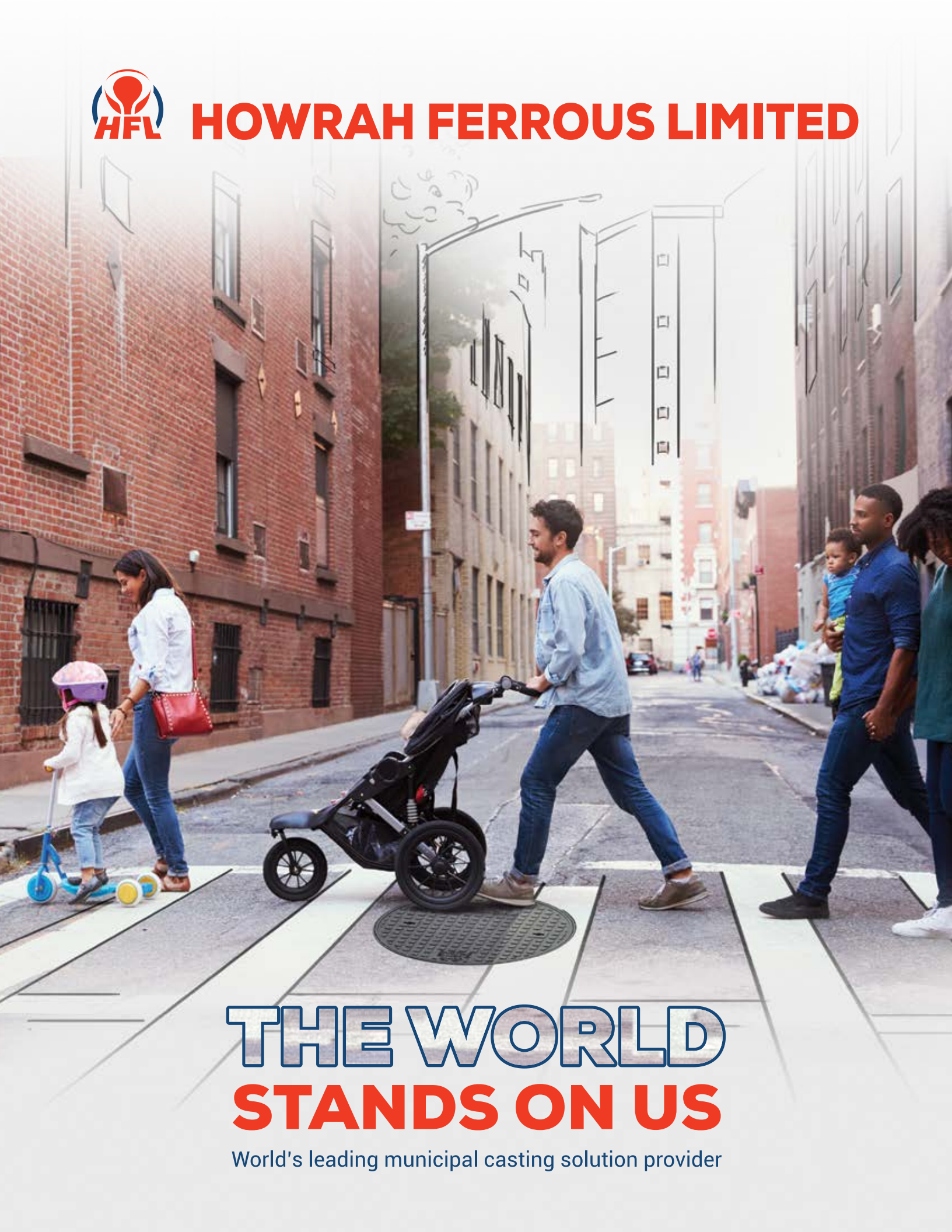




HOWRAH FERROUS LIMITED



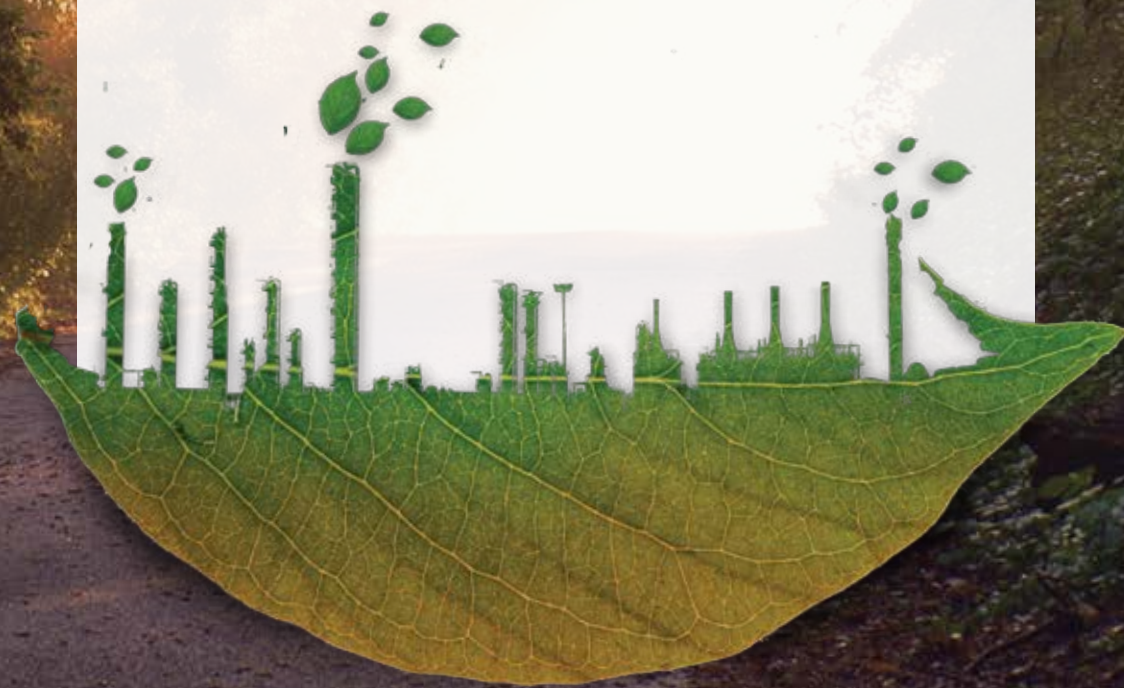
**THE WORLD
STANDS ON US**

World's leading municipal casting solution provider

BEYOND THE GREYS, **WE SEE GREENS.**

At Howrah Ferrous, as we aim for innovation, creation and instauration, we always fulfil our responsibility towards Mother Nature and our future generations. The thoughtfully-designed HFL system supports drainage solutions offering healthy environmental conditions.

Made to withstand the extreme weather conditions, HFL is committed to bring the best-in-class eco-friendly casting solutions. They play a dual role by restoring balance between man and water. Above all, we ensure that our products contribute towards the maintenance of a balanced ecological system.



DIRECTOR'S DESK



We value our customers & manufacture products that enrich lives across the world through sustained growth.



Our journey began twenty years ago and today Howrah Ferrous Limited stands as one of the most promising names in the Ductile Iron castings sector in the field of manhole cover castings and other sanitary castings. We take utmost pride in having established our presence in the global market across fifteen countries. It can be rightly asserted that we are just like the steel structures we manufacture – simple in our outlook and tough from inside. Our biggest achievement lies in being able to meet, in fact exceed the expectations of our clients through our manufacturing and exporting solutions that speak of sustainability.

The real strength of Howrah Ferrous Limited is its people. Our work process is continuously refined under the surveillance of experienced professionals. We are proud to have some of the best minds under whose guidance the company has been able to mark its unique position by contributing towards the creation of an environment friendly world we live in.

We follow a code of conduct for everyone associated with the company – employees, clients, partners and other stakeholders for them to be treated with respect and dignity. Together we strive to foster a culture that speaks of trust and quality.

We assure our customers on commitment and trust. We value customer feedback and constructive criticism and upgrade ourselves to customer needs.



The only limit to your impact is your imagination and commitment.

..... Tony Robbins



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INTRODUCTION

We at Howrah Ferrous Limited continue our journey of more than 20 years, exploring new challenges and going beyond them to emerge as one of the leading names at home and overseas.

HFL is a distinguished name in Grey and Ductile manhole covers manufactured in India, uniquely positioned to provide sewerage and drainage solutions for creating an ecologically balanced environment around us.

HFL with its range of products caters to all types of public work markets such as highway, pathway, industrial and commercial utility. The company is one of the largest manufacturers and exporters of Grey and Ductile Iron Castings from India, exporting to around 15 countries including UAE, Bahrain, Oman, Qatar, Poland, Austria, Romania, Germany, Slovakia, Greece, Portugal, South Africa, UK, USA and Canada.

With over two decades of experience in this sector, it combines its technological advantages in process control and quality, developed through experience, investment in new manufacturing techniques and innovative design technology.

With fully equipped in-house facilities for the various testing processes, HFL has an annual production capacity of 12,000 M.T castings and offers the world market a platform to access a wide range of products within the water and drainage

market sectors. These products are accurately designed with advanced electronic markup software. It is a house of quality as the products manufactured here have multiple certifications including ISO 9001 2008, ISO 9001 2015, ISO 14001 2015, ISO 45001 2018 and BSI Kitemark.

The Group companies of HFL include Calcutta Ferrous Ltd, Calcutta Export Company (Unit CIF), Howrah Ferrous Ltd. (Ductile Unit) and Howrah Forgings Ltd. (Manufacturer of railway components for Indian Railways).

HFL has set its own standards that play a key role in determining the design and development in drainage technology by us based on International Standards. Manhole covers and frames are a part of traffic surfaces. This calls for safety norms and therefore demands compliance between them and the drainage components that are to be fitted. The magnitude and number of load changes depend upon traffic conditions for which both static and dynamic load are equally important. From the traffic point of view, our manhole covers and gratings are completely safe as they fully conform to the standard and design features.

Our continuous effort is to manufacture and supply the best quality products as per international standard.



MISSION

At Howrah Ferrous Limited, we are committed to forging long term relationships with all our partners and stakeholders by demonstrating a unified strength with our resources and quality.

VISION

Having secured a strong position in the industry to cater to, we aspire to become an inspiring world-class business house contributing towards the creation of an environment-friendly world around us.

CORE VALUES

Our core values guide us to act better in the business areas we serve, inspiring us to enhance our technical expertise, process control and innovative designs.

Integrity- Adhering to the ethical values and maintaining transparency in everything we do

Commitment - Dedication towards achieving desired goals and fulfilling them within the given time frame.

Quality - Exploring continuously and bringing out the best to meet the needs of the clients

Teamwork - Working together with the principle that we are one company, one team

Respect - Fostering a work culture built on mutual respect for our employees, stakeholders and ourselves.

PRODUCT MATERIALS & COMPOSITION

HFL manufactures a range of high performance ductile iron and steel access covers and frames. We realise the value of providing a material that is capable of combating the extremities that come from rough weather conditions and the increasing amount of vehicular traffic on roads today.



Advantage of Ductile Iron

Ductile iron's high strength to weight ratio allows for the production of lightweight castings that offer what can amount up to substantial weight saving over traditional grey iron equivalents. The high strength inherent with ductile iron not only minimizes the risk of failure when installed but reduces the likelihood of breakages in transit and while off-loading. In a marketplace where it is being continuously encouraged to specify products that have fewer chances of manual handling risk, the dead weight of the castings during both installation and actual operation in service is recognized as a chief feature and clear attribute

What is Ductile Iron?

Ductile iron is a cast iron alloy in which the graphite is in the form of spherical nodules rather than flakes as in grey cast iron. The formation of nodules is achieved by the addition of nodulizing elements, most commonly magnesium, into the metal and allows the carbon to separate as spheroidal particles as the material solidifies. It is produced by re-melting pig iron, scrap iron steel at a melting temperature usually ranging from 1150° to 1200°C. Depending on the application, carbon and silicon content is from 3.2% to 3.7% and 2.2 to 2.8% respectively. Other alloying elements are then added to the melt before being poured into moulds to produce castings.

What is Cast Iron?

Grey cast iron is an alloy mainly consisting of iron, carbon and silicon. It is produced by re-melting pig iron, scrap iron or scrap steel at a melting temperature usually ranging from 1150° to 1200°C. Depending on the application, carbon and silicon content is from 2% to 3.5% and 1% to 3% respectively. Other alloying elements are then added to the melt before being poured into moulds to produce castings.

Difference between Ductile & Grey Iron

The addition of magnesium at the molten stage transforms the flakes of graphite, which are common with the grey iron casting process, into spheroidal or nodular form. While cast iron has small flakes of graphite, ductile iron contains spherical graphite nodules. The spheroidal structure provides a higher tensile strength as well as a higher 'strength to weight' ratio when compared with the properties inherent with grey iron manufacture.



In case of a thunderstorm, stand in the middle of the fairway and hold up one iron. Not even God can hit one iron.

Lee Trevino



MANUFACTURING UNITS

VMC PATTERN SHOP



MELTING



MOULDING LINE



IRON & ENVIRONMENT

At Howrah Ferrous, we strictly follow the environmental standards in our manufacturing units and do not allow any activity that may affect the environment. Our company takes every measure to control its business activities that might have a negative impact on the environment.

- As protecting our surroundings is one of our principal responsibilities, we take proactive measures to promote environmental protection.
- By educating our clients as well as influencing them, we aim to create an eco-friendly working culture around us.
- We ensure there is a mutual agreement between us and our partners regarding any environmental issues that may occur.

MANUFACTURING & PRODUCTION

Production Facilities

We merge our in-house design with our VMC Machines to produce patterns within a short span of time. Our products are designed with the help of AutoCAD, Creo Parametric and Solidworks software and optimised through a series of simulations. One 4 axis VMC machine is being used to produce fresh designs with greater speed and perfection. Our company has a melting capacity of 22,500 tons per year of ductile iron using 4 induction furnaces with a finished goods capacity of 12,000 tons. We produce GGG50 Grade of Ductile iron.

We are equipped with three automatic mechanised sand plants with separate sand for machine moulding and hand moulding. We have two pairs of Simultaneous Jolts Squeeze moulding machines that are capable of producing higher quality and high-pressure moulding machine casting.

Other machine shops include Lathes, Plano Millers Shapers and Drilling machines. Our practice involves the usage of black bitumen, environment-friendly water based paint, epoxy and primer for painting. We also have extensive container loading facilities.



Manufacturing Process

At Howrah Ferrous Limited, all products are manufactured according to worldwide standards. Here products are tested as per the required respective standard and we ensure that we deliver quality. We have fully developed in-house facilities for sand, raw materials testing, chemical analysis, load testing and other quality control measures. Beginning from the incoming material and production to the quality testing and dispatching of products, every stage of our product manufacturing process is monitored by our expert team of production managers. Spectrometers are being used in our system to determine results with more accuracy.



MANUFACTURING FACILITIES

At Howrah Ferrous Limited, the products are manufactured in accordance with the relevant international market standards.

SAND PLANT

- RMC-15 Sand Plant with Capacity of 15 Ton Per Hour for 900 M/C
- RMC-20 Sand Plant with Capacity of 20 Ton Per Hour for SF M/C
- IRM-600 Sand Plant with Capacity of 15 Ton Per Hour for 450 M/C
- IRM-300 Sand Plant with Capacity of 9 Ton Per Hour for Hand Mould
- Online Sand Testing Available in the above machine

MELTING SYSTEM

- One No. One Ton Induction Furnace with 2 Nos. 1000 Kg Crucible with 750 Kw power pack
- One No. One Ton Induction Furnace with 1 Nos. 1000 Kg Crucible with 750 Kw power pack
- One No. One Ton Induction Furnace with 1 Nos. 1000 Kg Crucible with 1000 Kw power pack

CORE MAKING

- Three Nos. Cold Box Core Shooter (3Kg, 3Kg, & 7 Kg)
- Three Nos. 50 Kg Core Sand Mixer
- AIR Receiver Horizontal for CO2
- Electrically Heated Core Oven

MOULDING SYSTEM

- SMFA 900 Moulding Machine (Jolt Squeeze)
- SMFA 900 Moulding Machine MHS System
- ARPA-450 Moulding Machine (Jolt Squeeze)

METAL POURING

- Mechanical Pouring through hoist
- Hand Pouring facility also available

MACHINING

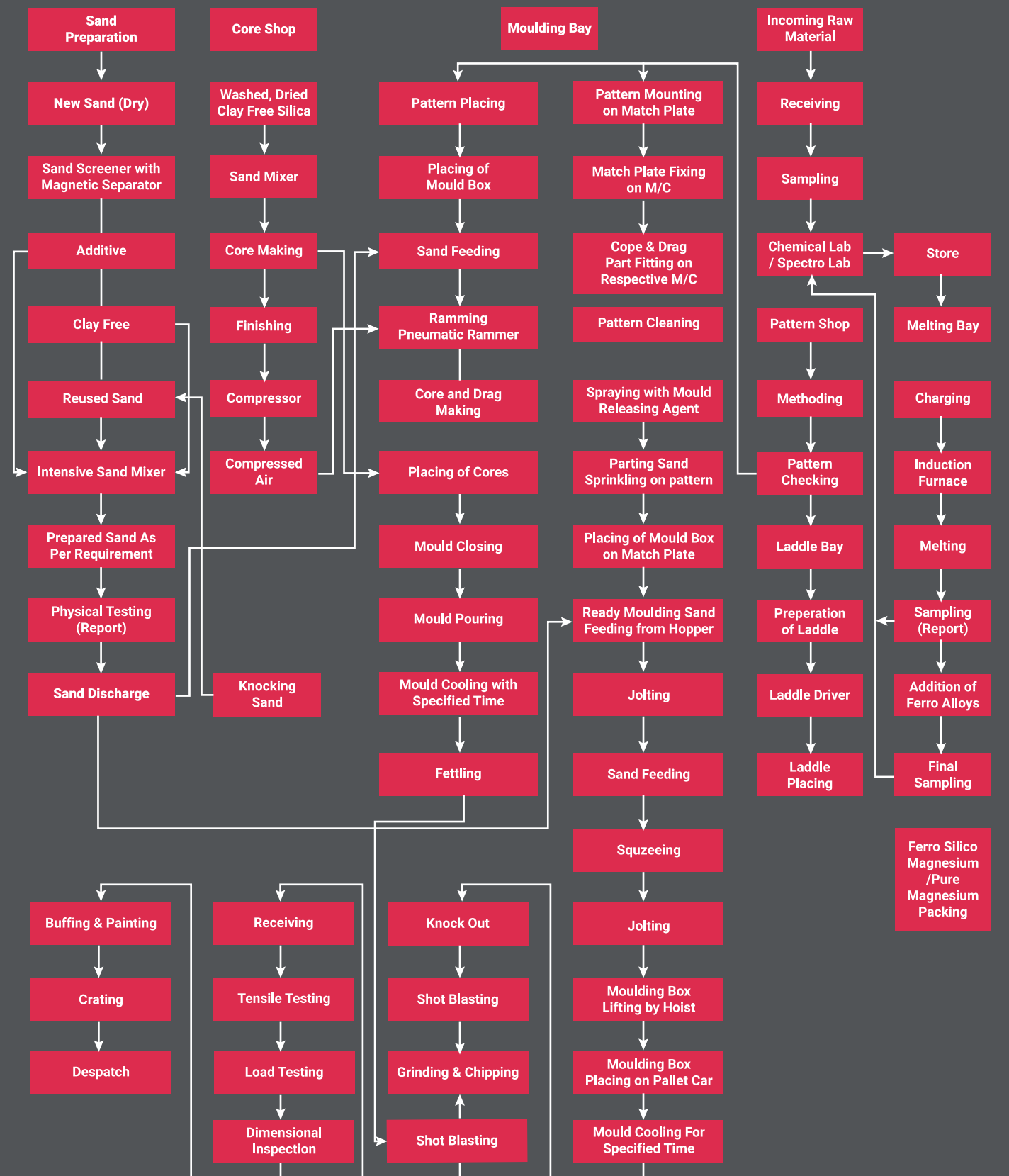
- Twelve Nos. Turning Machine (4 Nos. CNC & 8 Nos. Manual)
- Twelve Nos. Drilling Machine (2 Nos. CNC & 10 Nos. Manual)
- Three Nos. Shaper Machine
- One Universal Tapping Machine
- One Table & One Tool Grinding Machine

SHOT BLASTING

- 500 Kg batch capacity shot blasting machine for surface cleaning of the casting, fitted with dust collector

PROCESS FLOW CHART

From Incoming Raw Material to Finished Product



TESTING FACILITIES



SAND TESTING

To ensure complete quality control we use specific machinery and tools.

Howrah Ferrous Limited's specialised expertise and capabilities in its manufacturing area involves:

- Spectrometer for Chemical Analysis of Molten Metal
- Microscope with Image Analyzer for determining Microstructure
- Rapid Moisture Tester for determining moisture of RAW sand & Green Sand, Moisture Analyzer- Digital
- Universal Strength Machine (Mechanical and Digital with computer interface)
- Digital Permeability Tester Fully Auto with Software based technology
- Mould Hardness Tester & Core Hardness Tester
- Tensile, Elongation and Hardness
- Computerised Load Testing Machine for Load Test
- Shot Blasting of Products to Detect Surface Defects
- Dimensional Inspection for each batch
- Dry Film Thickness Test for Painting



CHEMICAL TESTING



MECHANICAL TESTING OFFSET BAR



HARDNESS TESTING

QUALITY ASSURANCE



At Howrah Ferrous Limited, we consistently strive to manufacture products of the highest quality in strict adherence to the worldwide international industry standards. This involves subjecting the company processes and its supplies to rigorous and objective assessments from time to time; ultimately assuring that consistency of quality in production is always maintained.

Our Quality Practice involves:

- Validation of suppliers and/or their materials
- Continuous assessment of quality systems
- Proper planning & figure out up to delivered product
- On-going monitoring & continuous testing of product quality
- Supervision by qualified and experienced professionals
- Manufacturing records of products
- Improvement based on customer feedback



LOAD TESTING MACHINE - With testing facility up to 120 Tons\ 1200 kn



SPECTROMETER - For determining the Chemical analysis of molten metal



DIMENSION - Dimensional inspection



MICROSCOPE - With image analyzer for determining microstructure

STANDARDS

HFL products are manufactured as per BS EN 124-2 with all key criteria such as load-bearing ability with extra features of said product.

- Access covers and gully grates installed in Doha should meet the requirements of the European Standard BS EN 124-2
- This applies to all situations, on and off-load and to all materials
- Products designed to BS EN 124-2 are grouped and classified depending on their place of installation
- It is the responsibility of the engineer to ensure that the correct product is specified
- The appropriate class of manhole top or gully top to be used depends upon the place of installation
- The selection of the appropriate class is the responsibility of the designer
- Where there is any doubt the stronger class should be selected
- This standard divides access covers and gully grates into a number of classes by static test load. It also categorises the various places where they may be installed from Group 1, the least demanding environment, through to Group 6, the most demanding environment. It provides guidance on the minimum class to be used against each installation group.



Loading	BS EN 124-2 Class	BS EN 124-2 Test Load
Group-1 – Areas accessible only pedestrians	A15	15kN
Group-2 – Footways, Pedestrians, etc.	B125	125kN
Group-3 – Gully tops only kerbside channels on road	C250	250kN
Group-4 – Carriageway of roads	D400	400kN
Group-5 – Areas accessible for high wheel loads	E600	600kN
Group-6 – Areas for very heavy wheel loads	F900	900kN

LOAD CLASSIFICATION



GROUP-1 A15

Access covers and gratings capable of withstanding a 15kN test load. For use in areas where only pedestrians and pedal cyclists have access.



GROUP-2 B125

Access covers and gratings capable of withstanding a 125kN test load. For use in car parks and pedestrian areas where occasional vehicle access is likely.



GROUP-3 C250

Access covers and gratings capable of withstanding a 250kN test load. For use in areas where not extending more than 500mm from the kerb face into the carriageway.



GROUP-4 D400

Access covers and gratings capable of withstanding a 400kN test load. For use in areas where cars and lorries have access, including carriageways, hard shoulders and pedestrian areas. All units to be either non-rock or silent in operation.



GROUP-5 E600

Access covers and gratings capable of withstanding a 600kN test load. For use in areas where heavy wheel loads are imposed such as loading areas, docks or aircraft pavements.

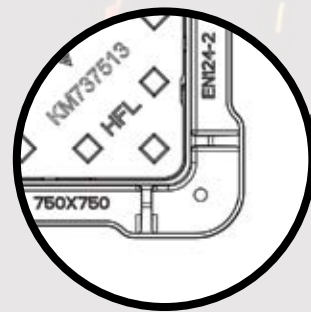


GROUP-6 F900

Access covers and gratings capable of withstanding a 900kN test load. For use in areas where very heavy wheel loads are imposed such as aircraft pavements.

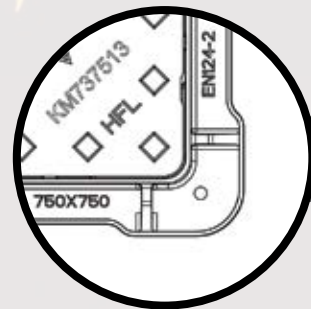
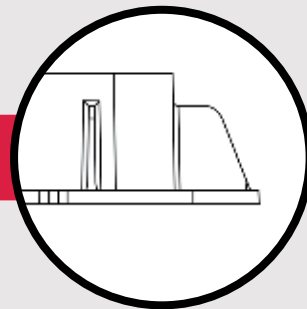
TECHNICAL DETAILS & DESIGN ASPECT

Howrah Ferrous Limited design all products safe, security & durability also customer-friendly which is easy to handle, install & use. We use the following design details in our product to increase more bearing pressure, lifting point, and high mortar adhesion.



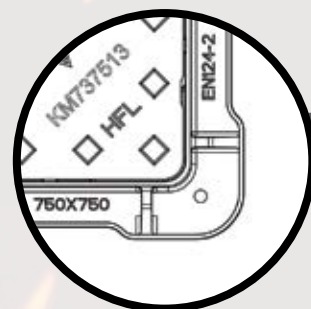
For higher mortar adhesion frames should allow this

Gussets must be below the top of frame by at least 25mm



For increase bearing pressure of the frame

Frames are provisioned with balanced lifting hole on all sides



The flanges are at least 5mm thick & 50mm wide

OUR PRODUCTS

- Circular Cover with Circular Frame
- Circular Cover with Square Frame
- Square Cover with Square Frame
- Rectangular Cover with Rectangular Frame
- Square Recessed Frame & Cover
- Rectangular Recessed Frame & Cover
- Circular Recessed Frame & Cover
- Double Triangular Cover with Frame
- Double Semicircular Cover with Square Frame
- Multiple Triangular Cover with Frame
- Gully Grate
- Channel Grating
- Trench Grating
- Curb Gully
- Surface Box
- Carriageway
- Multispan Solid Top
- Multispan Recessed
- Pump Station





**CIRCULAR SOLID
TOP COVER &
CIRCULAR FRAME**

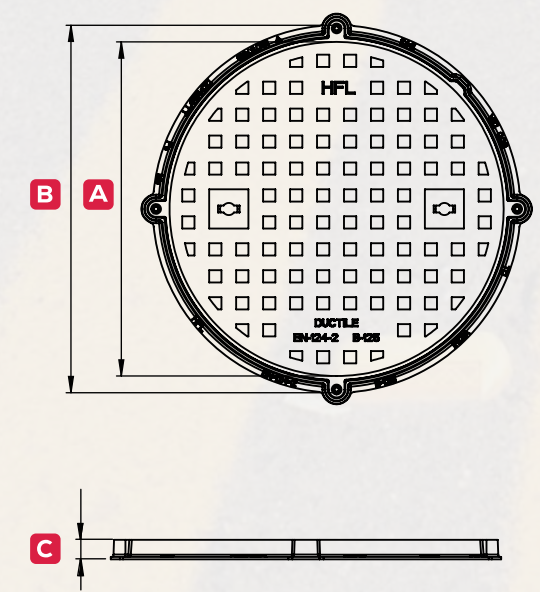
B- 125
CIRCULAR SOLID
TOP COVER &
CIRCULAR FRAME



Material
BS-EN-1563 500/7

Specification
BS-EN-124-2-2015

Kitemark
KM737513



Features

- Non-Skid Checker Design
- Non-Rocking Seating
- Medium Duty Loading
- Design and Product Compliance with BS EN 124-2:2015
- Closed Keyhole
- Double Seal / Single Seal

Option

- Epoxy Coating
- Customized Marking Available
- GRP Seal Provision

Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
600 DIA	700 DIA	50	Single	No	1172	-	-
600 DIA	755 DIA	40	Double	No	1143L	Yes	Yes
900 DIA	1100 DIA	50	Double	Yes	1240	-	-
750 DIA	930 DIA	50	Single	No	1239	-	-
900 DIA	1050 DIA	50	Single	No	1241	-	-
450 DIA	545 DIA	30	Single	No	1057	-	Yes

D-400

CIRCULAR SOLID TOP COVER & CIRCULAR FRAME



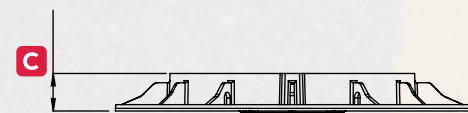
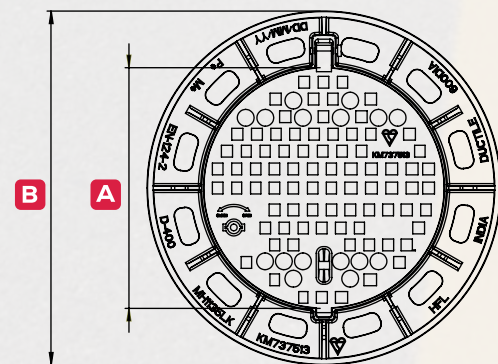
Material
BS-EN-1563 500/7

Specification
BS-EN-124-2-2015

Kitemark
KM737513



DUCTILE



Features

- Non-Skid Checker Design
- Non-Rocking Seating
- Heavy Duty Loading
- Design and Product Compliance with BS EN 124-2:2015
- Closed Keyhole
- Double Seal / Single Seal for odour Prevention

Option

- Epoxy Coating
- Customized Marking Available
- GRP Seal Provision

Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
200 DIA	420 DIA	75	Double	No	1118	Yes / No	Yes
300 DIA	520 DIA	75	Double	No	1162	Yes / No	Yes
600 DIA	800 DIA	100	Double	Yes	1244	-	-
750 DIA	950 DIA	100	Double	Yes	1242	-	-
900 DIA	1200 DIA	102	Double	Yes	1122	Yes / No	Yes
600 DIA	730 DIA	100	Single	No	1110	Yes	-
750 DIA	930 DIA	100	Single	No	1243	-	-
900 DIA	1050 DIA	100	Single	No	1246	-	-
590 DIA	785 DIA	100	-	No	1089	Yes	-

CIRCULAR SOLID

TOP COVER &

SQUARE FRAME

B- 125

CIRCULAR SOLID TOP COVER & SQUARE FRAME



Material
BS-EN-1563 500/7

Specification
BS-EN-124-2-2015

Kitemark
KM737513



D- 400

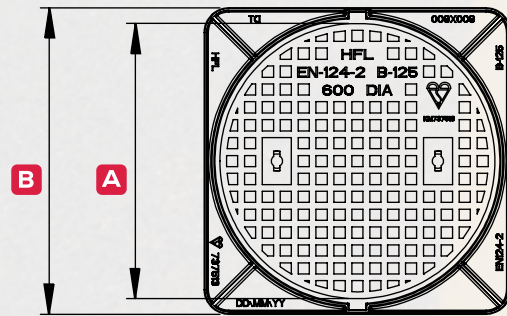
CIRCULAR SOLID TOP COVER & SQUARE FRAME



Material
BS-EN-1563 500/7

Specification
BS-EN-124-2-2015

Kitemark
KM737513

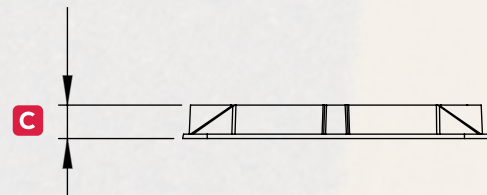


Features

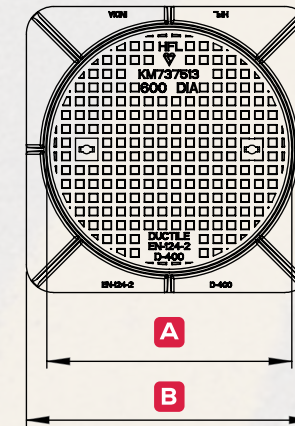
- Non-Skid Checker Design
- Non-Rocking Seating
- Medium Duty Loading
- Design and Product Compliance with BS EN 124-2:2015
- Closed Keyhole
- Double Seal used for Odour Prevention

Option

- Epoxy Coating
- Customized Marking Available
- GRP Seal Provision
- Hinge System can be provide
- Ventilated Cover also available



Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
600 DIA	775 X 775	40	Double	Yes	1024	-	Yes
750 DIA	930 X 930	50	Double	Yes	1247	-	-
900 DIA	1100 X 1100	50	Double	Yes	1248	-	-
600 DIA	700 X 700	75	Single	Yes	1002	-	Yes
600 DIA	700 X 700	75	Single	Yes	1022	-	No
600 DIA	685 X 685	75	Single	No	1039	-	Yes



Features

- Non-Skid Checker Design
- Non-Rocking Seating
- Heavy Duty Loading
- Design and Product Compliance with BS EN 124-2:2015
- Closed Keyhole
- Double / Single Seal for Odour Prevention



Option

- Epoxy Coating
- Customized Marking Available
- GRP Seal Provision
- Hinge System can be provide
- Ventilated Cover also available

Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
150 DIA	360 X 360	75	Double	Yes	1164	-	Yes
150 DIA	360 X 360	75	Double	No	1173	-	-
600 DIA	800 X 800	100	Double	Yes	1025	-	Yes
600 DIA	800 X 800	100	Double	No	1047	-	Yes
675 DIA	875 X 875	100	Double	Yes	1166	-	Yes
675 DIA	840 X 840	100	Double	No	1174	-	No
750 DIA	930 X 930	100	Double	Yes	1249	-	-
900 DIA	1100 X 1100	100	Double	Yes	1250	-	-
600 DIA	705 X 705	100	Single	Yes	1001	-	Yes
600 DIA	705 X 705	100	Single	No	1021	Yes	Yes
600 DIA	705 X 705	100	Single	No	1177	No	-
675 DIA	820 X 820	100	Single	Yes	1004	-	Yes



**SOLID TOP
SQUARE COVER
& SQUARE FRAME**

**A-15
SOLID TOP
SQUARE COVER
& SQUARE FRAME**

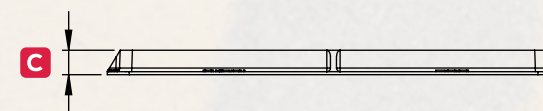
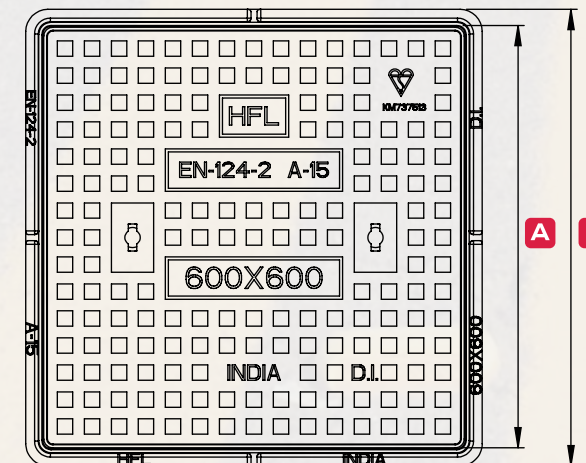


Material
BS-EN-1563 500/7

Specification
BS-EN-124-2-2015

Kitemark
KM737513

 DUCTILE



Features

- Non-Skid Checker Design
- Non-Rocking Seating
- Light Duty Loading
- Design and Product Compliance with BS EN 124-2:2015
- Close keyhole
- Double / Single Seal for Odour Prevention

Option

- Epoxy Coating
- GRP Seal Provision
- Customized Marking Available
- Provision for bolting cover to frame for better security
- Better Hinge and Locking arrangement
- Ventilated Cover Also available

Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
300 X 300	480 X 480	40	Double	No	1019	-	No
600 X 600	790 X 790	40	Double	No	1018	-	No
600 X 600	690 X 690	40	Single	No	1188L	Yes	No

B-125

SOLID TOP SQUARE COVER & SQUARE FRAME



Material
BS-EN-1563 500/7

Specification
BS-EN-124-2:2015

Kitemark
KM737513



C-250

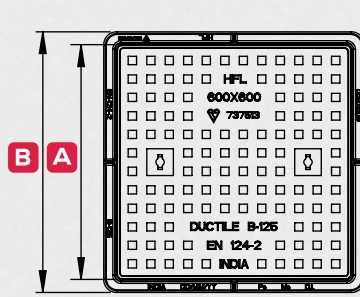
SOLID TOP SQUARE COVER & SQUARE FRAME



Material
BS-EN-1563 500/7

Specification
BS-EN-124-2:2015

Kitemark
KM737513



Features

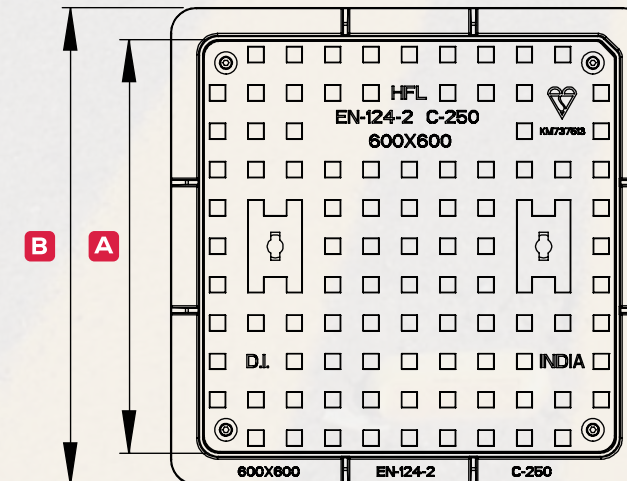
- Non-Skid Checker Design
- Non-Rocking Seating
- Medium Duty Loading
- Design and Product Compliance with BS EN 124-2:2015
- Closed Keyhole
- Double / Single Seal for Odour Prevention



Option

- Epoxy Coating
- Customized Marking Available
- GRP Seal Provision
- Ventilated Cover also available

Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
300 X 300	412 X 412	30	Double	No	1069	-	Yes
300 X 300	480 X 480	40	Double	No	1009	-	Yes
300 X 300	511 X 511	65	Single	Yes	1167	-	No
450 X 450	600 X 600	40	Double	No	1023	-	Yes
450 X 450	600 X 600	40	Double	Yes	1109	-	No
600 X 600	790 X 790	40	Double	No	1015	-	Yes
600 X 600	790 X 790	40	Double	Yes	1144	-	No
635 X 635	800 X 800	40	Double	No	1158	-	No
800 X 800	950 X 950	50	Double	No	1076	-	No
300 X 300	400 X 400	40	Single	No	1006	-	Yes
600 X 600	705 X 705	42	Single	No	1012	-	No
600 X 600	700 X 700	30	Single	Yes	1185	-	No
600 X 600	710 X 710	40	Single	Yes	1050	-	No
600 X 600	712 X 712	30	Double	No	1061	-	Yes
600 X 600	690 X 690	40	Single	No	1062	Yes / No	Yes
600 X 600	811 X 811	65	Single	Yes	1168	No	No
450 X 450	540 X 540	40	Single	Yes	1099	-	Yes
1000 X 1000	1190 X 1190	100	Single	No	1100	-	No
600x600	755x755	30	Double	Yes	1218	-	Yes

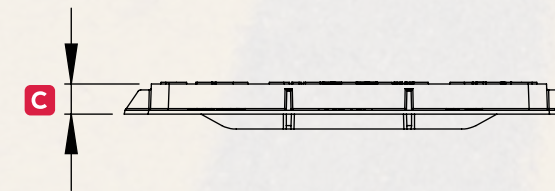


Features

- Non-Skid Checker Design
- Non-Rocking Seating
- Medium Duty Loading
- Design and Product Compliance with BS EN 124-2:2015
- Closed Keyhole
- Double / Single Seal for Odour Prevention

Option

- Epoxy Coating
- Customized Marking Available
- GRP Seal Provision
- Ventilated Cover also available



Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
600 X 600	746 X 746	50	Single	No	1124	Yes / No	Yes
600 X 600	800 X 800	100	Single	Yes	1077	No	No
600 X 600	771 X 771	50	Double	No	1209	-	No
300x300	473x473	75	Single	Yes	1073	-	-
600x600	770x770	50	Double	Yes	1231	-	Yes

D- 400
SOLID TOP
SQUARE COVER
& SQUARE FRAME



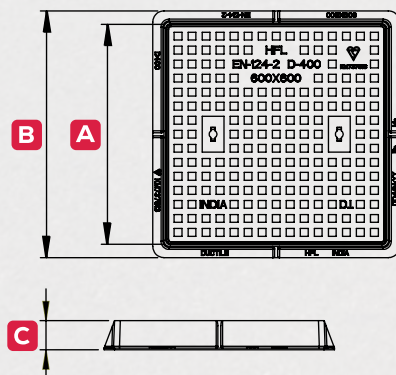
Material
 BS-EN-1563 500/7

Specification
 BS-EN-124-2:2015

Kitemark
 KM737513



DUCTILE



Features

- Non-Skid Checker Design
- Non-Rocking Seating
- Heavy Duty loading
- Design and Product Compliance with BS EN 124-2:2015
- Close keyhole
- Double / Single Seal for Odour Prevention

Option

- Epoxy Coating
- GRP Seal Provision
- Customized Marking Available
- Provision for bolting cover to frame for better security
- Better Hinge and Locking arrangement
- Ventilated Cover Also available

Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
300 X 300	480 X 480	100	Double	No	1008	-	Yes
450 X 450	717 X 717	100	Double	Yes	1028	-	Yes
600 X 600	790 X 790	100	Double	No	1014	-	Yes
600 X 600	740 X 740	100	Single	No	1178	Yes	No
700 X 700	920 X 920	100	Single	Yes	1108	Yes	No
700 X 700	920 X 920	100	Double	No	1148	Yes / No	Yes
800 X 800	1085 X 1085	100	Double	Yes	1029	-	Yes
300 X 300	435 X 435	100	Single	No	1005	-	Yes
600 X 600	755 X 755	100	Single	No	1011	-	Yes
1000 X 1000	1190 X 1190	100	Single	No	1031	-	No
600 X 600	800 X 800	100	Single	Yes	1048L	Yes	Yes
750 X 750	930 X 930	100	Single	Yes	1131	-	No
300 X 300	475 X 475	100	Single	Yes	1072	No	No
800 X 800	1020 X 1020	100	Single	Yes	1074	Yes / No	No
900 X 900	1120 X 1120	100	Single	Yes	1133L	Yes	No
450 X 450	600 X 600	100	Single	-	1094	-	No
600 X 600	820 X 820	100	double	Yes	1036	-	Yes

SOLID TOP
RECTANGULAR COVER
& RECTANGULAR FRAME



B-125

SOLID TOP
RECTANGULAR
COVER &
RECTANGULAR
FRAME



Material
BS-EN-1563 500/7

Specification
BS-EN-124-2-2015

Kitemark
KM737513



D-400

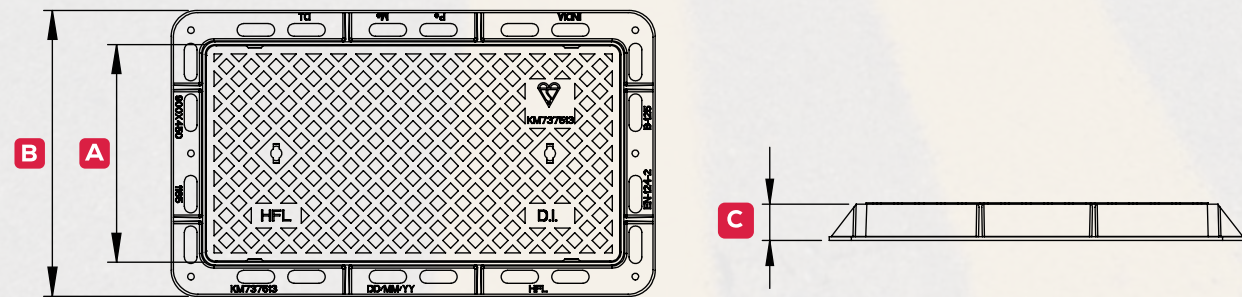
SOLID TOP
RECTANGULAR
COVER &
RECTANGULAR
FRAME



Material
BS-EN-1563 500/7

Specification
BS-EN-124-2-2015

Kitemark
KM737513



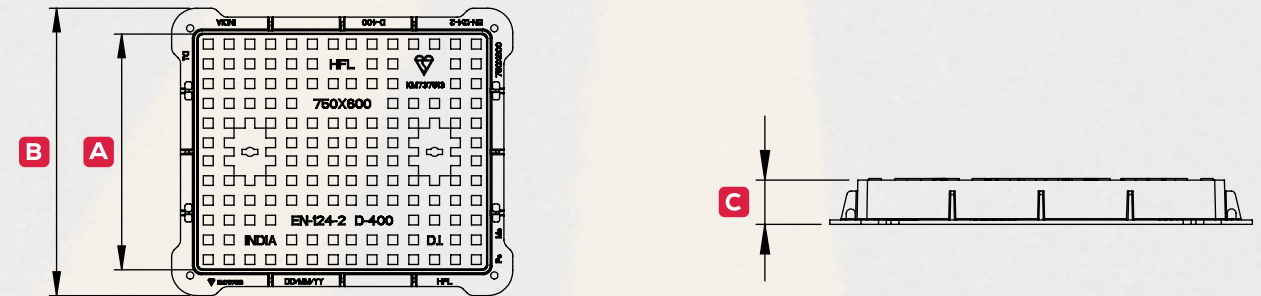
Features

- Non-Skid Checker Design
- Non-Rocking Seating
- Medium / Heavy Duty Loading
- Design and Product Compliance with BS EN 124-2:2015
- Close keyhole
- Double Seal used for Odour Prevention

Option

- Epoxy Coating
- GRP Seal Provision
- Customized Marking Available
- Provision for bolting cover to frame for better security
- Better Hinge and Locking arrangement
- Ventilated Cover Also available

Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
750 X 600	930 X 780	50	Double	Yes	1035	-	No
900 X 600	1004 X 704	50	Single	-	1098	-	No
900 X 450	1100 x 650	96	-	No	1165	-	No
750 X 600	894x744	30	Single	Yes	1229	-	Yes



Features

- Non-Skid Checker Design
- Non-Rocking Seating
- Heavy Duty Loading
- Design and Product Compliance with BS EN 124-2:2015
- Close keyhole
- Double Seal / Single Seal used for Odour Prevention

Option

- Epoxy Coating
- GRP Seal Provision
- Customized Marking Available
- Provision for bolting cover to frame for better security
- Better Hinge and Locking arrangement
- Ventilated Cover Also available

Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
750 X 600	1000 X 850	100	Double	Yes	1030	-	No
380 X 230	535 X 385	100	-	No	1111	-	Yes
750 X 600	958 X 808	100	Single	No	1110	-	Yes
600 X 450	600 X 750	100	Single	Yes	1084	No	Yes
600 X 450	800 X 700	100	Single	Yes	1101H	-	No
995 X 540	1115 X 660	96	-	No	1180	-	Yes



**SQUARE RECESSED
WITH SQUARE FRAME**

**B-125
SQUARE
RECESSED WITH
SQUARE FRAME**

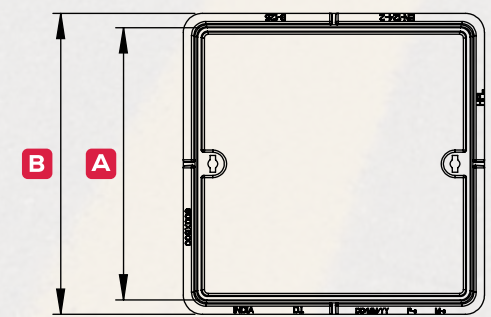


Material
BS-EN-1563 500/7

Specification
BS-EN-124-2:2015

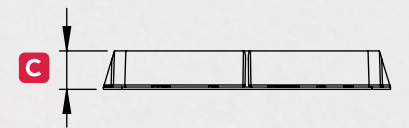
Kitemark
KM737513

 DUCTILE



Features

- Non-Rocking Seating
- Medium Duty Loading
- Design and Product Compliance with BS EN 124-2:2015
- Close keyhole
- Recessed depth for Interlocking Tiles
- Load Achieve before Concrete Filing
- Double Seal / Single Seal used for Odour Prevention



Option

- Epoxy Coating
- GRP Seal Provision
- Customized Marking Available

Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
300 X 300	450 X 450	80	Double	-	1127	Yes	Yes
600 X 600	735 X 735	50	Double	-	1159	Yes / No	No
600 X 600	780 X 780	60	Double	-	1016	-	No
600 X 600	725 X 725	80	Double	-	1064	-	Yes
600 X 600	785 X 785	105	Double	Yes	1147	Yes / No	Yes
600 X 600	790 X 790	90	Double	-	1045	-	Yes
600 X 600	808 X 808	85	Double	Yes	1126	-	Yes
300 X 300	452 X 452	90	Double	-	1140	-	-
800 X 800	950 X 950	91	Single	-	1090	-	-
800 X 800	950 X 950	100	Double	-	1160	Yes	Yes
700 X 700	870 X 870	100	Double	-	1141	Yes / No	Yes
300 X 300	493 X 493	100	Double	-	1121	No	Yes

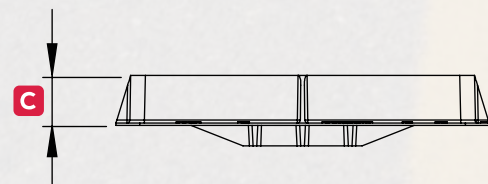
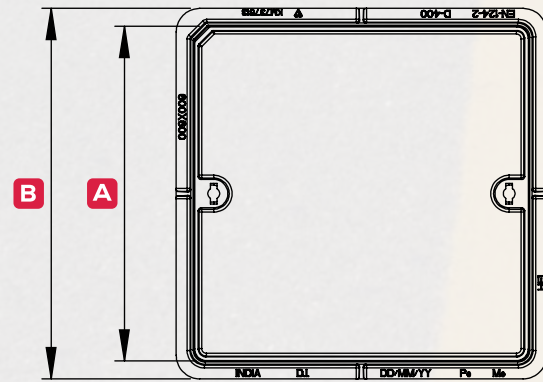
D-400
SQUARE
RECESSED WITH
SQUARE FRAME



Material
 BS-EN-1563 500/7

Specification
 BS-EN-124-2-2015

Kitemark
 KM737513



Features

- Non-Rocking Seating
- Heavy Duty Loading
- Design and Product Compliance with BS EN 124-2:2015
- Close keyhole
- Recessed depth for Interlocking Tiles
- Load Achieve before Concrete Filing
- Double Seal / Single Seal used for Odour Prevention

Option

- Epoxy Coating
- GRP Seal Provision
- Customized Marking Available

Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
300 X 300	490 X 490	100	Double	-	1032	Yes / No	Yes
600 X 600	785 X 785	100	Double	-	1033	-	Yes
600 X 600	785 X 785	105	Double	Yes	1125	Yes / No	Yes
675 X 675	860 X 860	105	Double	-	1082	-	No
300 X 300	430 X 430	100	Single	-	1007	-	No
600 X 600	730 X 730	100	Single	-	1013	-	No
800 X 800	950 X 950	100	Double	-	1093L	Yes	Yes
900 X 900	1030 X 1030	105	Single	-	1138	No	Yes
700 X 700	870 X 870	100	Double	-	1097	Yes / No	Yes

RECTANGULAR RECESSED

TOP COVER & FRAME

D-400

RECTANGULAR RECESSED TOP WITH RECTANGULAR FRAME



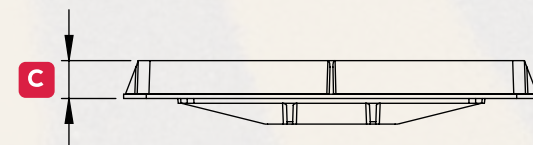
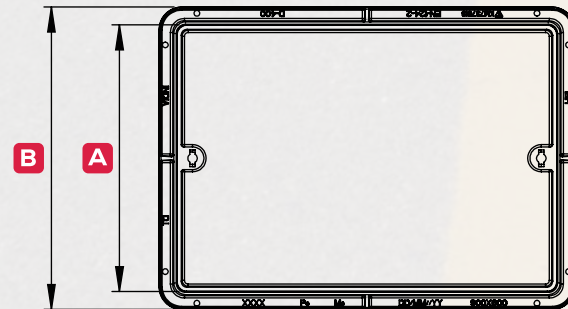
Material
BS-EN-1563 500/7

Specification
BS-EN-124-2-2015

Kitemark
KM737513



DUCTILE



Features

- Non-Rocking Seating
- Heavy Duty Loading
- Design and Product Compliance with BS EN 124-2:2015
- Close keyhole
- Recessed depth for Interlocking Tiles
- Load Achieve before Concrete Filling

Option

- Epoxy Coating
- GRP Seal Provision
- Customized Marking Available

Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
800 X 600	930 X 730	105	Single	-	1137	No	Yes
900 X 600	1088 X 788	100	Double	-	1157	No	Yes
900 X 450	1100 X 650	100	Double	-	1171	No	Yes
1000 X 750	1130 X 880	105	Single	-	1145	No	Yes

CIRCULAR RECESSED

WITH CIRCULAR FRAME

B-125

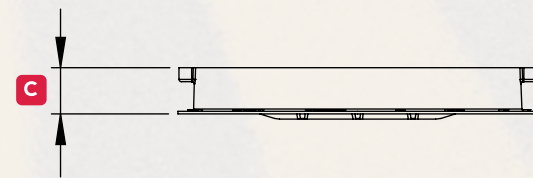
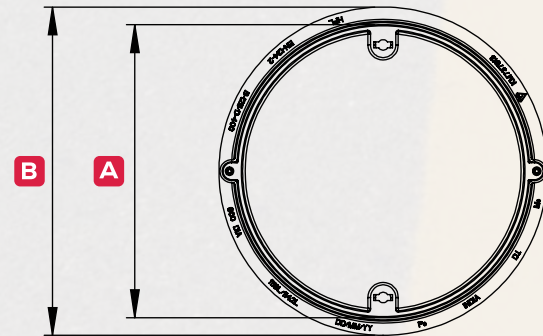
CIRCULAR RECESSED TOP COVER WITH CIRCULAR FRAME



Material
BS-EN-1563 500/7

Specification
BS-EN-124-2-2015

Kitemark
KM737513



Features

- Non-Rocking Seating
- Medium Duty Loading
- Design and Product Compliance with BS EN 124-2:2015
- Close keyhole
- Recessed depth for Interlocking Tiles
- Load Achieve before Concrete Filing
- Double Seal / Single Seal used for Odour Prevention

Option

- Epoxy Coating
- GRP Seal Provision
- Customized Marking Available

Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
DIA 200	DIA 370	100	Double	-	1152	Yes / No	Yes
DIA 600	DIA 780	100	Double	-	1119	Yes / No	Yes
DIA 600	DIA 780	80	Double	-	1149	Yes / No	No
DIA 800	DIA 970	105	Double	Yes	1170	No	No
DIA 900	DIA 1070	105	Double	Yes	1120	Yes / No	Yes

D-400

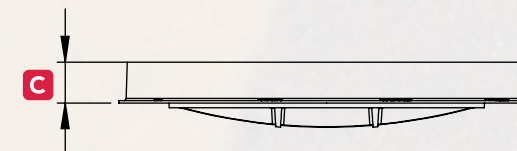
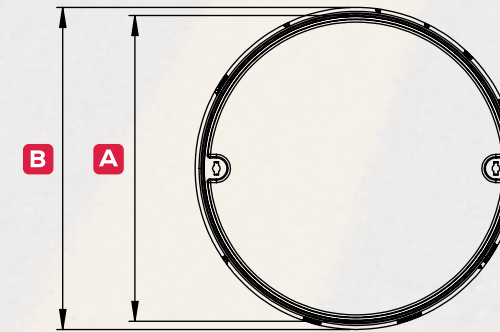
CIRCULAR RECESSED TOP COVER WITH CIRCULAR FRAME



Material
BS-EN-1563 500/7

Specification
BS-EN-124-2-2015

Kitemark
KM737513



Features

- Non-Rocking Seating
- Heavy Duty Loading
- Design and Product Compliance with BS EN 124-2:2015
- Close keyhole
- Recessed depth for Interlocking Tiles
- Load Achieve before Concrete Filing
- Double Seal / Single Seal used for Odour Prevention

Option

- Epoxy Coating
- GRP Seal Provision
- Customized Marking Available

Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
DIA 675	DIA 855	100	Double	-	1086 L	Yes	Yes
DIA 300	DIA 450	100	Double	-	1115L	Yes / No	Yes
DIA 200	DIA 370	100	Double	-	1117L	Yes / No	Yes
DIA 200	DIA 370	80	Double	-	1154L	Yes	No
DIA 600	DIA 780	100	Double	-	1142	Yes / No	Yes
DIA 900	DIA 1070	105	Double	Yes	1150	Yes / No	Yes



**DOUBLE TRIANGULAR
SOLID TOP COVER & FRAME**

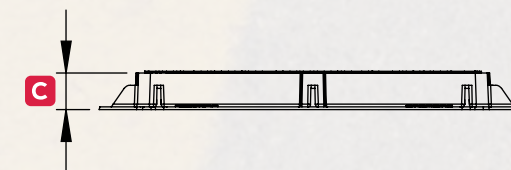
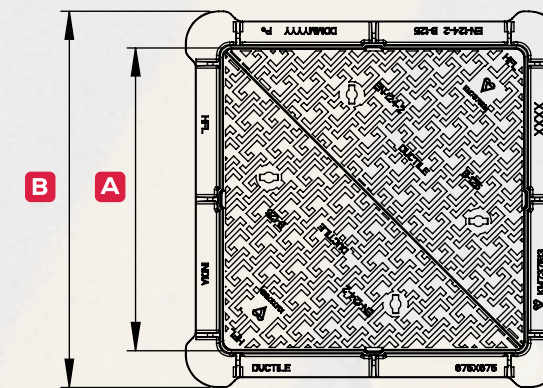
**B-125
DOUBLE
TRIANGULAR
SOLID TOP COVER
& FRAME**



Material
BS-EN-1563 500/7

Specification
BS-EN-124-2:2015

Kitemark
KM737513



Features

- Non-Skid Checker Design
- Non-Rock Seating
- Medium Duty Loading
- Design and Product Compliance with BS EN 124-2:2015
- Closed Keyhole
- Double triangular cover for easy handling
- Three point suspensions
- Stainless Steel bolt used for Cover Join

Option

- Epoxy Coating
- Customized Marking Available
- GRP Seal Provision
- Better Hinge System
- Better Locking Arrangement

Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
900 X 450	1020 X 570	100	-	No	1107	-	No
675 X 675	820 X 820	50	-	Yes	1175	-	Yes
750 X 750	914 X 914	50	-	Yes	1230	-	Yes

C-250

DOUBLE TRIANGULAR SOLID TOP COVER & FRAME



Material
BS-EN-1563 500/7

Specification
BS-EN-124-2:2015

Kitemark
KM737513



D-400

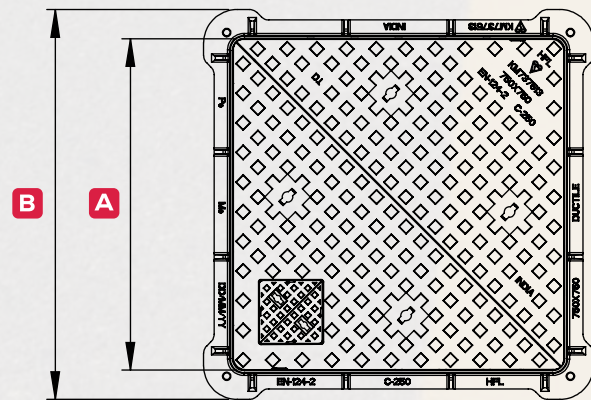
DOUBLE TRIANGULAR SOLID TOP COVER & FRAME



Material
BS-EN-1563 500/7

Specification
BS-EN-124-2:2015

Kitemark
KM737513

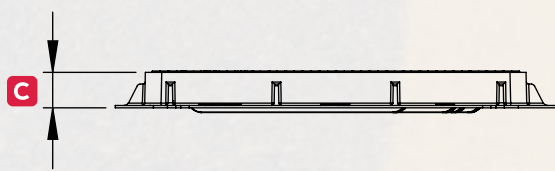


Features

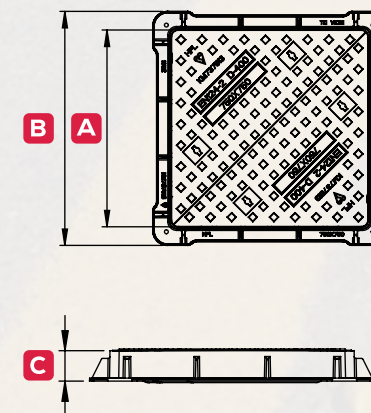
- Non-Skid Checker Design
- Non-Rock Seating
- Medium Duty Loading
- Design and Product Compliance with BS EN 124-2:2015
- Closed Keyhole
- Double triangular cover for easy handling
- Three point suspensions
- Stainless Steel bolt used for Cover Join

Option

- Epoxy Coating
- Customized Marking Available
- GRP Seal Provision
- Better Hinge System
- Better Locking Arrangement



Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
750 X 750	880 X 880	75	-	Yes	1112	-	Yes
900 X 600	1030 X 730	75	-	Yes	1114	No	Yes
900 X 900	1050 X 1050	75	-	Yes	1116	No	Yes
675 X 675	835 X 835	75	-	Yes	1113	-	Yes



Features

- Non-Skid Checker Design
- Non-Rock Seating
- Heavy Duty Loading
- Design and Product Compliance with BS EN 124-2:2015
- Closed Keyhole
- Double triangular cover for easy handling
- Three point suspensions
- Stainless Steel bolt used for Cover Join

Option

- Epoxy Coating
- Customized Marking Available
- GRP Seal Provision
- Better Hinge System
- Better Locking Arrangement

Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
750 X 750	914 X 914	100	-	Yes	1052	-	Yes
600 X 600	790 x 790	100	-	Yes	1026	-	Yes
300 X 300	400 X 400	100	-	No	1130	-	Yes
600 X 450	800 X 700	100	-	No	1103	-	Yes
600 X 600	770 x 770	100	-	No	1040	-	Yes
600 X 600	740 X 740	150	-	No	1041	-	Yes
675 X 675	884 X 884	100	-	Yes	1003	-	Yes
675 X 675	820 X 820	100	-	No	1042	-	Yes
900 X 450	1020 X 570	100	-	No	1106	-	No
1000 X 1000	1150 X1150	100	-	Yes	1075	-	Yes
675 X 675	820 X 820	150	-	No	1051	-	Yes
900 X 600	1040 X 740	100	-	No	1081	-	Yes
900 X 900	1105x1105	100	-	Yes	1134	Yes	Yes

E-600

DOUBLE TRIANGULAR SOLID TOP COVER & FRAME



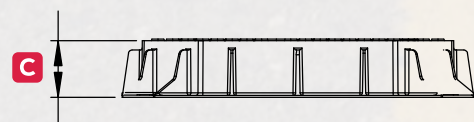
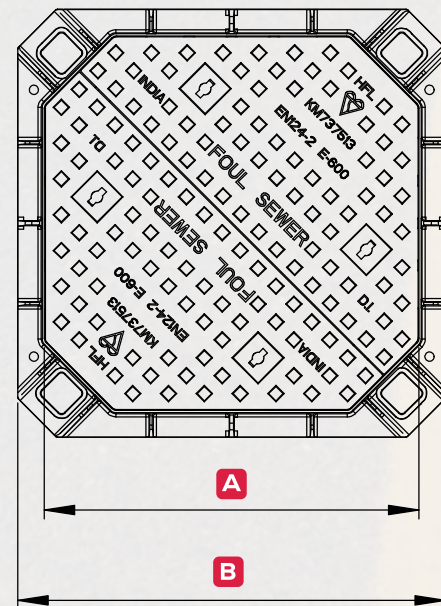
Material
BS-EN-1563 500/7

Specification
BS-EN-124-2-2015

Kitemark
KM737513



DUCTILE



Features

- Non-Skid Checker Design
- Non-Rock Seating
- Heavy Duty Loading
- Design and Product Compliance with BS EN 124-2:2015
- Closed Keyhole
- Double Triangular Cover for Easy Handling
- Three point suspensions
- Stainless Steel bolt used for Cover Join

Option

- Epoxy Coating
- Customized Marking Available
- GRP Seal Provision
- Better Hinge System
- Better Locking Arrangement

Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
750x750	930x930	150	-	Yes	1222	-	Yes
900x900	1090x1090	150	-	Yes	1223	-	Yes

DOUBLE SEMI CIRCULAR SOLID TOP COVER & SQUARE FRAME



D-400

DOUBLE SEMI
CIRCULAR SOLID TOP
COVER & SQUARE
FRAME



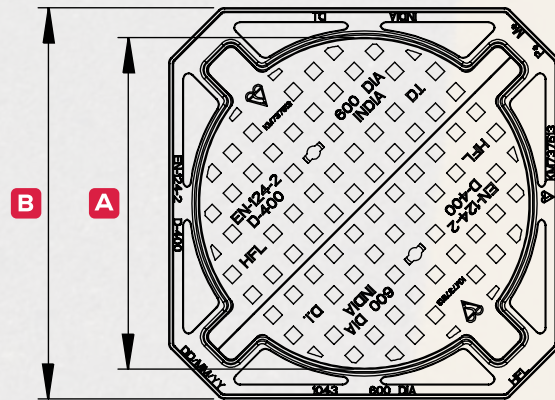
Material
BS-EN-1563 500/7

Specification
BS-EN-124-2:2015

Kitemark
KM737513



DUCTILE

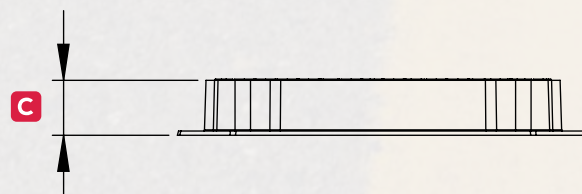


Features

- Non-Skid Checker Design
- Non-Rocking Seating
- Heavy Duty Loading
- Design and Product Compliance with BS EN 124-2:2015
- Blind keyhole for easy handling
- Three point suspensions

Option

- Epoxy Coating
- Customized Marking Available
- GRP Seal Provision



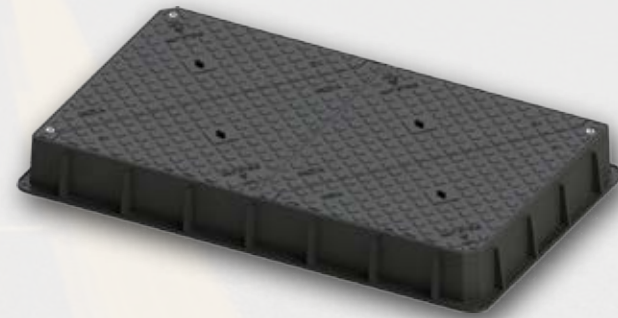
Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
600 DIA	750 X 750	100	-	Yes	1043	-	Yes
675 DIA	825 X 825	100	-	Yes	1252	-	-



**MULTIPLE TRIANGULAR
COVER & FRAME**

D-400

MULTIPLE TRIANGULAR COVER & FRAME



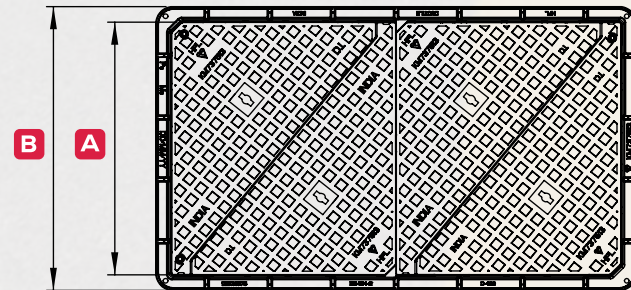
Material
BS-EN-1563 500/7

Specification
BS-EN-124-2-2015

Kitemark
KM737513



DUCTILE

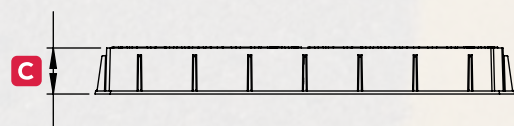


Features

- Non-Skid Checker Design
- Non-Rock Seating
- Heavy Duty Loading
- Design and Product Compliance with BS EN 124-2:2015
- Blind Keyhole
- Multiple Cover for easy handling
- Three point suspensions

Option

- Epoxy Coating
- Customized Marking Available
- GRP Seal Provision
- Better Hinge System
- Better Locking Arrangement



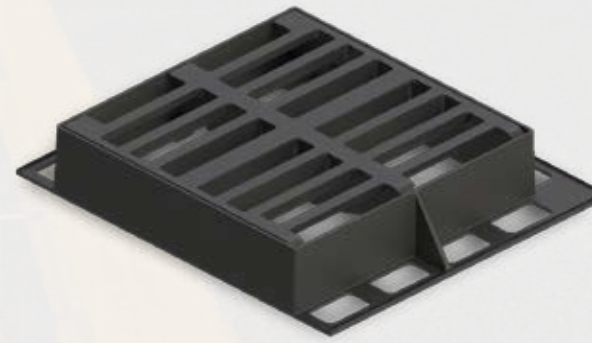
Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
1220 X 675	1370 X 825	100	-	-	1053	-	Yes
1220 X 675	1370 X 825	150	-	Yes/No	1054	-	Yes
1000 X 600	1200 X 800	100	-	-	1102	-	Yes
1200 X 600	1400 X 800	100	-	-	1091	-	Yes
1500 X 750	1660 X 950	100	-	-	1206	Yes	No



ROAD GULLY GRATING & FRAME

C-250

ROAD GULLY GRATING & FRAME

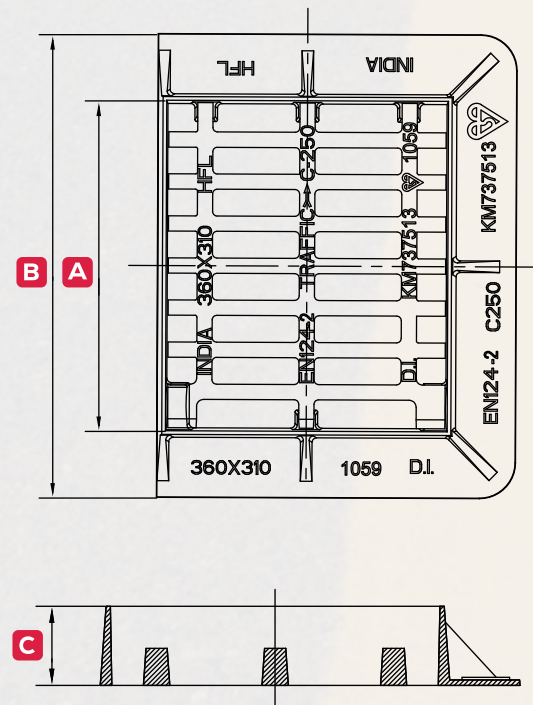


Material
BS-EN-1563 500/7

Specification
BS-EN-124-2-2015

Kitemark
KM737513

DUCTILE



Features

- Non-Rocking Seating
- Medium Duty Loading
- Design and Product Compliance with BS EN 124-2:2015
- Sufficient Water Way Area

Option

- Interlocked Grate
- Epoxy Coating
- Better Hinge System
- Better Locking Arrangement

Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
365 X 310	399X515	75	-	-	1059	-	Yes

D-400

ROAD GULLY GRATING & FRAME

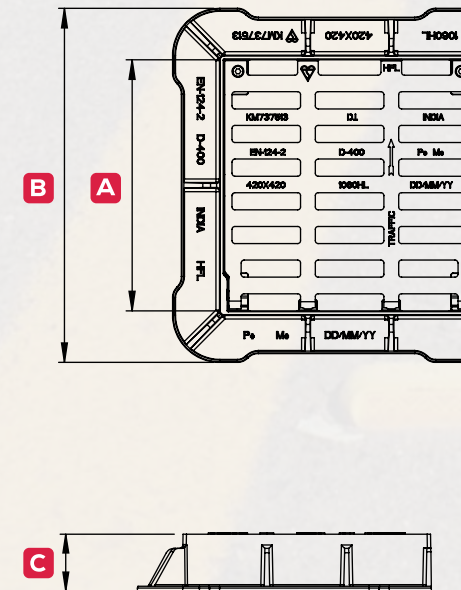


Material
BS-EN-1563 500/7

Specification
BS-EN-124-2-2015

Kitemark
KM737513

DUCTILE



Features

- Non-Rocking Seating
- Heavy Duty Loading
- Design and Product Compliance with BS EN 124-2:2015
- Sufficient Water Way Area

Option

- Interlocked Grate
- Epoxy Coating
- Better Hinge System
- Better Locking Arrangement

Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
300 X 300	400 X 400	100	-	-	1046	-	Yes
400 X 350	500 X 450	100	-	-	1129	-	No
420 X 420	570 X 506	100	-	-	1060	Yes / No	Yes
430 X 370	520 X 510	100	-	-	1058	-	Yes
450 X 450	600 X 600	100	-	-	1139	-	No
450 X 450	540 X 600	100	-	-	1044	Yes	Yes
385 X 315	535 X 401	100	-	-	1038	-	Yes
450 X 450	550 X 550	100	-	-	1056	-	No



**CHANNEL
GRATING**

**C-250
CHANNEL
GRATING**

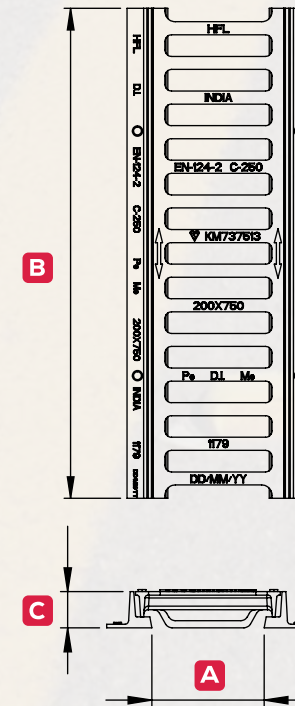


Material
BS-EN-1563 500/7

Specification
BS-EN-124-2-2015

Kitemark
KM737513

 DUCTILE



Features

- Non-Rocking Seating
- Medium Duty Loading
- Design and Product Compliance with BS EN 124-2:2015
- All Grate supplied with standard bearer bars
- Standard Length 750mm
- Large open area for water drainage

Option

- Epoxy Coating
- Interlocked Grate
- Available in various clear opening size

Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
155	280 X 750	50	-	-	1179	Yes	Yes
155	305 X 750	75	-	-	1095	-	No

D-400 CHANNEL GRATING



Material
BS-EN-1563 500/7

Specification
BS-EN-124-2-2015

Kitemark
KM737513



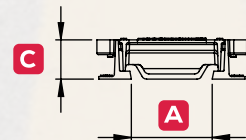
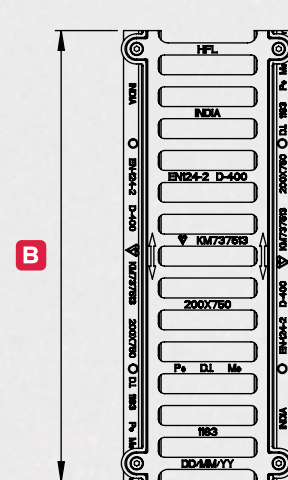
F-900 CHANNEL GRATING



Material
BS-EN-1563 500/7

Specification
BS-EN-124-2-2015

Kitemark
KM737513



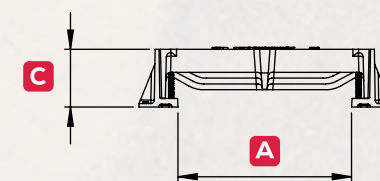
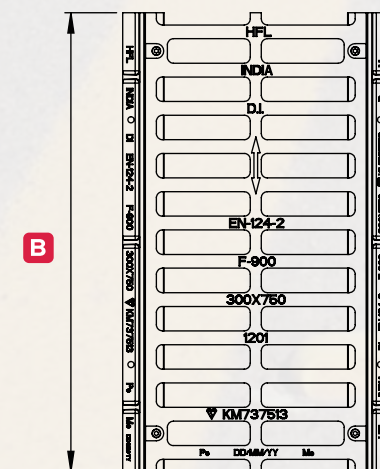
Features

- Non-Rocking Seating
- Heavy Duty Loading
- Design and Product Compliance with BS EN 124-2:2015
- All Grate supplied with standard bearer bars
- Standard Length 750mm
- Large open area for water drainage

Option

- Epoxy Coating
- Interlocked Grate
- Available in various clear opening size

Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
69	169 X 750	63	-	-	1078	-	No
300	380 X 750	63	-	-	1055	-	No
300	430 X 750	50	-	-	1020	-	No
300	435 X 750	75	-	-	1083	Yes	Yes
290	430 X 750	63	-	-	1063	-	No
400	530 X 750	75	-	-	1251	-	-
155	305 X 750	75	-	-	1087	-	No
155	280 X 750	75	-	-	1183	No	Yes
80	205 X 750	75	-	-	1184	No	-
255	405 X 750	75	-	-	1186	Yes	Yes
300	435 X 750	40	-	-	1211	Yes	No



Features

- Non-Rocking Seating
- Heavy Duty Loading
- Design and Product Compliance with BS EN 124-2:20215
- All Grate supplied with standard bearer bars
- Standard Length 750mm
- Large open area for water drainage

Option

- Epoxy Coating
- Interlocked Grate
- Available in various clear opening size

Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
300	470 X 750	100	-	-	1201	Yes	Yes



**TRENCH
GRATING**

**D-400
TRENCH
GRATING**

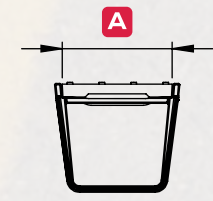
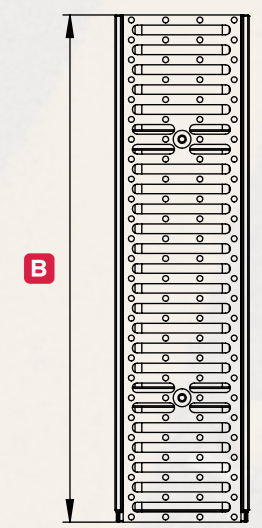


Material
BS-EN-1563 500/7

Specification
BS-EN-124-2-2015

Kitemark 
KM737513

 **DUCTILE**



Features

- Non-Rocking Seating
- Heavy Duty Loading
- Sufficient Water Way Area
- Design and Product Compliance with BS EN 124-2:2015

Option

- Epoxy Coating
- Service Marking as per customer requirement
- Bolt joint for locking

Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
100	Length - 750		-	-	-		-
150	Length - 750		-	-	-		-
200	Length - 750		-	-	-		-
250	Length - 750		-	-	-		-
300	Length - 750		-	-	-		-



KERB GULLY GRATE

D-400 KERB GULLY GRATE

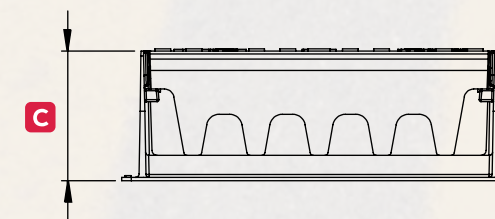
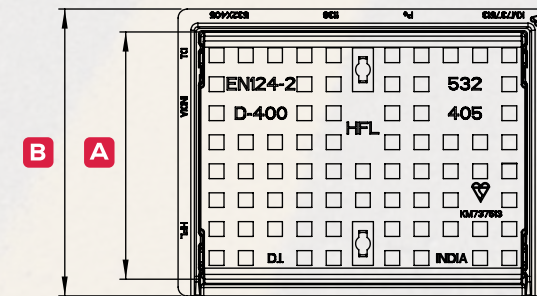


Material
BS-EN-1563 500/7

Specification
BS-EN-124-2-2015

Kitemark
KM737513

 DUCTILE



Features

- Non-Rocking Seating
- Heavy Duty Loading
- Sufficient Waterway area
- Better Hinging System
- Design and Product Compliance with BS EN 124-2:2015

Option

- Epoxy Coating
- Service Marking as per customer requirement
- Bolt joint for locking
- Debris Grid can be used
- Mud bucket can be used

Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
532 X 405	632 X 485	250	-	-	1068	-	No
532 X 405	632 X 485	205	-	Yes	1136	-	Yes
800 X 405	880 X 485	205	-	Yes	1034	-	Yes
555 X 505	655 X 585	205	-	-	1253	-	-
655 X 705	755 X 785	205	-	-	1254	-	-



SURFACE

BOX

D-400
SURFACE BOX

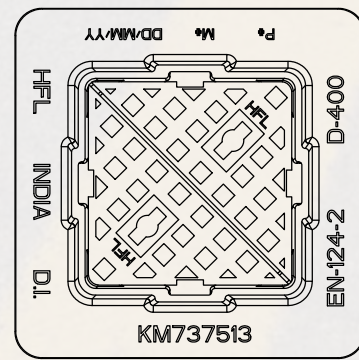


Material
BS-EN-1563 500/7

Specification
BS-EN-124-2-2015

Kitemark
KM737513

 DUCTILE

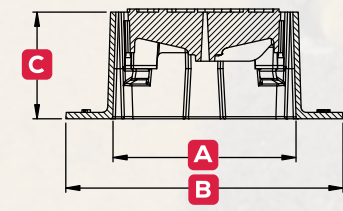


Features

- Non-Rock Seating
- Heavy Duty Loading
- Non-Skid Checker Design
- Closed Keyhole
- Provision for Security Chain Cover to Frame for Better Security
- Design and Product Compliance with BS EN 124-2:2015

Option

- Epoxy Coating
- Provision for Bolting Cover and Frame for better Security
- Customized Marking Available



Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
Dia 140	DIA 270	270	-	-	4B4L	-	-
Dia 177	DIA 282	170	-	-	5B5L	-	-
150 X 150	260 X 260	100	-	-	1070	-	Yes
380 X 230	535 X 385	100	-	-	1111	-	Yes
150 X 150	260 X 260	100/150	-	-	1071	-	-
200 X 200	300 X 300	100	-	-	1261	-	-
225 X 225	325 X 325	100	-	-	1262	-	-
150 X 150	360 X 360	75	Double	-	1085	-	Yes
DIA 150	280 X 280	75	-	-	1096	Yes / No	-



CARRIAGEWAY (JRC)

CARRIAGEWAY (JRC)

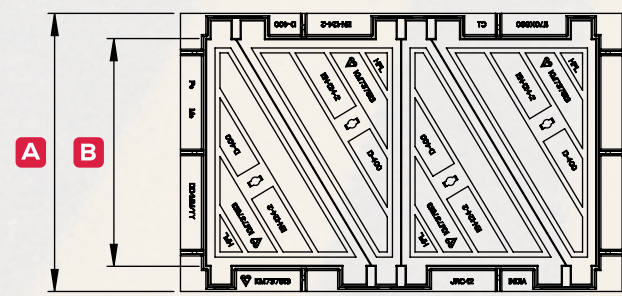


Material
BS-EN-1563 500/7

Specification
BS-EN-124-2-2015

Kitemark
KM737513

DUCTILE

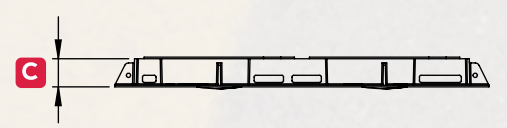


Features

- Non-Rocking Seating
- Heavy Duty Loading
- Design and Product Compliance with BS EN 124-2:2015
- Multiple Grate for easy handling
- Large Open area for water drainage
- Three point suspension

Option

- Provision for bolting with frame & cover for better security
- Epoxy Coating
- Better Hinge System
- Better Locking Arrangement

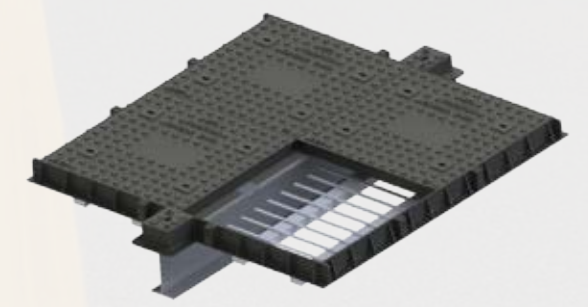


Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
915 X 460	1035 X 580	96	-	-	1123	-	-
995 X 540	1115 X 660	96	-	-	JRC-4	-	Yes
1220 x 696	1374 x 850	160	-	-	JRC-12	-	Yes
1830 X 696	1984 X 850	160	-	-	JRC-14	-	Yes



**SOLID MULTIPLE
COVER & FRAME**

**D-400
SOLID MULTIPLE
COVER & FRAME**

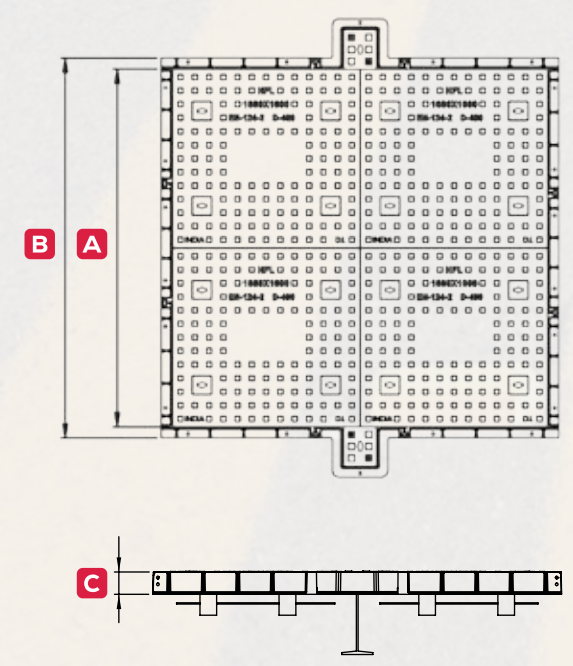


Material
BS-EN-1563 500/7

Specification
BS-EN-124-2-2015

Kitemark
KM737513

 DUCTILE



Features

- Non-Skid Checker Design
- Non-Rock Seating
- Heavy Duty Loading
- Design and Product Compliance with BS EN 124-2:2015
- Closed Keyhole
- Removable Mild Steel I-Beam used for support
- Stainless Steel bolt used for Rail Join

Option

- Epoxy Coating
- Customized Marking Available
- Hinge System Also Available
- Better Locking Arrangement

Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
1500 X 2000	1650 X 2150	100	-	No	1255	-	-
1170 X 690	1320 X 840	100	-	No	1256	-	-
1800 X 1450	1950 X 1600	100	-	No	1257	-	-
1680 X 1600	1830 X 1750	100	-	No	1156	-	-
1220 X 850	1370 X 1000	100	-	No	1258	-	-
1900 X 1980	2050 X 2130	105	-	No	1066	-	-
1500 X 750	1660 X 950	100	-	No	1206	-	-



**RECESSED MULTIPLE
COVER & FRAME**

D-400
RECESSED
MULTIPLE
COVER & FRAME

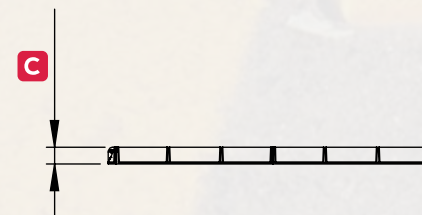
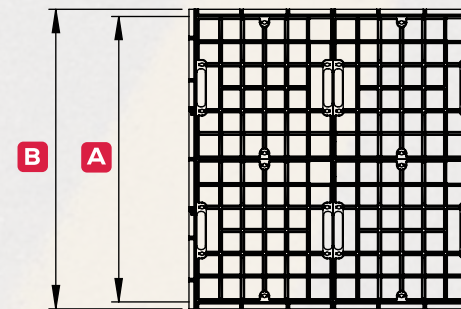


Material
BS-EN-1563 500/7

Specification
BS-EN-124-2-2015

Kitemark
KM737513

 DUCTILE



Features

- Non-Rock Seating
- Heavy Duty Loading
- Design and Product Compliance with BS EN 124-2:2015
- Closed Keyhole
- Recessed depth for interlocking Tiles
- Load Achieve before Concrete Filling
- Removable Mild Steel I-Beam used for support
- Stainless Steel bolt used for Rail Join

Option

- Epoxy Coating
- Customized Marking Available
- Hinge System
- Locking Arrangement

Clear Opening A	Overbase B	Height C	Seal	GRP Provision	Ref. No.	Locking Option	Kite Mark KM737513
1500 X 2000	1650 X 2150	100	-	No	1259	-	-
1000 X 750	1130 X 880	105	-	No	1145	-	Yes
1300 X 750	1430 X 880	105	-	No	1146	-	Yes
1830 X 696	1980 X 846	100	-	No	1260	-	-
1900 X 1980	2130 X 2050	100	-	No	1066	-	No
1680 X 1600	1940 X 1860	150	-	No	1216	-	No

ANTI-THEFT



- Product designed for anti-theft
- Load Confirming to EN-124 D-400 (400KN)
- Material available with ductile iron 500/7 grade
- Easy hinged cover to 120°
- Blocks at 90° against accidental close
- Removable when in vertical position
- EPDM gasket
- Ventilated / Non- Ventilated

Frame & Cover hinge Mechanisms



Frame Hinge



Cover Hinge



Cam Lock



Gasket View



Locking Arm



Lock Handle



Blocks at 90° against accidental close



Cover Open at 120°

LIFTING KEY



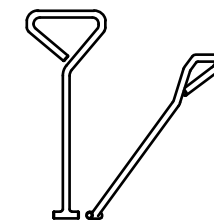
We have a wide range of manhole key sandlifters to meet all your requirements. From the basic manhole key to the hydraulic lifters with a wide range of interchangeable keys we have it all.

Features

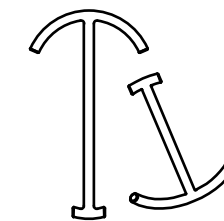
- Material - Mild Steel
- Available in Various length to suit lifting needs

Options

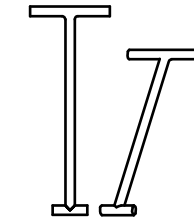
- Galvanized Available



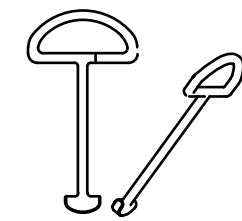
Type A



Type B

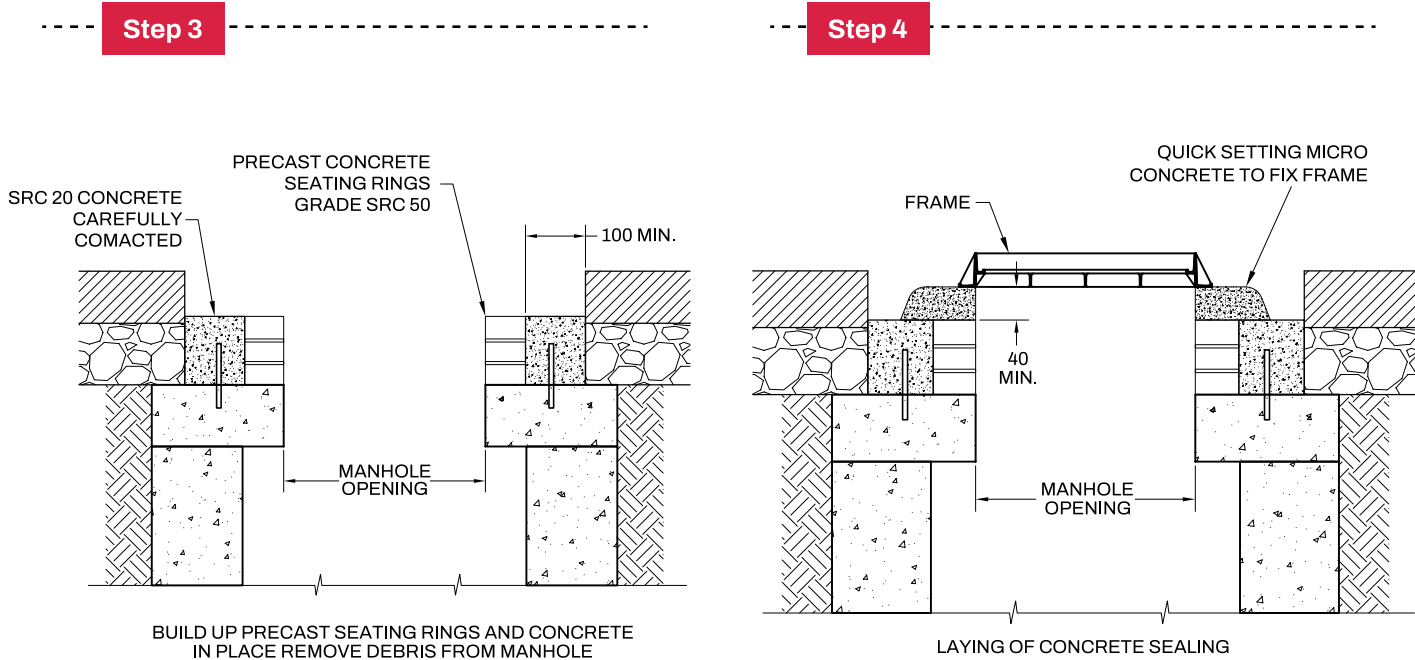
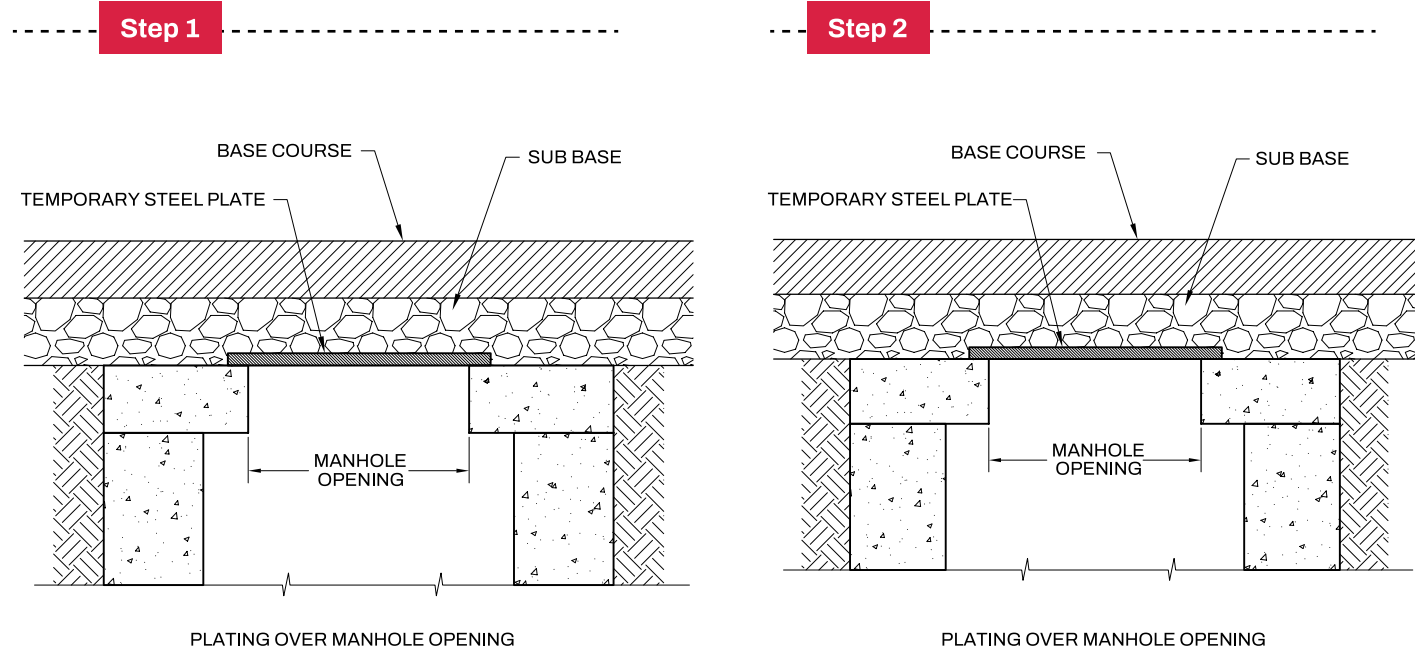


Type C

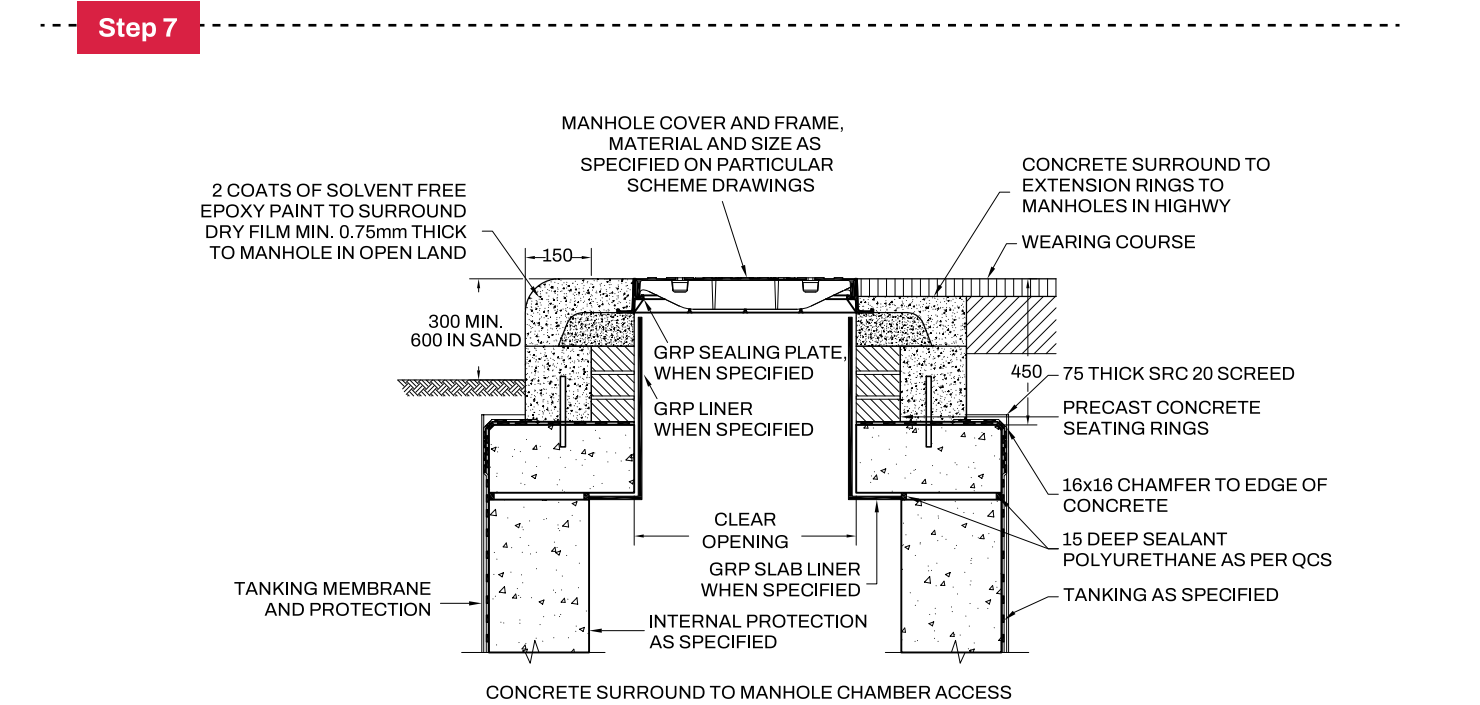
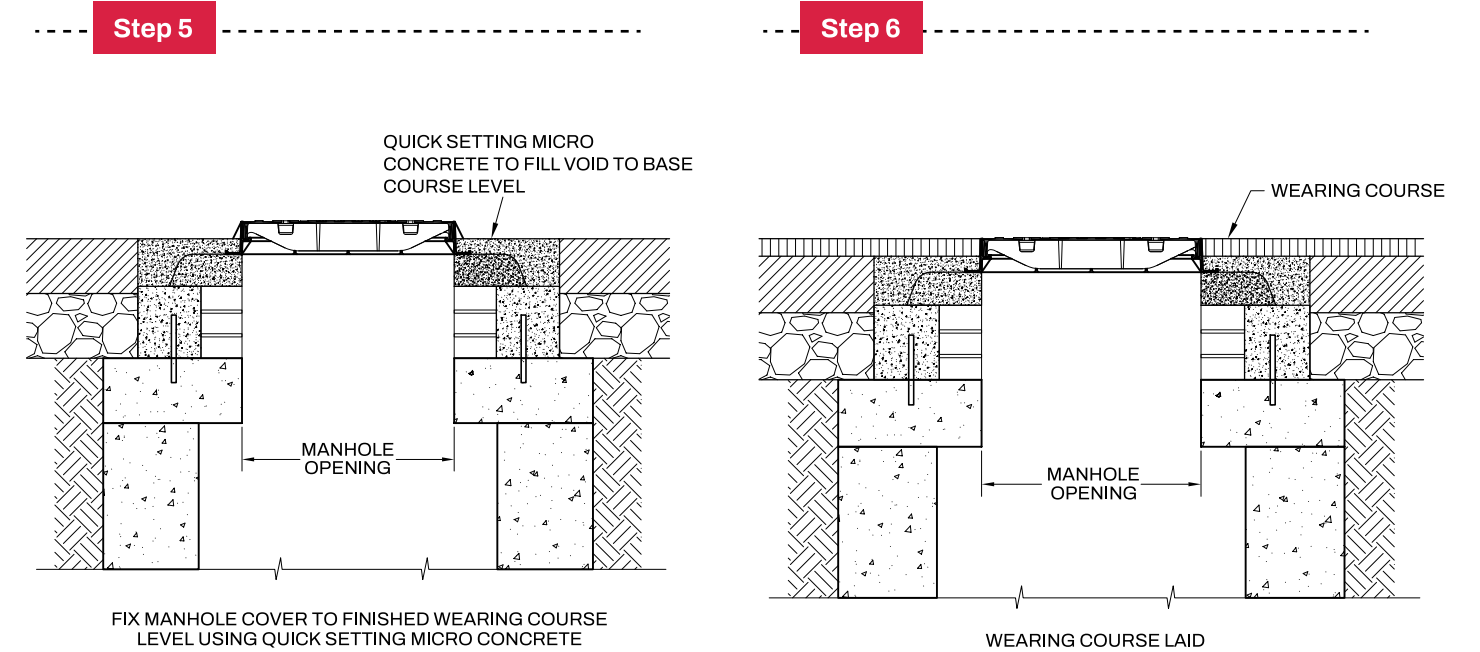


Type D

TYPICAL MANHOLE INSTALLATION SCHEMATIC DIAGRAM



TYPICAL MANHOLE INSTALLATION SCHEMATIC DIAGRAM



EXPORT AND **PACKAGING**

The wide range of products manufactured at HFL are well packed and safely distributed to the client site.

Being one of the leading manufacturers and exporters from India in Cast Iron and Ductile Iron castings, we are fully aware of the fact that packaging is a crucial component of export success. As a part of its business process, HFL equally focuses upon its manufacturing and packaging. We ensure that our products are well packed and reach customers in perfect condition. From special product packaging to distribution, HFL offers an extensive range of facilities to its

clients which includes steel crates, Cardboard and Plywood Packaging, Wooden Crates, and Pallets. All Wooden Packaging is fumigated as per international norms.

Our packaging and export section has trained specialists who manage our exporting facilities. Our business operations have adequate facilities to support the smooth and fast distribution of our products across the globe.



GLOBAL PRESENCE

Having exported products in over 17 countries across the globe, HFL has successfully marked its presence in the global market within a span of two decades. While we respect diversity in the organization, the prime objective behind our marketing activities is to promote the quality of the brand HFL. Howrah Ferrous is one of the market leaders in India manufacturing Cast Iron and Ductile Iron Castings.



AUSTRIA



GERMANY



POLAND



ROMANIA



UAE



UK



BAHRAIN



GREECE



PORTUGAL



SLOVAKIA



USA



SAUDI ARABIA



CANADA



ITALY



QATAR



SOUTH AFRICA



EGYPT

CERTIFICATIONS & APPROVAL

For HFL, conformance to the standard is more than a duty. As a company, we believe our customers deserve only the best technology and services.

HFL has been accredited with the following certifications:

1

British Standard Institute (BSI), UK
QUALITY MANAGEMENT SYSTEM - ISO 9001:2015
 Certificate No. FM 585441

2

British Standard Institute (BSI), UK
ENVIRONMENTAL MANAGEMENT SYSTEM - ISO 14001:2015
 Certificate No. EMS 742671

3

British Standard Institute (BSI), UK
OCCUPATIONAL HEALTH & SAFETY MANAGEMENT SYSTEM ISO 45001:2018
 Certificate No. OHS 742672

4

British Standard Institute (BSI), UK
KITEMARK
 Certificate No. KM 737513

5

Bureau de normalisation du Québec
 Certificate No. 3479



British Standard Institute (BSI), UK

Environmental Management System

Certificate No. EMS 742671



British Standard Institute (BSI), UK

Occupational Health & Safety Management System

Certificate No. OHS 742672



Bureau de normalisation du Québec

Certificate No. 3479



British Standard Institute (BSI), UK

Quality Management System

Certificate No. FM 585441



British Standard Institute (BSI), UK

Kitemark

Certificate No. KM 737513

AWARD & RECOGNITION

HFL is honoured to receive recognition for the work we do on behalf of our customers, employees, and communities around the globe. Here are some of the awards we have received recently.



**50th EEPC All India National Award for Export Excellence
Gold Trophy 2017 - 2018**



OUR PROMISE TOWARDS BUILDING A BETTER TOMORROW.

We strive to do something that will benefit our surroundings as part of our Corporate Social Responsibility. At HFL, we truly care for the social and economic development of the communities in which we live. By doing our bit of responsibility for society we help in building a better world.

The company has adopted an approach of involving itself directly in all CSR activities. The purpose of partnerships/collaborations with external individuals or institutions is to access expertise and/or resources and to support the implementation of projects. HFL's philosophy focuses on building a socially and environmentally conscious organisation through its volunteer initiatives.

GLOSSARY

Seating

Bearing/contact area between cover and frame. Also type or contact: three-point seating, on-rock seating; machined seating; gasket (rubber) seating.

Single-piece

Cover/grating comprises one piece

Single Seal

Traditionally single vertical tongue-in-groove relationship between cover, with single rim, and frame with a single groove. Allows single grease seal against egress of odour. Limits ingress of rainwater. Also, see the seal plate.

Sealed

Cover and frame which are Sealed in some way to at least prevent the egress of odour from the sewer. There are different methods of sealing and these give varying standards of performance. See double seal, single seal.

Slide-out

Cover removed by lifting one end then sliding out rather than direct vertical lift. Reduces the effort needed for removal.

Ventilated cover

Openings within cover allow free circulation of air within the shaft and prevent pressure build-up. The minimum vented area is specified in BS EN 124-2.

Waterway area

Free area of grating which allows the passage of water (ie. total area of slots).

Recessed Cover

Top of cover recessed to allow infilling with a chosen material, concrete, quarry tiles etc. Usually to match the surrounding area. Note most iron covers have a shallow recess and not be suitable for use with paver blocks.

STATUTORY DISCLAIMER

All weight and dimensions are subject to normal foundry tolerance. HFL Products Private Limited Reserves the right to alter size / weight / design of any product in this catalog without notice. This guide is offered in good faith. HFL accepts no responsibility, whatsoever, for any loss or damage: howsoever caused, from its use.



GLOSSARY

NOTE

Ruled area for handwritten notes with horizontal dashed lines.

NOTE

Ruled area for handwritten notes with horizontal dashed lines.



Earth does not belong to human beings.
Human beings belong to the Earth.

Chief Seattle





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info@howrahferrous.com