



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

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Cap. Soc. EURO 100.000 i.v.

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FRP GATES
MM08
08.02.2016 Rev. 3

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COMPOSITE SOLUTION



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1. USES AND CHARACTERISTICS

Gates



M.M. gates are made with FRP profiles and gratings, they assure several advantages compared to normal metal ones:

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

Gates are supplied preassembled and complete of all necessary fixing accessories.



**MM gates are CE marked according to the UE 305/2011 regulation.
Tested under the UNI EN 13241-1 norm.**





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2. EMPLOYMENT FIELDS

M.M. GATES can be installed in any plant, but they are mainly used in **corrosive environments** where their characteristics are emphasized, as:

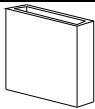
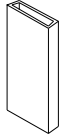
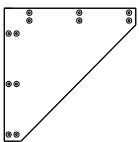
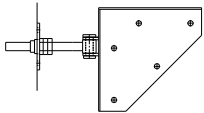
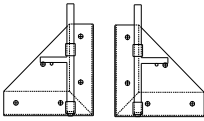
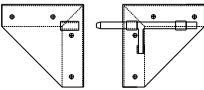
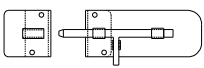
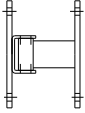
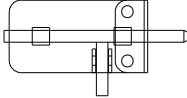
1. In **corrosive environments**, mainly in plants where conventional materials are not long lasting or need continuous varnishing or protection with high maintenance costs and, in any case, do not guarantee safety in the working environment.
2. In the **electric industry**, particularly where the safety of the workers is determined by the electric insulation.
3. In **airports** for the transparent radio frequency property.

Industries and sectors that use M.M. gates are:

- **Mineral industries**
- **Electric stations**
- **Electric distribution cabins**
- **Transport field**
- **Construction industry**
- **Others.**

3. MATERIALS

3.1. TABLE OF PROFILES AND STRUCTURAL ACCESSORIES

PROFILES	DESCRIPTION	USE (D=driveway P=pedestrian)	DIMENSIONS (mm)	BAR LENGTH (m)	WEIGHT (Kg/m)	COLOR
	rectangular structural profile	D/P	80x50x5	6	2.04	grey
	rectangular structural profile	D/P	85x25x3	6	1.17	grey
	FRP corner reinforcing	D/P	400x400 (C) 200x200 (P)			grey
	S.S. AISI 304 upper and lower pockets with S.S. adjustable hinge and M18 dowel	D				
	S.S. AISI 304 lower pockets for drop rod	D				
	S.S. AISI 304 upper pockets with slide bolt latch	D				
	S.S. AISI 304 intermediate pocket with slide bolt latch	D				
	Stainless steel hinge for single swing gate	P				
	S.S. slide bolt latch and plate for wall fixing	P				

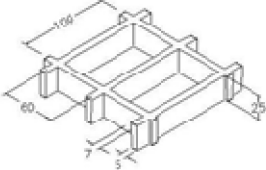
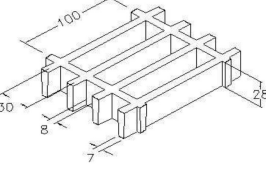
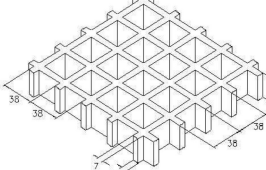
Stainless steel accessories

- M8X100 screws with nut
- M6X25 screws with fender or washer
- 4x12mm rivets



3.2 TABLE OF STRUCTURAL GRATINGS AND PROFILES FOR GATE CLADDING

The gate is built by using FRP gratings, profiles, and laminated plates.

3.2.1. TABLE OF FRP GRATINGS FOR GATE CLADDING

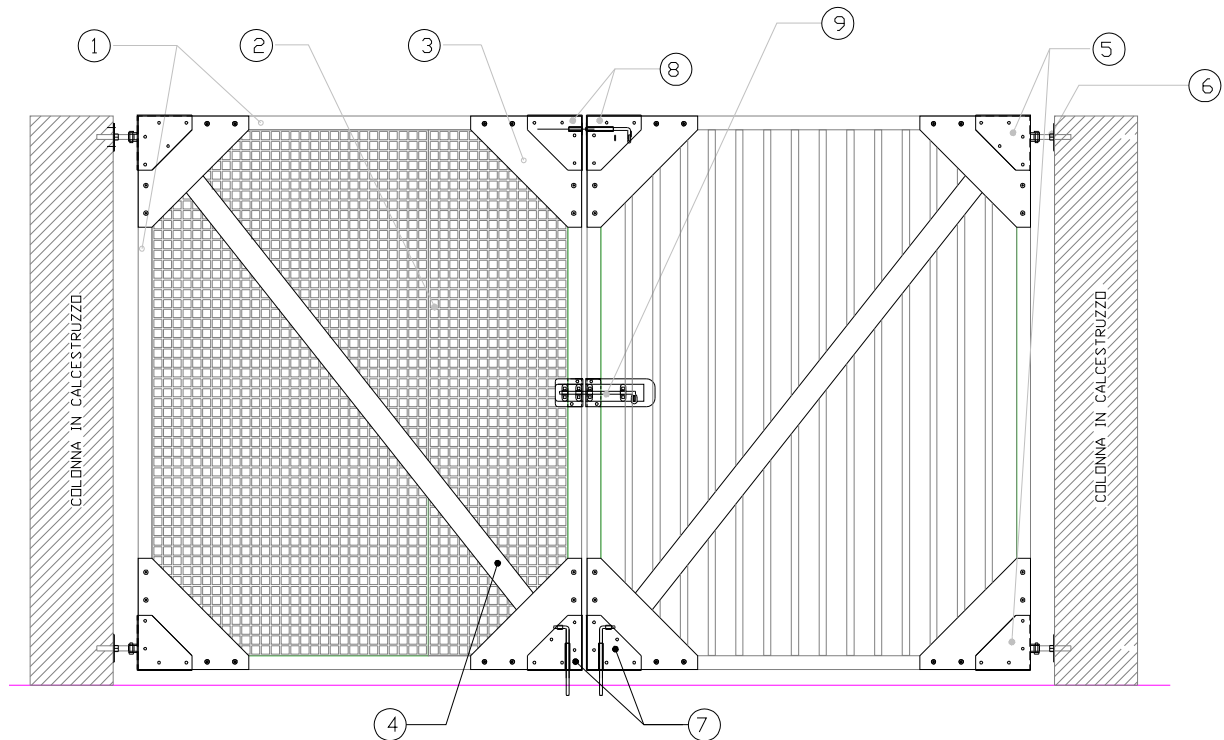
GRATINGS	DESCRIPTION	MESH (mm)	PANELS DIMENSIONS (mm)	WEIGHT (Kg/m ²)	COLOR
	Grating SCH60/25	100x60	1500x2000	7	Grey
	Grating SCH30/28	100x30	1000 x 2000 1500 x 2000	12	Grey
	Grating SCH38/25	38x38	1000 x 2000 1000 x 3000 1000 x 4038 1225 x 3660	11	Grey

3.2.2. TABLE OF FRP PROFILES FOR GATE CLADDING

PROFILES	DESCRIPTION	DIMENSIONS (mm)	BAR LENGTH (m)	WEIGHT (Kg/m)	COLOR
	Tubular profile	Ø 26x19	6	0.5	Yellow/grey
	Flat profile	40x5	6	0.36	Yellow/grey

4. INSTRUCTIONS FOR DESIGN ENGINEER

4.1 DOUBLE SWING DRIVEWAY GATE



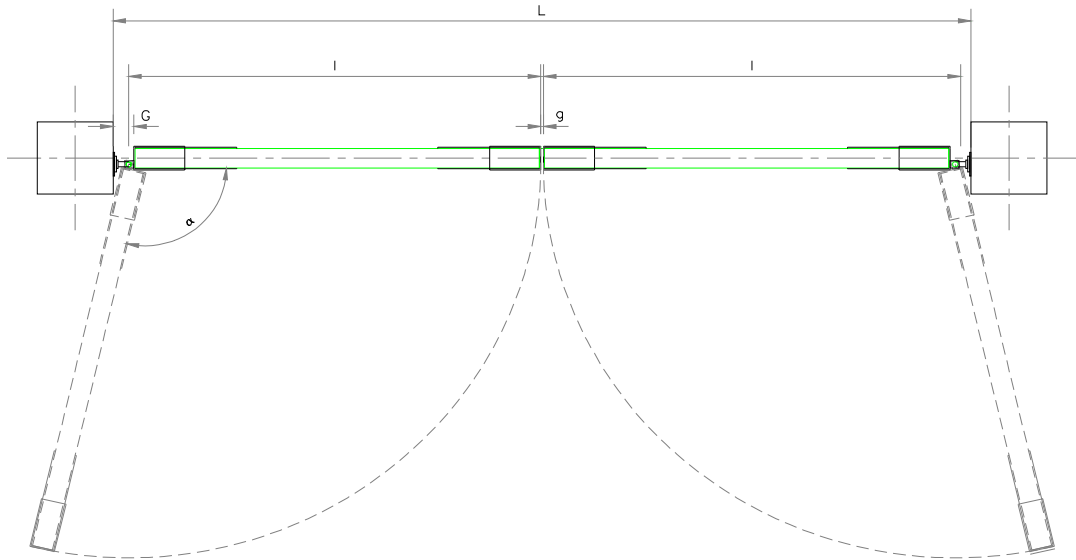
Legend

1. Rectangular structural profile in reinforced polyester resin with continuous glass fibers section mm 80x50 thickness mm 5;
2. Cladding (see point 3.2);
3. Corner reinforcing in polyester resin reinforced with continuous glass fibers;
4. Bracing profile in polyester resin reinforced with continuous glass fibers, rectangular section mm 80x25 thickness mm 3;
5. S.S. triangular pocket block with hinge for gate;
6. Galvanized steel threaded plate for dowel fixing;
7. Ground locking device with drop rod;
8. Upper locking device with steel latch;
9. Intermediate manual locking device with latch.

4.1.1 OVERALL DIMENSIONS

The type of cladding and the dimensions specified in the drawing determine the dimensions of M.M.'s double swing gates.

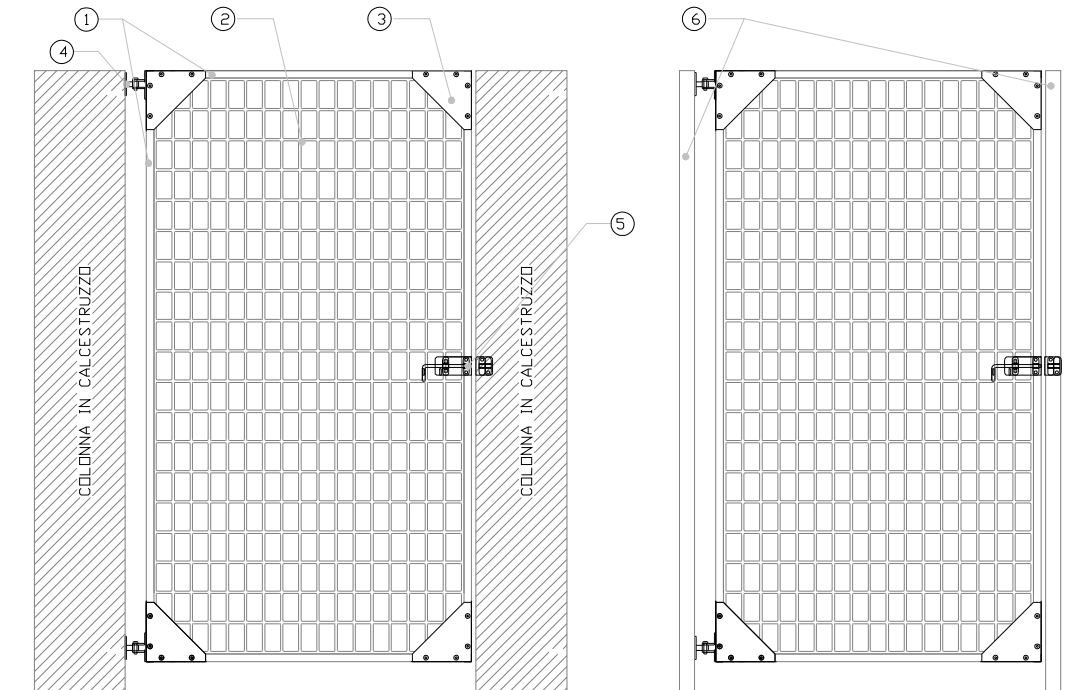
A "SCH60/25" type grating cladding gate has been considered in the following table.



1. Clear span (L)
2. Free space between column and swing (G)
3. Swing net dimension (l)
4. Free space between the two swings (g)

L gate (mm)	g (mm)	G (mm)	l (mm)	L grating (mm)	H grating (mm)	H _{max} gate (mm)
3000	14	126	1367	1261	1800	2000
4000	14	141	1852	1746	1800	2000
5000	14	104	2389	2283	1800	2000
6000	14	126	2867	2761	1800	2000

4.2 SINGLE SWING PEDESTRIAN GATE



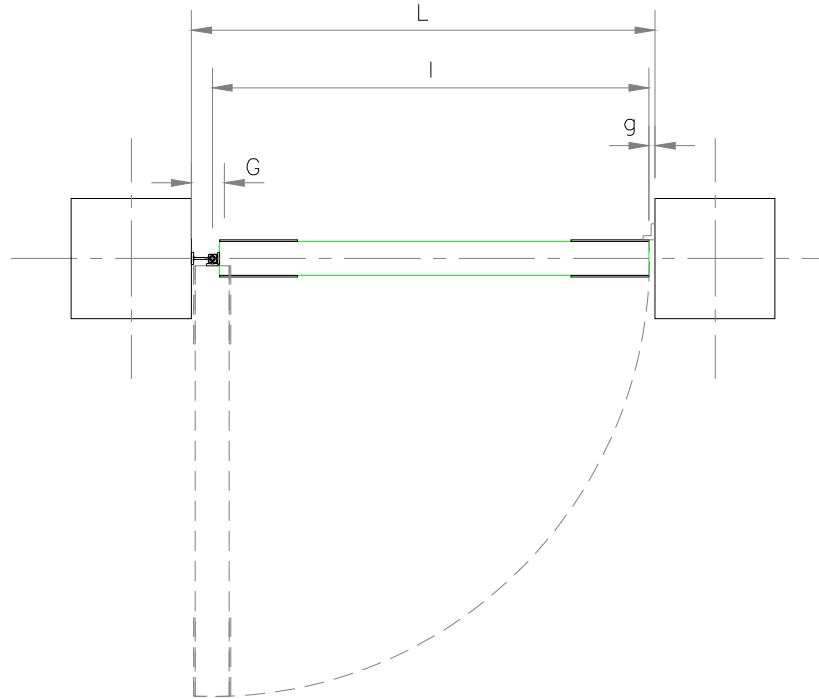
Legend

1. Rectangular structural profile in reinforced polyester resin with continuous glass fibers section 85x25 mm thickness 3 mm;
2. Cladding (see point 3.2);
3. Corner reinforcing in polyester resin reinforced with continuous glass fibers;
4. S.S. gate hinge;
5. Central manual locking devise with latch;
6. Rectangular gate stanchion in polyester resin reinforced with continuous glass fibers section 80x50 mm thickness 5 mm.

4.2.1 OVERALL DIMENSIONS

The type of cladding and the dimensions specified in the drawing determine the dimensions of M.M.'s single swing gates.

A "SCH60/25" type grating cladding gate has been considered in the following table.



1. Clear span (L)
2. Free space between column and swing (G)
3. Swing net dimension (I)
4. Free space between column and swing (g)

L gate (mm)	g (mm)	G (mm)	I (mm)	L grating (mm)	H grating (mm)	H _{max} gate (mm)
1516	15	70	1449	1381	1900	1950
1216	15	70	1150	1082	1900	1950
1037	15	70	971	903	1900	1950

5. ASSEMBLING INSTRUCTIONS

5.1 ADJUSTABLE PLATE FIXING FOR DOUBLE SWING GATES

The adjustable hinges must be fixed to the bearing concrete column with expansion bolts. It is necessary to drill a 20 mm diameter hole with a varying depth in the concrete for the adjustment of the pivots. After the hole is done it is very simple to adjust the pivot hinge's threaded bar to the plate. The dowel must fit into the concrete for at least 30 mm. (Fig. 1)

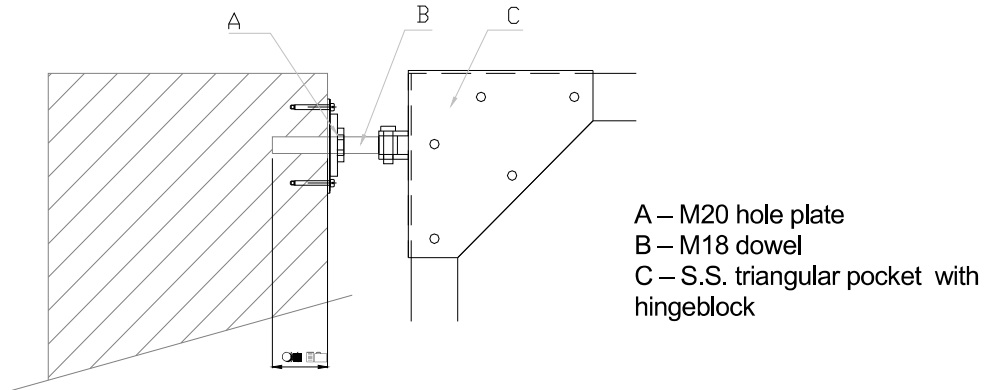


Fig. 1

5.2 PIVOT FIXING FOR SINGLE SWING GATES

The pivot is fixed to concrete with 4 M8 anchor bolts and to FRP stanchions with M8 screws (Ffig. 2).

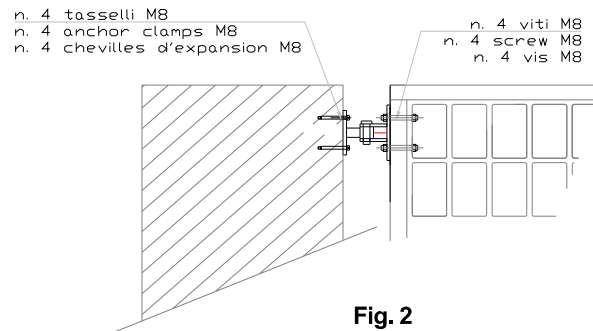


Fig. 2