	-	-	600	50000
TR22	22,00	12,80	1,75	0,88	1,93	2,90	73,0	1600	3400	1250	50000
TR22	22,00	14,80	2,00	2,00	4,32	4,80	73,0	1600	5300	1250	5000
TR22	22,00	16,20	2,00	2,00	3,95	4,80	75,0	1600	5800	1250	5000
TR28	28,00	4,50	2,00	1,00	7,11	3,80	11,0	1600	1600	1250	3000
TR28	28,00	5,00	2,00	0,50	3,20	2,70	20,0	1600	1150	1250	3000
TR28	28,00	9,00	2,00	1,00	3,56	3,80	56,0	2500	2650	1250	3000
TR28	28,00	9,00	2,50	1,00	4,44	4,50	44,0	2500	2100	1250	3000
TR28	28,00	9,00	2,50	2,00	8,89	5,50	44,0	2500	2100	1250	3000
TR28	28,00	9,00	3,00	2,00	10,67	6,20	33,0	2500	1750	1250	3000
TR28	28,00	11,00	2,50	1,00	3,64	4,50	55,0	2500	2600	-	-
TR28	28,00	12,00	2,00	1,00	2,67	3,80	67,0	2500	3550	-	-
TR30	30,00	13,00	1,50	0,5	0,92	1,45	77	-	-	1000	50000
TR30	30,00	13,00	4,75	2,5	14,62	9,00	27	2500	1600	-	-
TR30	30,00	14,00	2,50	1,0	2,86	4,50	64	-	-	1000	50000
TR30	30,00	16,00	2,50	2,0	5,00	5,50	69	2500	3800	-	-
TR30	30,00	16,00	1,10	0,5	0,55	1,70	64	-	-	1000	50000
TR30	30,00	13,00	2,80	2,0	6,90	5,00	57	2500	2750	1500	50000
TR35	35,00	12,00	2,00	1,0	2,67	3,80	67	2500	3550	-	-
TR35	35,00	14,20	2,50	1,0	2,82	4,50	65	2500	3350	-	-
TR35	35,00	15,00	4,80	2,5	12,80	9,20	36	2500	2250	-	-
TR38	38,00	11,00	4,00	3,0	17,45	8,60	27	2500	1600	-	-
TR38	38,00	17,00	4,50	3,0	12,71	9,30	47	2500	2200	-	-
TR38	38,00	17,00	4,50	3,0	12,71	9,30	47	-	-	1500	-
TR42	42,00	12,00	2,50	1,0	3,33	4,50	58	2500	2850	1250	5000
TR42	42,00	13,00	3,00	1,5	5,54	5,70	54	2500	2550	1250	5000
TR42	42,00	13,00	3,00	2,0	7,38	6,20	54	2500	2550	1250	3000
TR42	42,00	13,00	3,00	3,0	11,06	7,20	54	2500	2550	1250	3000
TR42	42,00	13,00	4,50	3,0	16,62	9,30	31	2500	1700	1250	3000
TR42	42,00	15,00	2,50	2,0	5,33	5,50	67	2500	3550	-	-
TR42	42,00	16,00	2,50	1,0	2,50	4,50	69	2500	3800	-	-
TR42	42,00	16,00	2,60	1,0	2,50	4,50	69	-	-	1250	5000
TR42	42,00	18,00	2,50	1,0	2,22	4,50	72	2500	4250	-	-
TR42	42,00	20,00	2,50	1,0	2,00	4,50	75	2500	4750	-	-
TR42	42,00	20,00	2,50	1,0	2,00	4,50	75	-	-	1500	25000
TR44	44,00	12,00	1,50	1,0	2,00	3,10	75	2500	4750	-	-
TR44	44,00	12,00	3,00	1,5	6,00	5,70	50	2500	2350	-	-
TR44	44,00	12,00	3,00	3,0	12,00	7,20	50	2500	2350	-	-
TR44	44,00	12,00	5,00	2,0	13,33	9,00	17	2500	1400	-	-
TR44	44,00	13,00	4,00	4,0	19,74	7,20	39	-	-	1500	2500
TR52	52,00	22,20	2,00	2,0	2,88	4,80	82	2500	6600	-	-
TR52	52,00	22,20	2,50	1,0	1,80	4,50	77	2500	5250	-	-
TR52	52,00	22,20	3,00	3,0	6,49	7,20	73	2500	4400	-	-
TR52	52,00	22,20	3,50	1,5	3,78	6,40	68	2500	3750	-	-
TR52	52,00	24,00	4,50	2,5	7,50	8,10	63	2500	3850	1500	5000
TR52	52,00	24,00	6,50	2,7	11,70	11,70	46	2500	2100	1500	5000
TR62	62,00	20,00	2,50	1,0	2,00	4,50	75	2500	4750	1500	2500
TR62	62,00	20,00	2,50	1,5	3,00	5,00	75	2500	4750	1500	2500
TR62	62,00	21,00	2,50	2,0	3,81	5,50	76	2500	4950	1500	2500
TR62	62,00	21,00	3,00	3,0	6,86	7,20	71	2500	4150	1500	2500
TR62	62,00	21,00	4,50	3,0	10,29	8,70	57	2500	2750	1500	2500
TR62	62,00	23,00	7,00	3,0	14,61	12,00	39	2500	1950	-	-
TR62	62,00	25,00	2,50	1,0	1,48	4,50	81	2500	6400	1500	2500
TR62	62,00	27,00	2,50	1,0	1,48	4,50	81	2500	6400	1500	2500
TR62	62,00	27,00	2,50	1,5	2,22	5,00	81	2500	6400	1500	2500
TR62	62,00	27,00	2,50	2,0	2,96	5,50	81	2500	6400	1500	2500
TR62	62,00	27,00	3,00	3,0	5,33	7,20	78	2500	5350	1500	2500
TR62	62,00	27,00	4,50	3,0	8,00	8,70	67	2500	3550	1500	2500
TR62	62,00	27,00	7,00	3,0	12,44	12,00	48	2500	2250	-	-
TR62	62,00	27,00	9,00	4,0	21,33	16,60	33	1500	2150	-	-
TR76	76,00	30,00	2,50	1,0	1,33	4,50	83	2500	7100	1500	2500
TR76	76,00	35,00	3,00	3,0	4,11	7,20	83	2500	6900	1500	2500
TR76	76,00	35,00	4,00	3,0	5,49	8,60	77	2500	5200	1500	2500
TR76	76,00	35,00	6,00	1,5	4,11	9,90	66	2500	3450	1500	2500
TR76	76,00	35,00	6,00	3,0	8,23	11,40	66	2500	3450	1500	2500
TR76	76,00	35,00	6,00	4,0	10,97	12,40	66	2500	3450	1500	2500
TR76	76,00	37,00	10,00	4,0	17,30	18,00	46	1500	2650	-	-
TR88	88,00	15,00	2,50	1,0	2,67	4,50	67	1500	3550	-	-
TR88	88,00	15,00	2,50	2,0	5,33	5,00	67	2500	3550	-	-
TR88	88,00	17,00	6,50	1,0	6,12	12,00	24	2500	1550	-	-
TR90	90,00	40,00	4,50	3,0	5,40	9,30	78	2500	5250	1500	2500
TR90	90,00	40,00	5,00	4,0	8,00	11,00	75	1500	5750	-	2500
TR90	90,00	40,00	6,00	1,5	3,60	9,90	70	2500	3950	1500	2500
TR90	90,00	40,00	6,00	3,0	7,20	11,40	70	2500	3950	1500	2500
TR90	90,00	40,00	6,00	4,0	9,60	12,40	70	1500	3950	1500	2500
TR110	110,00	50,00	12,00	3,0	12,00	-	50	-	-	-	-
TR110	110,00	50,00	23,00	3,0	22,00	-	8	-	-	-	-
TR115	115,00	21,50	5,00	2,5	9,30	8,50	53	2500	2550	-	-
TR115	115,00	21,50	5,00	3,0	11,16	9,00	53	2500	2550	-	-
TR115	115,00	25,80	5,00	3,0	9,30	9,00	62	2500	3000	-	-
TR115	115,00	40,00	3,00	1,5	1,80	6,00	85	2500	7900	1500	2500
TR115	115,00	40,00	3,00	2,0	2,40	6,00	85	2500	7900	1500	2500
TR115	115,00	40,00	3,00	3,0	3,60	7,20	85	2500	7900	1500	2500
TR115	115,00	40,00	4,50	3,0	5,40	9,30	77	2500	5250	1500	2500
TR115	115,00	40,00	8,00	3,0	9,60	14,00	60	2500	2950	1500	2500
TR115	115,00	40,00	7,00	4,0	11,20	13,70	65	2500	3400	1500	2500
TR115	115,00	40,00	9,00	4,0	14,40	15,00	65	2500	2600	-	-
TR115	115,00	40,00	9,00	6,0	21,60	18,60	55	1500	3200	-	-
TR115	115,00	40,00	9,00	6,0	21,60	-	55	-	-	-	-
TR115	115,00	43,00	9,00	6,0	20,09	18,60	58	1500	3440	-	-
TR115	115,00	47,00	3,00	1,5	1,53	5,70	87	2500	9300	1500	2500

Indication	Dimensions of meshes (in mm)				Weight (kg/m ²)	Overall thickness of expanded metal (in mm)	Open area (%)	Manufacturing from sheets		Manufacturing from coils	
	Length of mesh ± 5%	Width of mesh ± 5%	Width of bridge ± 5%	Thickness of bridge ± 10 %				Maximum width (in mm)	Maximum length (in mm)	Maximum width (in mm)	Maximum length (in mm)
TR115	115,0	47,0	3,00	2,0	2,04	6,00	87	2500	9300	1500	2500
TR115	115,0	47,0	3,00	3,0	3,06	7,20	87	2500	9300	1500	2500
TR115	115,0	47,0	7,00	4,0	9,53	13,70	70	2500	3950	1500	2500
TR115	115,0	47,0	8,00	3,0	8,17	14,00	65	2500	3450	1500	2500
TR115	115,0	47,0	9,00	4,0	12,26	15,00	62	1500	3750	1500	2500
TR115	115,0	47,0	9,00	6,0	18,38	18,60	62	1000	2450	-	-
TR115	115,0	50,0	23,00	2,0	14,50	-	8	-	-	-	-
TR123	123,5	31,5	8,76	3,0	13,33	13,50	44	2500	2100	-	-
TR130	130,0	38,0	9,00	6,0	22,74	18,60	53	1500	3000	-	-
TR150	150,0	42,0	8,00	4,0	12,19	15,20	62	2000	2450	-	-
TR150	150,0	44,0	9,00	6,0	19,64	18,60	59	1500	3500	-	-
TR152	152,0	52,0	17,00	3,0	15,69	7,70	35	2500	1800	-	-
TR200	200,0	75,0	3,00	2,0	1,28	6,20	92	2500	3000	-	-
TR200	200,0	75,0	3,00	3,0	1,92	7,20	92	2500	3000	-	-
TR200	200,0	75,0	4,50	3,0	2,88	9,20	88	2500	3000	-	-
TR200	200,0	75,0	6,00	3,0	3,84	12,20	84	2500	3000	-	-
TR200	200,0	75,0	6,00	3,0	3,85	-	84	-	-	-	-
TR200	200,0	75,0	6,00	4,0	5,12	12,40	84	2500	3000	-	-
TR200	200,0	85,0	29,00	3,0	16,35	-	32	-	-	-	-

TQ square mesh



TQ5F

□ = 3 mm



TQ8F

□ = 5 mm



TQ10F

□ = 6 mm



TQ14F

□ = 8 mm



TQ16F

□ = 10 mm



TQ20F

□ = 12 mm



TQ50F

□ = 30 mm



TQ60F

□ = 35 mm



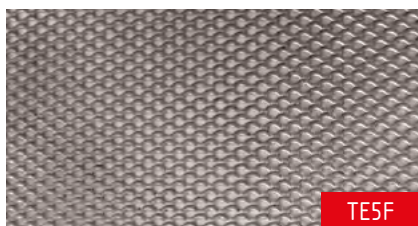
TQ90F

□ = 50 mm

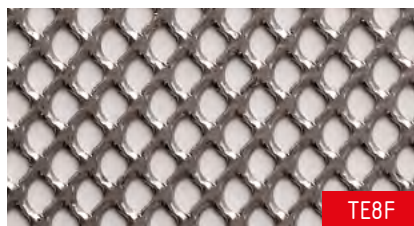
Indication	Dimensions of meshes (in mm)	Length of mesh ± 5%	Width of mesh ± 5%	Width of bridge (strand width) ± 5%	Thickness of bridge ± 10 %	Weight (kg/m ²)	Open area (%)
TQ2	1	2	1,70	0,15	0,15	0,60	82
TQ5	3	5	4,00	0,30	0,30	0,72	85
TQ8	5	8	6,70	1,00	1,00	4,80	70
TQ10	6	10	7,50	1,00	1,00	4,30	73
TQ10	6	10	7,62	1,40	1,25	7,40	63
TQ14	8	14	11,50	1,50	1,25	5,20	73
TQ14	8	14	12,00	1,00	1,00	2,70	83
TQ14	8	14	11,70	1,30	1,00	3,60	77
TQ16	10	16	14,00	1,00	1,00	2,30	85
TQ16	10	16	14,00	1,75	1,25	5,00	75
TQ20	12	20	17,00	1,50	1,00	20,00	82
TQ20	12	20	17,20	1,00	1,00	1,80	88
TQ20	12	20	15,00	3,00	2,00	12,80	60
TQ30	17	30	22,00	5,00	2,00	14,60	54
TQ30	17	30	25,00	3,00	1,50	5,80	76
TQ40	24	40	28,00	4,00	3,00	13,80	72
TQ50	30	50	37,00	5,00	3,00	4,10	70
TQ60	35	60	50,00	4,50	2,00	5,80	82
TQ90	50	90	56,00	4,00	3,00	6,90	85

TE round mesh

Example of manufacturing options



TE5F
ø = 2,5 mm



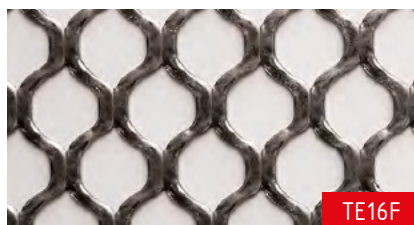
TE8F
ø = 3,0 mm



TE10F
ø = 5,0 mm



TE14F
ø = 7,0 mm



TE16F
ø = 8,0 mm



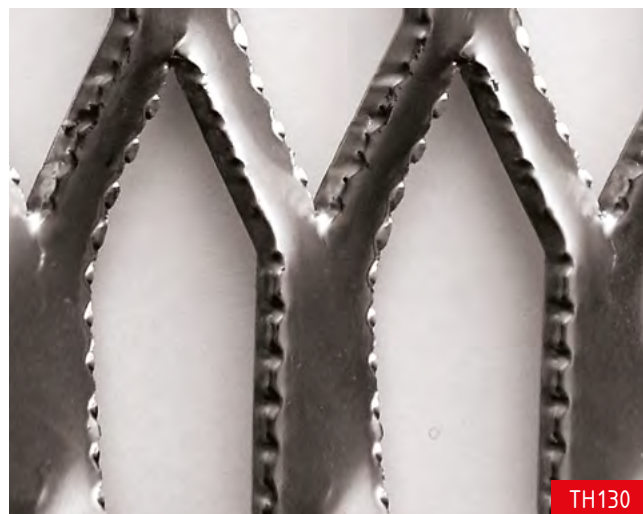
TE20F
ø = 10,0 mm

Indication	Dimensions of meshes (in mm)	Length of mesh ± 5 %	Width of mesh ± 5 %	Width of bridge (strand width) ± 5 %	Thickness of bridge ± 10 %	Weight (kg/m²)	Open area (%)
TE3	1,5	3	2,50	0,7	0,30	2,7	44,0
TE5	2,5	5	4,10	1,0	0,50	3,9	51,0
TE5	2,5	5	4,10	1,0	1,75	3,9	51,0
TE8	3,0	8	6,49	1,4	1,00	6,9	56,0
TE10	5,0	10	7,62	1,4	0,70	4,1	63,0
TE12	6,0	12	10,00	2,0	1,25	8,0	60,0
TE14	7,0	14	11,80	2,1	1,25	7,1	64,0
TE16	8,0	16	14,20	3,0	2,00	13,5	57,0
TE20	10,0	20	15,80	2,5	1,50	7,6	68,0
TE20	10,0	20	16,00	3,0	1,00	6,0	62,5
TE20	10,0	20	16,80	2,5	1,00	4,8	70,0

TH hexagonal mesh



TH47



TH130

Indication	Dimensions of meshes (in mm)				Weight (kg/m²)	Overall thickness of expanded metal sheets (in mm)	Open area (%)	Manufacturing from sheets		Manufacturing from coils	
	Length of mesh ± 5 %	Width of mesh ± 5 %	Width of bridge ± 5 %	Thickness of bridge ± 10 %				Maximum width (in mm)	Maximum length (in mm)	Maximum width (in mm)	Maximum length (in mm)
TH28	28,0	4,5	2,00	1,0	7,11	3,80	11	1600	1600	1250	3000
TH28	28,0	5,0	2,00	0,5	3,20	2,70	20	1600	1150	1250	3000
TH44	44,0	7,2	2,00	2,0	8,53	4,40	47	2500	2200	-	-
TH44	44,0	8,7	2,00	2,0	7,36	4,40	54	2500	2500	-	-
TH44	44,0	8,7	2,50	1,0	4,60	4,00	43	2500	2000	-	-
TH45	45,0	13,4	5,00	3,0	17,50	9,00	25	1500	3000	-	-
TH45	45,0	18,0	4,50	3,0	11,50	9,00	55	1500	3000	-	-
TH47	47,0	13,0	5,00	3,0	18,10	10,00	25	1500	3000	-	-
TH52	52,0	10,0	2,00	1,0	3,14	3,75	60	2500	3000	-	-
TH52	52,0	12,5	2,00	2,0	5,12	4,40	68	3500	3700	-	-
TH52	52,0	13,4	2,00	2,0	4,78	4,40	70	-	-	1250	3000
TH52	52,0	14,0	2,00	2,0	4,57	4,40	71	-	-	1250	3000
TH52	52,0	14,8	2,00	2,0	4,32	4,40	73	-	-	1250	3000
TH88	88,0	15,0	2,50	1,0	2,67	4,50	67	2500	3550	-	-
TH88	88,0	15,0	2,50	2,0	5,33	5,00	67	2500	3550	-	-
TH115	115,0	21,5	5,00	2,5	9,30	8,50	53	2500	2550	-	-
TH115	115,0	21,5	5,00	3,0	11,16	9,00	53	2500	2550	-	-
TH123	123,5	31,5	8,75	3,0	13,33	13,50	44	2500	2100	-	-
TH130	130,0	38,0	9,00	6,0	22,8	16,20	50	1300	3000	-	-

Use > of steel gratings and stair treads

Steel gratings and stair treads are load-bearing, resistant construction elements with a long working life and they are suitable for construction of staircases, foot bridges, bridges, working platforms and floors. They

are used in the construction, mechanical engineering, chemical, food and mining industries and heavy manufacturing. They are also used in modern architecture – interiors and exteriors, gardens and exhibition centers.



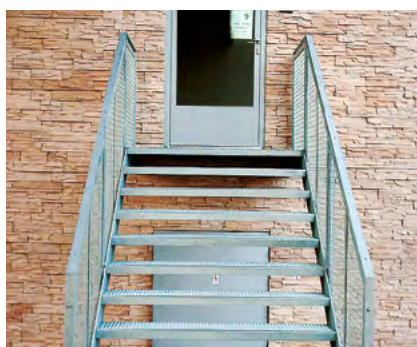
steel gratings of a stadium grandstand



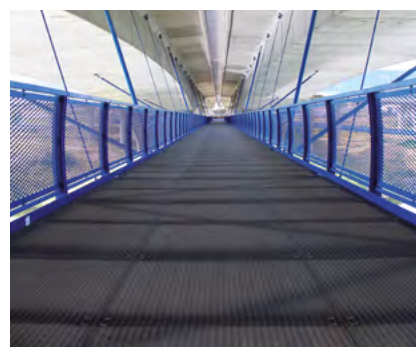
pressed stair tread



airy balconies made of gratings



modern staircase



foot bridges across the river Vltava



foot bridges made of steel gratings



spiral staircase

Steel gratings, stair treads and materials used

Steel gratings and stair treads are characterized by their low weight, variability of design, a high percentage of open area thanks to which they minimally prevent permeability of light and air. They can be made

by pressing or welding with the option of anti slip finish. Gratings and treads from expanded metal are slightly different – see below. The most common material for their manufacturing is mild steel or possibly mild

steel hot dip galvanized. Lately, the demand for stainless steel (be it natural, macerated or polished stainless steel) has been increasing. We also offer gratings and stair treads made of composite materials.

TYPES

- **Pressed**

- a) steel gratings, [see page 28](#)
- b) stair steps, [see page 31](#)

- **Welded**

- a) steel gratings, [see page 32](#)
- b) stair steps, [see page 32](#)

- **Expanded metal**

- a) steel gratings, [see page 33](#)
- b) stair steps, [see page 34](#)

- **Composite materials**

Floor gratings made of composite materials are lightweight, maintenance-free, strong and flexible, and absolutely stainless with unlimited working life. The composite materials are made from a mixture of resin and fibreglass. They need not be welded or surface treated. Gratings made of composite materials can be used especially for floors, walkways and ramps, platforms, stair components, and in the power-producing, chemical and food industries and agriculture.



pressed steel gratings (strip-strip)



welded steel gratings (strip-wire)



grating/stair tread made of composite materials



steel grating made of expanded metal

MATERIALS



stainless steel grating

- **Mild steel (S235)**

Most cost-effective, it can be variably surface treated, i.e. powder painted, galvanized or coated with various paints.

- **Stainless steel**
(most common 1.4301).

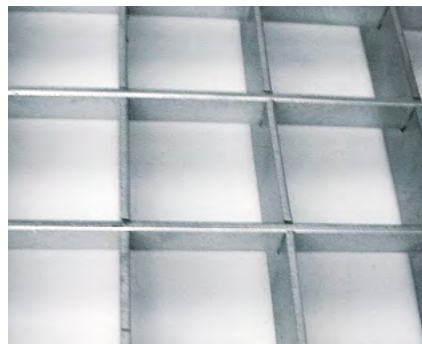
Other qualities of material can be supplied after a mutual consultation.

It guarantees a long working life. Macerated and polished stainless steel does not corrode. We recommend that natural stainless steel be surface treated. It is suitable for the customers who use this semi-finished product in further processing. It is used in pharmaceutical, food and chemical plants and also plants that have to comply with strict hygiene regulations. It also found some uses in the modern architecture.

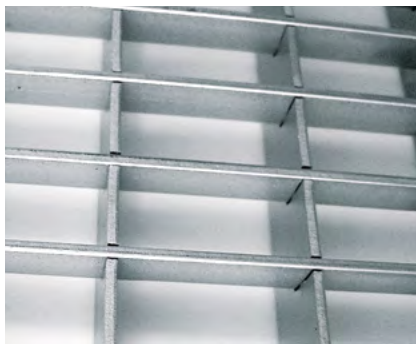
Most common types of openings

The photos are for illustration only, not in actual sizes.

Pressed



opening 33 x 33 mm



opening 33 x 16 mm



opening 33 x 11 mm



opening 25 x 25 mm



one directional antislip arrangement

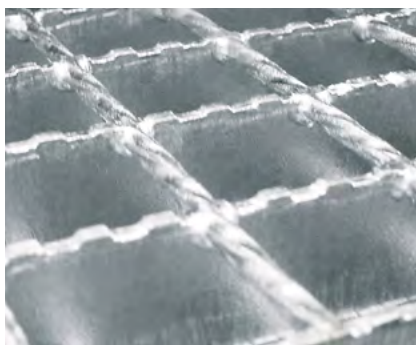


two directional antislip arrangement

Welded



opening 34 x 38 mm



with antislip arrangement

Made of expanded metal

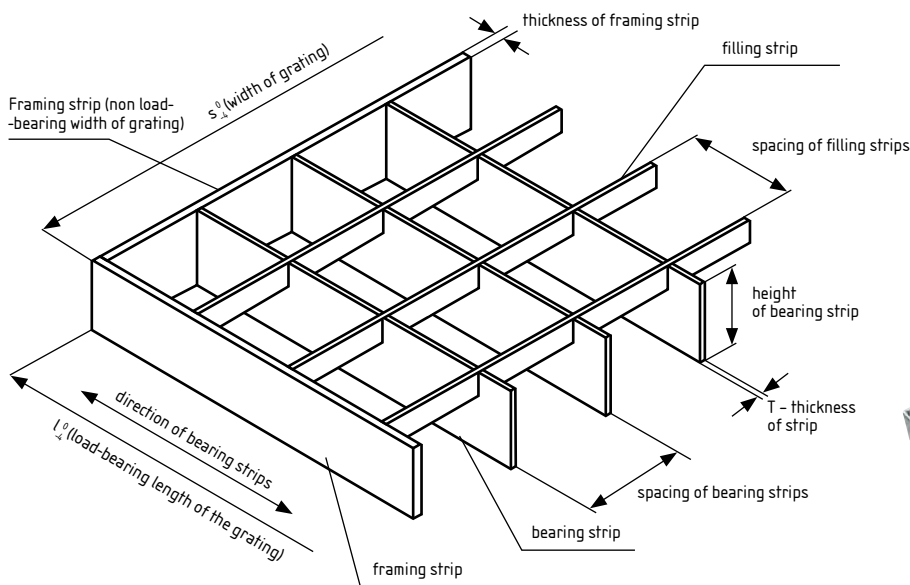


mesh 47 x 13 mm



mesh 62 x 15 mm

Steel gratings > pressed



USES

Pressed gratings are suitable for applications where there is an increased emphasis on the aesthetic impact. They are used for entranceways, stairways, footbridges to public areas, railing panels, industrial design ceilings, etc.

SHAPES OF GRATINGS

Commonly used are rectangular and slanted shapes or with curved slots. They can also be made according to individual customer need. We recommend attaching a drawing or sketch. Examples of atypical shapes are shown on page 29.

CONSTRUCTION

The distinct feature of the design of pressed grating is the special shaped groove that locks into the bearing strip. Filling strips are moulded under high pressure into the grooves. The filling strips hold the bearing strips in the vertical position and make them stable, thus providing an even distribution of the load. Framing strips are welded along the perimeter of the grating. Construction of pressed gratings is based on the standards EN 732 611 and DIN 24537.

SUPPORTING STRUCTURE

By this is usually meant a steel or concrete structure to which the gratings are anchored.

BEARING STRIPS

These are parallel strips transferring the load. It must be set at the minimal distance of 25 mm on both sides of the supporting structure, see the diagram on the right.

SIZE OF OPENING

Axial distance between two adjacent bearing and two filling strips.

LENGTH OF GRATING

This is an external dimension of the grating in the direction of bearing strips, even in case when it is smaller than the width of the grating.

WIDTH OF GRATING

Width of the grating, which is not load-bearing. Measured in the direction of filling strips.

FILLING STRIPS

These bars (for example 10 mm x 2 mm in cross section) hold the load-bearing strips in the vertical position and make them stable.

FRAMING BARS

Perimeter of the grating is lined and reinforced with strips made of strip steel, usually of the same profile as the bearing strips.

TREADING EDGE

This is especially reinforced first/front profile of steps and stair landings of staircases and landings. Anti slip treatment is applied to treading surfaces.

SIDE BOARD OF THE STAIR TREAD

Individual steps are bolted to the staircase carriage through side boards, in other words through flanges made of flat steel.

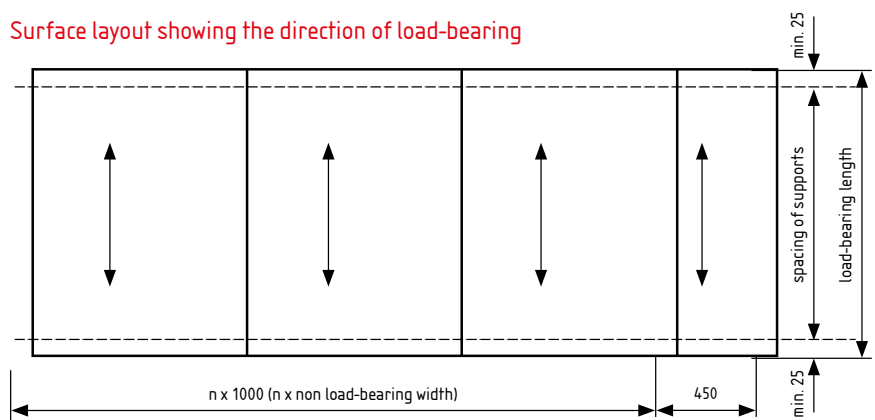
ONE DIRECTIONAL ANTISLIP ARRANGEMENT

Effective one directional antislip arrangement of gratings is achieved by special cut-outs in filling strips (photo on page 27).

TWO DIRECTIONAL ANTISLIP ARRANGEMENT

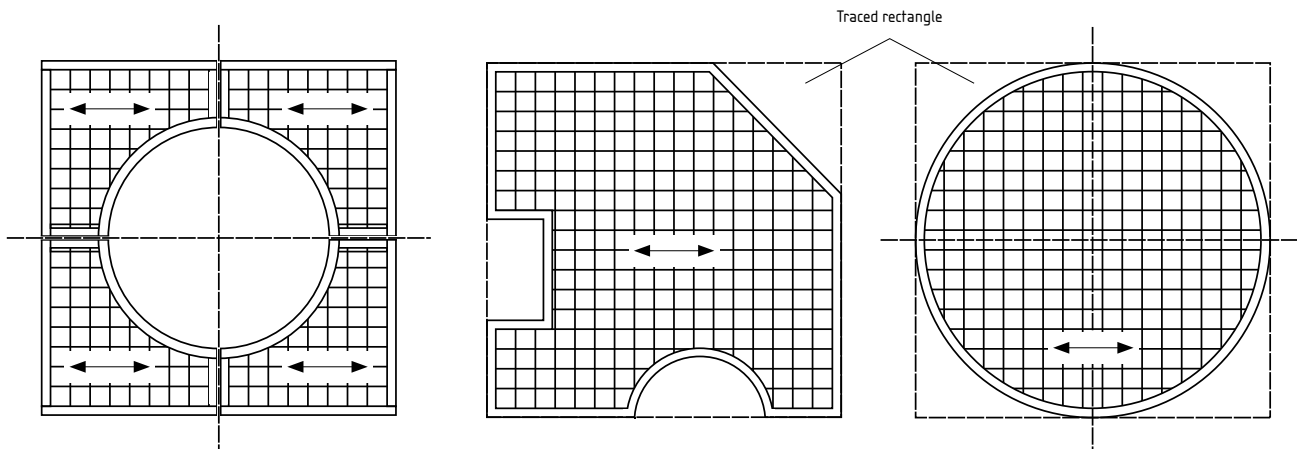
Two directional antislip arrangement of gratings is achieved by special cut-outs in filling strips and bearing strips (page 27).

Surface layout showing the direction of load-bearing



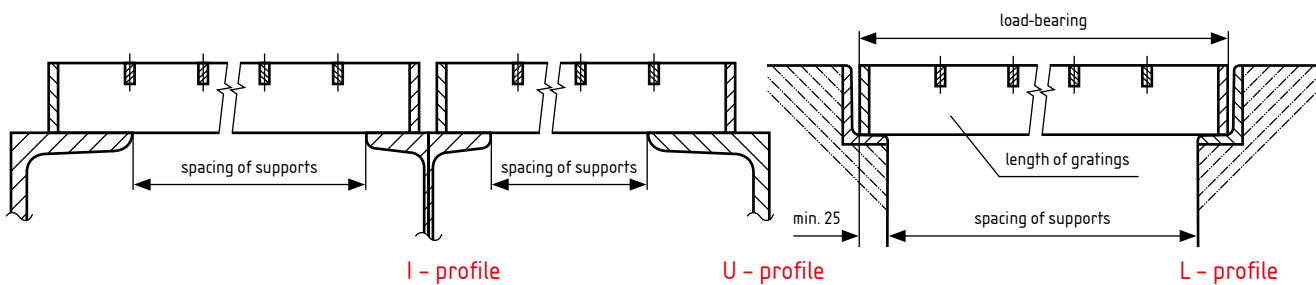
Atypical shapes

Here are some examples of shapes of gratings with bevels and cut-outs for pipe lines and such like. For thus modified gratings, it's necessary to attach a drawing or sketch to the order. Atypical shapes can be made for all types of gratings.



Mounting on load-bearing structure > examples

Schemes are valid for all types of gratings



Dimensional and geometrical tolerances

Parameter	Specification	Max. permitted deviation (in mm)
format	dimension lengths and widths	+0 / -4
squareness	difference between the lengths of diagonals	6 / 1000 of the longer side of the format
flatness of surface	up to the format dimension 500 mm	2
straightness of the edge – framing	above the format dimension 500 mm	1 / 250 of the longer side of the format

- Maximum size of the grating is 2000 x 1500 mm (load-bearing length x width).
- In special cases, it's possible to deal with even larger dimensions than those listed here.

Mounting of gratings > connecting parts

Most commonly used way of gratings mounting onto the load-bearing structure with profiles with the horizontal flange is done with the help of connecting parts –

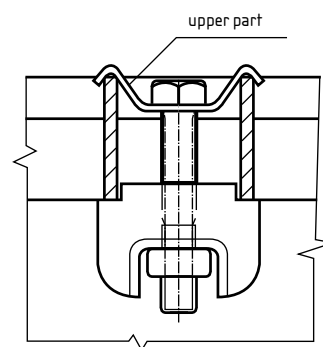
see further. It's also possible to use less recommended welded joint for anchoring of gratings. In case of galvanized gratings, it's necessary to remove the layer of zinc in

the location of the weld and then repair it with a layer of zinc paint. This scheme does not apply to gratings made of expanded metal.

Detail of anchoring of a grating by a clamp – recommended

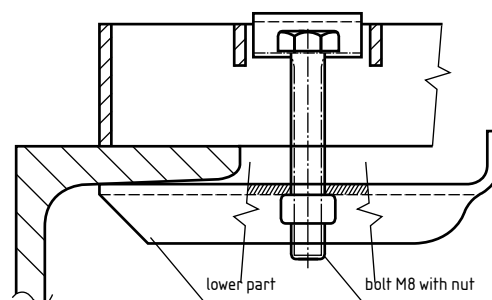
Material – stainless steel (1.4301)

The anchoring kit includes: the upper and lower part without bolts and nuts. It's available in the natural finish. Recommended number of connecting parts is 4 per one grating. Sales managers can provide further information.



Material – structural (mild) steel (S235)

The anchoring kit includes: the upper shaped fastener, lower clasps with a nose, the connecting bolt M8 x 60 and the connecting nut M8. The kit is galvanized. This kit is suitable for mild steel and hot dip galvanized gratings.



Regularly stocked items > pressed gratings

These are examples of inventory items that are available in our retail warehouses in Chrudim and Prostějov.

GRATING

Opening size: 33 x 33 mm

Bearing strip: 30 x 2/30 x 3 mm *

Surface treatment: hot dip galvanizing

Stocked items

Item	Length x width (in mm)	Weight (kg)
1	400 x 1000	8,7
2	500 x 1000	10,9
3	600 x 1000	13,0
4	700 x 1000	15,2
5	800 x 1000	17,4
6	900 x 1000	19,5
7	1000 x 1000	21,7
8	1100 x 1000	23,9
9	1200 x 1000 *	35,2
10	1000 X 1000 (without hot dip galvanizing)	21,0

Most wanted types of pressed gratings

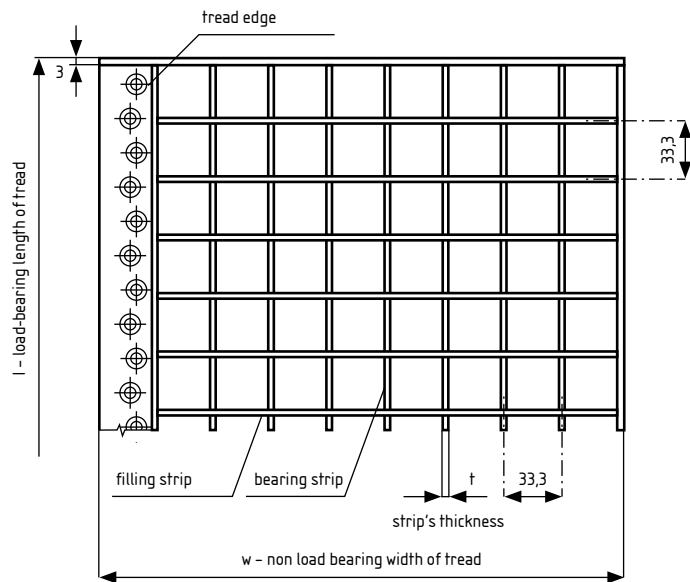
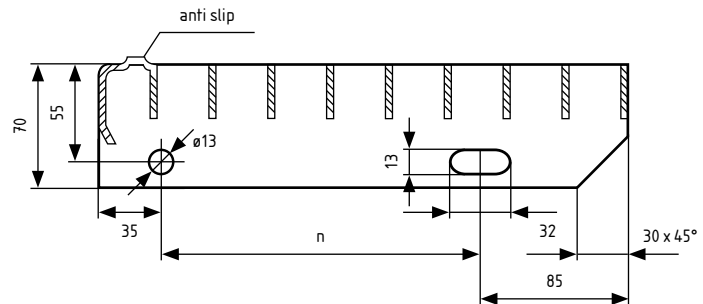
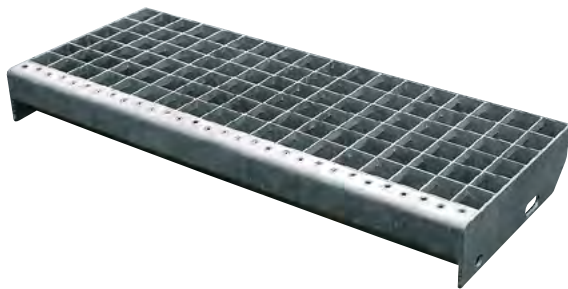
Production options	Steel quality S235						Steel quality 1.4301 (AISI 304)			
	Bearing strip (size in mm)						Bearing strip (size in mm)			
opening (in mm)	20 x 2	25 x 2	30 x 2	30 x 3	40 x 2	40 x 3	20 x 2	25 x 2	30 x 2	40 x 2
25 x 25,0	•	•	•	•	•	•	•	•	•	•
33 x 11,0			•		•				•	•
33 x 16,5	•	•	•	•	•	•	•	•	•	•
33 x 33,0	•	•	•	•	•	•	•	•	•	•

Steel gratings > welded

Pressed stair treads are made of steel mesh grating that corresponds to DIN 24537. The tread edge is reinforced with a special profile that is a anti slip treated and has a two-row perforation.

Pressed stair treads conform to DIN 24531.

Stair treads are anchored to the staircase carriage behind the side boards that are ready for anchoring with 2 x 2 M12 bolts. See the picture below.



Most commonly used > pressed stair treads

Most often wanted types of pressed stair treads

l - length of tread (in mm)	w - width (in mm)	h x t - cross section of bearing strip (in mm)	n - spacing of anchoring elements (in mm)	weight (kg/piece)
600	240	30 x 2	120	4,9
	270	30 x 2	150	5,4
	305	30 x 2	185	5,9
800	240	30 x 2	120	6,1
	270	30 x 2	150	6,7
	305	30 x 2	185	7,3
1000	240	35-40 x 2	120	6,9
	270	35-40 x 2	150	7,7
	305	35-40 x 2	185	8,7

We can supply a wider assortment. Our sales managers can provide more information.

Steel gratings > welded

Welded steel gratings are thanks to being welded at all cross points very strong and resistant to torsion strain and their design allows optimal load distribution. Gratings are made of structural steel

(S235). They can be protected from corrosion by hot dip galvanizing. Their frames are made from steel strips. Gratings are reinforced with filling rods from twisted wire that are pressed to bearing strips

under high pressure and then they are electrically welded. Dimensional tolerances and the method of production conform to the standards that are presently in effect.

USE

Welded steel gratings are suitable, if appropriate dimensioning is used, as treading for vehicles and machinery at construction sites or in industrial plants.

Dimensions of bearing strips from 25/2 to 60/5

Basic opening 34.3 x 38.2 mm

Standard opening 28.2 mm

Production options

Load-bearing length in direction of bearing strip 3050 mm

Non load-bearing width in direction of filling wire 1000 mm



welded steel grating with the load-bearing strip and twisted filling wire

Stair treads > welded

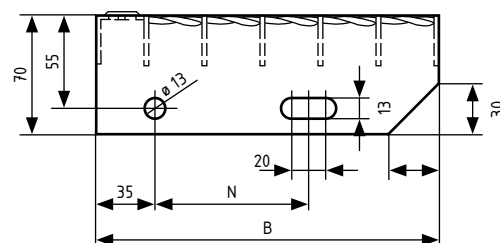
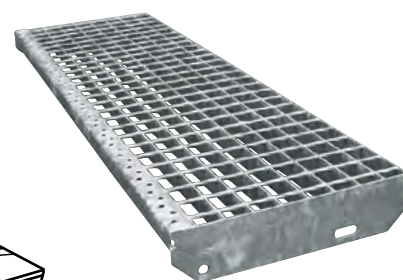
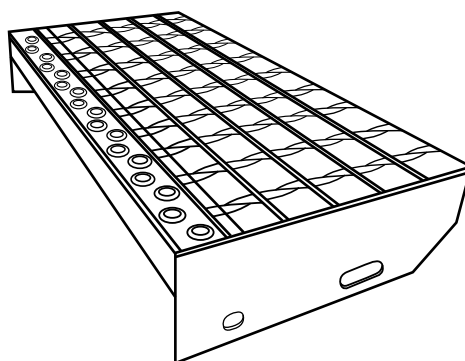
Welded stair treads feature profiles, side borders with pre-drilled holes for mounting onto steel structures and

edge treads with perforations in two rows.

Basic opening: 34.3 x 38.2 mm

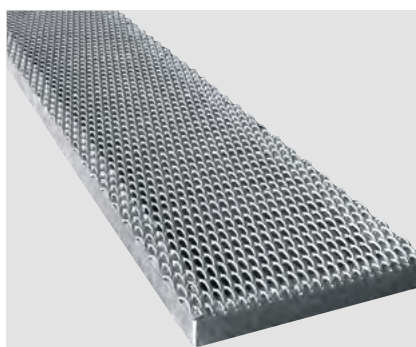
Permissible load impacting at the center of the tread on the area of 100 x 100 mm is 1500 N at the maximum deflection of 1/300 of spacing, but not exceeding 6 mm.

Length (in mm)	Width (in mm)	Bearing strip (height/ thickness)	n	Weight (kg/ piece)
600	240	30 / 2	120	4,0
	270	30 / 2	150	4,5
	305	30 / 2	180	5,0
800	240	30 / 2	120	5,1
	270	30 / 2	150	5,7
	305	30 / 2	180	6,3
1000	240	30 / 3	120	7,9
	270	30 / 3	150	8,9
	305	30 / 3	180	9,9
1200	240	40 / 2	120	8,7

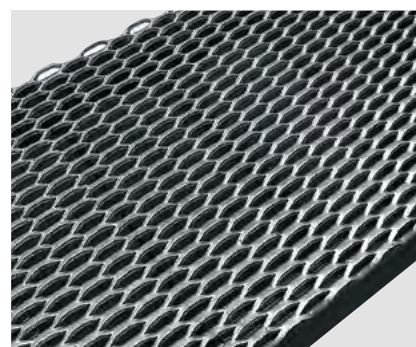


Steel gratings > of expanded metal

Expanded metal floor gratings and stair treads are welded products that are assembled from expanded metal, perimeter frames and lengthwise reinforcement. They are commonly made of mild steel (S235) and then hot dip galvanized as per DIN 50 976 or coated or they can be made of stainless steel (1.4301). They are usually made to order.



grating made of expanded metal 1

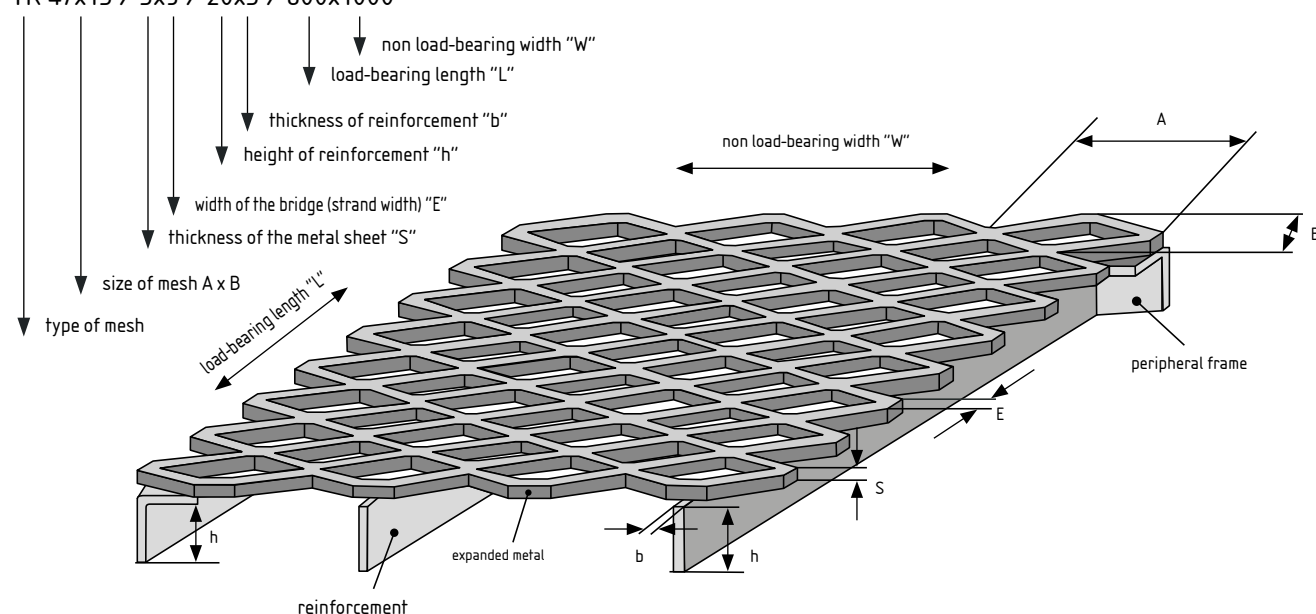


steel grating made of expanded metal 2

Example of labelling of gratings

(steel gratings made of expanded metal are not very common, therefore their labelling of parameters is different – that is determined by demands of production)

TR 47x13 / 3x5 / 20x3 / 800x1000



Common dimensions of expanded metal gratings

Load-bearing length (L)	Non load-bearing width (S)	Overall height of the grating/ height of the strip (H/h)	Weight of the raw grating (in kg)
600	400	30 / 20	6,0
	600		8,5
	800		11,1
	1000		13,6
	1200	40 / 30	16,2
	400		7,0
	600		9,9
	800		12,8
	1000		15,7
	1200	50 / 40	18,5
	400		8,1
	600		11,3
800	800		14,5
	1000	40 / 30	17,7
	1200		20,9
	400		9,0
	600	50 / 40	12,7
	800		16,3
	1000		19,9
	1200		23,6
	400	50 / 40	10,3
	600		14,3
	800		18,4
	1000		22,4
	1200		26,4

Load-bearing length (L)	Non load-bearing width (S)	Overall height of the grating/ height of the strip (H/h)	Weight of the raw grating (in kg)
1000	400	40 / 30	11,0
	600		15,4
	800		19,8
	1000		24,2
	1200	50 / 40	28,6
	400		12,5
	600		17,4
	800		22,2
1200	1000	50 / 40	27,0
	1200		31,9
	400		14,7
	600	50 / 40	20,4
	800		26,0
	1000		31,7
	1200		37,3

Data in the tables are in mm unless some other unit of measurement is indicated.

Table of loads of expanded metal gratings

Load-bearing strip	Load Deflection	Unit	Range L (in mm)							
			500	600	700	800	900	1000	1100	1200
20 x 3	Fv	kN/m ²	4,54	3,11	2,25	1,70	1,31	1,04	0,84	0,68
	fv	mm	1,83	2,65	3,62	4,76	6,07	7,56	9,23	11,09
30 x 3	Fv	kN/m ²	10,37	7,16	5,22	3,97	3,11	2,49	2,03	1,69
	fv	mm	1,21	1,75	2,39	3,13	3,97	4,93	5,99	7,16
40 x 3	Fv	kN/m ²	18,53	12,83	9,38	7,15	5,62	4,52	3,71	3,10
	fv	mm	0,91	1,31	1,78	2,33	2,96	3,66	4,45	5,31

Legend

Fv joint load in kN/m², including the coefficient 1.4

fv maximum deflection of a strip of the tread in mm at the load Fv

Local deflection of expanded metal may be about 2 mm larger

Stair treads > of expanded metal

Mounting of stair treads

Side boards of treads have 2 holes each for four fastening bolts M12 – see the diagram, it's analogous to pressed and welded treads.

Load on treads

Permissible load impacting at the centre of treads on the area of 100 x 100 mm is 1500 N. See the summary of permissible loads in the previous table: Loads on expanded metal gratings.

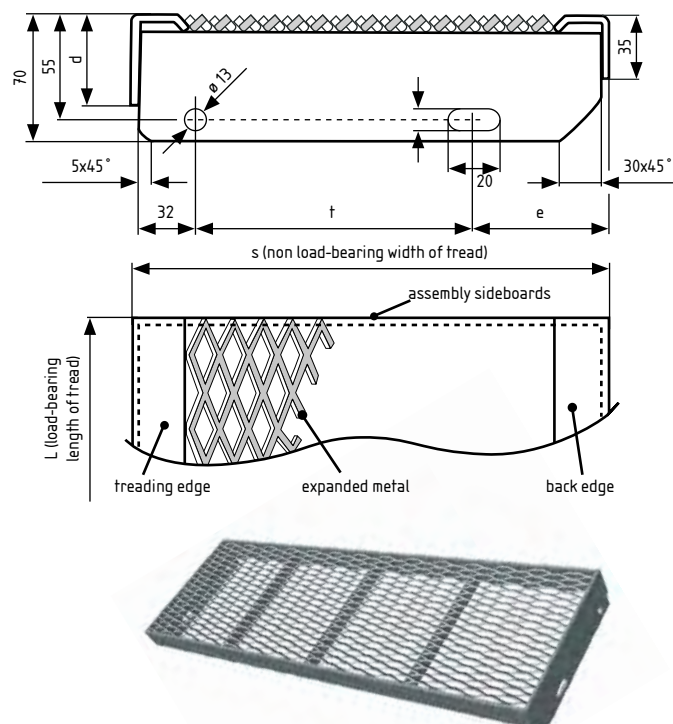
Production tolerances

L = max + 0, -3 mm

W = max + 5, -5 mm



Assembly diagram – it's valid for the version 1i 2



Common dimensions of stair treads

L (mm)	W (mm)	t (mm)	e (mm)	d (mm)	mild steel (kg/piece)	hot dip galvanized steel (kg/piece)
600	240	120	85	44	4,9	5,4
	270	150	85	44	5,3	5,9
	305	180	90	44	5,9	6,4
800	240	120	85	44	6,3	7,0
	270	150	85	44	6,9	7,6
	305	180	90	44	7,6	8,3
1000	240	120	85	58	8,1	8,9
	270	150	85	58	8,8	9,7
	305	180	90	58	9,7	10,6
1200	240	120	85	58	9,6	10,6
	270	150	85	58	10,5	11,5
	305	180	90	58	11,5	12,6

Legend

L load-bearing length

W non load-bearing width

t spacing between assembly holes

e distance of oval hole from back edge

d height of treading edge of expanded metal

Load-bearing capacity of pressed gratings > spacing of bearing bars 25 mm

These are the load-bearing capacities for spacing modules 25 mm and 33.3 mm and for joint loads (Fv) and for pointed loads (Fp) that impact at the least favourable point, that is in the middle of the grating on the area of 200 x 200 mm. Corresponding deflections are stated by values fv and fp measurements.

Basic data

Measurements shown in tables are valid for gratings made of steel of the strength grade S235 and they are defined for the calculated firmness Rd = 210 MPa.

It is necessary to reduce measured values by multiplying them by the coefficient 0.9 for gratings made of steel 1.4301. Weight of gratings themselves is not taken into consideration in the calculations of load-bearing capacity, therefore it is necessary to include it in the overall load.

Bearing strip h x t (in mm)	Monitored value	Distance of supports lN (in mm)						
		200	300	400	500	600	700	800
30 x 2	Fv	350,00	155,56	87,50	56,00	38,89	28,57	21,88
	fv	0,30	0,80	1,30	2,10	3,00	4,10	5,30
	Fv'						24,49	16,41
	Fp	17,50	8,75	5,83	4,38	3,50	2,92	2,50
	fp	0,30	0,70	1,30	1,90	2,70	3,70	4,70
	Fp'						2,78	2,11
30 x 3	Fv	525,00	233,33	131,25	84,00	58,33	42,86	32,81
	fv	0,30	0,80	1,30	2,10	3,00	4,10	5,30
	Fv'						36,73	24,61
	Fp	26,25	13,13	8,75	6,56	5,25	4,38	3,75
	fp	0,30	0,70	1,30	1,90	2,70	3,70	4,70
	Fp'						4,18	3,17
40 x 2	Fv	686,00	304,89	171,50	109,76	76,22	56,00	42,88
	fv	0,20	0,50	1,00	1,50	2,10	2,90	3,80
	Fv'							
	Fp	34,30	17,15	11,43	8,58	6,86	5,72	4,90
	fp	0,20	0,50	0,90	1,40	2,00	2,60	3,40
	Fp'							
40 x 3	Fv	1029,00	457,33	257,25	106,64	114,33	84,00	64,31
	fv	0,20	0,50	1,00	1,50	2,10	2,90	3,80
	Fv'							
	Fp	51,45	25,73	17,15	12,86	10,29	8,58	7,35
	fp	0,20	0,50	0,90	1,40	2,00	2,60	3,40
	Fp'							
Bearing strip h x t (in mm)	Monitored value	Distance of supports lN (in mm)						
		900	1000	1100	1200	1300	1400	1500
30 x 2	Fv	17,28	14,00	11,57	9,72	8,28	7,14	6,22
	fv	6,80	8,30	10,10	12,00	14,10	16,30	18,80
	Fv'	11,52	8,40	6,31	4,86	3,82	3,06	2,49
	Fp	2,19	1,94	1,75	1,59	1,46	1,35	1,25
	fp	5,90	7,30	8,70	10,30	12,10	13,90	15,90
	Fp'	1,66	1,34	1,10	0,92	0,79	0,68	0,59
30 x 3	Fv	25,93	21,00	17,36	14,58	12,43	10,71	9,33
	fv	6,80	8,30	10,10	12,00	14,10	16,30	18,80
	Fv'	17,28	12,60	9,47	7,29	5,74	4,59	3,73
	Fp	3,28	2,92	2,63	2,39	2,19	2,02	1,88
	fp	5,90	7,30	8,70	10,30	12,10	13,90	15,90
	Fp'	2,49	2,01	1,65	1,39	1,18	1,01	0,88
40 x 2	Fv	33,88	27,44	22,68	19,06	16,24	14,00	12,20
	fv	4,80	6,00	7,20	8,60	10,10	11,70	13,40
	Fv'	31,62	23,05	17,32	13,34	10,49	8,40	6,83
	Fp	4,29	3,81	3,43	3,12	2,86	2,64	2,45
	fp	4,20	5,20	6,20	7,40	8,60	10,00	11,40
	Fp'		3,67	3,02	2,53	2,16	1,86	1,61
40 x 3	Fv	50,81	41,16	34,02	28,58	24,36	21,00	18,29
	fv	4,80	6,00	7,20	8,60	10,10	11,70	13,40
	Fv'	47,33	34,57	25,98	20,01	15,74	12,60	10,24
	Fp	6,43	5,72	5,15	4,68	4,29	3,96	3,68
	fp	4,20	5,20	6,20	7,40	8,60	10,00	11,40
	Fp'		5,51	4,54	3,80	3,23	2,78	2,42

Load-bearing capacity of pressed gratings > spacing of bearing bars 33 mm

Load-bearing capacities of pressed gratings are practically identical to load-bearing capacities of welded gratings with the bearing bar spacing of 34 mm.

Bearing strip h x t (in mm)	Monitored value	Distance of supports l _N (in mm)						
		200	300	400	500	600	700	800
30 x 2	F _v	262,53	116,68	65,63	42,00	29,17	21,43	16,41
	f _v	0,30	0,80	1,30	2,10	3,00	4,10	5,30
	F _v '						18,37	12,31
	F _p	15,75	7,88	5,25	3,94	3,15	2,63	2,25
	f _p	0,30	0,70	1,30	1,90	2,70	3,70	4,70
	F _p '						2,51	1,90
30 x 3	F _v	393,79	175,02	98,45	63,01	43,75	32,15	24,61
	f _v	0,30	0,80	1,30	2,10	3,00	4,10	5,30
	F _v '						27,55	18,46
	F _p	26,63	11,81	7,88	5,91	4,73	3,94	3,38
	f _p	0,30	0,70	1,30	1,90	2,70	3,70	4,70
	F _p '						3,76	2,85
40 x 2	F _v	514,55	228,69	128,64	82,33	57,17	42,00	32,16
	f _v	0,20	0,50	1,00	1,50	2,10	2,90	3,80
	F _v '							
	F _p	30,87	15,44	10,29	7,72	6,17	5,15	4,41
	f _p	0,20	0,50	0,90	1,40	2,00	2,60	3,40
	F _p '							
40 x 3	F _v	771,83	343,03	192,96	123,49	85,76	63,01	48,24
	f _v	0,20	0,50	1,00	1,50	2,10	2,90	3,80
	F _v '							
	F _p	46,31	23,15	15,44	11,58	9,26	7,72	6,62
	f _p	0,20	0,50	0,90	1,40	2,00	2,60	3,40
	F _p '							
Bearing strip h x t (in mm)	Monitored value	Distance of supports l _N (in mm)						
		900	1000	1100	1200	1300	1400	1500
30 x 2	F _v	12,96	10,50	8,68	7,29	6,21	5,36	4,67
	f _v	6,80	8,30	10,10	12,00	14,10	16,3	18,80
	F _v '	8,64	6,30	4,73	3,65	2,87	2,30	1,87
	F _p	1,97	1,75	1,58	1,43	1,31	1,21	1,13
	f _p	5,90	7,30	8,70	10,30	12,10	13,90	15,90
	F _p '	1,49	1,20	0,99	0,83	0,71	0,61	0,53
30 x 3	F _v	19,45	15,75	13,02	10,94	9,32	8,04	7,00
	f _v	6,80	8,30	10,10	12,00	14,1	16,30	18,80
	F _v '	12,96	9,45	7,10	5,47	4,30	3,44	2,80
	F _p	2,95	2,63	2,36	2,15	1,97	1,82	1,69
	f _p	5,90	7,30	8,70	10,30	12,1	13,90	15,90
	F _p '	2,24	1,81	1,49	1,25	1,06	0,91	0,79
40 x 2	F _v	25,41	20,58	17,01	14,29	12,18	10,50	9,15
	f _v	4,80	6,00	7,20	8,60	10,1	11,70	13,40
	F _v '	23,72	17,29	12,99	10,01	7,87	6,30	5,12
	F _p	3,86	3,43	3,09	2,81	2,57	2,37	2,21
	f _p	4,20	5,20	6,20	7,40	8,6	10,00	11,40
	F _p '		3,30	2,72	2,28	1,94	1,67	1,45
40 x 3	F _v	38,11	30,87	25,51	21,44	18,27	15,75	13,72
	f _v	4,80	6,00	7,20	8,60	10,1	11,70	13,40
	F _v '	35,57	25,93	19,48	15,01	11,80	9,45	7,68
	F _p	5,79	5,15	4,63	4,21	3,86	3,56	3,31
	f _p	4,20	5,20	6,20	7,40	8,6	10,00	11,40
	F _p '		4,96	4,08	3,42	2,91	2,51	2,18

Uncoloured area marks gratings suitable for walking purposes with 1.5 kN. Deflection "f" of the size 1/200 of inner distance of supports, but up to max. of 0.4 cm, is not exceeded.

Coloured area marks gratings which are not suitable for walking purposes.

F_v permitted uniform load

f_v deflection by load F_v

F_v' permitted uniform load at deflection $f_{\text{dov}} = l_N/200$

F_p permitted load in the middle of the grating (load on the area of 200 x 200 mm)

f_p deflection caused by load F_p

F_p' permitted load in the middle of the grating at deflection $f_{\text{dov}} = l_N/200$

[kN/m²]*

[in mm]*

[kN/m²]**

[kN]*

[in mm]*

[kN]**

Why contact us

INDIVIDUAL APPROACH TO CUSTOMERS

- > fast and friendly communication
- > respect our customers' wishes
- > professional approach

ADVISORY SERVICE

- > professional consultation
- > problem solving

HIGH QUALITY PRODUCTS

- > in accordance with valid technical norms
- > regular machinery and tool servicing
- > tried and tested production processes and output control

WIDE ASSORTMENT OF SUPPLIES

- > perforated metal sheets, expanded metal, steel gratings and grating stair treads, steel conveyor belts and products from perforated materials

CUSTOM-MADE ORDERS

- > resolving requirements
- > flexibility in atypical products

FAST PRODUCTION

- > based on mutual agreement & agreed schedule

DELIVERY SERVICE

- > delivery of in-stock items and completed orders within 24 hours anywhere in the Czech Republic
- > express delivery service if necessary

BIGGEST DISTRIBUTION WAREHOUSE IN THE CZECH REPUBLIC

- > largest distribution warehouses in Chrudim and Prostějov offer more than 600 in-stock items for immediate pick-up

How to shop the easy way

1. INQUIRY

Consult it with us. We can find a solution together and process the price offer.

2. ORDER

Place your order by e-mail or fax. We will confirm it immediately.

3. DELIVERY SERVICE

Pick up your merchandise at our distribution warehouses in Chrudim or Prostějov or we will deliver it in the shortest possible time.

- dispatch regular stock items within 24 hours
- custom-made items according to agreed term of delivery

Telephone

+420 469 603 124
+420 469 603 111

Fax

+420 469 603 110

Internet

E-m: perfolinea@perfolinea.cz
Skype: perfolinea

RECOMMENDED DATA FOR SUBMITTING AN ORDER

- Your exact address, identification number of the organization, tax identification number of the organization, contact person, telephone, fax, e-mail address
- Required delivery date
- Required method of delivery
- Number of pieces
- Type of goods
- Specification
- Type and quality of material
- Required load-bearing capacity in kg
- Size of opening (mm)
- Surface treatment
- Attach a drawing or sketch

Range of our products



PERFORATED METAL SHEETS

Main advantage of PERFO LINEA trade mark is its own custom manufacturing and the largest perforated metal sheet warehouse in the Czech Republic. We have modern machinery and a wide range of production tools at our disposal. That's why we are very flexible in both – the custom-made and standard production. We perforate metal sheets or metal coils of structural steel, stainless steel, galvanized steel,

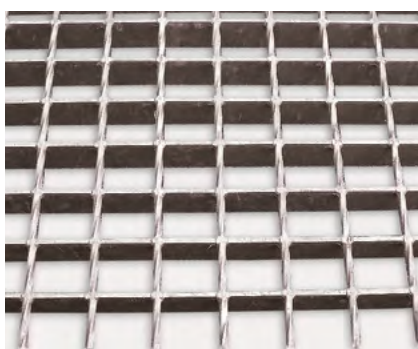
aluminum, copper, brass, as well as paper, cardboard and PVC. Sheets can be covered with a plastic film that prevents scratching. This is mainly done for stainless steel sheets that were brushed or polished. Steel sheets can be subsequently zinc coated, given another finish, flattened, etc. Imagination has no limits, we will gladly realize just your very idea!



EXPANDED METAL

Expanded metal finds its use in mechanical engineering, construction, agriculture, transportation, food processing, etc. Expanded metal could be an alternative to perforated metal sheets. We can supply it in format sheets or coils up to the thickness of 6 millimetres. We offer more than 100 types of standard expanded metal in format sheets. We can also supply decorative expanded metal,

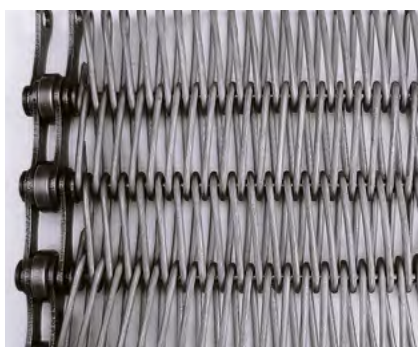
micro expanded metal and various products made of expanded metal. We can supply steel, stainless steel, galvanized, aluminium, copper, brass expanded metal. Sheets or coils of expanded metal can be flattened; they have then a smooth surface or they can keep their natural form. We always supply flattened expanded metal.



STEEL GRATINGS AND GRATING STAIRCASE TREADS

Steel gratings and staircase treads are characterized by their low weight, variability of design, high percentage of open area which enables permeability of light and air. Floor gratings and staircase treads are supplied in pressed or welded forms with the option of anti slip finish. Most frequently, they are used for staircases, foot bridges and walkways. Surface finish can be done by hot dip galvanizing or it can be

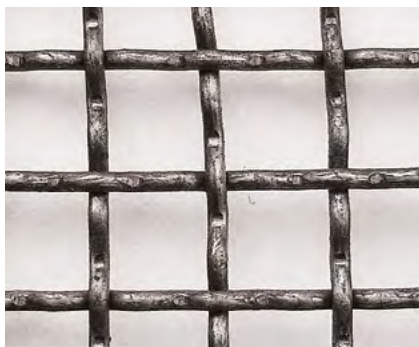
supplied in natural, macerated or polished stainless steel variations. They could also be supplied in composite materials. At our warehouses, we offer more than 40 items, including all components. Consultation with trained experts, especially for custom-made products, is a matter of course.



CONVEYOR BELTS

Wire conveyor belts, used for mechanization of transport, accelerate and facilitate work. They are used wherever standard conveyor belts do not function well. Objects delivered by wire transport belts could vary in weight, size, solidity, moisture, and aggressiveness. Belts can be used at temperatures from -50°C to $+1100^{\circ}\text{C}$ on assembly lines with a strict requirements for hygiene, or heavy duty operations and in high temperatures. A suita-

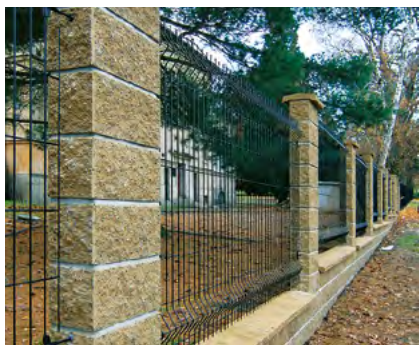
bly chosen type of belt, along with the quality of used material, will ensure compliance with such requirements. Belts are made from low-carbon, plain carbon, steel, corrosion-resisting, and heat-resisting steel semi-products. We can also provide surface finishing. Wire can be galvanized or copper-coated. Welds can be treated by metallic spraying and teflon. There is a novelty – belts from abrasion-resistant manganese steel.



WIRE MESH AND WELDED GRIDS

Wire mesh and pressed mesh are ideal for fencing of buildings and shops, industrial sites, construction sites, farms, yards, runs for livestock, game enclosures, aviaries, orchards, gardens, flower beds or as a temporary fences or barriers. Various kinds of mesh are made from structural, stainless or galvanized steel. Welded grates provide a secure and discreet protection on lookout towers, staircas-

es, bridges or in areas that need to be separated from each other. Welded grids make for stronger material; they ensure optimal distribution of materials in reinforced sections and their guy length can be short. Welded grids are made on the principle of resistance welding in different variations of hole pitch and wire diameter. They are made from structural and stainless steel.



FENCING SYSTEMS

Panel fencing systems are solution for fencing around family homes, compounds and shops, industrial areas, construction sites, farms, runs for livestock, game enclosures, aviaries, orchards, gardens, flower beds or as a temporary fences or barriers. We, of course, can provide all fencing accessories, such as custom-made and custom-painted wickets and sliding or single-winged and/or double-winged gates, for quality and esthet-

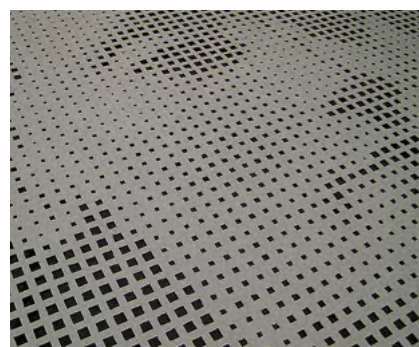
ically pleasing fencing and protection of any type of lot. Hot dip galvanizing and powder coating paints guarantee their longevity. Unique system of fixing of fencing panels into fence columns allows for an easy assembly of the whole fence. We offer concrete gravel boards that are esthetical and easily assembled addition to our fencing system and they increase the value of the finished fence.

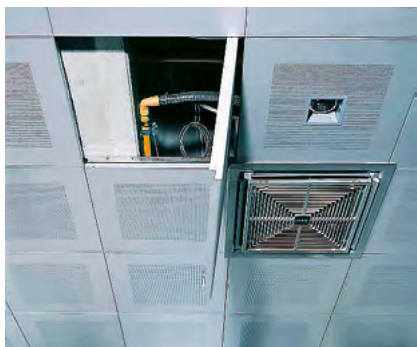


DESIGN METAL SHEETS

Novelty of 2011 are patterns that are transferred from a photograph or a graphic design onto perforated metal sheets. Patterns are formed by various combinations of holes and the changing of pitch between them. Another option is to create large patterns that cover several cassettes or the whole wall or, alternatively, the ceiling. The interplay of shapes, colours and light enables us to develop a wide selection

of ceilings, partitions or facades. Our sales department will gladly assist you navigating through our wide selection of ornaments, grills, checkerboards, linear or corner cartridges pixels, movie and children motives. One of the unique patterns could even become your company's logo!





ACOUSTIC CEILINGS

It is possible to use acoustic ceilings, thanks to their technical characteristics, pleasing design and easy assembly, in the interiors of offices, administrative buildings, universities, schools, hospitals, retail outlets, supermarkets, cultural centres, airports, train stations, showrooms, industrial halls, warehouses, etc. Metal acoustic ceiling systems are technically functional – they muffle and absorb noises, they are

fire-resistant and divide space optically. They can partially support lighting fixtures, electric fire sensors, security system, sound system and ventilation outlets as required by architects or designers. Practical use of metal ceiling systems brings an affordable solution for optical screening of under-ceiling power, gas, water, air and sound distribution systems and reduction of ceiling height.



BAKING TRAYS

Baking trays are used by bakers, confectioners for baking their products. Taste and shape of pastries and baked goods are their main attributes sales wise; that's why the unique structure of baking trays for making baguettes, breads, french breads, croissants, buns, kaiser buns, multi-grain baked goods, special breads, cookies, biscuits and waffles matters even today. The most used types are the trays with notched edges (PP0), with four

equally sloping sides (PP1) and three vertical and one discharging side (PP2), metal sheet with four vertical sides (PP3) and baguette/french-bread trays with the reinforced profile steel frame. Usually baking trays are made from structural steel and for food industry from aluminum alloy AlMg3 and also from stainless steel. Customer defines the thickness of material according to weight and size of the baked goods



TRIEUR SHEETS

Trieur sheets are used in sorting machines and devices for cleaning grain. In order to achieve the best results in sorting of grain, it is important to choose the right kind of perforation and size of holes. Trieur perforations are made carefully and our engineers make sure that each hole is accurate. The quality of each hole is checked by the impermeability control method. This control method ensures a high quality

of grain sorting. Trieur sheets can be delivered in the format sheets, they can be tailor-cut according to customers' needs and/or preferences or they can come in the form of a welded drum. Main characteristic feature of trieur sheets is the minimal distance between individual holes, by which the maximum effect of sorting per 1 m² is achieved.



SUSPENDED CABLE TRAYS

Suspended cable trays are used for simple and elegant electric distribution systems in the construction of residential houses, farm buildings, warehouses, industrial underground buildings. Individual routes of cable trays can be differentiated by color. Suspended cable system consists of perforated trays, couplings, branch lines, and suspension system itself. Kind of perforation that is applied to the trays depends on

customers' requirements. Suspended cable trays can be equipped with hinged or fixed lids that protect the cabling from the direct contact with dust. We make suspended cable trays from mild, galvanized steel or stainless steel.



LADDER RUNGS

To order, we make ladder rungs and steps that are suitable for vertical ladders that have on the up side, for safety reasons, anti slip perforations. These ladder rungs are being used anywhere where stress is on safety. Ladder rungs are customarily made from the mild steel; however, if the customer wishes, they can be hot dip galvanized or made from stainless steel. They are available in various lengths, with

various diameters of antislip holes. We can make ladder rungs according to your specifications if you send them to us in the form of a drawing. You can also try ladder rungs with perforations in several rows.



METALLURGICAL MATERIALS

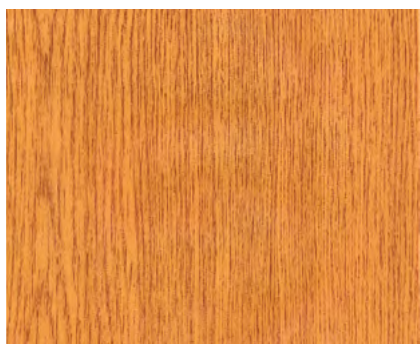
We can deliver a wide range of metallurgical materials – mild steel (DC01, S235, S355, etc.), stainless steel (AISI 304 2B, etc.), galvanized steel (DX51D) – in coils (width 1000, 1250, 1500 mm of any length) or in format sheets (1000x2000, 1250x2500; 1500x3000 mm). Thicknesses from 0.55; 0.75; 0.8; 1; 1.5; 2; 3; 4; 5; 6; 8 mm, and so on.



STRUCTURED STAINLESS STEEL METAL SHEETS (AISI 304, 430)

Structured stainless steel metal sheets can be supplied in two qualities of material (AISI 304, AISI 430). Their surface is made of several layers of titanium that guarantees a high degree of hardness of the surface, resistance to scratching, finger prints and mineral deposits from vapourized water. By applying titanium layers, various shades, reliefs and patterns are created. They are commonly

supplied in the format of 1,219 x 2,438 mm and thickness of 0.8 mm. To order, they are also made in the 1,250 x 2,500 mm and thicknesses From 0.6 to 2 mm.



DECORATIVE SHEETS COATED WITH PVC FOIL

They are produced with the following finishes: imitation wood, marble stone, stainless steel, copper or brass. Metal sheets with these finishes are suitable for interiors and exteriors. They are made from structural steel, galvanized steel and aluminium. They are distinguished for being resistant to corrosion, damage by chemicals and UV rays. It's possible to supply them in coils in widths from 20mm to 1,500 mm or in format

metal sheets of max. width of 1,500 mm and max. length of 5,000 mm. Their thickness can vary from 0.3 mm to 2 mm. Effective solution is to perforate decorative sheets. You can select a type of the tool from more than 1,200 kinds or we can make a tool according to your instructions.



ANTI-NOISE BARRIERS

Anti noise barriers are, due to their acoustic insulation, a quality solution for reducing noise that carries from highways, railways, industrial zones or other places that are excessively burdened by noise. As there is a great assortment of anti noise barriers, various solutions of noise protection can be found. Standard anti noise sandwich walls are made on the face side from perforated sheets that absorb noise and on the flip side

from regular sheets. Thanks to the so called cylinder, noise barriers become more effective. Cylinders are fitted on the top edge of barriers and reduce the noise level by up to 7 dB. Cylinders add much to the effectiveness of barriers because they reduce as much noise as 2 m of the barrier itself. Reflective cylinder was developed from aluminum with dense perforations that was filled with special material that absorbs noise.



MUNICIPAL FURNITURE PERFO CITY

Quality benches and trash cans from the PERFO CITY series of municipal furniture are suitable for urban built-up areas and also natural parks. Advantages of street furniture made from perforated metal materials – perforated metal sheets and expanded metal – is high-quality processing, their modern design, resistance to corrosion, fire and vandals, and lightness of materials. You can choose from a wide range of colors in the RAL sample book.

It can be agreed with customers that furniture will be made without a surface finish. The most common material is aluminum in the form of perforated sheets or expanded metal. PERFO CITY benches are either fixed or bended in various lengths. PERFO CITY trash cans can be anchored in several ways: they can be fastened to a pole, to an aluminum frame or to its own central post. PERFO CITY furniture can be viewed in our show room in Chrudim.

PERFO LINEA – references



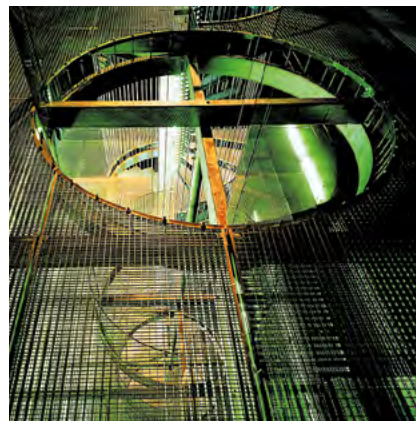
Prague, Troja Bridge



gratings, stair treads



Brno, AZ Tower



Prague, MUZO head office



Bratislava, Apollo Bridge



shopping center



Liberec, NISA shopping center

PERFO LINEA – references



perforated expanded metal



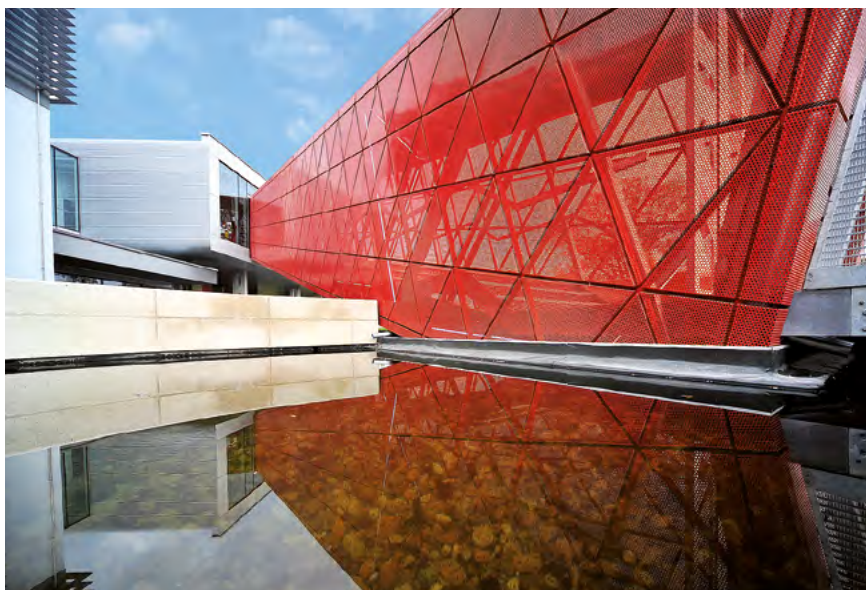
Brno, Planetarium



pressed steel gratings and treads



Prague, Jinonice Prospect



Jihlava, SAPELI head office



Brno, Planetarium

Largest producer of perforated materials in the Czech Republic

RANGE OF PRODUCTS:

- Perforated sheets
- Expanded metal
- Steel gratings, treads
- Wire belts
- Wire mesh
- Fence systems
- Design sheets
- Acoustic ceilings
- Baking sheets
- Trieur sheets
- Overhead cable trays
- Ladder rungs
- Metallurgical materials
- Structured stainless steel sheets
- Decorative plates with PVC foil
- Noise barriers
- Municipal furniture

Head office & distribution warehouse

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GPS: 49°57'23.274"N, 15°48'15.933"E
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Production & distribution warehouse

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perfolinea@perfolinea.cz

