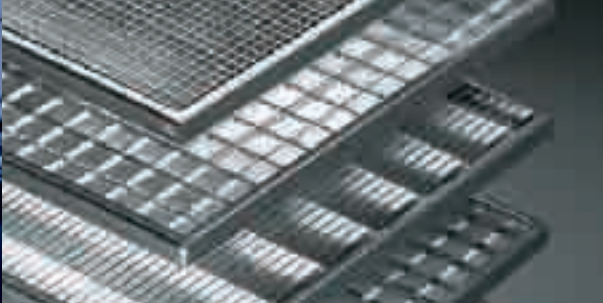


# HighSolid Grating



**SEPELER GRUPPE  
NEUHAUS**

# What makes Neuhaus HighSolid gratings so unique?

Contents	Page
Introduction	2
HighSolid quality for every job	4
Gratings for architectural designs	6
HighSolid pressed gratings information	8
<hr/>	
Standard gratings	10
Mesh sizes for standard and custom-made gratings	11
Anti-slip gratings	12
Custom-made gratings with cut-outs	14
Standard stairtreads	16
Custom-made stairtreads	17
Stainless steel gratings	18
Glass fibre gratings	19
Heavy duty gratings	20
Welded pressure-locked gratings	21
Aluminium gratings and stairtreads	22
Powder coated gratings	23
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Technical terms	24
Tolerances	26
Fastenings	29



**1. Guaranteed short delivery times throughout the year**

**2. Specialists in custom-made orders**

**3. Up to 50 percent higher strength material**

**HighSolid gratings have both tangible and intangible benefits.**

The unique benefits of our HighSolid gratings originate from the way they are processed. We exclusively use only selected high strength quality material.

Gratings are produced by highly qualified engineers using modern computer-aided systems. The steel gratings are then hot dip galvanised in-house to give the ultimate protection from corrosion.

We are industry-famous for fast production and delivery speeds, our absolute devotion to deadlines and our reliability.

Our service portfolio is further supported by the experience and expertise we have in solving one-off projects. Those who have come to know us in the construction and associated industries can rely on the quality of our consultancy services.

## Neuhaus-Hotline:

Tel. +49 (0) 52 41-6 04-0

Fax +49 (0) 52 41-6 04-40

E-Mail: [gitterroste@seppeler.de](mailto:gitterroste@seppeler.de)

Internet: [www.gitterroste.de](http://www.gitterroste.de)



## Everything you need to know about our gratings.

### How are pressure-locked gratings made?

Cross bars are pressed into the slots of the bearing bars under high pressure. The slots are tapered in the middle, which ensures a firm, buckle-resistant grating. Pressure-locked gratings are produced in steel, stainless steel and aluminium.

The *steel* used for the HighSolid pressure-locked gratings has particular tensile strength, which is, in comparison to traditional gratings, up to 50 per cent stronger. This often enables us to use a lower gauge grating for a particular loading. This quality is also applied in our anti-slip products and stair treads.

Stainless steel gratings are made from grade 304 and grade 316 steel.

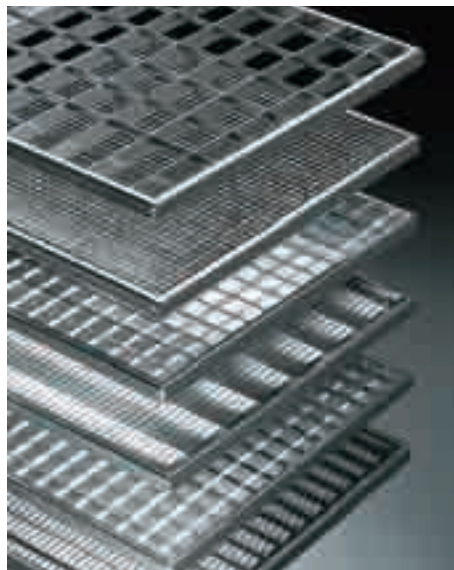
*Glass fibre gratings* are made from fibreglass reinforced plastic.

### Custom-made gratings are our forte

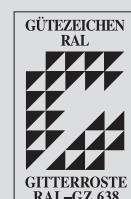
Our core business activity is producing customised gratings made to your specifications. We produce every conceivable grating to cover all applications.

### Quality assurance system

Quality standards are defined, documented and inspected for all sectors and activities. Whether we are dealing with standard gratings or custom-made products, whether the grating is to be walked on or driven over, whether it is a standard stock item, has anti-slip characteristics, or is used for heavy loads – you can rely on our quality. Our quality assurance for all our work is in accordance with EN ISO 9001.

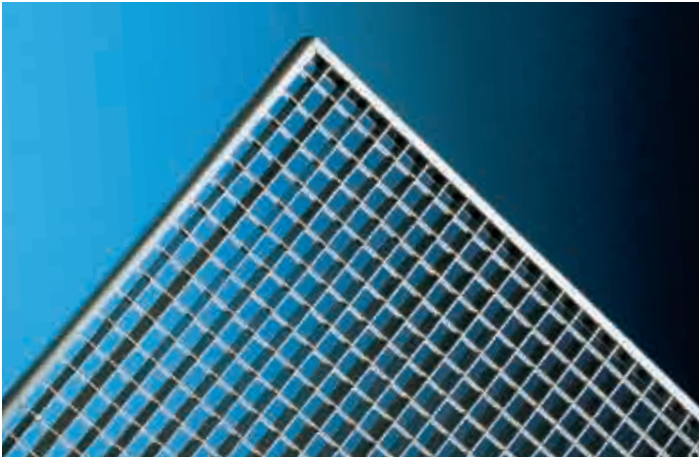


**Quality Management System**  
DQS-certified in accordance  
with DIN EN ISO 9001  
Reg.-No. 3066 Q1

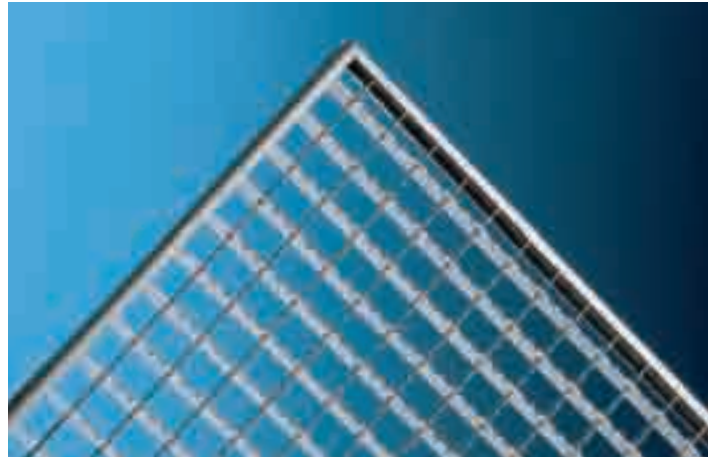


Neuhaus HighSolid gratings correspond to the RAL GZ 638 guidelines for products and inspection.

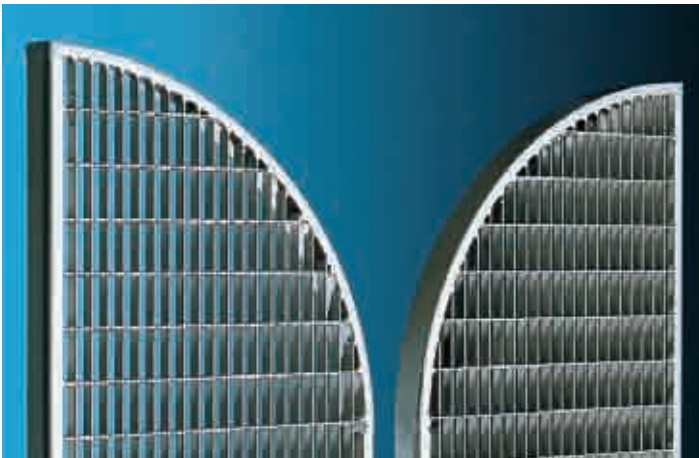
# Neuhaus HighSolid quality for every job



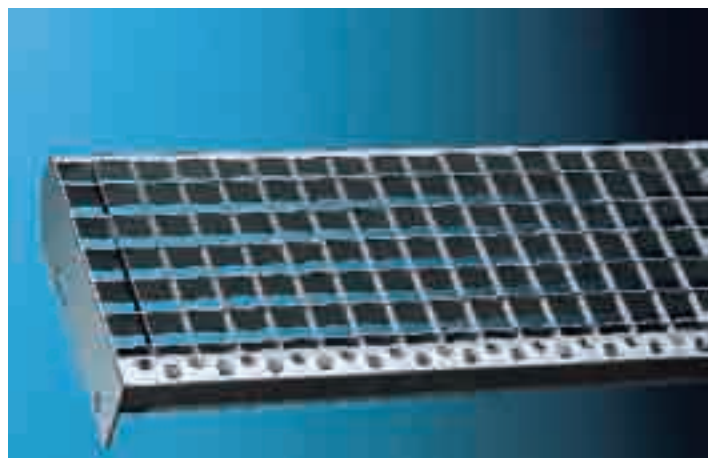
Standard gratings – pages 10 - 11



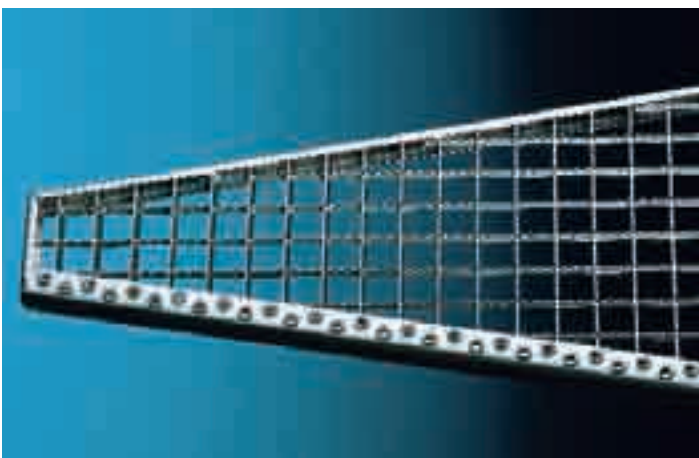
Anti-slip custom-made gratings – pages 12 - 13



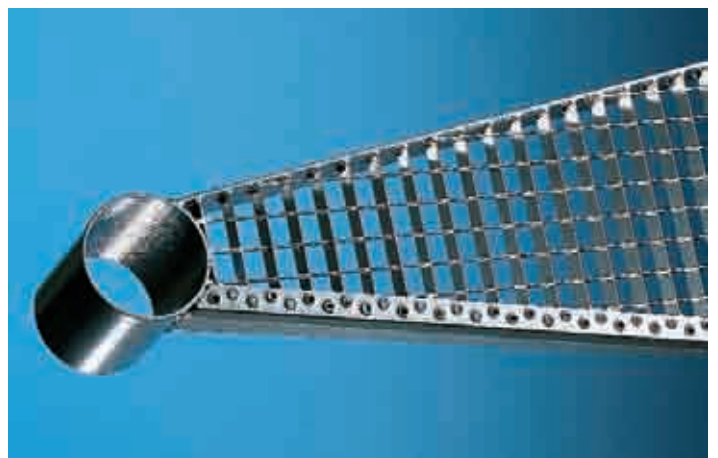
Custom-made gratings with cut-outs – pages 14 - 15



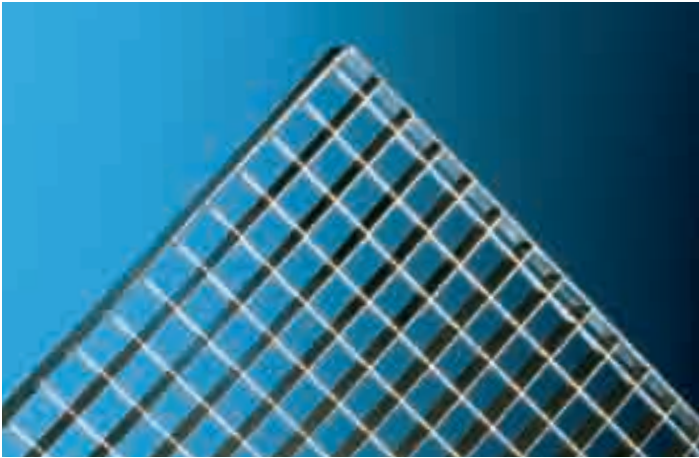
Standard stairtreads – page 16



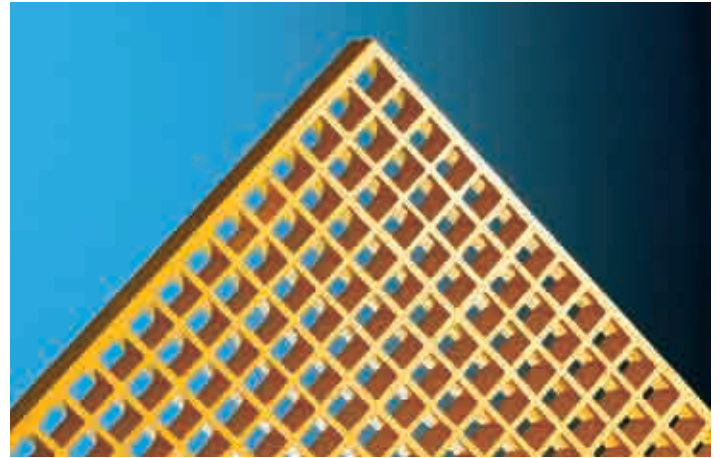
Custom-made stairtreads: trapezium shape – page 17



Custom-made stairtreads: spindle shape with casing – page 17



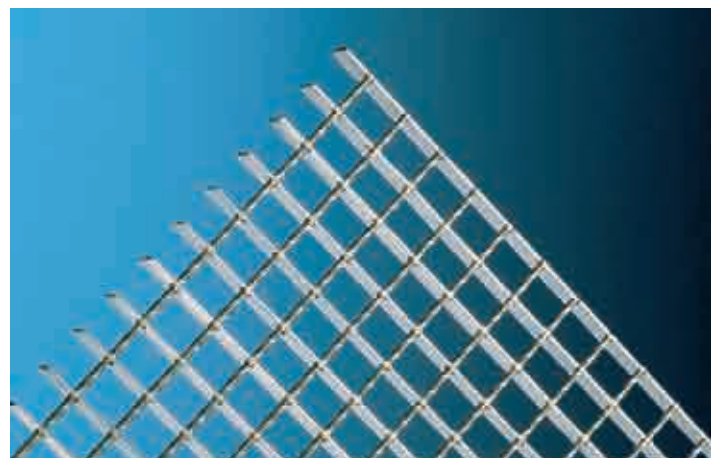
Stainless steel gratings – page 18



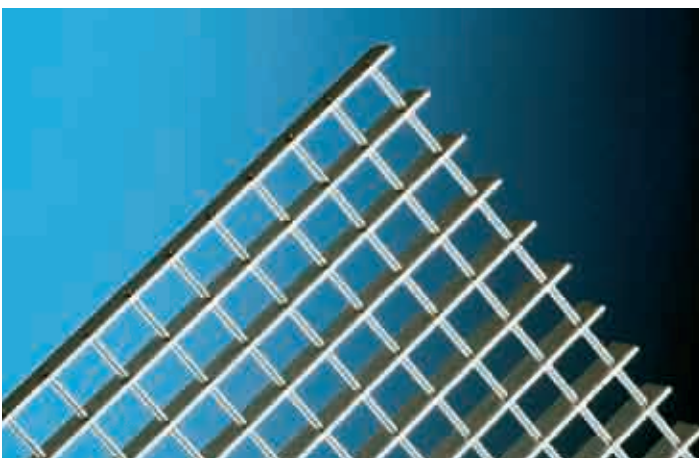
Glass fibre gratings – page 19



Heavy-duty gratings – page 20



Forge-welded gratings – page 21



Aluminium gratings and stairtreads – page 22

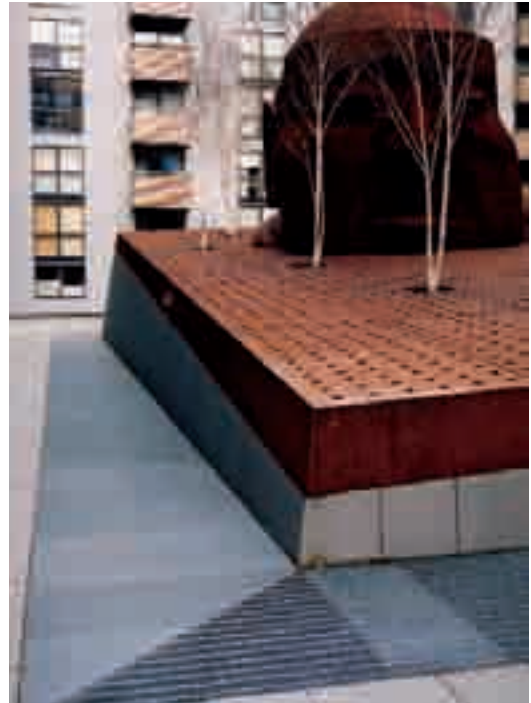


Powder coated gratings – page 23

# Architectural grating applications



*Car park in Teddington*



*Underground car park ventilation grilles*



*Fencing, Ilford in London*



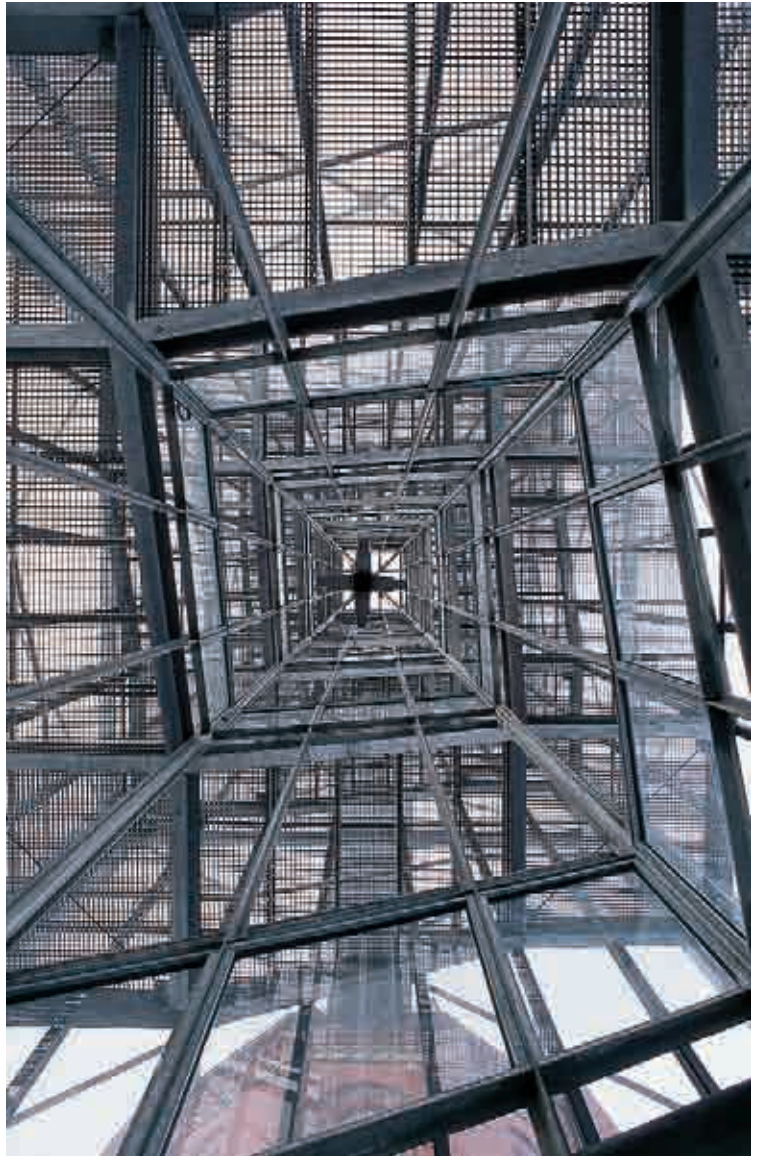
*Staircase infill panels, Leeds*



*Balustrade infill panels, Manchester*



*Brise soleil walkway panels, Edinburgh*



*Church spire, Berlin*



*Cladding panels, Essex*



*Perimeter fencing, London*

# Neuhaus HighSolid pressed grating



## The construction of pressed gratings

Cross bars are pressed into the slots of the bearing bars under high pressure. The slots are tapered in the middle, which ensures a firm, buckle-resistant grating. Even cuts ensure the rigidity of the grating.

## Manufactured sizes

Gratings are produced in any desired size and strength. Maximum panel length in the bearing bar direction is 4,000 mm. Maximum width is usually 1,400 mm, although panels can be combined to produce sizes outside this range.

## Binding bars

HighSolid gratings have a border edging in a U profile. This edging increases buckle-resistance and is deployed in ~ 20 x 2 mm to ~ 60 x 3 mm dimensions. Gratings with other border edgings can be produced on request.

## Product dimensions

**Bearing bar dimensions range from 20 x 2 mm to 130 x 5 mm. Any length and width of the gratings can be chosen.**

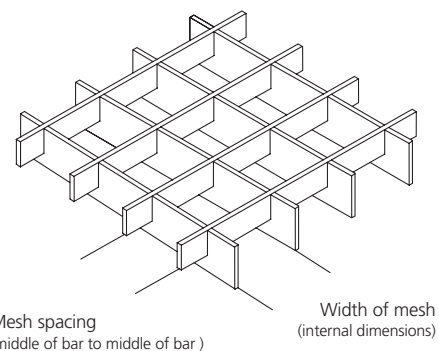
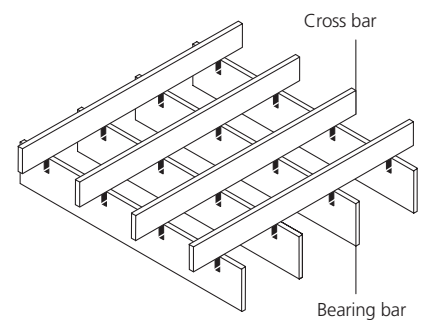
**Please contact us for more information.**

## Full press gratings

Gratings in which the bearing bars and the support bars have the same height are called full press gratings. This is predominantly used as a decorative design element, e.g. as a ceiling, balustrading in-fill or sun screen. The range of full press mesh spacing and bar heights is available on request.

## Louvres

Louved gratings are also available with horizontal bars set at a 45° angle.

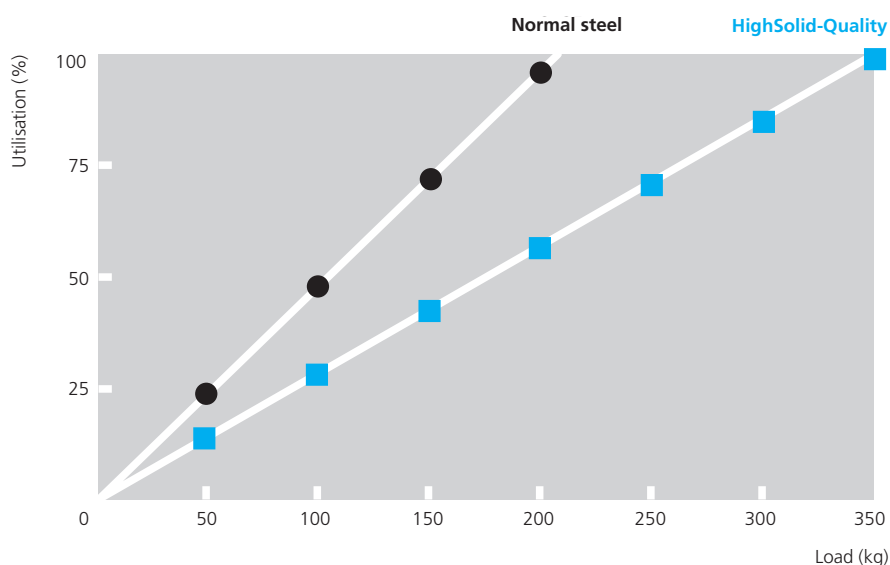






### Quality standards

HighSolid gratings are manufactured from material which provides a tensile strength of 54 – 70 kN/cm<sup>2</sup>. Therefore our gratings are stronger than normal grating products enabling us to give our clients the most cost-effective solution to an application. Our manufacturing techniques, incorporate the latest automated processes, guaranteeing a high degree of safety and quality.



*Degree of bending tension comparing HighSolid gratings and gratings St 37.  
Example: 800 x 1,000 mm, carrying bar 30/2 mm, width of mesh 31 x 31 mm.*



## Standard stock gratings

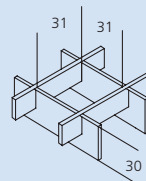
We have a large warehouse of standard products and can therefore meet high demands efficiently. Special infill/adjustment pieces are manufactured and delivered within the space of a few days. The material is hot dip galvanised steel for durability and corrosion protection.

## Standard gratings U-profile edging.

The edge of the profile is flush with the carrier and supporting bars. Thus – without representing a trip-hazard – an even higher degree of buckle-resistance is ensured. The height of a grating = the height of the bearing bar.

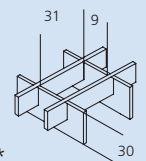
### Bearing bar 30/2 – width of mesh 31/31

CB 500 × SB 1,000
CB 600 × SB 1,000
CB 700 × SB 1,000
CB 800 × SB 1,000
CB 900 × SB 1,000
CB 1,000 × SB 950
CB 1,000 × SB 1,000*
CB 1,000 × SB 1,200
CB 1,100 × SB 1,000
CB 1,200 × SB 1,000



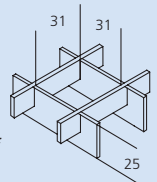
### Bearing bar 30/2 – width of mesh 31/9

CB 500 × SB 1,000
CB 600 × SB 1,000
CB 700 × SB 1,000
CB 800 × SB 1,000
CB 900 × SB 1,000
CB 1,000 × SB 1,000*



### Bearing bar 25/2 – width of mesh 31/31

CB 500 × SB 1,000
CB 600 × SB 1,000
CB 700 × SB 1,000
CB 800 × SB 1,000
CB 900 × SB 1,000
CB 1,000 × SB 1,000*
CB 1,000 × SB 1,200



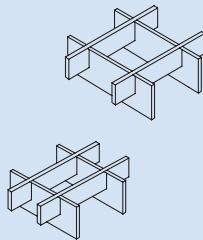
CB = bearing bar, SB = cross bar.

All dimensions are in mm.



## Square and rectangular mesh sizes

CB 9 x FS 9	CB 31 x SB 53
CB 9 x FS 20	CB 31 x SB 64
CB 9 x FS 31	CB 42 x SB 9
CB 9 x FS 42	CB 42 x SB 20
CB 9 x FS 64	CB 42 x SB 31
CB 14 x FS 14	CB 42 x SB 42
CB 20 x FS 9	CB 53 x SB 20
CB 20 x FS 20	CB 53 x SB 26
CB 20 x FS 42	CB 53 x SB 31
CB 20 x FS 53	CB 53 x SB 53
CB 26 x FS 26	CB 64 x SB 9
CB 31 x FS 9	CB 64 x SB 20
CB 31 x FS 14	CB 64 x SB 31
CB 31 x FS 20	CB 64 x SB 64
CB 31 x FS 31	CB 75 x SB 75
CB 31 x FS 42	



**Other mesh sizes are available on request.**

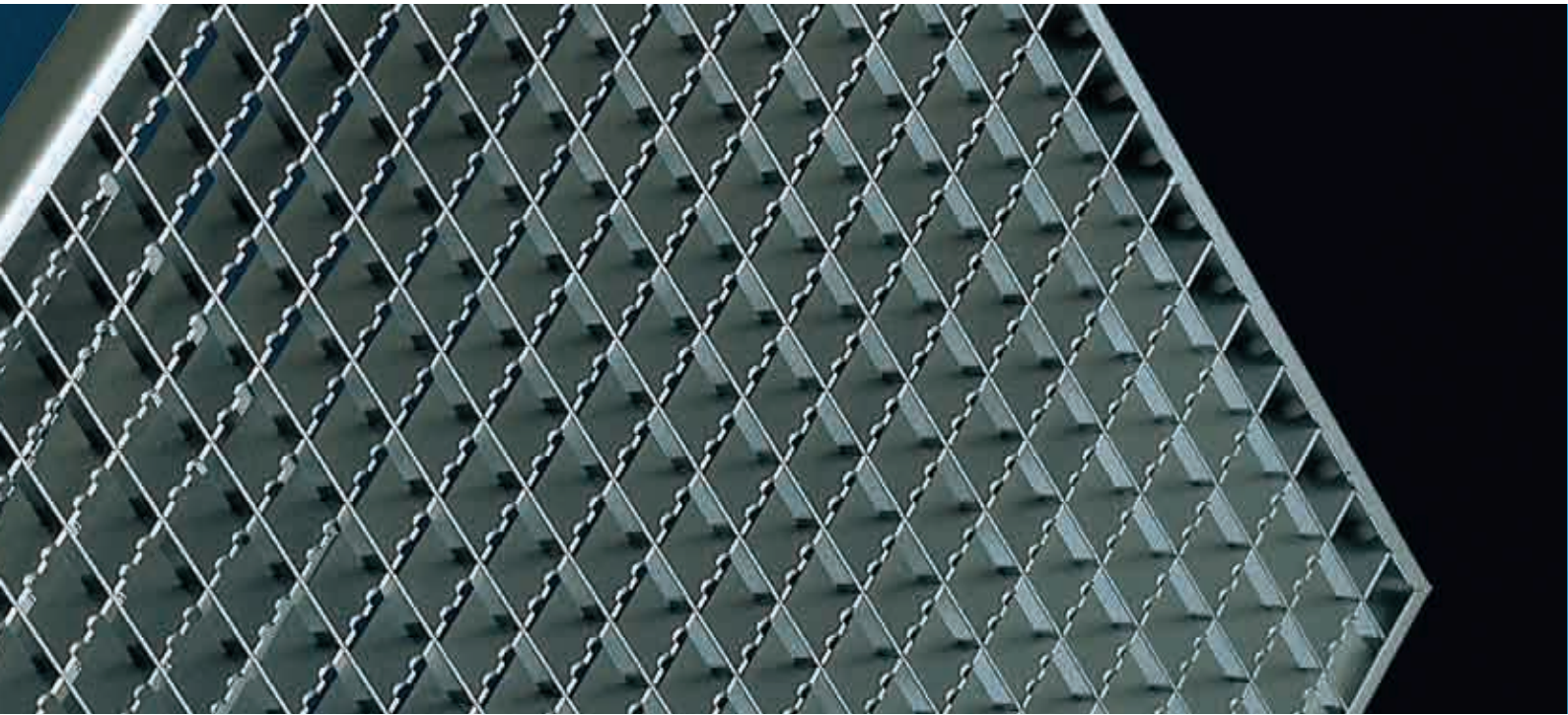
We also manufacture gratings with inclined cross bars, known as louvres, for brise soleil and screening applications.

*The distances between bearing bars is in correlation with the cross bar dimensions.*

*CB = bearing bar, SB = cross bar.*

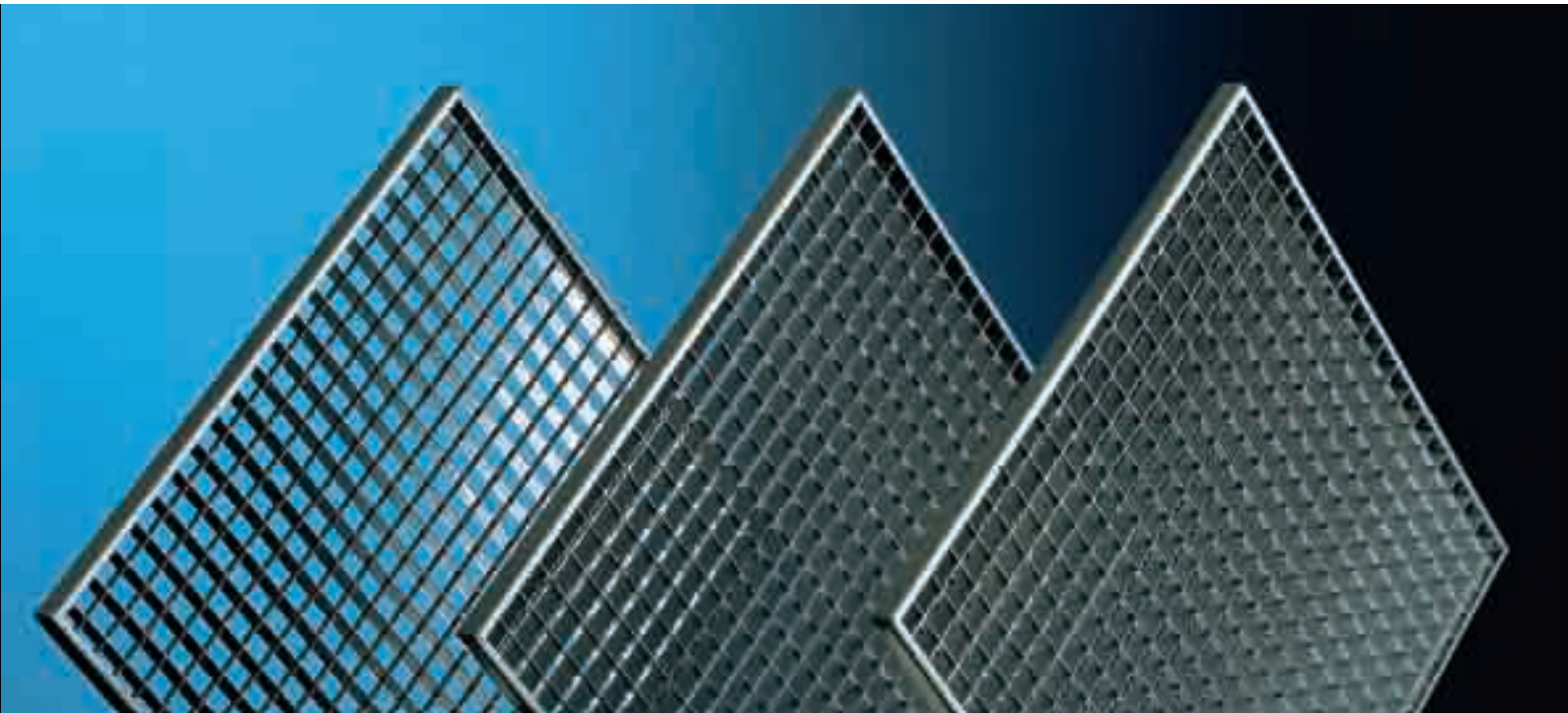
*All dimensions are in mm.*

# Anti-slip gratings

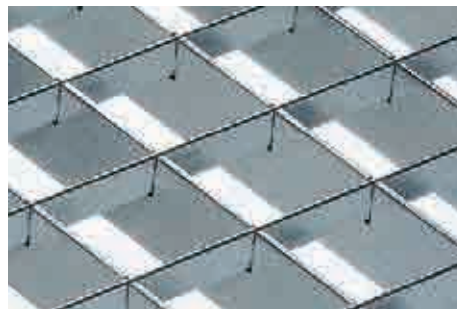


**Anti-slip gratings are thoroughly recommended for places where, oils, fats dirt or ice may accumulate.**

Their use is invaluable in many areas. The non-slip properties are improved by simply putting various serrations in the bearing and/or supporting bars and complies with the "Regulation of Anti-Slip Properties" DIN 51130. The procedure in accordance with this standard serves as a performance test for the identification and evaluation of anti-slip properties of floor surfaces where its use in certain situations would decrease the risk of slipping e.g. plant rooms and other areas in which the production or manufacturing process involves slippery substances such as oil, fat, water, foodstuffs, dust or plant waste.



The anti-slip characteristics can be applied to a wide variety of standard and non-standard panel sizes and across a wide range of loadings and grating types. For example the serrations can also be used in stainless steel and aluminium applications.



*Gratings, carrier bar, support bar.  
 Equivalent to antislip standard R 10.*



*Gratings, support bar moulded.  
 Equivalent to antislip standard R 11.*



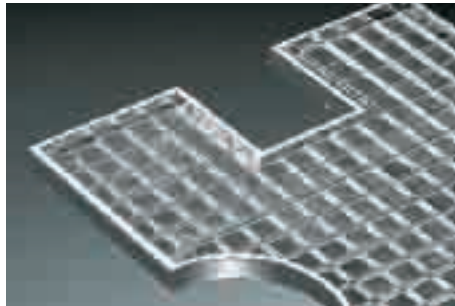
*Gratings, carrier bar and support bar moulded.  
 Equivalent to antislip standard R 11/R 12.*

## Custom-made gratings with cut-outs



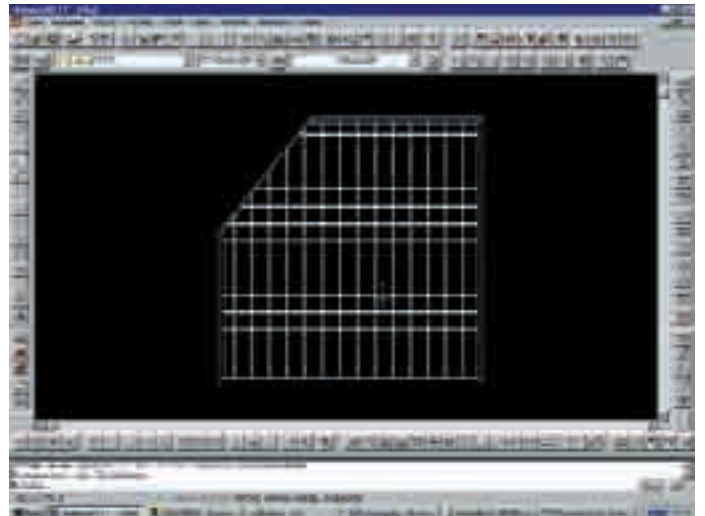
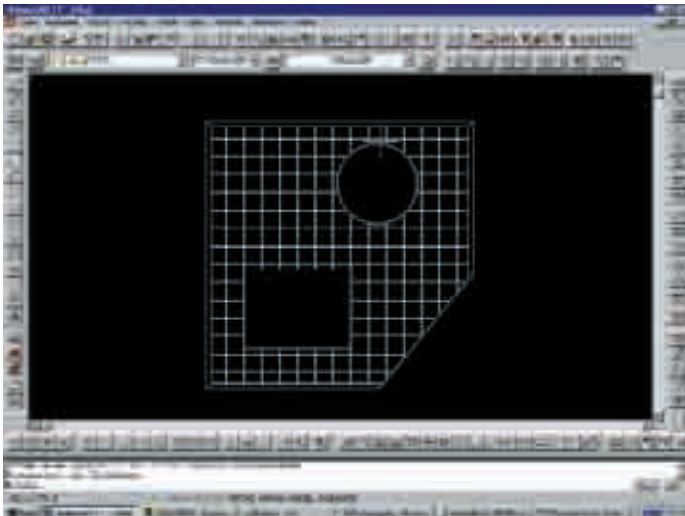
**Custom-made gratings in HighSolid quality are our speciality.**

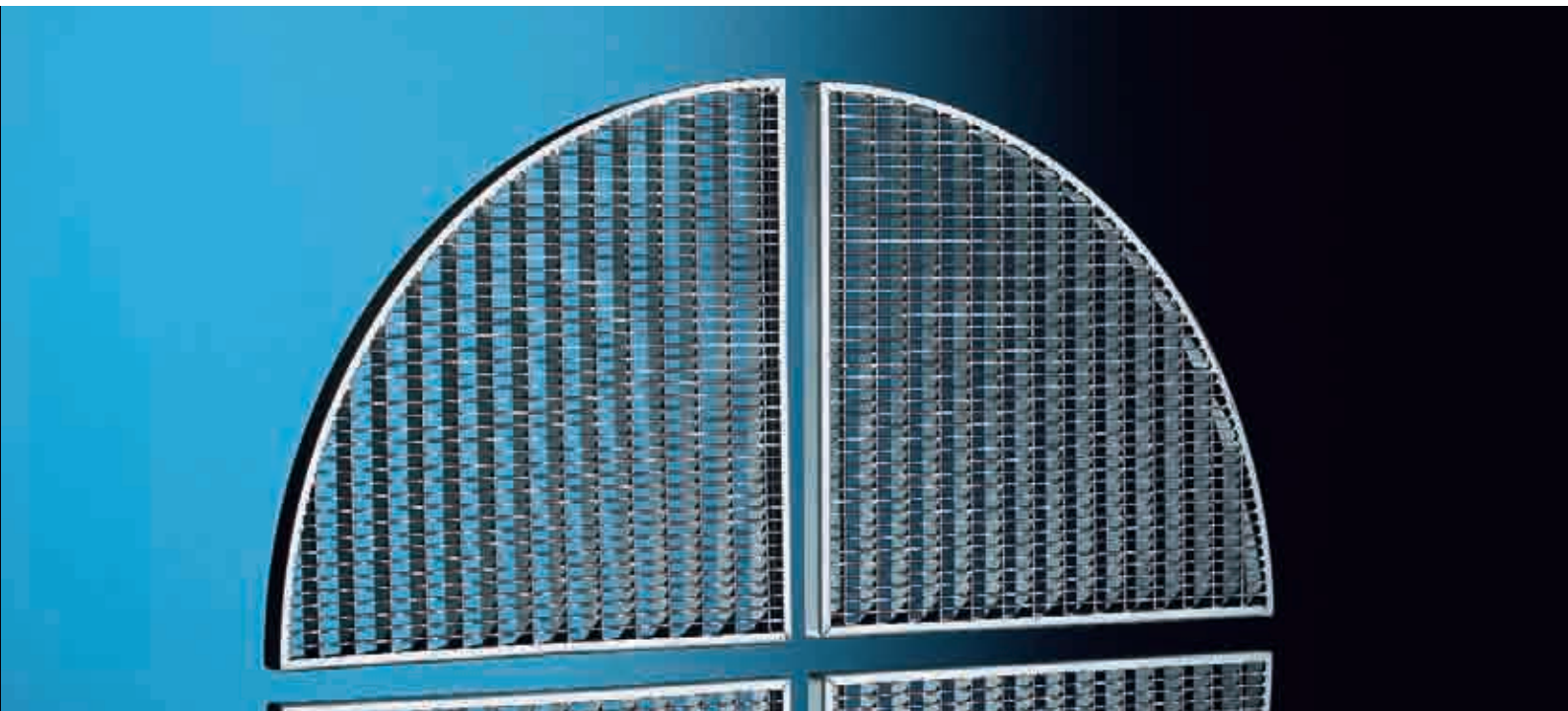
All are made in hot dip galvanised steel and stainless steel with smooth or anti-slip bars. Cut-outs and sections are bordered with flats to fit any shape or length.



Our manufacturing process covers a wide range of possibilities:

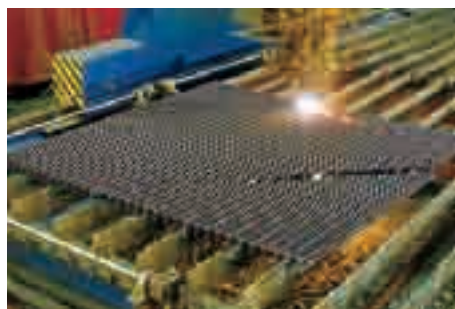
- Bespoke panels
- Round and square cut-outs
- Sections
- HighSolid height adjustment gratings
- Angled framework for all dimensions of grating





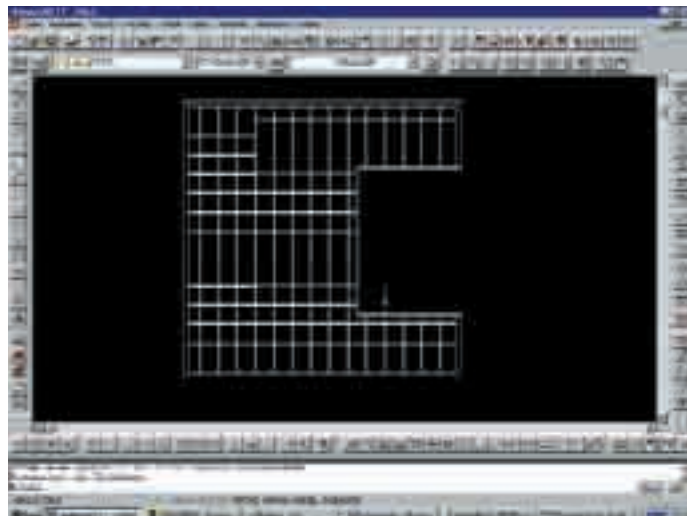
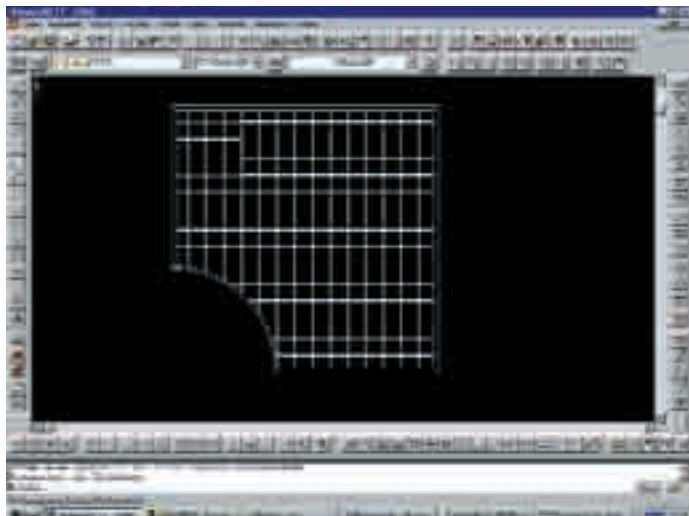
This opens up the possibility for new and very creative panels especially in the areas of façade coverings and sound reduction walls.

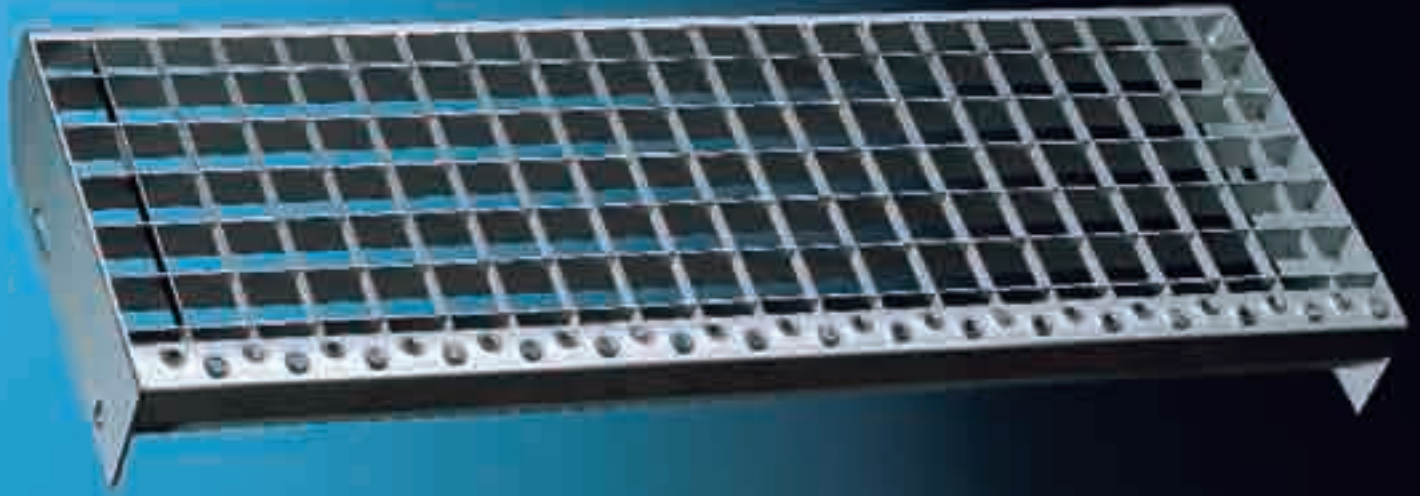
**The easiest way to arrive at a perfect, customised solution is to contact us.**



Our range of services:

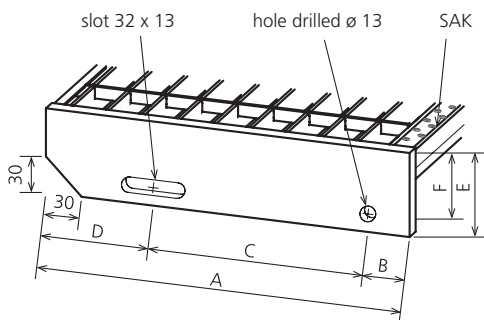
- Technical advice on-site
- Site measuring
- Statistical calculations
- Creation of layout and installation plans





HighSolid stairtreads are manufactured with the same bearing bar and cross bar dimensions as the gratings.

Each tread has a perforated, anti-slip safety edge. All plates have a drilled hole and a slotted hole to facilitate the alignment of the outside edges during assembly.



### Standard stairtreads Mesh width 31/31 and 31/9

Centre width	Tread width A	B	Hole distance C	D
<b>CB 25/2</b>	Mesh width 31/31			
500	195	35	100	60
600	195	35	100	60
600	240	35	120	85
600	270	35	150	85
700	195	35	100	60
700	240	35	120	85
800	195	35	100	60
900	240	35	120	85
900	270	35	150	85
<b>CB 25/2</b>	Mesh width 31/31 and 31/9			
800	240	35	120	85
800	270	35	150	85
800	305	35	180	90

### Standard stock stairtreads Mesh width 31/31 and 31/9

Centre width	Tread width A	B	Hole distance C	D
<b>CB 30/2</b>	Mesh width 31/31 and 31/9			
1.000	240	35	120	85
1.000	270	35	150	85
1.000	305	35	180	90
<b>CB 40/2</b>	Mesh width 31/31			
1.100	240	35	120	85
1.100	270	35	150	85
1.100	305	35	180	90
<b>CB 40/2</b>	Mesh width 31/31			
1.200	240	35	120	85
1.200	270	35	150	85
1.200	305	35	180	90
<b>CB 40/2</b>	Mesh width 31/31 and 31/9			
1.200	270	35	150	85

Naturally you can also have stairtreads manufactured to specific measurements.

### Height dimensions

E	F	Height of grating
70	55	25–40
80	65	50
90	75	60

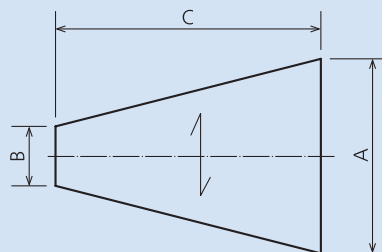




In principle, all stairtread variations are possible in HighSolid quality steel. The availability of trapezoidal treads alone creates many possibilities:

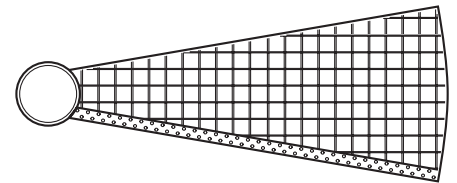
**Trapezoidal treads square, mesh width 31/31 and 31/9 CB 30/2**

A	B	C
<b>Mesh width 31/31</b>		
290	100	540
<b>Mesh width 31/31 and 31/9</b>		
360	100	685
390	100	835
430	100	935
<b>Mesh width 31/31</b>		
455	100	1.010
475	100	1.060



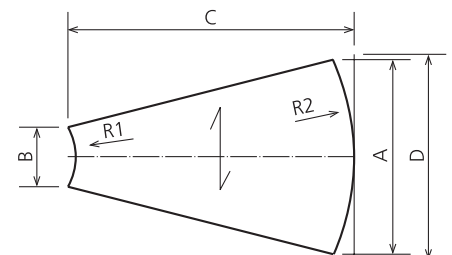
All designs are anti-slip (cross bar is profiled), non-galvanised and without safety edges. All dimensions are in mm.

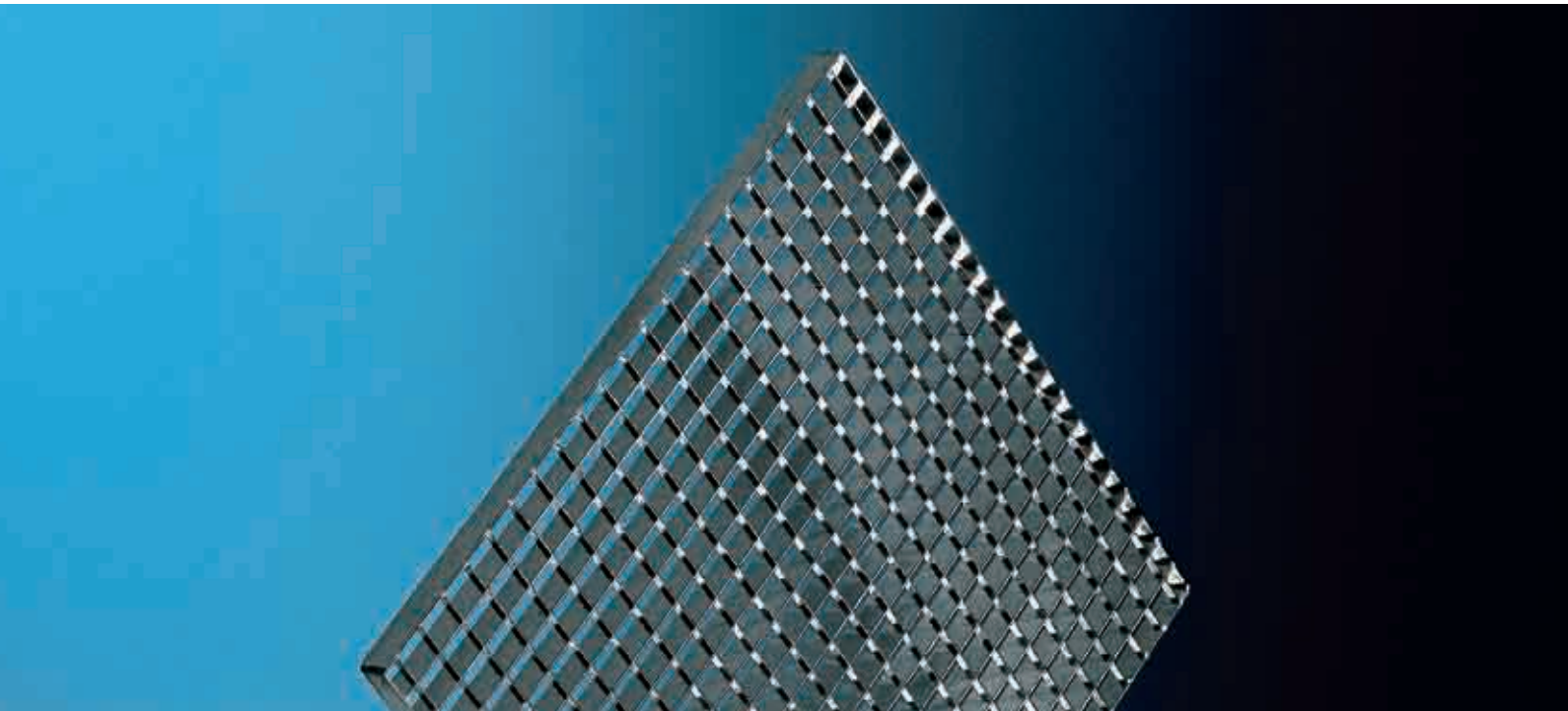
We can also manufacture trapezoidal treads with sockets for fixing to central spindles. These can be turned around very quickly.



We deliver the 'going' stages for spiral treads custom-made either galvanised or non-galvanised for additional welding.

**Trapezoidal treads round.**





## **Stainless steel gratings fulfill specific design or safety aspects**

We produce grade 304 and grade 316 stainless steel gratings and manufacture customised gratings and stair treads.

Whether for cut-outs or sections, smooth or anti-slip construction, all variations are possible. Our stainless steel gratings are available in basic versions with flat edging or with profiled edging, depending on your requirements.

There are two options regarding surface treatment – standard pickled or electrolytically polished – both with excellent durability against aggressive substances. In addition, the electrolytically polished surface provides an excellent finish for architectural applications.

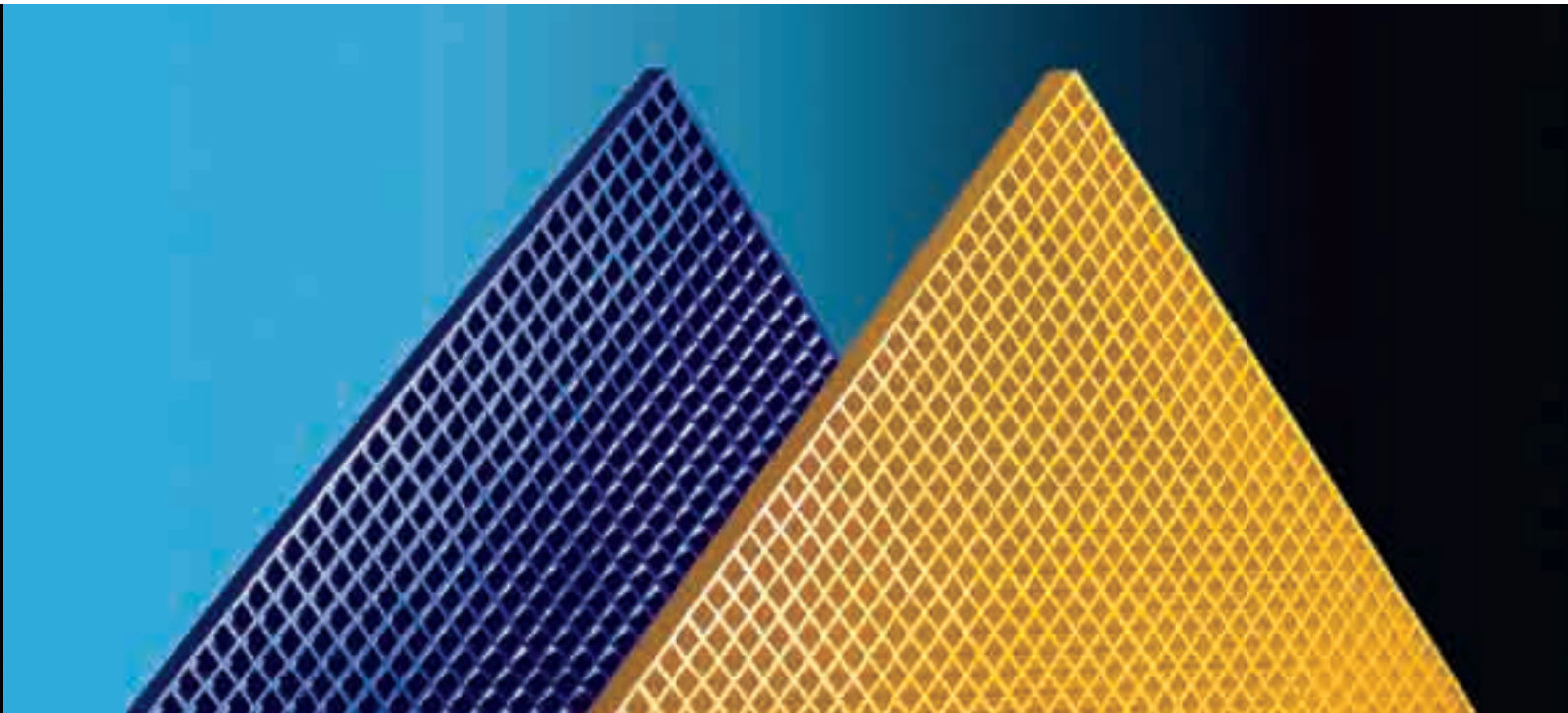
## **Areas of application**

In canteen kitchens, the food processing industry, chemical industry, laboratories, hospitals, swimming pools, sewage treatment plants, breweries and creameries.

## **Durability against effects of:**

- Food
- Organic acids
- Nitric acid
- Phosphoric acid
- Alkaline concentrations
- Sulphuric acid
- Caustic potash solution

**We produce stainless steel gratings in the same designs and dimensions as the hot galvanised gratings.**



**Fibreglass reinforced plastic gratings combine the structural advantages of gratings and the particular physical characteristics of fibreglass.**

**All sorts of businesses and industries value glass fibre quality gratings.**

Research laboratories, electroplating, surface finishing, petrochemistry, refineries, paper, pulp, textile and staple fibre industry, water, electric power companies, sewage works, shipbuilding, transportation facilities, garages, sporting complexes, outdoor swimming pools, road construction, breweries, creameries, foodstuff manufacturers to name but a few.

**Glass fibre gratings provide many advantages:**

- No corrosion or contact corrosion.
- Resistant to chemicals and weathering to the highest requirements.
- 100% UV resistance, glass fibre gratings lose neither shape nor colour.
- Glass fibre gratings provide extreme rigidity. They are durable and bridge large spans.
- Quick, cost-effective assembly.
- There are no maintenance costs.
- Glass fibre gratings are extremely durable and also fire-resistant (with phenolic resin), anti-slip to R 13, supplied in numerous RAL colours, non-conductive, thermally insulated, impact resistant, tough and reliable.
- Temperature resistant from -100 °C to +230 °C.

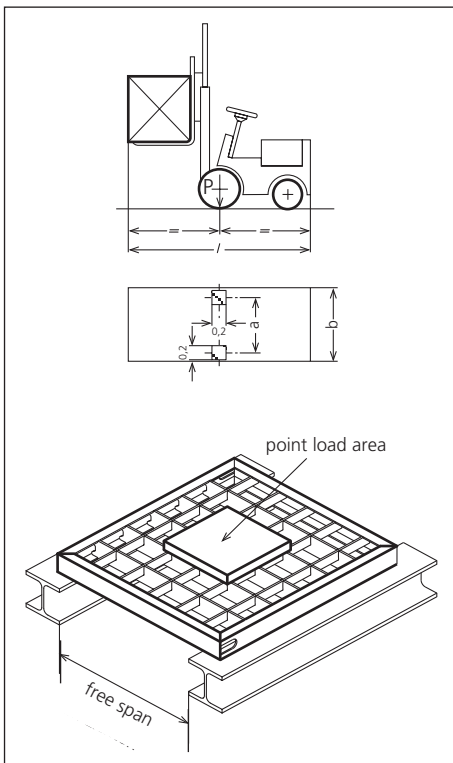
Standard mesh sizes 38/38 bridge width 6 - 8	
Fibreglass grating IAR/grey	Plate size
25	1,000 x 2,000
30	1,000 x 2,000
35	1,000 x 2,000
40	1,000 x 2,000

*All dimensions are in mm.*



## Heavy-duty applications

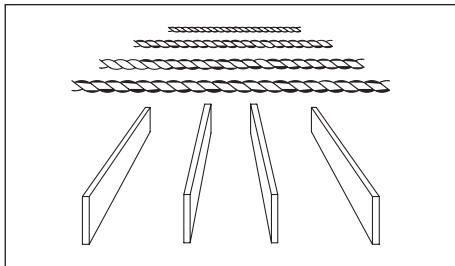
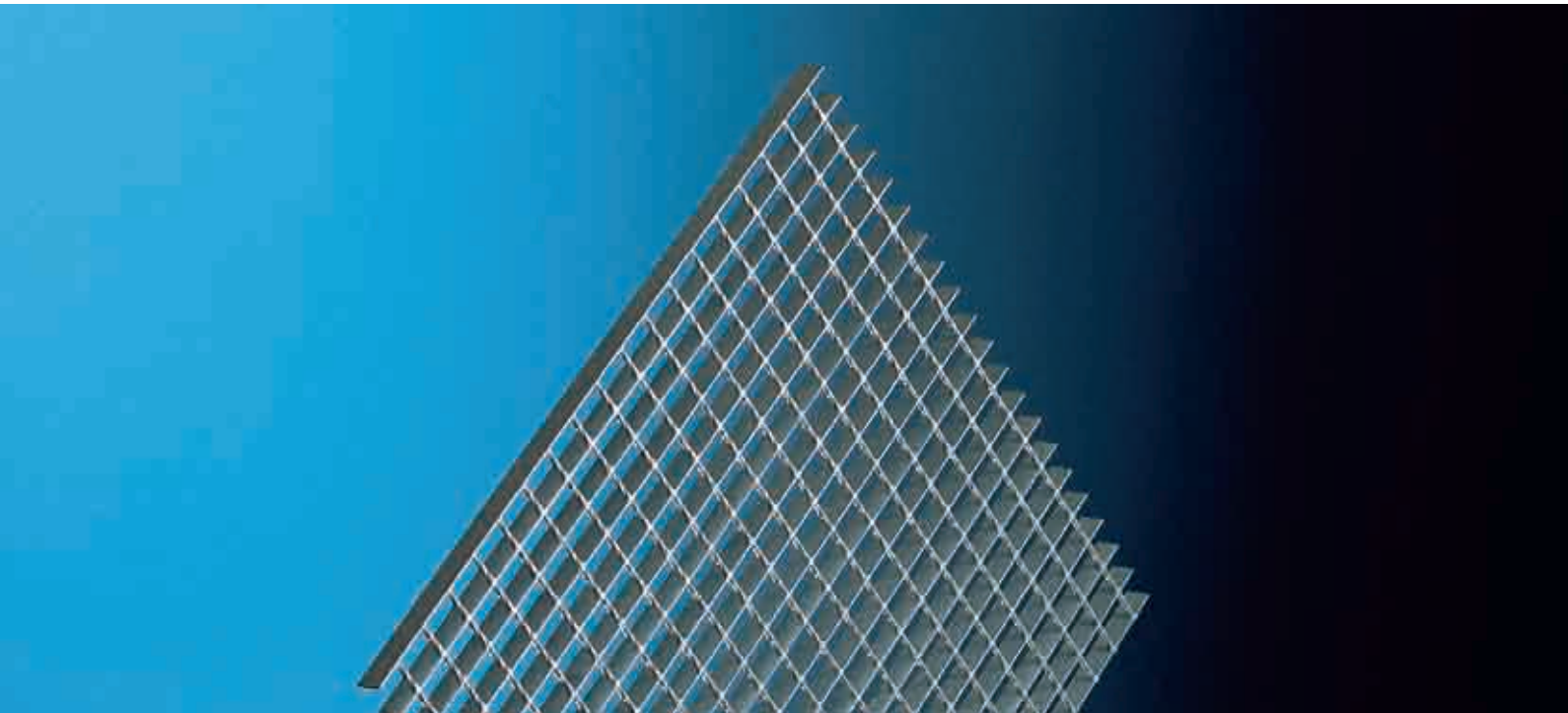
Heavy-duty gratings can be optionally produced with a U profile, or with flat steel edging and are then hot dip galvanised. This forklift truck application is an example.



Standard specifications						
Forklift truck vehicles						
Reliable total weight	Nominal load capacity	Statistical axle load (standard load) P	Middle wheel base a	Total width b	Total length l	Evenly distributed working load (normal load)
daN	daN	daN	m	m	m	daN
2,500	600	2,000	0.8	1.0	2.4	1,000
3,500	1,000	3,000	0.8	1.0	2.8	1,250
7,000	2,500	6,500	1.0	1.2	3.4	1,500
13,000	5,000	12,000	1.2	1.5	3.6	2,500

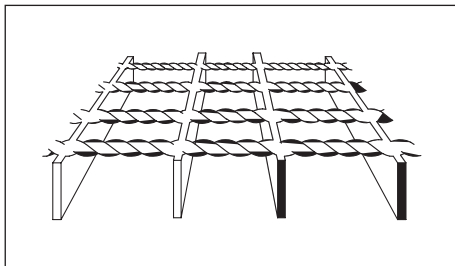
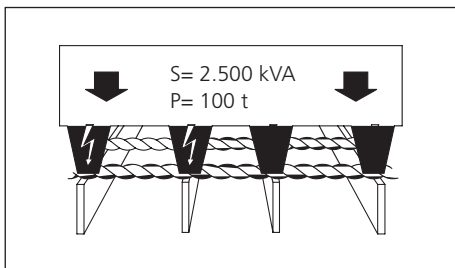
Abstract from DIN 1072			
Vibration coefficient	Bridge class*	Tyre pressure	Cube load**
If the track contains components that are particularly delicate (e.g. parts of track transitions, gratings or such like) then the wheel loads which are allotted to the individual parts, are to be multiplied by 1.4 of the brake loads.	60	10,000 daN	200 × 600 mm
	45	7,500 daN	200 × 500 mm
	30	5,000 daN	200 × 400 mm
	24	4,000 daN	200 × 300 mm
	16	5,000 daN	200 × 400 mm
	12	4,000 daN	200 × 300 mm
	9	3,000 daN	200 × 260 mm
	6	2,000 daN	200 × 200 mm
3	1,000 daN	200 × 200 mm	

\* Bridge class = Total weight of the vehicle. \*\* Cube load = Load application surface.



## Forge-welded grating construction

The twisted square bars and/or round bars that take over the task of the cross bar are pressed into the bearing bar under high pressure and are simultaneously welded by resistance welding methods.



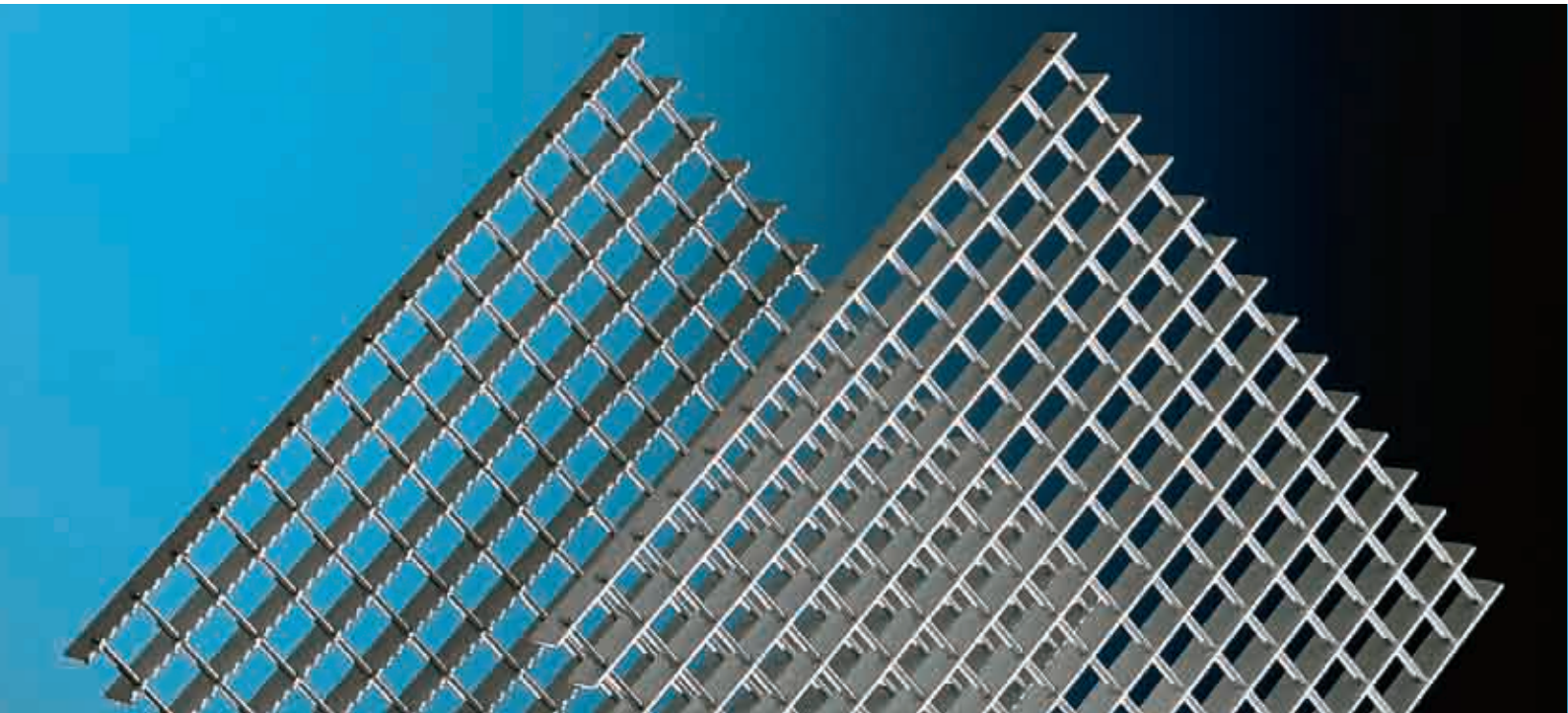
## Manufactured sizes

The width produced in the direction of the cross bar should not exceed 1,250 mm. The maximum length in the direction of the bearing bars is 5,990 mm.

## Border edging

Forge-welded gratings have a binding edge made from flat steel.

We can also produce gratings with other special border edge profiles.



**By using aluminium you can make use of all the material's advantage:**

A high load carrying capacity, low weight and good rigidity.

It also has high corrosion resistance.

Aluminium gratings are distinguished by their lightweight properties and are produced to specific customer requirements.

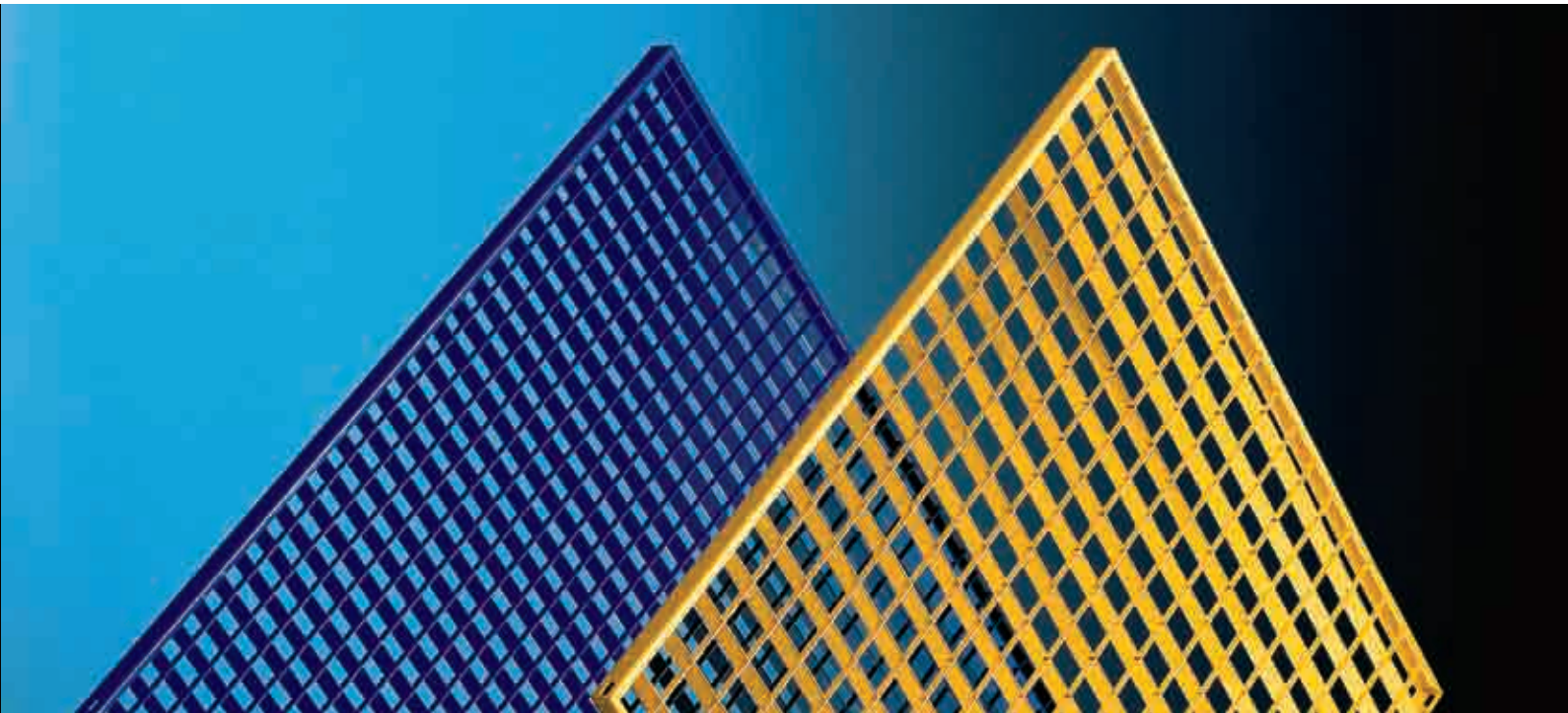
**Aluminium is advisable above all others for the following fields of application:**

Façade coverings, sun protection screens, walkways, staircases and ceiling panels.

Stairtread mesh width 32/46		
Length	Width	Hole spacing
<b>CB 30/3</b>		
600	200	110
	235	120
	270	150
	305	180
800	235	120
	270	150
	305	180

Stairtread mesh width 32/46		
Length	Width	Hole spacing
<b>CB 40/3</b>		
1,000	235	120
	270	150
	305	180
<b>CB 50/3</b>		
1,200	235	120
	270	150
	305	180

*All dimensions are in mm.*



**Powder coated HighSolid gratings provide additional architectural appeal.**

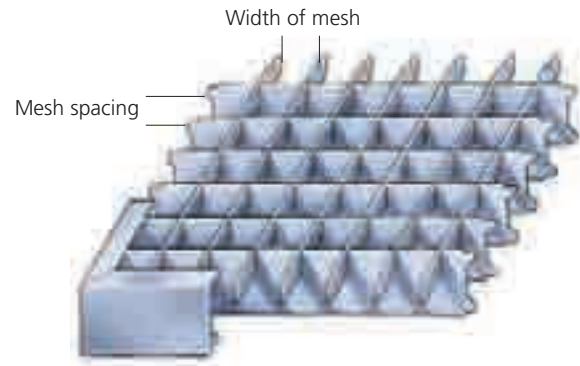
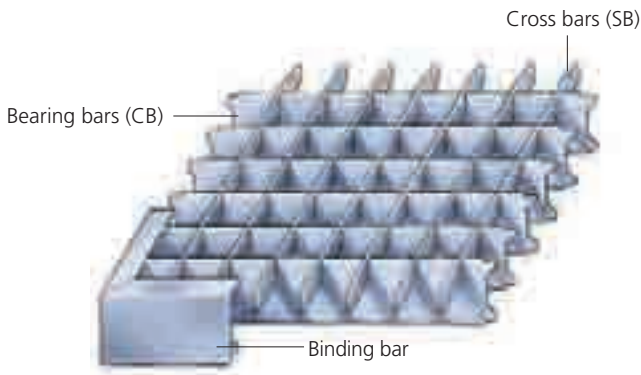
Through the Duplex system - hot dip galvanised plus powder coating – a particularly stable, durable corrosion protection is ensured. Powder coated gratings are supplied in numerous RAL colour tones.

**The procedure**

A colour powder is applied when coating steel components, which becomes liquified under exposure to heat and forms a protective coating on the surface. This procedure demands a special cleaning and pre-treatment process to the surface and is implemented in full or partially automated systems. Electrostatic application of the powder ensures good protection in the corners and on the edges, which is not possible in conventional wet paint spraying.

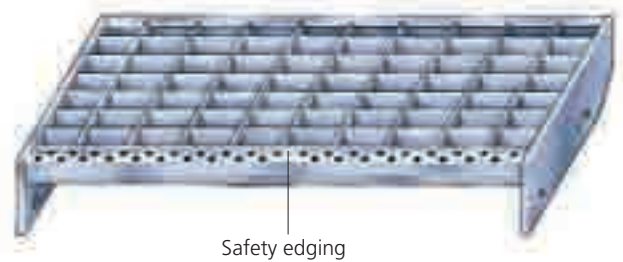


# Technical terms



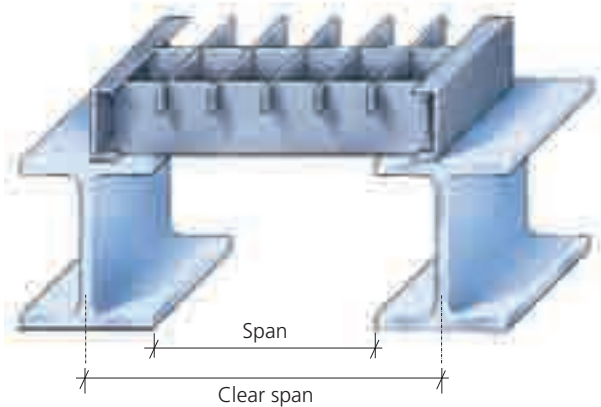
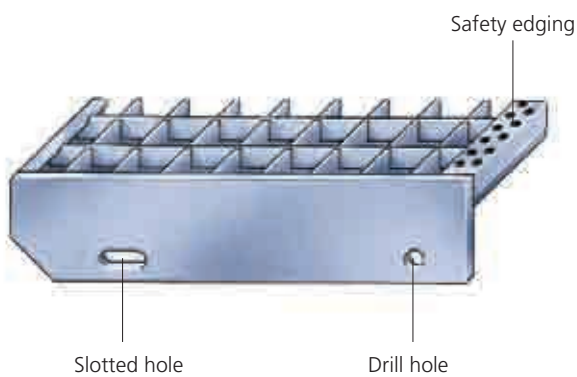
**Bearing bars** bear the weight. **Cross bars** are pressed and/or welded onto the bearing bars. They absorb a proportion of the weight distribution and provide stability. The **binding bar** encloses the mesh pattern.

**Mesh width** is the distance between the bars, **Mesh spacing** is the distance from the middle of one bar to the middle of another bar.



**Anti-slip gratings** have special serrations notched on the upper surface of the bearing and/or cross bars.

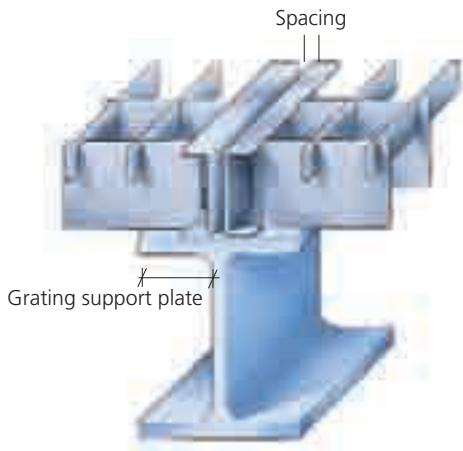
**Safety edging:** For anti-slip and increased load carrying capacity, specially formed angle profiles (safety edges) are welded onto the stairtreads.



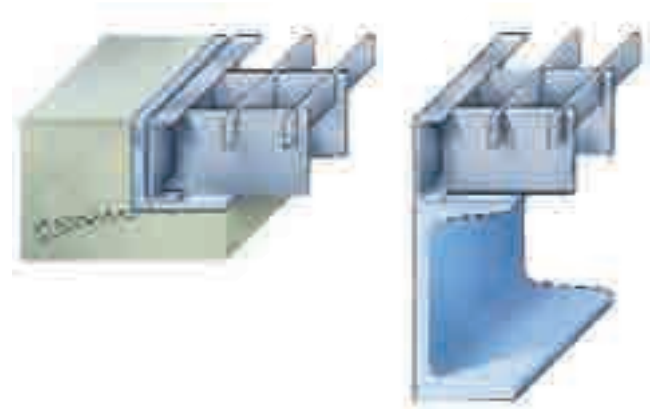
Stairtreads consist of gratings with welded on safety edges and punched **plates**.

The **clear span** is the measurement from the middle of one support to the middle of another in the direction of the bearing bars. The span specifies the measurement between two supports.

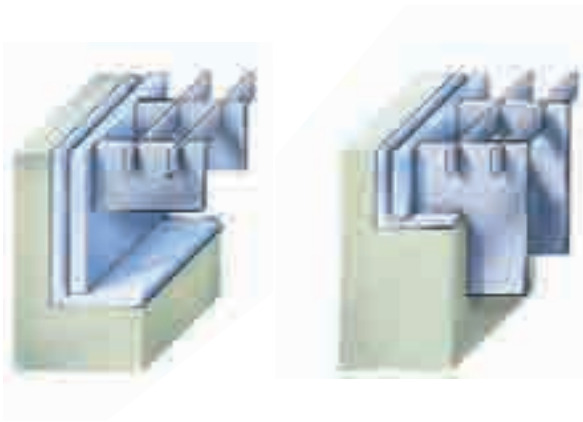




**Grating support plate:** The length of the support plate in the design should be at least 30 mm; in working conditions it should be at least 25 mm. Deviations are acceptable as long as a grating is prevented from moving.



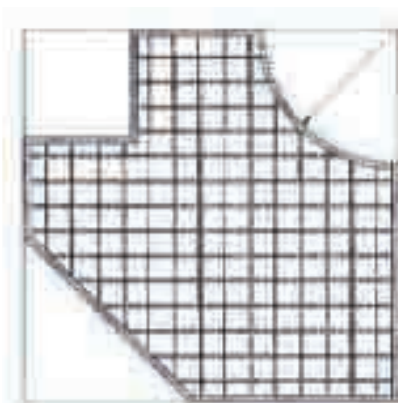
The **substructure** is the component on which the grating is laid.



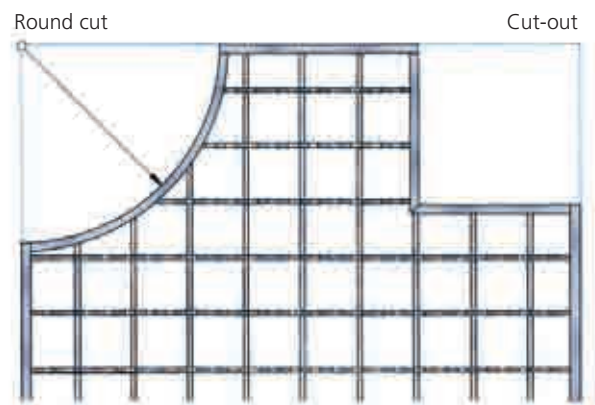
In order to create a flush connection between the upper grating surface and level of the floor, a **concrete ledge** is produced or the grating is **notched**.



The **kickplate** is welded on, to increase safety.



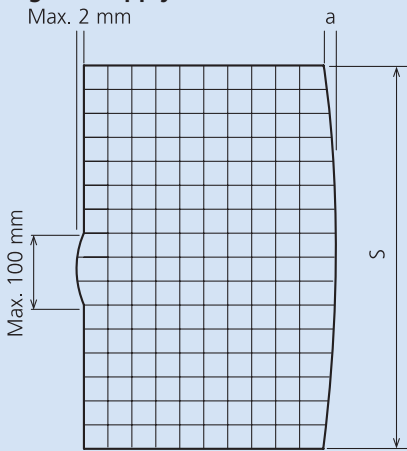
**Cuts** refer to the **cut-outs** of the gratings. The edges of the cuts are bound by flat material.



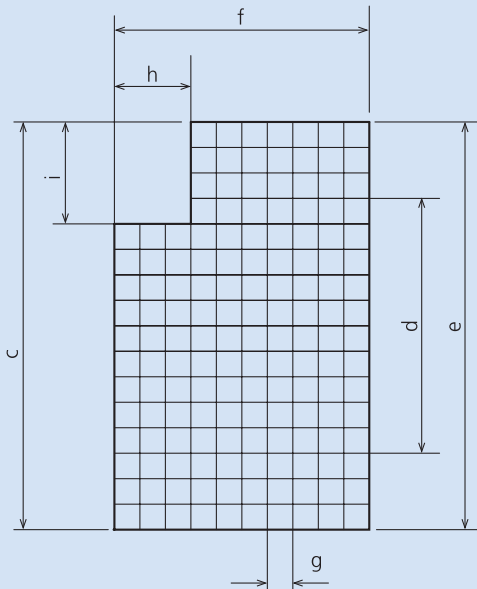
Cut-outs whose length of cut is smaller than 0.5 m are referred to as **small cut-outs**.

# Tolerances

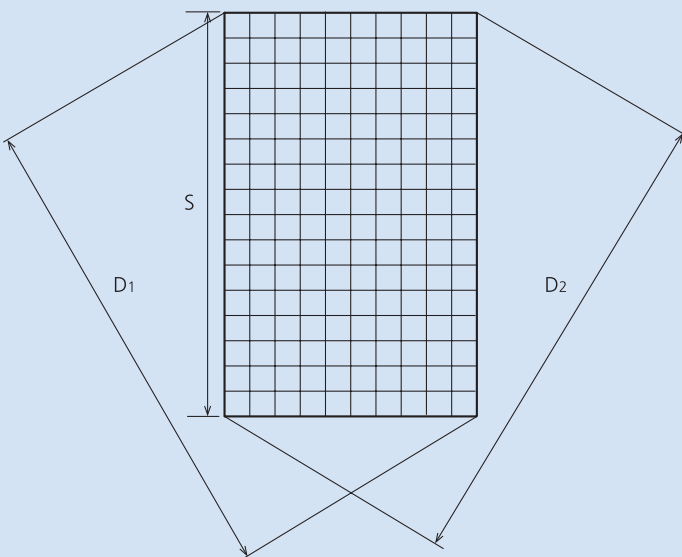
## Manufacturing and supply tolerances.



The tolerances occurring under a load (changes in tension) are not covered,  $a = \max. 0.0025 \times S$



$c; e; f = \max. +0 \text{ mm to } -4 \text{ mm}; g = \max. \pm 1,5 \text{ mm}$   
 $d = \max \pm 4 \text{ mm (over 10 divisions measured)}; h; i = \begin{matrix} +8 \\ -0 \end{matrix} \text{ mm}$



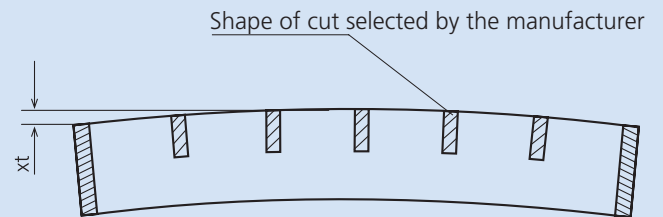
Deviation of the measured diagonals  
 $D_1 \text{ minus } D_2, \max. 0.010 \times S$

These manufacturing tolerances are valid for all our gratings in accordance with the following specifications:

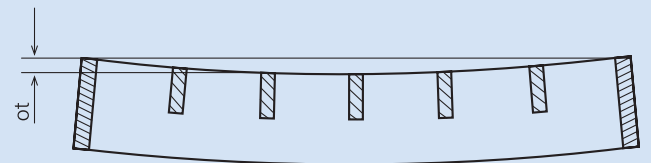
- Bearing bars  $\leq 60 \times 5 \text{ mm}$
- Mesh spacing maximum 68 mm and minimum 11 mm
- Size of grating maximum  $2.0 \text{ m}^2$ , whereby a measurement of one side is not bigger than 2,000 mm.

## Acceptable tolerances for pressure-locked gratings.

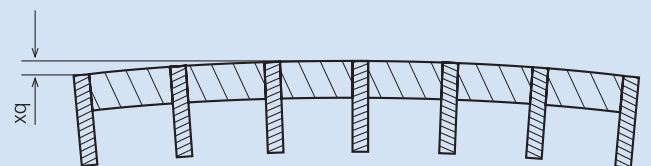
The tolerances occurring under a load (changes in tension) are not covered.



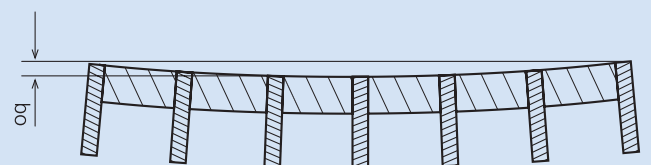
Deviation for convex  $xt \max. = \frac{1}{200}$  of the length with dimensions  $> 600 \text{ mm}$ , max. 8 mm; smaller dimensions than 600 mm, max. 3 mm



Deviation for concave  $xt \max. = \frac{1}{200}$  of the length with dimensions  $> 600 \text{ mm}$ , max. 8 mm; smaller dimensions than 600 mm, max. 3 mm



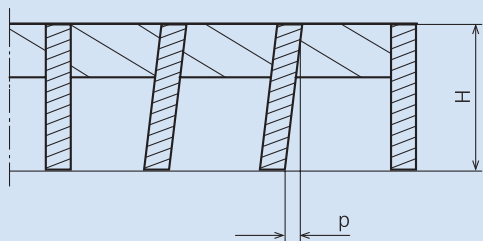
Deviation for convex  $xq \max. = \frac{1}{200}$  of the width with dimensions  $> 600 \text{ mm}$ , max. 8 mm; smaller dimensions than 600 mm, max. 3 mm



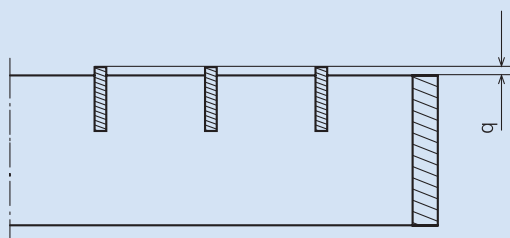
Deviation for concave  $oq \max. = \frac{1}{200}$  of the width with dimensions  $> 600 \text{ mm}$ , max. 8 mm; smaller dimensions than 600 mm, max. 3 mm

**Acceptable tolerances for pressure-locked gratings.**

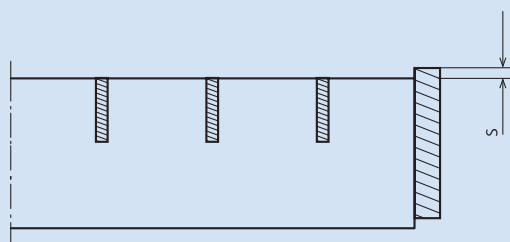
The tolerances occurring under a load (changes in tension) are not covered.



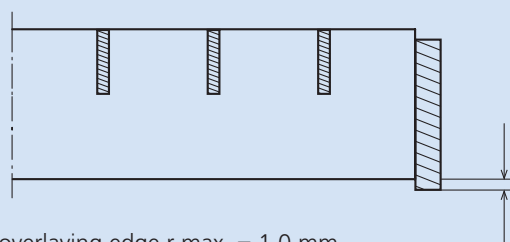
Inclination of the carrying and edging bars  
 $p \text{ max.} = 0.1 \times H$ , but max. 3 mm



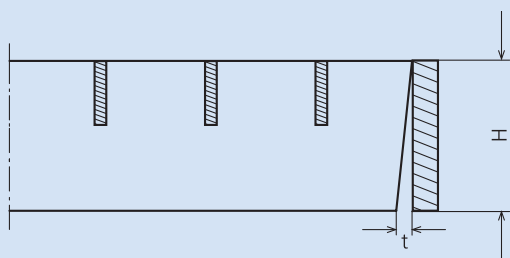
Higher standing cross bar  $q \text{ max.} = 1.5 \text{ mm}$



Upper overlaying edge  $s \text{ max.} = 1.0 \text{ mm}$



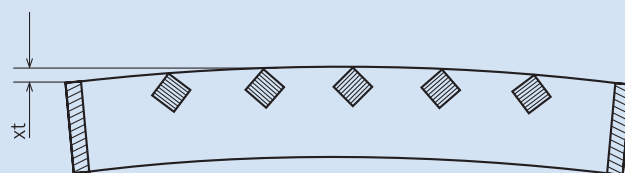
Lower overlaying edge  $r \text{ max.} = 1.0 \text{ mm}$



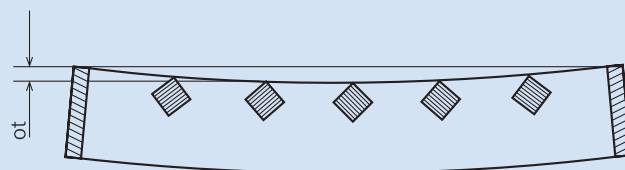
Bevel cut of the carrying and cross bar  
 $t \text{ max.} = \pm 0.10 \times H$ , but max. 3 mm

**Acceptable tolerances for welded pressure-locked gratings.**

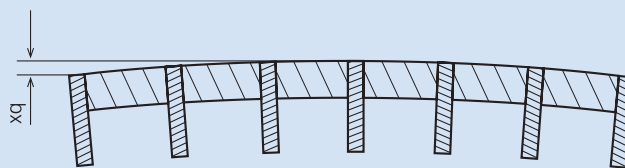
The tolerances occurring under a load (changes in tension) are not covered.



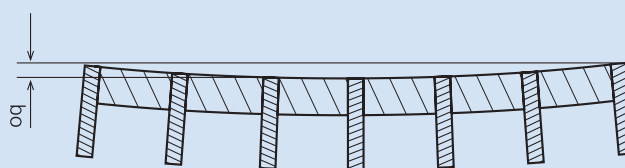
Deviation for convex  $xt \text{ max.} = \frac{1}{500}$  of the length with dimensions > 450 mm, max. 8 mm; smaller dimensions than 450 mm, Max. 3 mm



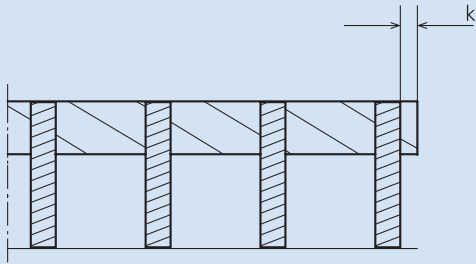
Deviation for concave  $ot \text{ max.} = \frac{1}{200}$  of the length with dimensions > 600 mm, max. 8 mm; smaller dimensions than 600 mm, Max. 3 mm



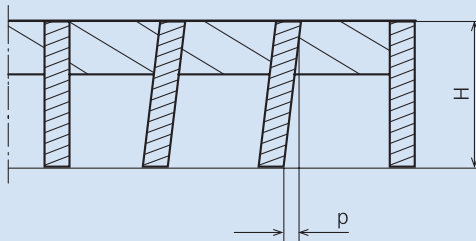
Deviation for convex  $xq \text{ max.} = \frac{1}{500}$  of the width with dimensions > 450 mm, max. 8 mm; smaller dimensions than 450 mm, Max. 3 mm



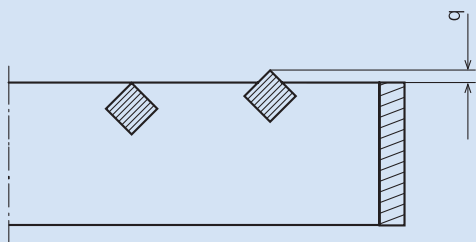
Deviation for concave  $oq \text{ max.} = \frac{1}{200}$  of the width with dimensions > 600 mm, max. 8 mm; smaller dimensions than 600 mm, Max. 3 mm



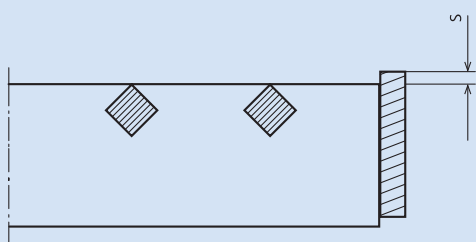
Overlaying cross or border bar (also for P gratings)  
k. Max. = 0.5 mm



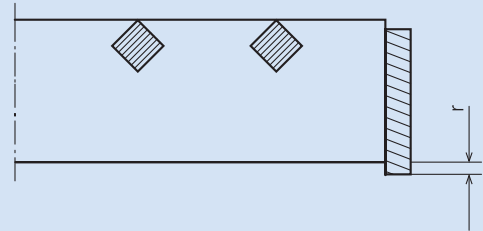
Inclination of the carrying and edging bars  
p max. =  $0.1 \times H$ . Max. 3 mm



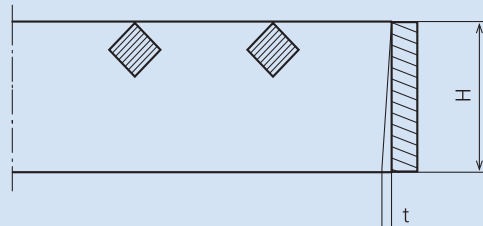
Higher standing cross bar q. Max. = 1.5 mm



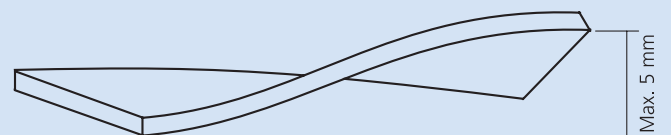
Upper overlaying edge s. Max. = 1.0 mm



Lower overlaying edge r. Max. = 1.0 mm

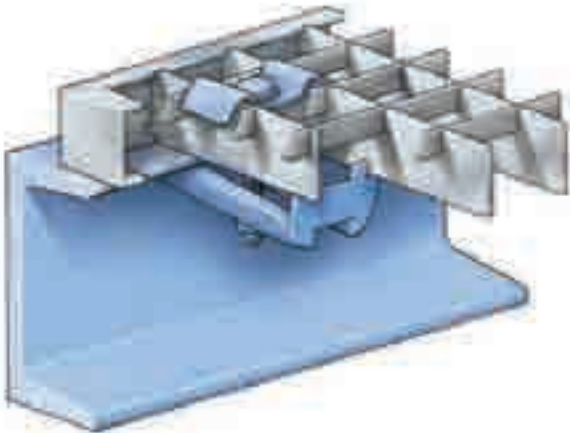


Bevel cut of the carrying bar and/or cross bar  
t max. =  $0.10 \times H$ . Max. 3 mm

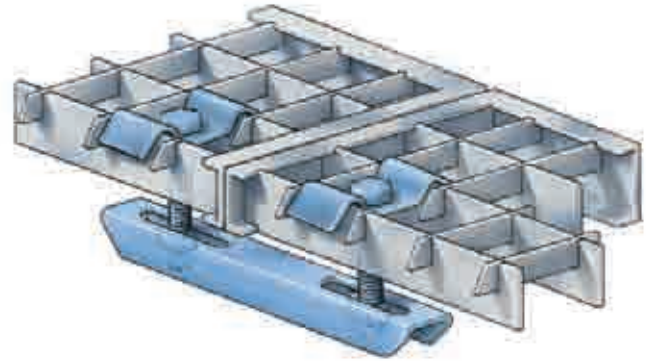


Torsion (deviation of flatness) of the grating.  
Deviation maximum 5 mm tolerable with grating  
approx. 300 x 300 mm. Maximum approx. 2 mm

# Fastenings and fixings



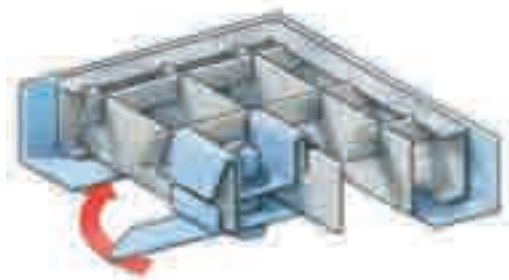
**Standard fixings**, which can also be supplied as safety attachments, are used for securing the grating against movement and lifting.



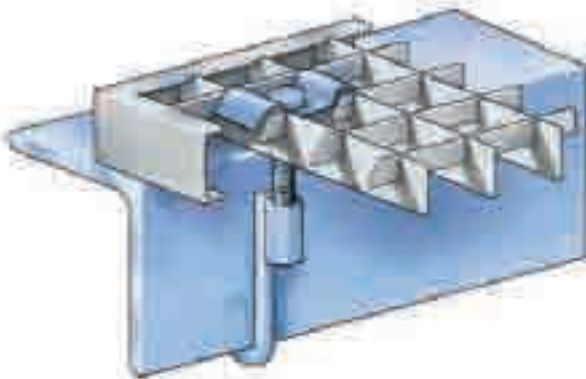
**Double brackets** for connecting two gratings of different mesh sizes. This ensures that no trip hazards develop.



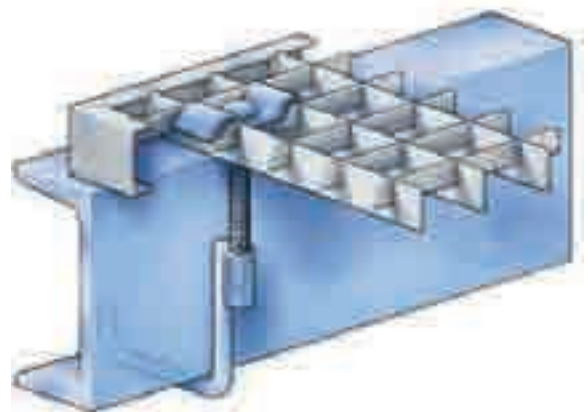
**Welded socket wrench catch** for easy locking and release, e.g. for emergency exits. At the same time this catch serves to prevent unauthorised raising of the grating.



**Socket wrench catch** for additional installation strength.



**Hook mounting**, e.g. for angled profiles. The hook mountings can be manufactured in accordance with the required dimensions.



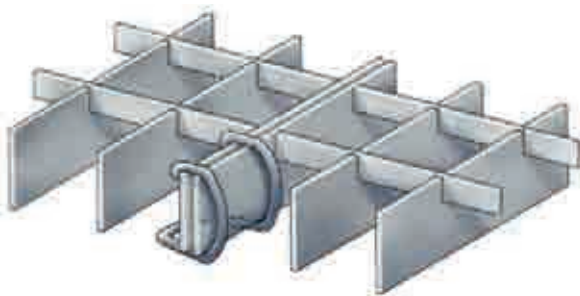
**Hook mounting** for gratings which rest upon vertical supports with a bottom flange e.g. channel, or box section.



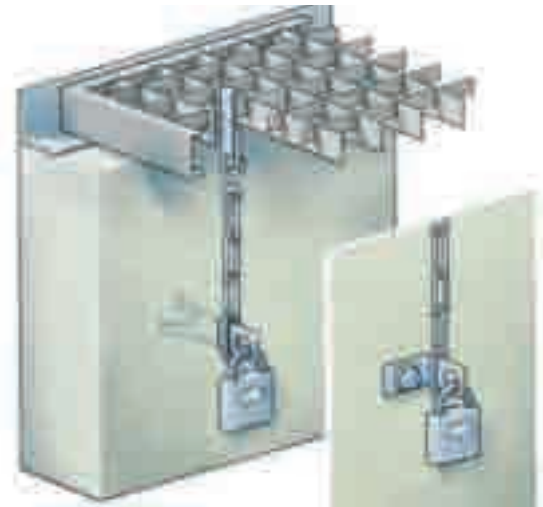
**Adapter clamp** for toolless rapid assembly from above. It is suitable for assembly on T bearers, U and L profiles. Total clamping range 36 – 48 mm.



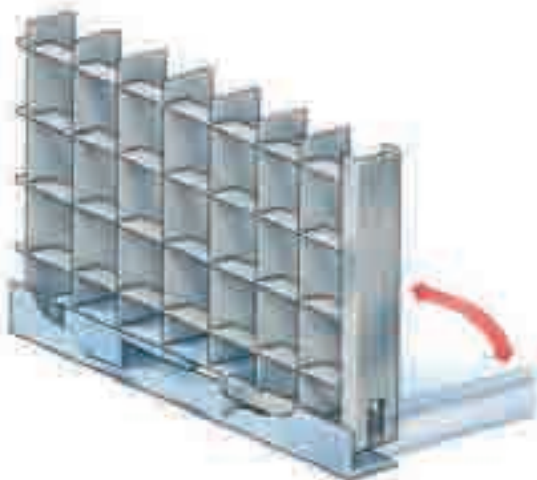
**Attachment spring** for easy assembly and dismantling of gratings on steel structures. It is designed as a spatial spring and replaces conventional standard and double clamps.



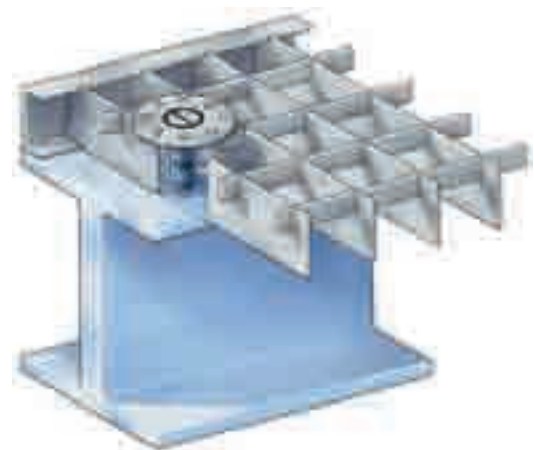
**Connecting springs** for connecting gratings to one another. Improved load distribution of dynamic and static forces.



**Safety chain** in different lengths for securing gratings e.g. basement manholes. (delivered without a safety lock).



**Hinges**, which are connected with an angle border for gratings with notches. Particularly useful for emergency exits in connection with a socket wrench catch.



**Threaded "HILTI" style power driven fastener**, driven into the substructure, where a type of cold welding takes place. The grating is secured to the substructure with the specially developed upper retaining flange.

# Architectural grating applications



*Architectural car park infills in Leeds*



*Walkway balustrading in Manchester*



*Brise soleil, Newcastle*



*Perimeter fencing, Kent*



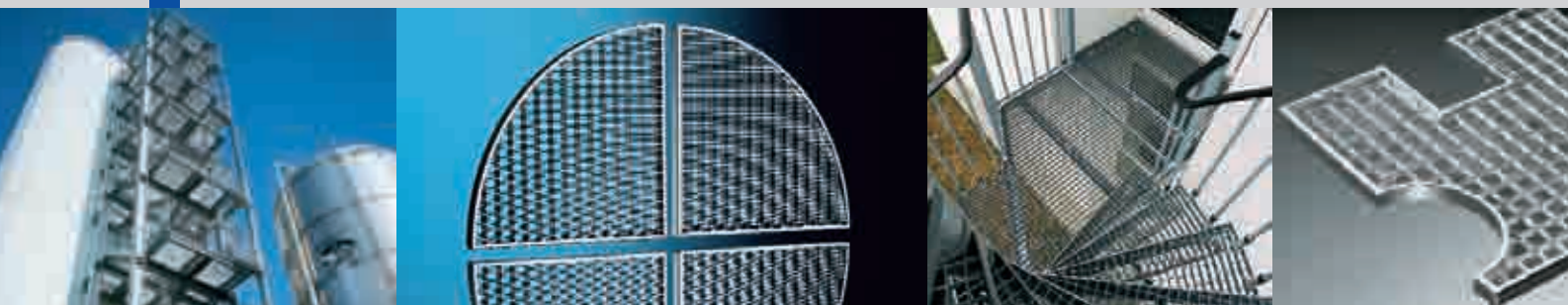
*Brise soleil in Edinburgh*



*Fencing and gate in London*



*Balcony infills in Liverpool*



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