



M.M. S.R.L.
Fiberglass Reinforced Polymer
gratings and structures

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FRP FENCES

MM05

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COMPOSITE SOLUTION



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SUMMARY

| | |
|--|-----------|
| 1. USE AND CHARACTERISTICS | 3 |
| 2. EMPLOYMENT FIELDS | 4 |
| 3. MATERIALI | 5 |
| 3.1 PROFILES | 5 |
| 3.2 GRATINGS | 5 |
| 3.3 BASE PLATES | 5 |
| 3.4 ACCESSORIES..... | 5 |
| 4. TYPES..... | 6 |
| 4.1 FENCES' SUMMARY TABLE | 6 |
| 4.2 TYPES OF FENCES | 7 |
| 5. INSTRUCTIONS FOR DESIGN ENGINEER | 14 |

1. USE AND CHARACTERISTICS



The FRP fences are built with fiberglass and polyester resin gratings and profiles, they assure several advantages compared to the normal metal ones:

- a. High resistance to chemical and atmospheric aggressions
- b. High mechanical/weight ratio peso
- c. Long-lasting
- d. Lightness
- e. Dimensional stability
- f. High dielectric properties
- g. No maintenance
- h. radio transparency
- i. Easy to install

Fences are preassembled and supplied with all the necessary fixing accessories.

2. EMPLOYMENT FIELDS

MM's FENCES can be installed in any type of plant, but they are mainly used in areas where it's necessary to have corrosion resistance and electric insulation. The FRP fences are not only installed outdoors, they are also used to surround under-tension equipments in industrial plants or power stations.

The industries and sectors that use MM's FENCES are:

- **Chemical industries**
- **Galvanic plants**
- **Mineral industries**
- **Textile industries**
- **Food industries**
- **Electric stations**
- **Electric distribution cabins**
- **Oil plants**
- **Tanneries**
- **Water treatment plants**
- **Marine field**
- **Paper factories and others**




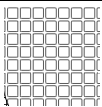
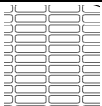
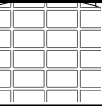
3. MATERIALS

MM fences are built with FRP pultruded profiles and molded FRP gratings as described in tables 4.2 and 4.3. The distance between the posts changes accordingly to the used grating type. The posts can be embedded directly into concrete or fixed with Stainless Steel base-plates.

High wind loads or particular customer needs can be arranged and designed by the technical department.

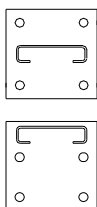
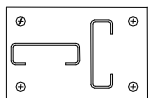
3.1 PROFILES

| PROFILE | DESCRIPTION | DIMENSIONS (mm) | BAR LENGTH (m) | WEIGHT (Kg/m) | COLOR |
|---|---------------|-----------------|----------------|---------------|-------|
|  | standard post | 85x25x3 | 6 | 1.17 | grey |

| GRATING | TYPE | MESH (mm) | OPEN SPAN (mm) | HEIGHT (mm) | BEAM THICKNESS (mm) | STANDARD PANELS (mm) | WEIGHT (Kg/m²) |
|---|-----------|-----------|----------------|-------------|---------------------|---|----------------|
|  | SCH 38/25 | 38x38 | 31x31 | 25 | 5/7 | 1000x2000 - 1000 x3000 - 1000x4038 - 1220x 3660 | 11 |
|  | SCH 30/28 | 100x30 | 92x22 | 28 | 7/8 | 1000x2000 - 1500x2000 | 13 |
|  | SCH 60/25 | 100X60 | 93X53 | 25 | 5/7 | 1500x2000 | 7 |

3.2 GRATINGS

3.3 BASE PLATES

| BASE PLATES | DESCRIPTION | DIMENSIONS (mm) | MATERIAL | WEIGHT (Kg) | COLOR |
|---|-------------------------------|--------------------|---------------|-------------|-------|
|  | Post base plate PR8525 | 100X100X250 | S.S. AISI 304 | 0.96 | * |
|  | Post corner base plate PR8525 | square 100x150x250 | S.S. AISI 304 | 1.73 | * |

3.4 ACCESSORIES

- Stainless steel M6 x 55 screws
- M6 self-locking bolts
- Profile caps

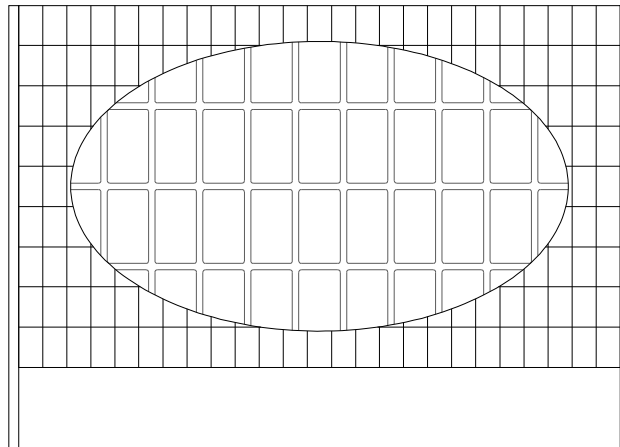
4. TYPES

4.1 FENCES' SUMMARY TABLE

| TYPE* | GRATING | PANEL DIMENSIONS | POST | DISTANCE BETWEEN POSTS |
|---------|--|------------------|------------|------------------------|
| TYPE 1 | SCH 60/25 Mesh mm 100X60 thickness 25 mm | 1500X900 mm | 85x25x3 mm | 1525 mm |
| TYPE 7 | SCH 30/28 Mesh mm 100X30 thickness 28 mm | 2000x1500 mm | 85x25x3 mm | 2025 mm |
| TYPE 9 | SCH 60/25 Mesh mm 100X60 thickness 25 mm | 2000x1500 mm | 85x25x3 mm | 2025 mm |
| TYPE 10 | SCH 60/25 Mesh mm 100X60 thickness 25 mm | 1500x2000 mm | 85x25x3 mm | 1525 mm |
| TYPE 11 | SCH 38/25 Mesh mm 38X38 thickness 25 mm | 1000x2000 mm | 85x25x3 mm | 1025 mm |
| TYPE 12 | SCH 38/25 Mesh mm 38X38 thickness 25 mm | 1220x1800 mm | 85x25x3 mm | 1245 mm |
| TYPE 13 | SCH 30/28 Mesh mm 100X30 thickness 28 mm | 1500x2000 mm | 85x25x3 mm | 1525 mm |

4.2 TYPES OF FENCES

TYPE 1



- Grating type “SCH 60/25” in polyester resin reinforced with continuous glass fibers, mesh mm 100x60, flat finishing.
- Post type “53R85253I” in isophthalic polyester resin reinforced with continuous glass fibers, rectangular section 85x25 mm thickness 3 mm.

| | |
|--------------------|---------------------------------|
| Grating dimensions | mm 1500 length mm 900 height |
|--------------------|---------------------------------|

| | |
|------------------------|---------|
| Distance between posts | mm 1525 |
|------------------------|---------|

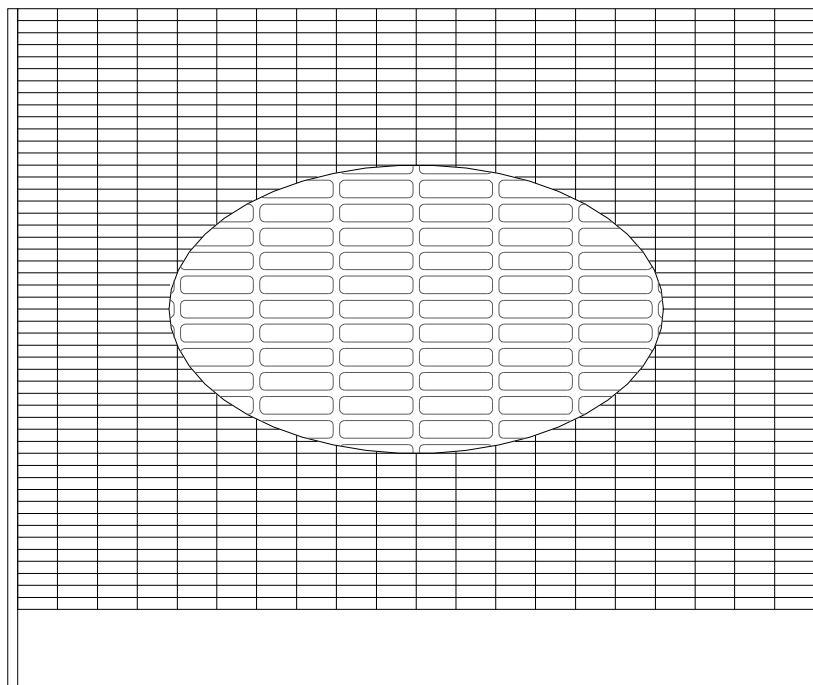
Fixing between grating and post is made with M6 Stainless steel screws.

| | |
|------------------------|---------------|
| Standard grating color | Grey RAL 7004 |
|------------------------|---------------|

| | |
|---------------------|---------------|
| Standard post color | Grey RAL 7035 |
|---------------------|---------------|

Other colors are available, conditioned to quantity.

TYPE 7



- Grating type “SCH 30/28” in polyester resin reinforced with continuous glass fibers, mesh mm 100x30, “meniscus” finishing.
- Post type “53R85253I” in isophthalic polyester resin reinforced with continuous glass fibers, rectangular section 85x25 mm thickness 3 mm.

| | |
|--------------------|----------------------------------|
| Grating dimensions | mm 2000 length mm 1500 height |
|--------------------|----------------------------------|

| | |
|------------------------|---------|
| Distance between posts | mm 2025 |
|------------------------|---------|

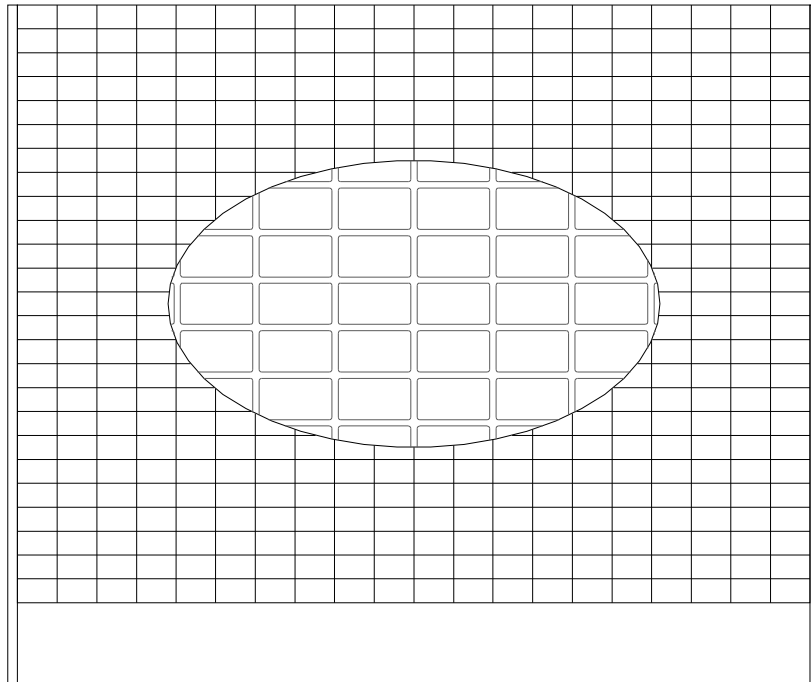
Fixing between grating and post is made with M6 Stainless steel screws.

| | |
|------------------------|---------------|
| Standard grating color | Grey RAL 7004 |
|------------------------|---------------|

| | |
|---------------------|---------------|
| Standard post color | Grey RAL 7035 |
|---------------------|---------------|

Other colors are available, conditioned to quantity.

TYPE 9



- Grating type “SCH 60/25” in polyester resin reinforced with continuous glass fibers, mesh mm 100x60, flat finishing.
- Post type “53R85253I” in isophthalic polyester resin reinforced with continuous glass fibers, rectangular section 85x25 mm thickness 3 mm.

| | |
|--------------------|----------------------------------|
| Grating dimensions | mm 2000 length mm 1500 height |
|--------------------|----------------------------------|

| | |
|------------------------|---------|
| Distance between posts | mm 2025 |
|------------------------|---------|

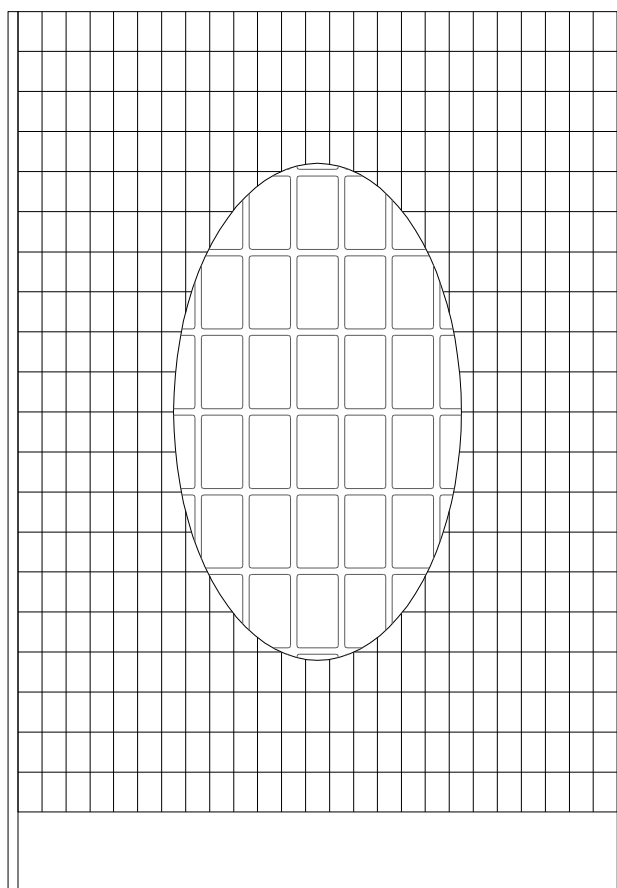
Fixing between grating and post is made with M6 Stainless steel screws.

| | |
|------------------------|---------------|
| Standard grating color | Grey RAL 7004 |
|------------------------|---------------|

| | |
|---------------------|---------------|
| Standard post color | Grey RAL 7035 |
|---------------------|---------------|

Other colors are available, conditioned to quantity.

TYPE 10



- Grating type “SCH 60/25” in polyester resin reinforced with continuous glass fibers, mesh mm 100x60, flat finishing.
- Post type “53R85253I” in isophthalic polyester resin reinforced with continuous glass fibers, rectangular section 85x25 mm thickness 3 mm.

| | |
|--------------------|----------------------------------|
| Grating dimensions | mm 1500 length mm 2000 height |
|--------------------|----------------------------------|

| | |
|------------------------|---------|
| Distance between posts | mm 1525 |
|------------------------|---------|

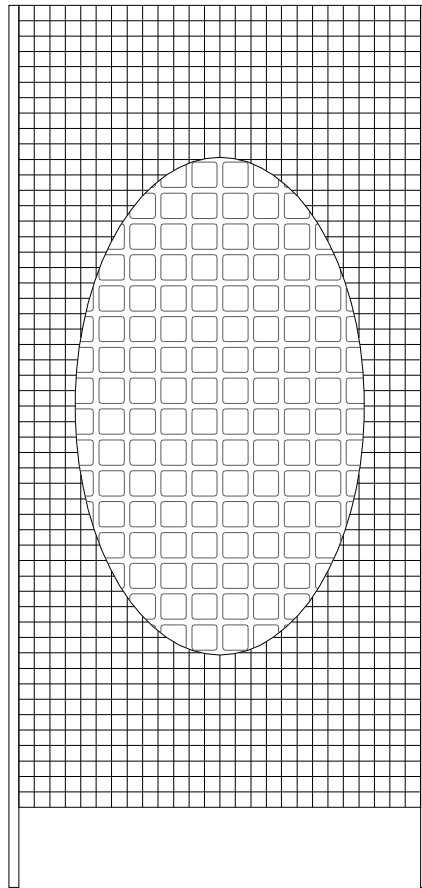
Fixing between grating and post is made with M6 Stainless steel screws

| | |
|------------------------|---------------|
| Standard grating color | Grey RAL 7004 |
|------------------------|---------------|

| | |
|---------------------|---------------|
| Standard post color | Grey RAL 7035 |
|---------------------|---------------|

Other colors are available, conditioned to quantity.

TYPE 11



- Grating type “SCH 38/25” in polyester resin reinforced with continuous glass fibers, mesh mm 38x38, “meniscus” finishing.
- Post type “53R85253I” in isophthalic polyester resin reinforced with continuous glass fibers, rectangular section 85x25 mm thickness 3 mm.

| | |
|--------------------|----------------------------------|
| Grating dimensions | mm 1000 length mm 2000 height |
|--------------------|----------------------------------|

| | |
|------------------------|---------|
| Distance between posts | mm 1025 |
|------------------------|---------|

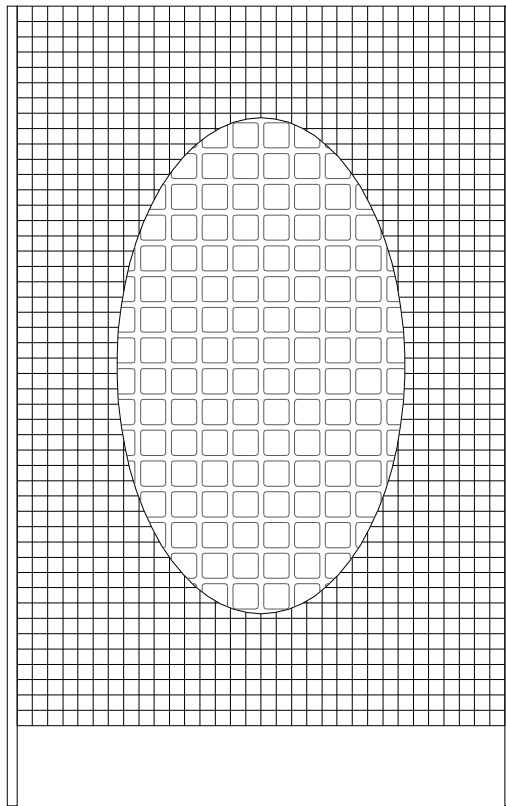
Fixing between grating and post is made with M6 Stainless steel screws

| | |
|------------------------|---------------|
| Standard grating color | Grey RAL 7004 |
|------------------------|---------------|

| | |
|---------------------|---------------|
| Standard post color | Grey RAL 7035 |
|---------------------|---------------|

Other colors are available, conditioned to quantity.

TYPE 12



- Grating type “SCH 38/25” in polyester resin reinforced with continuous glass fibers, mesh mm 38x38, “meniscus” finishing.
- Post type “53R85253I” in isophthalic polyester resin reinforced with continuous glass fibers, rectangular section 85x25 mm thickness 3 mm.

| | |
|--------------------|----------------------------------|
| Grating dimensions | mm 1220 length mm 1800 height |
|--------------------|----------------------------------|

| | |
|------------------------|---------|
| Distance between posts | mm 1245 |
|------------------------|---------|

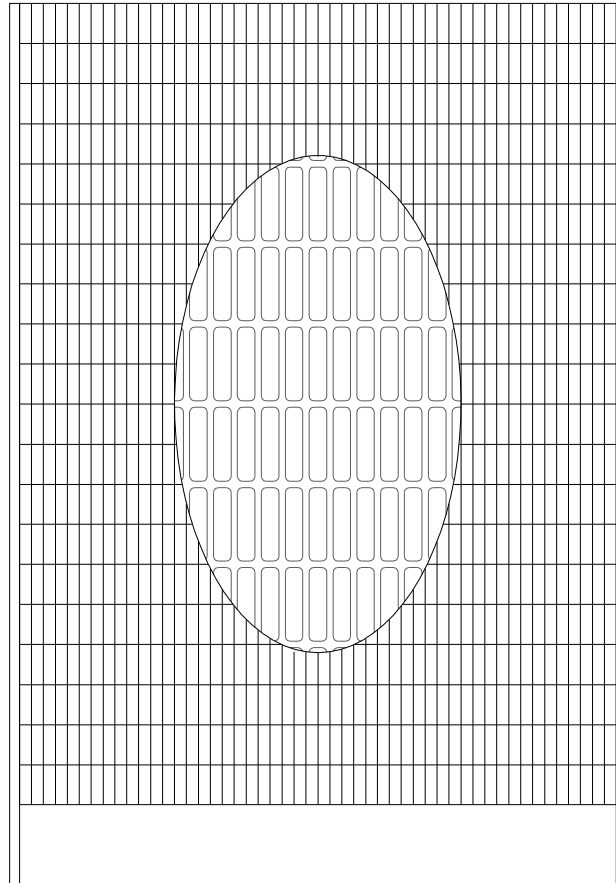
Fixing between grating and post is made with M6 Stainless steel screws.

| | |
|------------------------|---------------|
| Standard grating color | Grey RAL 7004 |
|------------------------|---------------|

| | |
|---------------------|---------------|
| Standard Post color | Grey RAL 7035 |
|---------------------|---------------|

Other colors are available, conditioned to quantity.

TYPE 13



- Grating type “SCH 30/28” in polyester resin reinforced with continuous glass fibers, mesh mm 100x30, “meniscus” finishing.
- Post type “53R85253I” in isophthalic polyester resin reinforced with continuous glass fibers, rectangular section 85x25 mm thickness 3 mm.

| | |
|--------------------|----------------------------------|
| Grating dimensions | mm 1500 length mm 2000 height |
|--------------------|----------------------------------|

| | |
|------------------------|---------|
| Distance between posts | mm 1525 |
|------------------------|---------|

Fixing between grating and post is made with M6 Stainless steel screws

| | |
|------------------------|---------------|
| Standard grating color | Grey RAL 7004 |
|------------------------|---------------|

| | |
|---------------------|---------------|
| Standard post color | Grey RAL 7035 |
|---------------------|---------------|

Other colors are available, conditioned to quantity.

5. INSTRUCTIONS FOR DESIGN ENGINEER

The posts can be either embedded into concrete for a 30 cm depth or fixed to Stainless Steel base-plates (Fig. 1-2). The top is closed by a plastic cap (Fig. 3).

Grating is fastened to the post with Stainless Steel AISI 314 screws and self-locking nuts or inviolable nuts (Fig. 4).

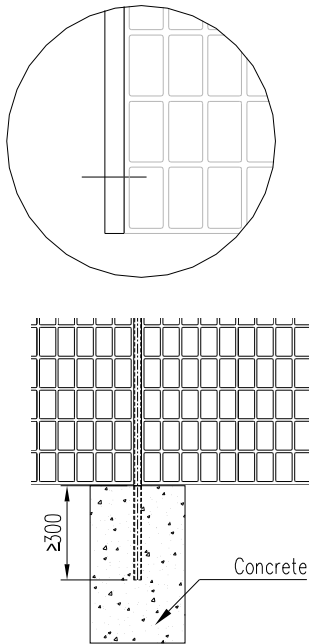


Fig. 1 Embedding in to concrete

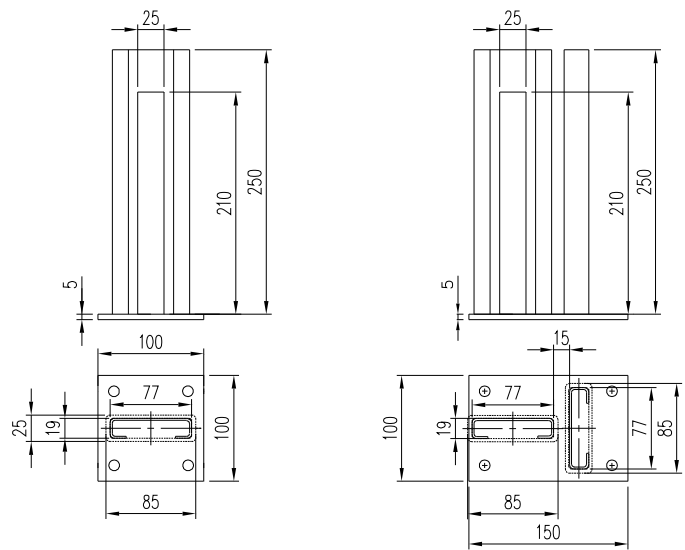


Fig. 2 horizontal fixing with S.S. base-plates

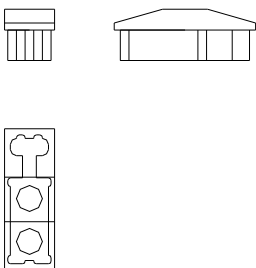


Fig. 3 Cap

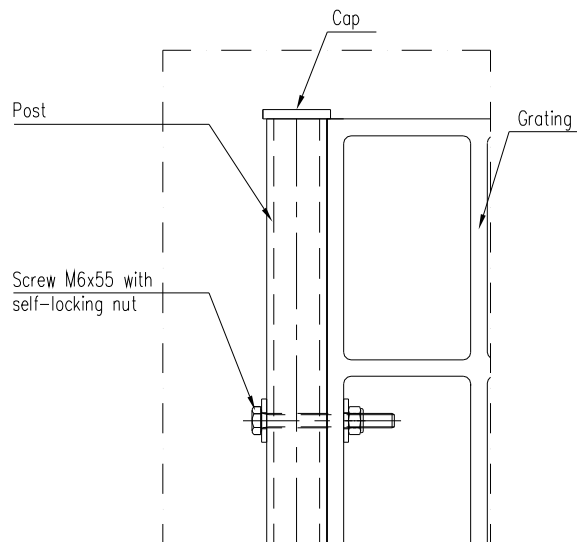


Fig. 4 grating/post fixing