



FRP/GRP/BMC

COMPOSITE

**MANHOLE & WATER GULLY COVERS
MESH GRATING & CHEQURE PLATE
WATER GULLY CHANNEL GRATING**

INTRODUCTION

Glass Reinforced Plastic (BMC & GRP) otherwise known as Fiber Reinforced Polymer (FRP) offers developers many advantages over metallic alternatives, especially when compared with steel equivalents Benefits, such as high tensile strength, low weight (approximately 1/4 of the weight of steel), corrosion resistant, non-conductive properties, radar transparent and electromagnetically neutral, combine to deliver a highly cost effective, durable and sustainable product

High corrosion resistance:

Offering exceptional corrosion resistance, GRP is highly tolerant of the most aggressive of environments Its total resistance against chloride ion attacks demonstrates its durable nature and ability to withstand harsh conditions Unlike traditional alternatives, such as steel, aluminum and timber, GRP delivers a long-term practical solution that overcomes the inherent corrosion challenges facing industry today

High impact resistance:

GRP resists sudden and severe point loading and avoids permanent distortion. If the GRP is deformed due to impact, it will return to its original shape without contractors having to incur costly repairs or replacements

Easy to fabricate:

GRP can be easily fabricated and cut onsite to accommodate precise specifications and complex layouts Using standard hand tools, such as circular saws, contractors can easily cut the product without compromising any of its advantageous properties

High strength:

GRP's superior tensile strength is equal to or greater than equivalent steel profiles Despite its lightweight properties, GRP offers impressive strength-to-weight load-bearing performance The high glass-to-resin ratios used in our technically advanced formulation ensure our GRP products outperform and outlast traditional materials

Low maintenance:

GRP is an incredibly resilient and durable material that delivers outstanding cost benefits. GRP in all its forms, offers a low maintenance solution with little need for renovation or refurbishment during its fifty year lifespan

Light weight:

lighter than steel equivalents, GRP significantly reduces transport costs and 75% eliminates the need for heavy lifting equipment

Long Life Cycle:

When subjected to normal operating conditions and environment, the life expectancy of the profiles will be +20 year

Non-conductive, inert and non-sparking:

The non-conductive properties of GRP make it ideally suited for use on electrically hazardous sites A highly effective electromagnetic and thermal insulator, it is electronically transparent and not affected by electromagnetic fields or radio wave frequencies. The non-sparking qualities of GRP make it suitable for locations where combustible gases may be present

Radar Transparent:

GRP will not interfere with radar systems

FEATURES

Safety:

GRP is recommended when corrosion protection and safety are your goal

Stability:

expansion and contraction is 24% and 50% less than aluminum and steel providing greater dimensional stability

Durability:

superior durability to stainless steel, aluminum, and galvanized gratings

Strength:

higher tensile strength than hot rolled steel and better impact resistance %50

Cutting Method:

Serging four side, serging three sides, serging opposite sides, serging the neighboring sides Surface Treatment: smooth surface grating, concave surface grating, Tree gating

PRODUCT ADVANTAGES



**ENVIRONMENTAL
PROTECTION QUALITIES**



**SOLID AND RESISTANT
TO DEFORMATION AND
STRENGTH**



CAN BE CUSTOMISED



**LIGHTNESS AND
HANDINESS**



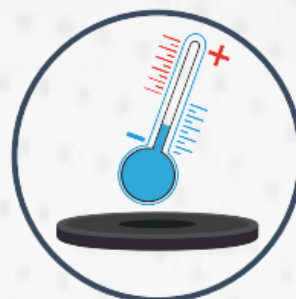
ELECTRIC INSULATING



THEFT PREVENTION



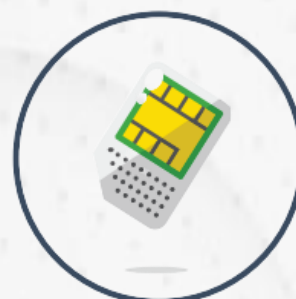
NOISE REDUCTION



**RESISTANT TO
TEMPERATURE
FLUCTUATIONS**



**RESISTANCE TO
CORROSION**



**PERMEABLE TO
ELECTROMAGNETIC
WAVES**

LOAD CAPACITY

A15



Areas which can only be used by pedestrians and bicycles

B 125



Footways, pedestrian areas and comparable areas, car park or parking decks

C 250



Footways, pedestrian areas and comparable areas, car park or parking decks

D 400



Carriage ways of roads (including pedestrian streets), hard shoulders and parking areas, for all types of road vehicles

E 600



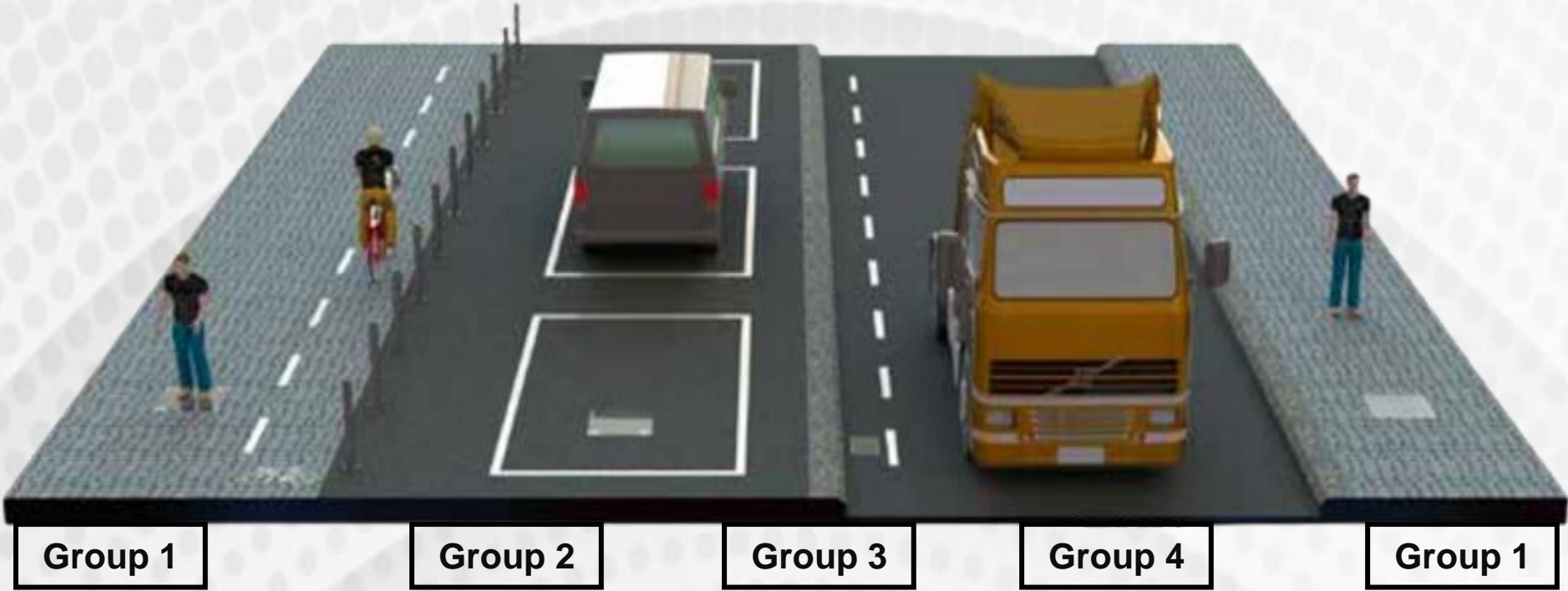
Areas imposing high wheel loads, e.g. decks, aircraft

F 900



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

LOAD CAPACITY



Group	Traffic Description	Class
1	Areas which can only be used by pedestrians and pedal cyclists	A15
2	Footways, pedestrian areas and comparable parks or car parking decks	B125
3	For gully tops installed in the area of kerbside channels of roads	C250
4	Carriageways of roads (including pedestrian streets), hard shoulders and parking areas, for all types of road vehicles	D400
5	Areas of imposing high wheel loads, e.g. dock and aircraft pavements	E600
6	Areas imposing particularly high wheel loads, e.g. aircraft pavements.	F900

**GRP/FRP/BMC Manhole Covers
without Rust or Corrosion**

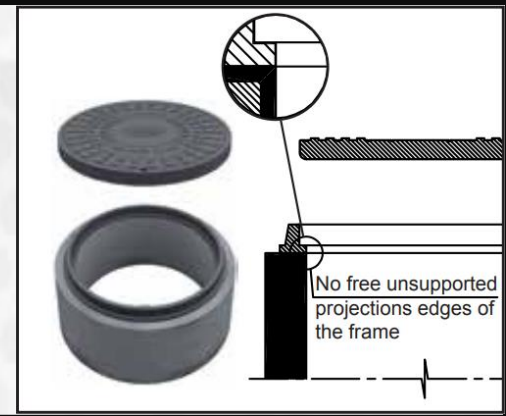
**Regular Cast Iron Manhole
Covers Affected by rust**



INSTALLATION INSTRUCTIONS

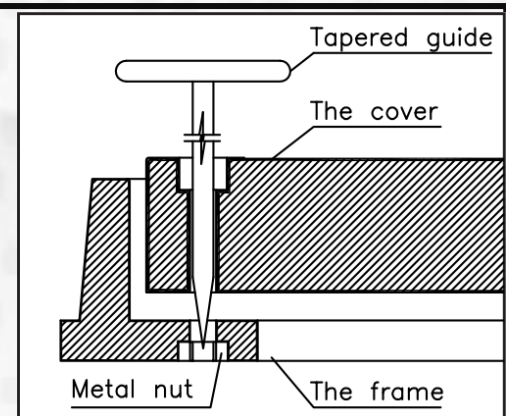
1 - The frame must be installed fully supported on the manhole enclosure topping surface without any free unsupported projections inside the free opening

2 - Protect the metal nut fixed in the frame to receive the lock from any dirt or material waste



3 - Use tapered installation guide tool to ensure accurate alignment and verticality of the screw and nut holes

4 - Use any greasing material to coat the screw so that it will be unscrewed easily for maintenance



5 - To lock the cover to the frame be sure that the lock holes are accurately aligned together and use the screwing T-tool until the screw head is fully flush with the cover top surface

6 - Use the same T-tool for unlocking when needed



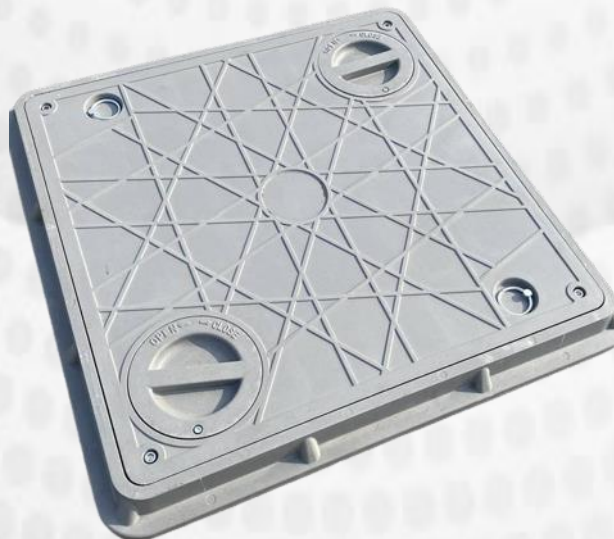
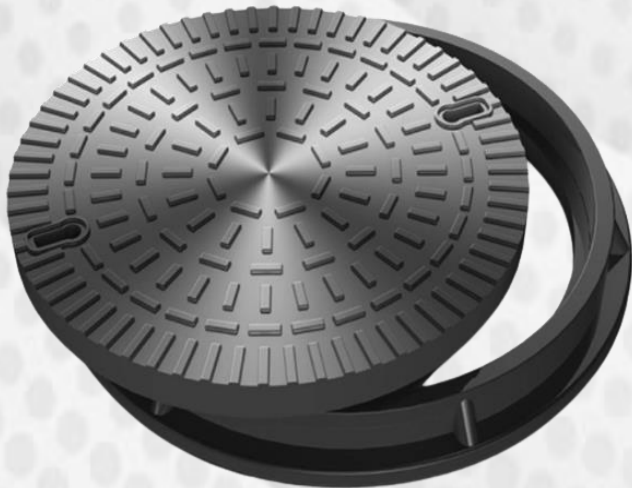
7 - To lift up the cover use the screw side of the T-tool and screw it in the metal nut fixed at cover bottom and pull up the cover from the frame

8 - Keep the T-tool tied to the cover to reinstall the cover in the frame after maintenance



DESIGNS & TYPES

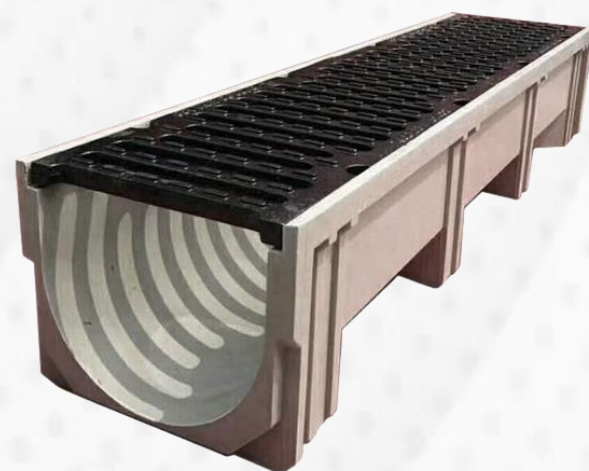
GRP/BMC/FRP MANHOLE COVERS



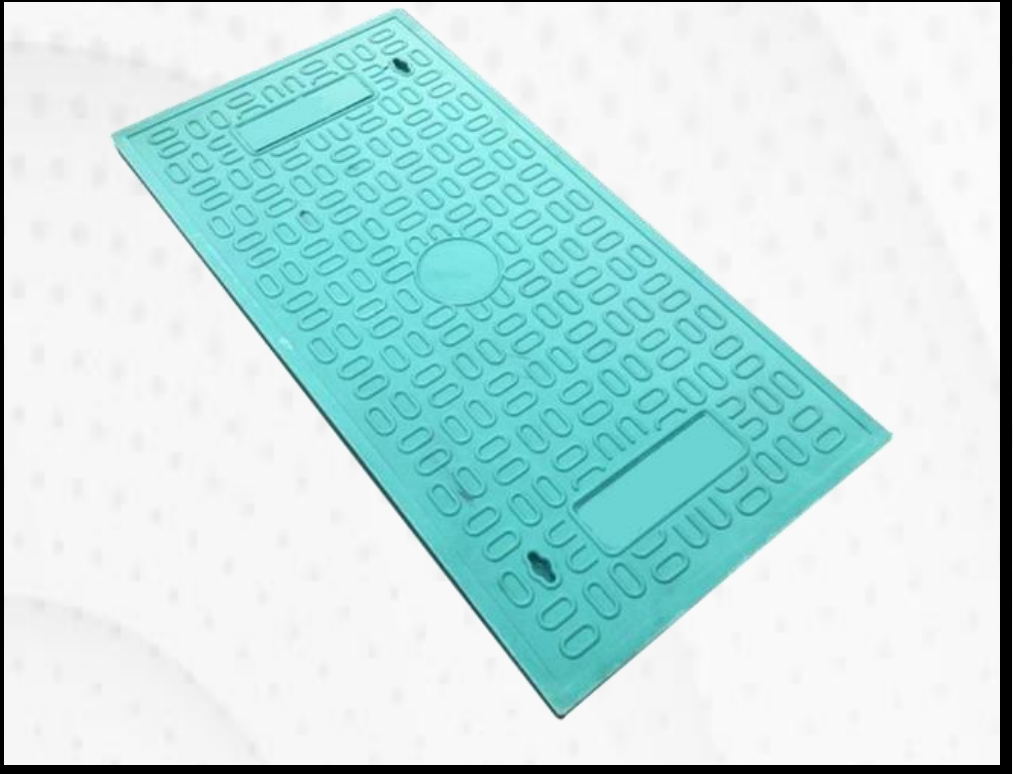
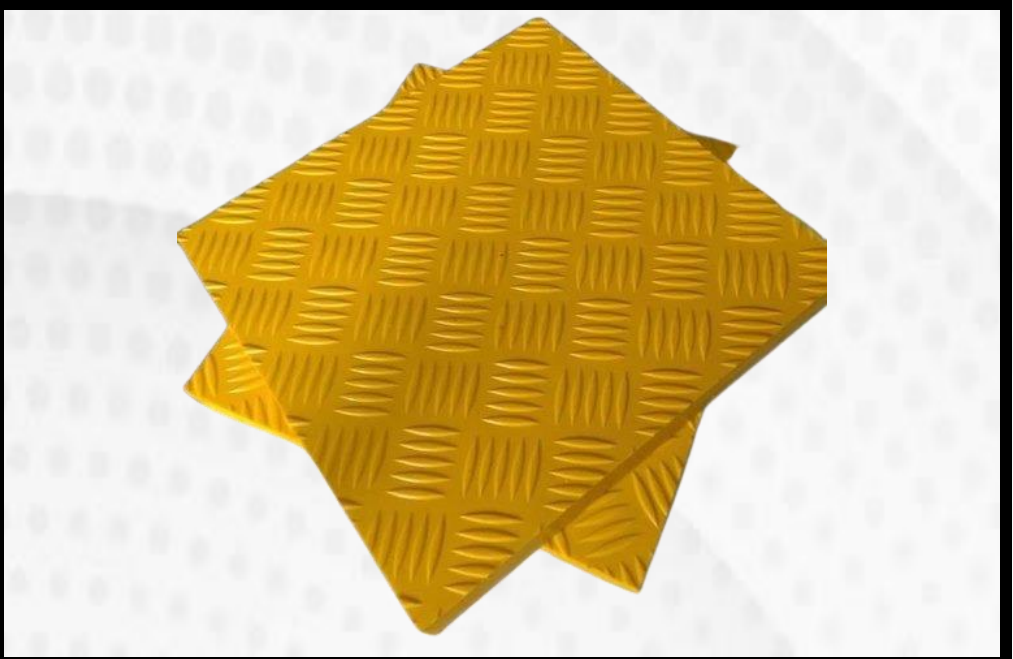
GRP/BMC/FRP LARGE SEPTIC TANK & INTERLOCK CABLE TRENCH COVERS



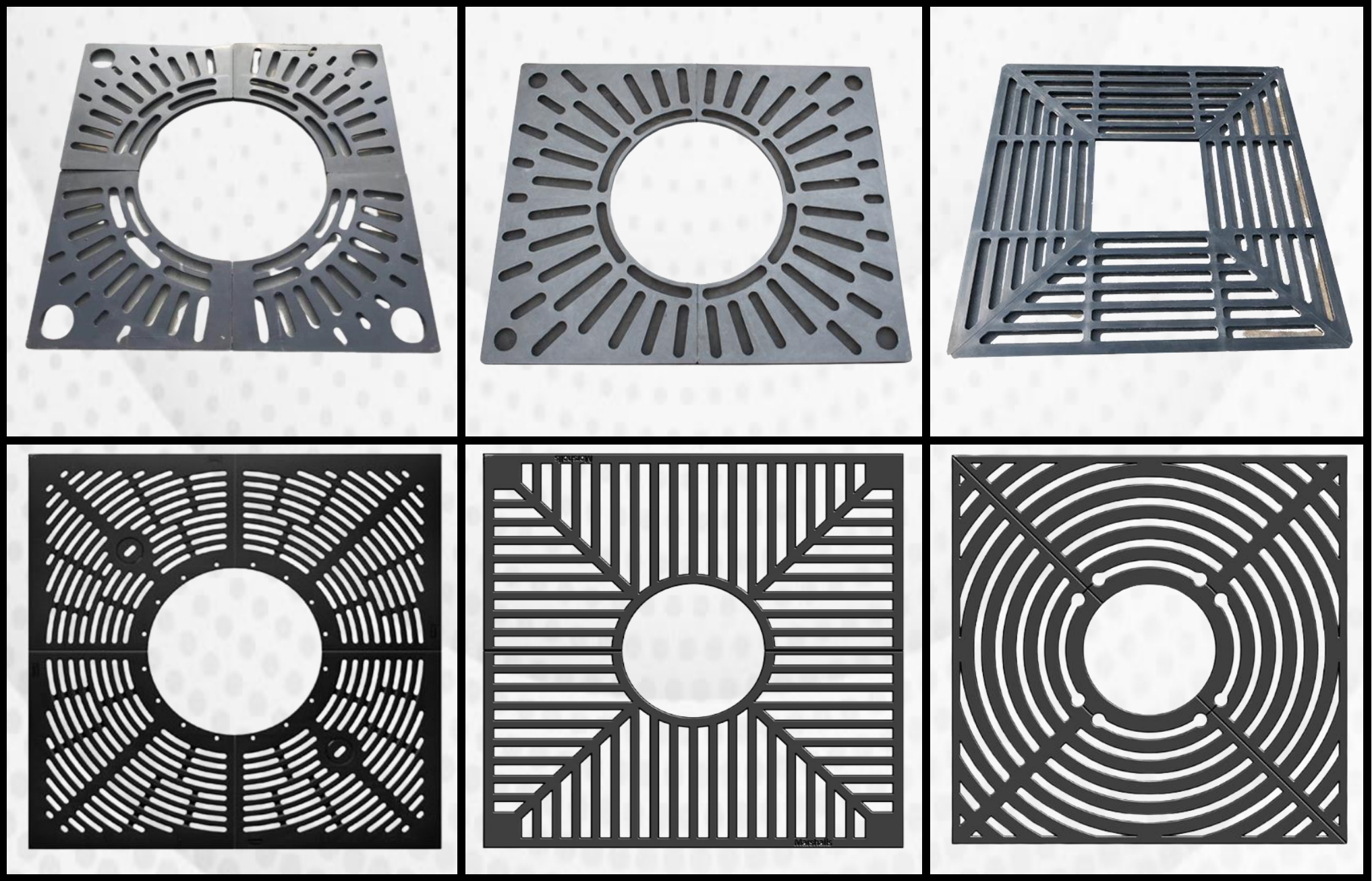
GRP/BMC/FRP WATER GULLY DRAIN & CHANNEL GRATING



GRP / FRP MESH GRATING & CHEQURE PLATE & TRENCH COVERS/PLATE



GRP/BMC/FRP TREE GRATING



SIZES & DIMENSIONS

SQUARE MANHOLE COVERS (WITH FRAME)

INSIDE OPENING	LOADS CAPACITY
20 X 20 CM	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS
30 X 30 CM	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS
40 X 40 CM	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS
50 X 50 CM	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS
60 X 60 CM	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS
70 X 70 CM	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS
80 X 80 CM	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS
90 X 90 CM	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS
100 X 100 CM	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS

ROUND MANHOLE COVERS (WITH FRAME)

INSIDE OPENING	LOADS CAPACITY
20 ∅	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS
30 ∅	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS
40 ∅	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS
50 ∅	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS
60 ∅	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS
70 ∅	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS
80 ∅	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS
90 ∅	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS
100 ∅	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS

WATER GULLY DRAIN (WITH FRAME)

INSIDE OPENING	LOADS CAPACITY
40 X 60 CM	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS
60 X 60 CM	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS
50 X 50 CM	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS

LARGER SIZES & LOADS CAN BE PROVIDED

WATER GULLY DRAIN

SIZES	LOADS CAPACITY
30 X 50 CM	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS
40 X 60 CM	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS
25 X 50 CM	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS
20 X 50 CM	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS
40 X 40 CM	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS
50 X 50 CM	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS

LARGE SEPTIC TANK COVERS

SIZES	LOADS CAPACITY
50 X 100 CM	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS
100 X 100 CM	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS
100 X 150 CM	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS
100 X 200 CM	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS

LARGER SIZES & LOADS CAN BE PROVIDED

TRENCH COVERS/PLATE

SIZES	LOADS CAPACITY
50 X 100 CM	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS
100 X 100 CM	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS
100 X 150 CM	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS
100 X 200 CM	1.5 – 3 – 5 – 12.5 – 25 – 40 TONS

LARGER SIZES & LOADS CAN BE PROVIDED

TREE GRATING

EXTERNAL SIZES	LOADS CAPACITY
80 X 80 CM	1.5 – 3 – 5 – 10 TONS
90 X 90 CM	1.5 – 3 – 5 – 10 TONS
100 X 100 CM	1.5 – 3 – 5 – 10 TONS
120 X 120 CM	1.5 – 3 – 5 – 10 TONS
130 X 130 CM	1.5 – 3 – 5 – 10 TONS
150 X 150 CM	1.5 – 3 – 5 – 10 TONS

LARGER SIZES & LOADS CAN BE PROVIDED



BLUE CIRCLE LURUN

FRP\GRP\BMC MANHOLE COVERS



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