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SMC Manhole Cover

1. High load rating and strength

- Similar hard property as cast iron, while have overwhelming advantage on stretch recovery and bend resistance.
- Designed to meet and exceed A 15/B 125/C250/D400/E600/F900 loading rating, according to EN124: 1994.
- Less noise and lower vibration transmissions.
- Certificated with CE, EN124, SGS, Eurofins, BV & ISO9001.

2. Against theft and safety options

- Comparing with cast iron manhole cover, composite cover has zero theft value and not attractive to thieves, which reduce the potential accident and further maintenance cost causesd by thieves.
- Surface anti-slip thread guarantees safe road condition even in extreme weather.
- Locks are available as an option molded into the cover to improve security rate.
- Non-electricity conduction and non-heat conduction, UV resistance.

3. Light weighted

- Compared with cast iron manhole covers, composite covers are 30% lighter.
- Lightweight allows easy of handling and more loading per vehicle, more convenient transportation and economical saving.
- Allows a safer working condition, which a single worker is enough for complete installation without risk of injury.
- Easy of moving, ease and reduce the maintenance cost.

4. Durable service life

- More than 30 years theoretical service life at usual road condition.
- Anti corrosion, waterproof, dust and pets tight, well sealed prevent poisonous gas leaking out.
- Without displacement, freely radio signal passing.
- Higher and lower temperature tolerance with the range - 40ºC – 200ºC.

5. Free design

- Composite material itself allows for innovative design features, client logo and their own design is available as an option.
- Much more clear resolution ratio of surface design than cast iron or of other material.

6. Carbon footprint saving and environmental cares

- Lower embedded energy and carbon emission during manufacturing process than cast iron covers.
- New material, new manufacturing technology and lean production idea save carbon footprint.

What is SMC ?

SMC is the short form of Sheet Moulding Compound.It is composed of resin, Fiberglass and other chemical polymer. This is the raw material for mold pressing.

The core is chopped strand and unsaturated polyester resins paste that are covered by HDPE & LDPE sheet. With a thickness of 3…6 mm, 600…1200 mm width and is packed in rolls or boxes.

During production, to cut, weigh the raw material and then put it into a mould opening. After a high pressure and temperature preservation for set time, final product is finished and will be transported to next working station.

EN124: 1994 Standard

1. Classification

Description of load rating: A15, B125, C250, D400, E600 and F900.

2. Place of installation

The appropriate class of manhole covers or gully gratings to be used depends upon the place of installation. the various places of installation have been divided into groups numbered 1 to 6, as listed below . Figure 1a and figure 1b show the location of some of these groups in a highway environment. A guide as to which class of manhole covers or gully gratings should be used is shown in parentheses for each group. The selection of the appropriate class is the responsibility of the designer . Where there is any doubt, the stronger class should be selected.

Group 1 (min. class A15)

Areas which can only be used by pedestrians and pedal cyclists.

Group 2 (min. class B125)

Footways, pedestrian areas and comparable areas, car parks or car parking decks.

Group 3 (min. class C250)

For gully tops installed in the area of kerbside channels of roads (figure 1a) which when measured from the kerb edge, extend a maximum of 0.5m into the carriageway and a maximum of 0,2m into the footway.

Group 4 (min. class D400)

Carriageways of roads (including pedestrian streets), hard shoulders(Figure 1b) and parking areas, for all types of road vehicles.

Group 5 (min. class E600)

Areas imposing high wheel loads .e.g. docks, aircraft pavements.

Group 6 (min. class F900)

Areas imposing particularly high wheel loads, e.g. aircraft pavements.

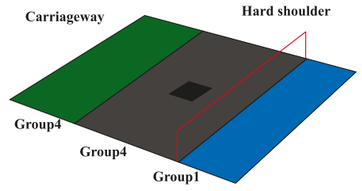


Figure 1b-Typical detail of a hard shoulder showing the location of some installation groups

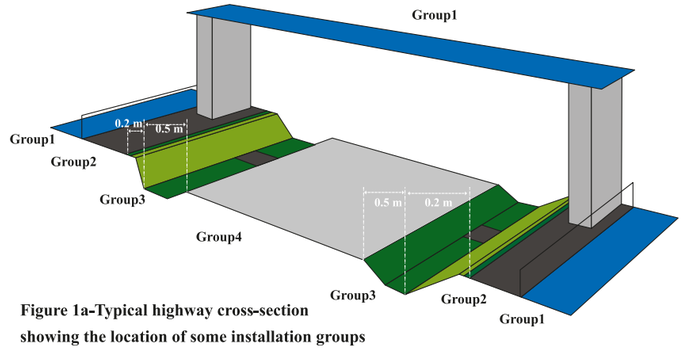
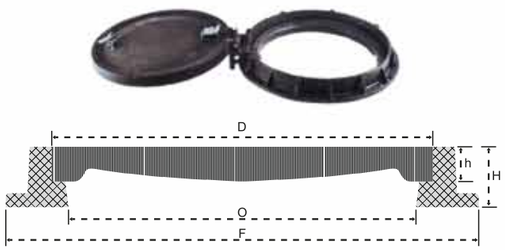


Figure 1a-Typical highway cross-section showing the location of some installation groups

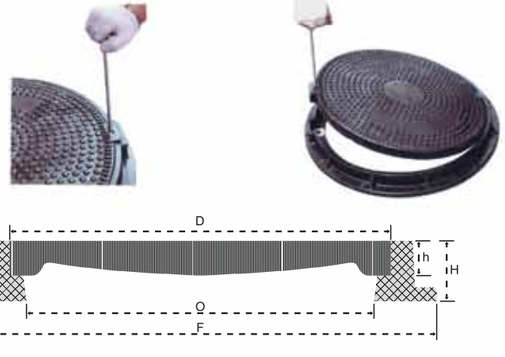
PPS – MR101D Manhole Cover

. High load-D400(EN124) certificated by SGS.
. Stable and Quiet-Using one lock with hinge to keep the cover stable on the road. Using a seal to reduce noise.
. Convenience and safety opened-A single worker is enough to open the cover without any risk of injury. Hinge design ,cover is opened with a best safe angle of 180°.
. D400 Cereificated with SGS, lt is a new safety hinged manhole cover.
. Hinge design whith a safe angle of 180°.
. 2 locks and separate keys ensure the cover satety.
. A single worker is enough to open and maintain the cover without risk of injury.



Unit: mm

Product Code	Clear Opening	Class	O	D	F	H	h	lock/screw	sealing
PPS- MR101D	600	D400	600	690	820	110	50	lock	yes
PPS- MR101C	600	C250	600	690	820	110	50	lock	yes
PPS- MR101D1	600	D400	600	690	805	100	50	lock	yes
PPS- MR101C1	600	C250	600	690	805	100	50	lock	yes
PPS- MR111D	700	D400	700	750	910	100	50	lock	yes
PPS- MR111C	700	C250	700	750	910	75	50	lock	yes

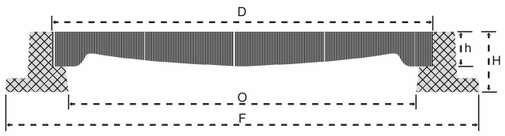


Unit: mm

Product Code	Clear Opening	Class	O	D	F	H	h	lock/screw	sealing
PPS- MR102D	600	D400	600	650	760	100	40	lock	yes
PPS- MR102C	600	C250	600	650	760	60	40	lock	yes
PPS- MR102B	600	B125	600	650	780	40	26	screw	no
PPS- MR102A	600	A15	600	650	780	40	26	screw	no

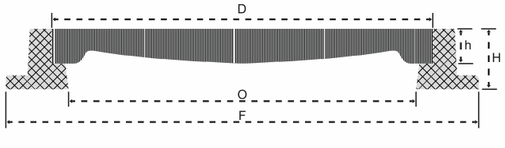
PPS SMC Manhole Cover Application

SMC Manhole cover has been widely used in inspection wells of power , telecommunication, mobile communication, fuel gas pipes, gas station, chemical bases, real estates, urban arteries, high-grade highways, expressways, freight transport piers. Airports etc.



Unit: mm

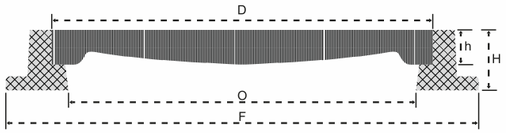
Product Code	Clear Opening	Class	O	D	F	H	h	lock/screw	sealing
PPS- MR105D	840	D400	840	900	1065	113	70	no	yes
PPS- MR105C	840	C250	840	900	1065	113	70	no	yes
PPS- MR105B	840	B125	840	900	1065	113	70	no	yes

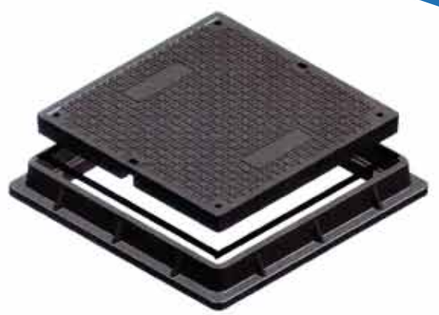


Unit: mm

Product Code	Clear Opening	Class	O	D	F	H	h	lock/screw	sealing
PPS- MR108D	600	D400	600	690	800*800	100	50	lock	yes
PPS- MR109D	600	D400	600	690	850*850	100	50	lock	yes

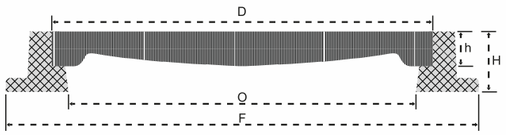
SMC Manhole Cover

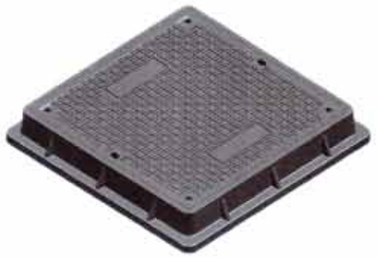




Unit: mm

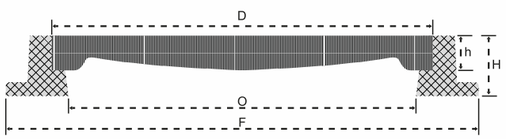
Product Code	Clear Opening	Class	O	D	F	H	h	lock/screw	sealing
PPS- MS201D	600*600	D400	600*600	655*655	760*760	100	50	screw	yes
PPS- MS201C	600*600	C250	600*600	655*655	760*760	75	50	screw	yes
PPS- MS201B	600*600	B125	600*600	650*650	750*750	35	25	screw	no
PPS- MS201A	600*600	A15	600*600	650*650	750*750	35	25	screw	no





Unit: mm

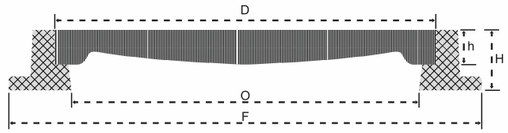
Product Code	Clear Opening	Class	O	D	F	H	h	lock/screw	sealing
PPS- MS202D	550*550	D400	550*550	600*600	705*705	100	50	no	yes
PPS- MS202C	550*550	C250	550*550	600*600	705*705	75	50	no	yes
PPS- MS202B	550*550	B125	550*550	600*600	705*705	65	40	no	no
PPS- MS202A	550*550	A15	550*550	600*600	705*705	65	40	no	no
PPS- MS220B	450*450	B125	450*450	500*500	620*620	75	50	no	no
PPS- MS221B	300*300	B125	300*300	400*400	515*515	60	40	no	no



Unit: mm

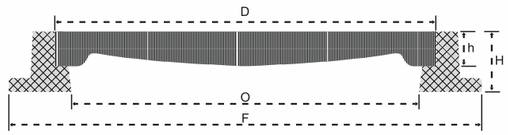
Product Code	Clear Opening	Class	O	D	F	H	h	lock/screw	sealing
PPS- MS203D	900*900	D400	900*900	1000*1000	1150*1150	100	65	screw	yes
PPS- MS203C	900*900	C250	900*900	1000*1000	1150*1150	75	55	screw	yes
PPS- MS203B	900*900	B125	900*900	1000*1000	1150*1150	70	40	no	no
PPS- MS203A	900*900	A15	900*900	1000*1000	1150*1150	70	40	no	no

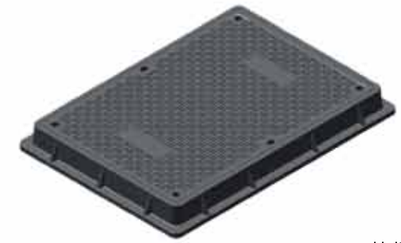
SMC Manhole Cover



Unit: mm

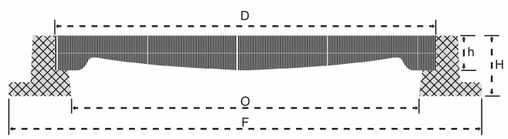
Product Code	Clear Opening	Class	O	D	F	H	h	lock/screw	sealing
PPS- MS205B	990*990	B125	990*990	1060*1040	1210*1190	100	45	no	no
PPS- MS205A	990*990	A15	990*990	1060*1040	1210*1190	100	45	no	no
PPS- MS206B	850*770	B125	850*770	940*860	1060*980	70	40	no	no
PPS- MS206A	850*770	A15	850*770	940*860	1060*980	70	40	no	no
PPS- MS207B	750*550	B125	750*550	800*600	920*720	65	40	no	no
PPS- MS207B	750*550	A15	750*550	800*600	920*720	65	40	no	no

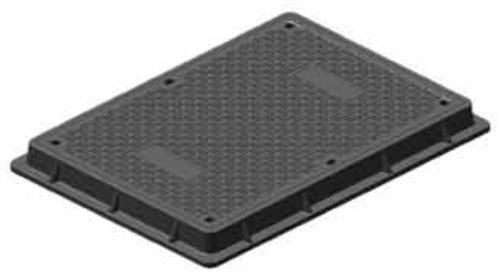




Unit: mm

Product Code	Clear Opening	Class	O	D	F	H	h	lock/screw	sealing
PPS- MS209D	600*450	D400	600*450	655*505	760*610	100	50	screw	yes
PPS- MS209C	600*450	C250	600*450	655*505	760*610	100	50	screw	yes



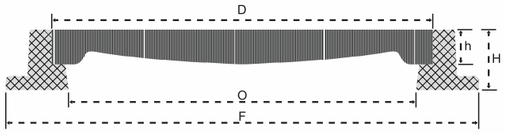


Unit: mm

Product Code	Clear Opening	Class	O	D	F	H	h	lock/screw	sealing
PPS- MS210D	900*600	D400	900*600	960*660	1070*760	100	65	screw	yes
PPS- MS210C	900*600	C250	900*600	960*660	1070*760	100	65	screw	yes

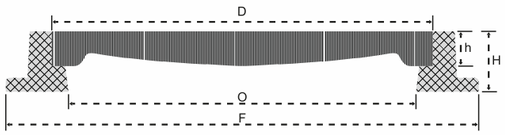
Advantage of SMC composite grating

. High load rating and efficient.
. Increased security with zero theft value.
. Light weighted than same model that made of cast iron.
. Anti corrosion, anti-UV and lower noise.
. Longer service life.



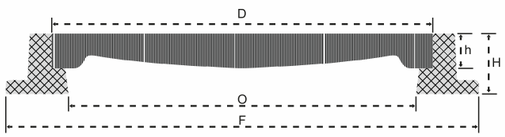
Unit: mm

Product Code	Clear Opening	Class	O	D	F	H	h	lock/screw	water area
PPS- WG401D	450*450	D400	450*450	500*500	650*550	100	75	screw	≥ 30%
PPS- WG401C	450*450	C250	450*450	500*500	650*550	100	75	screw	≥ 30%



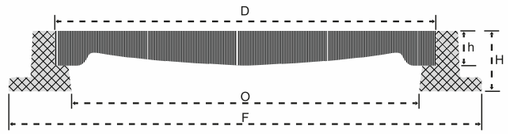
Unit: mm

Product Code	Clear Opening	Class	O	D	F	H	h	lock/screw	water area
PPS- WG402D	460*370	D400	460*370	520*430	680*595	110	70	no	≥ 30%
PPS- WG403D	460*370	D400	460*370	530*430	680*535	110	70	no	≥ 30%



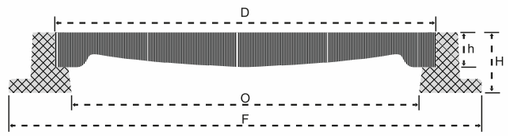
Unit: mm

Product Code	Clear Opening	Class	O	D	F	H	h	lock/screw	water area
PPS- WG404B	680*380	B125	680*380	750*450	880*580	90	45	no	≥ 30%
PPS- WG404A	680*380	A15	680*380	750*450	880*580	90	45	no	≥ 30%
PPS- WG405B	630*330	B125	630*330	680*380	810*510	70	40	no	≥ 30%
PPS- WG405A	630*330	A15	630*330	680*380	810*510	70	40	no	≥ 30%



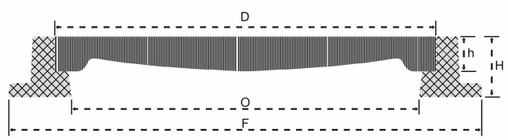
Unit: mm

Product Code	Clear Opening	Class	O	D	F	H	h	lock/screw	water area
PPS- WG406B	610*440	B125	610*440	640*495	760*585	75	50	no	≥ 30%
PPS- WG406A	610*440	A15	610*440	640*495	760*585	75	50	no	≥ 30%
PPS- WG407B	550*350	B125	550*350	600*400	710*500	65	40	no	≥ 30%
PPS- WG407A	550*350	A15	550*350	600*400	710*500	65	40	no	≥ 30%
PPS- WG408B	450*350	B125	450*350	500*400	620*520	70	50	no	≥ 30%
PPS- WG408A	450*350	A15	450*350	500*400	620*520	70	50	no	≥ 30%
PPS- WG409B	345*245	B125	345*245	400*300	500*400	65	38	no	≥ 30%
PPS- WG409A	345*245	A15	345*245	400*300	500*400	65	38	no	≥ 30%



Unit: mm

Product Code	Clear Opening	Class	O	D	F	H	h	lock/screw	water area
PPS- WG410B	305*205	B125	305*205	350*250	440*340	55	35	no	≥ 30%
PPS- WG410A	305*205	A15	305*205	350*250	440*340	55	20	no	≥ 30%



Unit: mm

Product Code	Clear Opening	Class	O	D	F	H	h	lock/screw	water area
PPS- WG412D		D400		550*340			70		≥ 30%
PPS- WG412C		C250		550*340			50		≥ 30%
PPS- WG413B		B125		450*300			35		≥ 30%
PPS- WG414A		A15		450*300			35		≥ 30%

1. Check the hole depth and manhole opening diameter that the frame is to be fitted on, ensuring the latter manhole cover to be installed is on the same flat with road.
If necessary , insert a formwork around the manhole on which the cover is to be fitted.
Make sure thet the frame does not lay on the formwork when in its final position.

2. Check the condition of the manhole opening and remove any dust from the support and manhole opening .

3. Lay a coat of sealing product around the top of the manhole. The minimum recommended thickness for the coat under the frame, once installed and levelled is:
- 40mm in the case of quick setting ”micro-concrete” type sealing products,
- 80mm in the case of a 350 CPA concrete sealing.

4. Lay the frame directly on the sealing product.

5. Adjust the frame to the same level as the wearing course.
The adjustment shouhd be carried out by the exerting downward pressure on the frame with wooden hammer to ensure that the sealing product spreads evenly under the surface.
The requirement of the thickness under the frame, please refer to POINT 3.

6.Clean the edge of clear opening and put on the cover.

7. Fill with sealing product and use a float to level off the product.
If the road is asphalt , leaving 30-50mm for the latter laying of the asphalt course.

8. After the concrete final set, clean the installation area and maintain with water no less than 7 days .