How are Electroforged Gratings made

Electroforged Steel Gratings are made using the electroforging process. In this process, the square twisted rods (Cross Members) are fused into the main load bearing members at using a special welding machine at very high current and tonnage. The Cross Members are properly set-in the Load Members such that it projects out of the grating top member by only a little more than 1 mm. This improves the slip resistance during walking. Electroforged Grating Panels are generally manufactured to 6000 mm lengths.

The panels are then cut to exact Spans as per the customer requirements. The cut panels are then taken for welding of the Banding Bar. Notches and Toe Plates are added as required as per the drawing requirements.

The gratings are then Hot Dip Galvanized.
Advantages of using Electroforged Steel Gratings

Following are the advantages of using Electroforged Steel Gratings

1. High load-bearing capacity with a low dead weight.
2. High level of transparency.
3. Visually attractive
5. Hot-dip zinc surface treatment gives it a good anti-corrosion capacity, shiny surface appearance and durability for uses.
6. It is suitable for places and sites requiring ventilation and natural lighting.

Glossary of Terms

ANCHOR

A device by which grating is attached to its supports.

BAND

A flat bar welded to a side or to the end of a grating panel, or along the line of a cutout, and extending neither above nor below the bearing bars.

Load-Carrying Band: A band used in a cutout to transfer the load from unsupported bearing bars in the cutout to the supported bearing bars.

Trim Band: A band which carries no load, but is used chiefly to improve appearance.

BEARING BARS
Load carrying bars made from steel strip or slit sheet or from rolled or extruded aluminum and extending in the direction of the grating span.

**BEARING BAR CENTERS**

The distance center to center of the bearing bars.

**CARRIERS**

Flats or angles which are welded to the grating panel and nosing of a stair tread and are bolted to a stair stringer to support the tread.

**CLEAR OPENING**

The distance between faces of bearing bars in a rectangular grating.

**CROSS BARS**

The connecting bars, made from steel strip, slit sheet, or rolled bars, or from rolled or extruded aluminum, which extend across the bearing bars, usually perpendicular to them. In the Electroforged Steel Gratings, Cross Bars are generally of the Square twisted type. Where they intersect the bearing bars, are welded, forged to them.

**CROSS BAR CENTERS**

The distance center to center of the cross bars.

**CURVED CUT**

A cutout following a curved pattern.
CUTOUT

An area of grating removed to clear an obstruction or to permit pipes, ducts, columns, etc. to pass through the grating.

ELECTRO-FORGED

A process combining hydraulic pressure and heat fusion to forge bearing bars and cross bars into a panel grid.

FINISH

The coating, usually paint or galvanizing which is applied to the grating.

FLUSH TOP GRATING

A type of pressure-locked grating in which the cross bars and bearing bars are in the same plane relative to the top surface of the grating.

GRATING

An open grid assembly of metal bars, in which the bearing bars, running in one direction, are spaced by rigid attachment to cross bars running perpendicular to them or by bent connecting bars extending between them.

LENGTH / SPAN

The dimension of a grating panel measured parallel to the bearing bars.

NOSING

A special L-section member used on the front of treads and on grating at the head of stairs, both for visual safety and to sustain edge loads.
PRESSURE-LOCKED GRATING

Grating in which the cross bars are mechanically locked to the bearing bars at their intersections by deforming or swaging the metal.

RADIALLY CUT GRATING

Rectangular grating which is cut into panels shaped as annular segments, for use in circular or annular areas.

Reticuline Bar

A sinuously bent connecting bar extending between two adjacent bearing bars, alternately contacting and being riveted to each.

RIVET CENTERS

The distance center to center of rivets along one bearing bar.

RIVETED GRATING

Grating composed of straight bearing bars and bent connecting bars, which are joined, at their contact points, by riveting.

SERRATED GRATING

Grating which has the top surfaces of the bearing bars or cross bars, or both, notched.

STRAIGHT CUT
That portion of the cut edge or cutout of a grating which follows a straight line.

**TOEPLATE**

A flat bar attached against the outer edge of a grating or rear edge of a tread, and projecting above the top surface of grating or tread to form a lip or curb.

**TREAD**

A panel of grating having carriers and nosing attached by welding, and designed specifically to serve as a stair tread.

**WELDED GRATING**

Grating in which the bearing bars and cross bars are joined at their intersections by a weld.

**WIDTH**

The overall dimension of a grating panel, measured perpendicular to the bearing bars, and in the same direction as the cross bars.

### Information on Pitches, Bearing Bar Sizes

Almost any combination of sizes can be produced but the most common mesh sizes are:

<table>
<thead>
<tr>
<th>Types of Bearing Bars</th>
<th>Commonly Used Bearing Bar Sizes</th>
<th>Commonly Used Bearing Bar Pitches</th>
<th>Commonly Used Cross Bar Sizes</th>
<th>Commonly Used Cross Bar Pitches</th>
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</thead>
<tbody>
<tr>
<td>Plain</td>
<td>25 x 3 mm</td>
<td>23 mm</td>
<td></td>
<td>6 mm Square Twisted 38 mm</td>
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<td></td>
<td>25 x 5 mm</td>
<td>30 mm</td>
<td></td>
<td>8 mm Square Twisted 50 mm</td>
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<tr>
<td>Serrated</td>
<td>30 x 3 mm</td>
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<td>40 x 5 mm</td>
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Facilities

We have setup a 80,000 sq.ft. eco-friendly facility at Sahajpur Industrial Area, Nandur Village which is about 40 Km from Pune City on the Pune – Sholapur National Highway.

We are equipped with the following ultra modern high-tech equipment and machinery as listed below:

Electroforge Grating Welder from CLIFFORD (IDEAL Germany).

Model – GW12.

Maximum Panel width of 1.2m

Line Bar Loading Table with Automatic Feeding System.

Edge Cropping Unit.

Roller Mesh Discharge System.

Sheet Flattening Station with Hydraulic Power Pack.

Side Exit Stacker.

Chain Discharge Conveyor to work with Stacker.
Fully Automatic Bandsaw Cutting Machine and Automatic Circular Saw Cutting Machines

For Panel Cutting.

Resistance Welding Machine for Edge Banding

For welding all Bearing Bars at one shot to the Binding (Nose) Bar.
Bearing and Binding bars height upto maximum of 70mm.

Bearing and Binding bars thick upto maximum of 5mm.

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**Automatic Roll Forming Line for manufacture of profile Edge Bands**

For production of Profiled Edge Banding Bars.
Twisting Line

For manufacture of Square Twisted Cross Bars.
**Fully Automatic Galvanizing Line**

This is a most modern Galvanizing line with automation for loading/unloading, drying chamber at 100 Deg C, High Velocity Gas fired Furnace, White fumes collection and Filtration, Acid Vapour Exhausting & Scrubbing, Flux Reprocessing & Regeneration, etc.

Environment friendly system – Lead Free system

Kettle Specs : 8.2m length x 1.2m width x 2.3m Deep.

9 Tank Pretreatment Process.

Capacity :- 3000 Tons per Month.