

**COFUNCO**  
Cast for Life

**EXPERTS IN CAST  
IRON MANHOLE  
COVERS AND  
GRATINGS**



**Funosa**  
SHAPING EXCELLENCE

# ABOUT US

Cofunco is a company specialising in civil engineering covering and closing products. Our business is based on fast custom service, offering the finest quality products to the various markets we serve. We are exclusive distributors for products manufactured by Funosa, a foundry established in 1916 in Igualada (Barcelona), specialising in ductile and grey cast iron parts.

## INTERNATIONAL OUTLOOK

At Cofunco there are no limits to our growth. Our presence throughout Europe allows us to detect new trends, grow, and offer our clients world-class service based in innovation and development.



Our innovation, adaptation capacity and comprehensive management ensure that we achieve what our clients need.





## RESOURCES

**+50.000 tonnes/year**

**19.600 m<sup>2</sup> of built-up surface**

**Model manufacturing**

**Painting**



## ADVANCED TECHNOLOGY

- › Part design:  
CAD 3D - CAE-CAM
- › Structural calculation by finite elements
- › Testing laboratory:  
Resistance  
Metrology  
Metallography  
Chemistry



# 360° PROJECTS. SATISFACTION FROM ALL ANGLES

From product conception to full time service, we are a motivated leading international industry that is ready to assist you on every step of the way.

Our success stems in large part from Funosa's support as supplier of optimal technological and human resources that guarantee optimal efficiency and service.

## QUALITY

Funosa manufactures all of its products under the IATF 16949:2016 quality system, which makes us the only company in the world capable of designing, manufacturing and marketing cast iron pieces for global market. Under this quality system, we offer ergonomic products reknown for their maximum resistance and safety.

Likewise, our products are certified by the corresponding agencies in the market where we operate, guaranteeing compliance with UNE-EN124-2:2015 and all other standards and regulations.

## ENVIRONMENT

Preserving the environment is part of Funosa's fundamental responsibilities. This implies compliance with regulations both at the technical and human level, which include compliance with the 14001:2015 Environmental Management Standard.

Funosa is a solid company that respects and fosters processes aimed at **ensuring the highest quality, safety and respect for the environment**



## FUNOSA AND COFUNCO

Having Funosa as our partner ensures our success, due to the high quality standards throughout their production process and their finished product. They are IATF 16949 certified and have their own laboratory for controlling cast iron compositions and structures.

At Cofunco we apply this management system to our products ensuring optimal operation and maintenance for the duration of their product life cycle.

- Manufacturing
- Design
- Raw material industrialization and control
- Production process
- Quality and Delivery Control

## SERVICES OFFERED

### SALES DEPARTMENT

Our extensive and experienced sales team, both regionally and internationally, offers quick solutions to our customers' needs.

### ENGINEERING DEPARTMENT

We specialize in custom designs, offering effective and innovative solutions adapted to the specific situation of each project.

### AFTER-SALES SUPPORT

At the completion of each project, we keep at our customers' disposal a technical guarantee for any incident that may arise on-site, by providing the technical assistance needed to resolve the situation.

**Funosa**  
SHAPING EXCELLENCE



## ↓ APPROVALS

### WATER COMPANIES:

- Aqualia
- Emusa
- Huelva
- Seragua
- Emasa
- Giahsa
- Agbar
- AMVISA
- Emalgesa
- Facsa
- Pamplona
- Sercomosa
- Emasesa
- Guadix
- EYDAP
- Ajemsa
- Galasa
- SEAAL
- Aljarafesa
- Apemsa
- SEOR
- Huesna
- Chiclana
- Natural

### POWER COMPANIES:

- Endesa
- Unelco
- Eléctrica de Cádiz
- Iberdrola
- Viesgo
- Unión Fenosa
- EAE Ceuta
- R.E.E
- Miajadas

### GAS COMPANIES:

- Gas Natural Fenosa

### TELECOMMUNICATION COMPANIES:

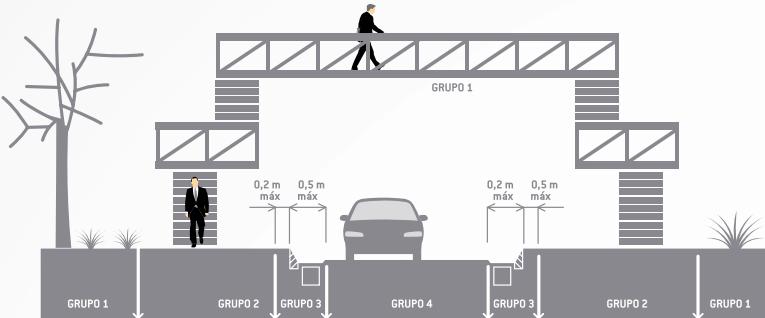
- Telefónica
- CTTI
- Teleco
- Vodafone
- Metropolitana
- Orange
- Euskatel

### PUBLIC AGENCIES AND MUNICIPALITIES:

- Government of Cantabria
- Vila-Real
- Almería
- Frigiliana
- Seville
- Córdoba
- Acosol
- Chipiona
- Sanlúcar de Barrameda
- San Fernando
- Cáceres
- Elche
- Benidorm
- El Ejido
- Barcelona
- Consortium Bilbao
- Cantabria
- Valladolid

## ↓ RANGE

Cofunco provides an entire range of products as per standard UNE-EN124-2:2015 in terms of cast iron manholes and grates for civil engineering works:



Location of groups according to their location on the public roads as per UNE-EN124-2:2015 definition.



**B 125**

### Group 2 (Class B 125 minimum)

Car parks and pedestrian areas, where occasional vehicular access is likely.



**C 250**

### Group 3 (Class C 250 minimum)

For covers on shoulders and ditch areas of streets up to 50 centimetres into the road and 20 centimetres towards the pavement, both measured from the side of the kerb alongside the road.



**D 400**

### Group 4 (Class D 400 minimum)

Roads (including pedestrian ways), hard shoulders and parking areas for all kinds of vehicles.



**E 600**

### Group 5 (Class E 600 minimum)

Areas where heavy vehicles circulate, such as pavements at airports, docks, etc.



**F 900**

### Group 6 (Class F 900 minimum)

Areas subjected to extreme weight loads – ports and airports.

### Loudness generated by vehicles passing over the engraving on a manhole cover:

Sound level obtained from several standard tests based on the following values:  
Vehicle speed 50 km / hr (1800 rpm engine) Peugeot 308 100CV

Tires: GoodYear Efficient GRP

Sound level meter: 1.5 m horizontally, 1 m vertically

The sound level values in dBA are also available for speeds between 20 km / hr and 60 km / hr

**F900****MATERIAL PRODUCED:**

Casted device produced in micro alloy spheroidal graphite. Ductile cast iron according to EN -1563.

**COATING:**

Epoxy-polyester BLACK ENAMEL, RAL-9004, thickness 100 microns, based on thermo stable plastic resins treated at high temperature. Compliant with Council Directive 1999/13/EC regarding exemption of solvents.

**GALAXY F900****HINGED MANHOLE COVER WITH CONTINUOUS ELASTOMERIC GASKET****INTENSE TRAFFIC**

Set provided with a high performance continuous elastomeric gasket to absorb vibrations and insure soundproofing. The frame secures maximum fixation to pavements. Hinged cover with maximum opening range of 110°, safety blocking at 90° angle and removable from the frame at 90°. Closing system with interlocking perimeter edge. Total or partial customization available. Opening force below 30 daN.

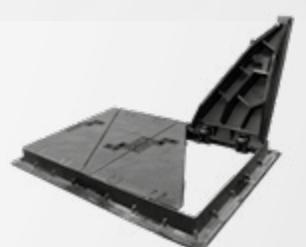
MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	SOUND LEVEL [dBA]	CERTIFICATE	UNITS PER PALLET
2184	Ø 650	850 x 850	100	Ø 604	82	BVC	6

**Options:** Locking system, anti-theft

**COLUMBIA F900****HINGED MANHOLE COVER****INTENSE TRAFFIC**

Hinged cover manhole with 110° opening angle, accidental closing lock at 100°, and cover removal at 90°. Interlocking closure with peripheral skirt. Frame equipped with sealing gasket.

MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	CERTIFICATE
2130	Ø 765	900 x 900	150	Ø 714	FUNOSA

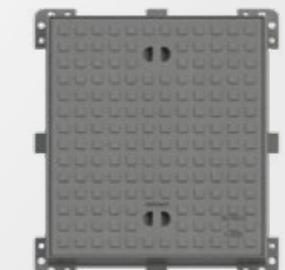
**RETEL F900****HINGED MANHOLE COVER****INTENSE TRAFFIC**

Frame with 4 triangular hinged covers, with maximum opening range of 110° and safety blocking at 90° angle. Hinges are integrated into the frame to provide external edges without ridges for easier installation into the concrete or bricks. Customization available.

Opening force below 35 daN.

MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	SOUND LEVEL [dBA]	CERTIFICATE	UNITS PER PALLET
10114 triangles	598 x 780	1285 x 870	100	1180 x 760	79	BVC	5

**Options:** Locking system with a special head-screw according to the customer specifications. Special steel key with hook to remove cover easily.

**A1 SINGLE F900****HINGED MANHOLE COVER****INTENSE TRAFFIC**

Road manhole cover with gasket and optional galvanized frame.

MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	CERTIFICATE
3192 A1	725 x 625	916 x 716	100	683 x 563	FUNOSA



## GRATINGS RCS F900

### CHANNEL GRATING INTENSE TRAFFIC



Grating 300 mm clear opening for channel, 13,6 dm<sup>2</sup> absorption surface.  
Anti-slip surface for pedestrian safety.



**Options:** Anti-theft system with stainless steel bolts, secures grate to frame, eliminating shifting or movement when traffic passes over and when placed in channel.

## E600

### MATERIAL:

Casted device produced in micro alloy spheroidal graphite. Ductile cast iron according to EN -1563.

### COATING:

EPOXY-POLYESTER BLACK ENAMEL, RAL-9004, thickness 100 microns, based on thermo stable plastic resins treated at high temperature. Compliant with Council Directive 1999/13/EC regarding exemption of solvents.



## GALAXY E600

### HINGED MANHOLE COVER WITH ELASTOMERIC GASKET INTENSE TRAFFIC



Set provided with a high performance continuous elastomeric gasket that absorbs vibrations and insure soundproof. Frame secures maximum fixation to cement on pavement. Hinged cover with maximum opening range of 107°, safety blocking at 90° angle and removable from the frame at 90°. Closing system with interlocking perimeter edge. Opened by standard tools (crowbar, pick). Opening force below 30 daN. Total or partial customization available.



MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	SOUND LEVEL [dBA]	CERTIFICATE	UNITS PER PALLET
1184 *	Ø 645	Ø 850	100	Ø 604	82	AFNOR	8
2184	Ø 645	850 x 850	100	Ø 604	82	AFNOR	6

\* Options: ventilated cover



## GALAXY E600 GRATING

### HINGED MANHOLE COVER WITH ELASTOMERIC GASKET INTENSE TRAFFIC



Hinged grating with 110° opening and safety lock to prevent accidental closing at 90°. Grating removal at 90°. Frame equipped with a specially designed gasket to ensure perfect seating and sound insulation. Interlocking closure with 50 mm peripheral skirt.



MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	ABSORPTION SURFACE [dm <sup>2</sup> ]	CERTIFICATE	UNITS PER PALLET
6184	Ø 645	Ø 850	100	Ø 604	11,8	FUNOSA	6

**Optional:** anti-theft system with locking pin and tamper-proof nuts at the hinge point.

# D400

**MATERIAL:**

Casted device produced in micro alloy spheroidal graphite. Ductile cast iron according to EN -1563.

**COATING:**

EPOXY-POLYESTER BLACK ENAMEL, RAL-9004, thickness 100 microns, based on thermo stable plastic resins treated at high temperature. Compliant with Council Directive 1999/13/EC regarding exemption of solvents.



## COLUMBIA D400

**HINGED MANHOLE COVER WITH APPARENT FRAME OR SQUARE FRAME****INTENSE TRAFFIC**

Set with clear opening 705mm. Hinged cover with safety blocking at 100°angle and removable from the frame at 90°. Closing with interlocking perimeter edge.

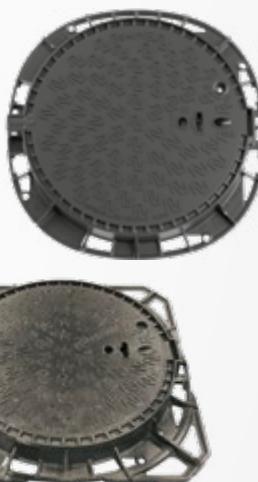
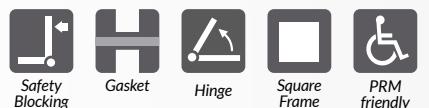
Opened by standard tools (crowbar, pick). Customization available.

Opening force below 54 daN.

MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	SOUND LEVEL [dBA]	CERTIFICATE	UNITS PER PALLET
2130-1	Ø 765	900 x 900	100	Ø 705	82	AENOR	8
2134 apparent frame	Ø 765	910 x 910	130	Ø 705	82	AENOR	8



## GEMINIS D400

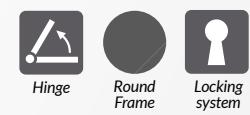
**HINGED ACCESS COVER****INTENSE TRAFFIC**

Set of frame and articulated lid with opening of up to 120° and equipped with 90° lock against accidental closure. Interlocking closure with 55mm perimeter skirt. The lid has 10 ribs that allow it to have a very high resistance, excellent flatness, minimize dynamic deformation and noise to the passage of intense traffic, minimizing the wear of the joint. The frame has 3 lifting handles for easy handling. Ergonomic handle on the lid for lifting.

MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	CERTIFICATE	UNITS PER PALLET
1194	Ø745	Ø 950	100	Ø 700	IO-CERT	8
2194	Ø745	910x910	100	Ø 700	IO-CERT	8



## KOPERNIK D400

**HINGED ACCESS COVER WITH GASKET****INTENSE TRAFFIC**

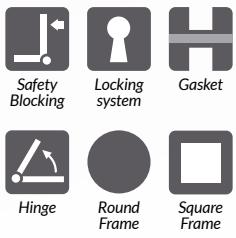
Access cover with maximum opening range 120°, safety blocking at 90° angle and removable from the frame at 90°. Depth of insertion 59 mm. Lower structure of the lid is formed by 8 main ribs. Continuous, reinforced gasket to avoid distortion and partially serves as hermetic sealing. Closing system with interlocking perimeter edge. Customization available.

MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	SOUND LEVEL [dBA]	CERTIFICATE	UNITS PER PALLET
1191	Ø 635	Ø 770	150	Ø 600	82	IO-CERT	8
1193	Ø 635	Ø 770	115	Ø 600	82	IO-CERT	10



## VOYAGER D400

HINGED ACCESS COVER WITH ELASTOMERIC GASKET IN ENTIRE FRAME PERIMETER AND ELASTIC CLOSING SYSTEM  
NORMAL TRAFFIC



Set of 600 mm clear opening and hinged cover with maximum opening range of 120°, safety blocking at 90° angle and removable from the frame at 90°. New patented elastic closing system. Continuous gasket to avoid distortion and partially serves as hermetic sealing. Customization available.

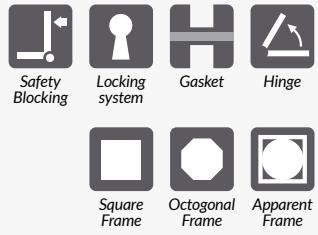
MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	SOUND LEVEL [dBA]	CERTIFICATE	UNITS PER PALLET
1173*	Ø 635	Ø 785	100	Ø 600	82	BVC/IO-CERT	12
1173.55	Ø 585	Ø 717	75	Ø 550	-	IO-CERT	16
2173	Ø 635	810 x 810	75	Ø 600	82	BVC	12
6173 grating	Ø 635	Ø 791	100	Ø 600	-	IO-CERT	12

\*Options: locking system, ventilated cover



## COSMOS D400

HINGED ACCESS COVER WITH ELASTOMERIC GASKET AND ELASTIC CLOSING SYSTEM  
NORMAL TRAFFIC



Set of 600mm clear opening. Available with 850mm and 790mm exterior diameter. Hinged cover with maximum opening range of 120°, safety blocking at 90° angle and removable from the frame at 90°. Closing system operated by two elastic bars. Anti-residue elastomeric gasket design for stability and noise reduction. Anti-slip surface. Opened by standard tools (crowbar, pick). Available in ventilated cover model 1164VENT and grating model 6184 intense traffic (11,8 dm<sup>2</sup> absorption surface) and model 6174. All frames may be substituted for concrete cover model 1186. Opening force below 17,5 daN. Total or partial customization available.



MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	SOUND LEVEL [dBA]	CERTIFICATE	UNITS PER PALLET
1164*	Ø 645	Ø 850	100	Ø 600	82	AENOR/AFNOR	10
2164*	Ø 645	850 x 850	100	Ø 600	82	AENOR/AFNOR	6
2131	Ø 645	850 frame 750 cover surface	100 apparent frame	Ø 600	82	BVC	6

\*Options: anti-opening block with two elastic bars by screw and nut with fixation, anti-theft hinge. Ventilated cover.

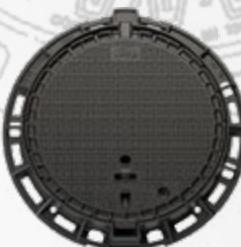


## APEX D400

### HINGED ACCESS COVER CONTINOUS JOINT INTENSE TRAFFIC

Articulated register with continuous joint. Interlock closure 51.5 mm. Surface with non-slip and sound-absorbing engraving.

MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	CERTIFICATE	UNITS PER PALLET
1182	Ø 675	Ø 850	100	Ø 625	AFNOR	8



## GALAXY D400

### HINGED ACCESS COVER WITH ELASTOMERIC GASKET AND ELASTIC CLOSING SYSTEM INTENSE TRAFFIC

Octogonal frame management with 90° safety lock. Equipped with an elastomeric seal and manoeuvring box.



MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	SOUND LEVEL [dBA]	CERTIFICATE	UNITS PER PALLET
1184D *	Ø 645	Ø 850	100	Ø 604	82	-	8

\* Anti-intrusion lock: consult\*



## EXPLORER D400

### INTENSE TRAFFIC

Manhole cover with self-level frame. Continuous gasket in the lid.

MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	CERTIFICATE	UNITS PER PALLET
1183*	Ø 675	Ø 820	190	Ø 600	IO-CERT	-

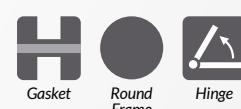
\* Anti-intrusion lock: consult\*



## METEOR D400

### HINGED MANHOLE COVER WITH CONCRETE FILLER AND FRAME IN DUCTILE IRON WITH ELASTOMERIC GASKET

Set of 604 mm clear opening. Hinged cover with maximum opening range of 120° and safety blocking at 90° angle. Anti-residue elastomeric ring design for stability and noise reduction. Self-locking fixation to better secure product to pavement. Closing system with interlocking perimeter edge maximized by cover's weight. Anti-slip surface. Opened by standard tools (crowbar, pick). Opening force below 30 daN.



MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	SOUND LEVEL [dBA]	CERTIFICATE	UNITS PER PALLET
1186	Ø 650	Ø 790	100	Ø 600	80,5	IO-CERT	5

**Options:** locking system

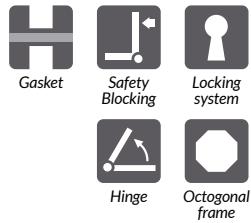


## RETEL D400

### HINGED ACCESS COVER WITH ELASTOMERIC GASKET AND ELASTIC CLOSING SYSTEM

#### NORMAL TRAFFIC

Access cover with clear opening 804mm. Hinged cover with maximum opening range of 120°, safety blocking at 90° angle and removable from the frame at 90°. Closing system operated by of two elastic bars. Anti-residue joint design. Elastomeric gasket for stability and noise reduction. Anti-slip surface. Opened by standard tools (crowbar, pick). Opening force below 30 daN.



MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	SOUND LEVEL [dBA]	CERTIFICATE	UNITS PER PALLET
1108-08	Ø 840	1000 x 920	120	Ø 804	81	IO-CERT AFNOR	8

**Options:** locking system



Set of 600 mm clear opening. Air and Water tight sealed below 1 bar of pressure. The hermetic seal is secured by 4 closures of stainless steel bolts to avoid seizing, equipped with non-loosening washers for vibration. Anti-slip surface designed for pedestrian safety. Opened by standard tools (crowbar, pick). Opening force below 30 daN. Customization available.

MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	SOUND LEVEL [dBA]	CERTIFICATE	UNITS PER PALLET
1122	Ø 655	Ø 850	75	Ø 600	81	AFNOR	10



## ARCHILIFT D400

### HINGED ACCESS COVER WITH LOCKING SYSTEM AND KEY

#### NORMAL TRAFFIC

Access cover of 760x760mm clear opening. Hinged cover with maximum opening range of 110°. Hinge with spring system for easy handling. Cover includes a hermetic gasket and has an anti-slip surface especially designed with a slight slope so that water is eliminated quickly. Anti-theft closing system and lifting key included. The typical usage of this product is for accesses to the carburant deposits in petrol stations. Customization available.

MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	SOUND LEVEL [dBA]	CERTIFICATE	UNITS PER PALLET
3193	840 x 840	1015 x 920	100	760 x 760	82	BVC	8

**Options:** ergonomic lifting key with long handle, customizable with an adapted head, usable as a grip for opening and closing.



## SPREE D400

### GRATING

#### NORMAL TRAFFIC

Set of grating and frame provided with dual steel elastic closing system (patented). Grating supported in frame in four points separated by special gasket with high hardness and durability for stability and noise reduction. Interior part of frame with round form to install a basket for solid waste collection. Anti-slip surface. Opened by standard tools (crowbar, pick).

MODEL	GRATING DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	ABSORPTION SURFACE [dm <sup>2</sup> ]
5170	505 x 295	520 x 305	100	363 x 291	5,9

**Options:** locking system.





## EOS D400

### HINGED MANHOLE COVER WITH GASKET NORMAL TRAFFIC



Hinged cover with maximum opening range of 110°, safety blocking at 100° angle and removable from the frame at 90°. Anti-residue elastomeric gasket designed for stability and noise reduction. Self-locking fixation to better secure frame to pavement. Closing system with interlocking perimeter edge maximized by cover weight. Anti-slip surface. Opened by standard tools (crowbar, pick). Customization available.

MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	SOUND LEVEL [dBA]	CERTIFICATE	UNITS PER PALLET
31110	328x328	415 x 415	75	301 x 301	79	AFNOR*	12
31111	424 x 424	508 x 525	100	400 x 400	79	AFNOR	8
31112	524 x 538	608 x 628	100	500 x 500	79	AFNOR	8
31113	624 x 638	708 x 737	105	600 x 600	79	AFNOR	5
31114	724 x 737	808 x 844	100	700 x 700	79	AFNOR*	5
31115	828 x 828	908 x 954	100	800 x 800	79	AFNOR* IO-CERT	5

Options: locking system

\*In the process of certification



## EOS GRATING D400

### HINGED GRATING WITH GASKET NORMAL TRAFFIC



Hinged grating with maximum opening range of 110°, safety blocking at 100° angle and removable from the frame at 90°. Anti-residue elastomeric gasket designed for stability and noise reduction. Self-locking fixation to better secure frame to pavement. Closing system with interlocking perimeter edge maximised by cover weight. Anti-slip surface. Opened by standard tools (crowbar, pick).

MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	ABSORPTION SURFACE [dm <sup>2</sup> ]	CERTIFICATE	UNITS PER PALLET
51110	328 x 328	415 x 415	75	301 x 301	2,85	AFNOR *	12
51111	424 x 424	508 x 525	100	400 x 400	5,8	AFNOR	8
51112	524 x 524	608 x 628	100	500 x 500	8,7	AFNOR	8
51113	624 x 638	708 x 737	100	600 x 600	12,4	AFNOR	5
51114	724 x 737	808 x 844	100	700 x 700	18,2	AFNOR *	5
51115	828 x 828	908 x 954	100	800 x 800	25,1	AFNOR *	5

Options: locking system

\*In the process of certification



## C-EOS D400

### CONCAVE GRATING – PRM NORMAL TRAFFIC



Hinged grating with 120° concave slope and maximum opening range of 110°. Closing system with interlocking perimeter edge maximized by grating's weight. Anti-slip surface. Opened by standard tools (crowbar, pick).

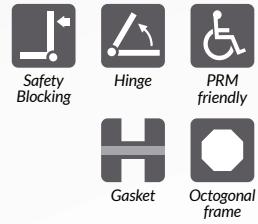
MODEL	GRATING DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	ABSORPTION SURFACE [dm <sup>2</sup> ]	CERTIFICATE
5172	330 x 330	420 x 420	100	307 x 307	4,45	AFNOR
5173	430 x 430	520 x 520	100	407 x 407	8,26	AFNOR
5174	530 x 530	620 x 620	100	507 x 507	12,12	AFNOR
5175	630 x 630	720 x 720	100	620 x 620	15,1	AFNOR
5176	730,5 x 735	820 x 820	100	710 x 710	18,8	AFNOR

Options: Anti-theft hinge



## GALAXY D400 GRATING

### HINGED GRATING PRM WITH ELASTOMERIC GASKET INTENSE TRAFFIC



Set with clear opening Ø604 mm. Hinged grating with maximum opening range of 110°, safety blocking at 90°angle and removable from the frame at 90°. Frame equipped with gasket to prevent noise and vibration. Closing system with interlocking perimeter edge. Bar design according to PRM regulation and to provide maximum water drainage. Opened with standard tool (crowbar, pick).

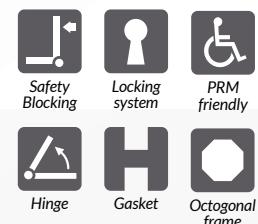
MODEL	GRATING DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	ABSORPTION SURFACE [dm <sup>2</sup> ]	CERTIFICATE	UNITS PER PALLET
6184	Ø 645	Ø 850	100	Ø 604	11,8	AFNOR	6

**Options:** Anti-theft hinge



## COSMOS GRATING D400

### HINGED GRATING WITH ELASTOMERIC GASKET AND ELASTIC CLOSING SYSTEM NORMAL TRAFFIC



Set of 600 mm clear opening available in 850 mm and 790 mm exterior diameter. Hinged cover with maximum range of 120°, safety blocking at 90° and removable from the frame at 90°. Closing system operated by two elastic bars. Anti-residue elastomeric gasket design for stability and noise reduction. Anti-slip surface. Opened by standard tools (crowbar, pick). Opening force below 16,5 daN.

MODEL	GRATING DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	ABSORPTION SURFACE [dm <sup>2</sup> ]	CERTIFICATE	UNITS PER PALLET
6174	Ø 645	Ø 850	100	Ø 600	11,8	AFNOR	10

**Options:** anti-opening block with two spring bars by screw and nut with fixation. anti-theft hinge



## AQUA D400

### HINGED GRATING NORMAL TRAFFIC



Set includes grate and frame. Hinge provided with anti-theft screw. Anti-slip surface. Opened by standard tools (crowbar, pick). Opening force below 17 daN.

MODEL	GRATING DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	ABSORPTION SURFACE [dm <sup>2</sup> ]	CERTIFICATE	UNITS PER PALLET
5121	600 x 350	730 x 420	80	550 x 297	11,10	IO-CERT	30



## MAREMAGNUM D400

### HINGED GRATING FOR MODULAR/LINEAL FORMATION NORMAL TRAFFIC



Set of frame and hinged grating with maximum opening range of 120° and anti-closing security block. Minimal gap that ensures perfect grate fitting in the frame. Appropriate for flooding roads. Great absorption capabilities (22,3 dm<sup>2</sup>). Modular grating available with perpendicular installation at the kerb or crossing of the intercepting road. Opening force below 22 daN.

MODEL	GRATING DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	ABSORPTION SURFACE [dm <sup>2</sup> ]	CERTIFICATE	UNITS PER PALLET
5152	754 x 504	828 x 578	100	690 x 440	22,3	AENOR	10
5152 PLUS	980 x 490	1000 x 515	100	900 x 400	20,3	IO-CERT	10

**Options:** to adjust the size to the width of the end of the road you can optionally add the 5153 module (dimensions 500mm wide and length 250mm). Class C-250. Non-jointed. Self-locking anchorage to better secure the product to pavement





## BALATON D400

### GRATING WITH HINGE

#### NORMAL TRAFFIC

Articulated grate wedged at 2 points.



MODEL	GRATING DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	ABSORPTION SURFACE [dm²]	CERTIFICATE
5183	310 x 310	400 x 380	75	305 x 305	4,1	FUNOSA
5184	455 x 455	550 x 550	75	425 x 425	9,2	FUNOSA



## VOLGA D400

### GRATING WITH HINGE

#### PRM



Set of grating and frame with anti-theft hinge. Sinusoidal bars designed to prevent water accumulation at the ends of the set and provide maximum water drainage. Anti-slip surface.



MODEL	GRATING DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	ABSORPTION SURFACE [dm²]	CERTIFICATE
5151	730 x 280	815 x 365	80	301 x 301	11,45	AFNOR *

Options: reinforced frame



## BALTIKA D400

### HINGED GRATING WITH ELASTIC CLOSING SYSTEM

#### NORMAL TRAFFIC



Set of grating and frame with 3 type of frame – round, half-round, square. Hinged grating with maximum opening range of 120° and elastic closing system. Anti-theft hinge.



MODEL	GRATING DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	ABSORPTION SURFACE [dm²]	CERTIFICATE
5126.10	598 x 397	471 x 650	115	500 x 356	11	IO-CERT
5126.20	598 x 397	570 x 650	115	500 x 356	11	IO-CERT
5126.30	598 x 397	670 x 650	115	500 x 356	11	IO-CERT
5130.10	598 x 397	471 x 650	150	500 x 356	11	IO-CERT
5130.20	598 x 397	570 x 650	150	500 x 356	11	IO-CERT
5130.30	598 x 397	670 x 650	150	500 x 356	11	IO-CERT

Options: locking system



## TELESKOP HUBBLE D400



Connection box for the pipe 400 mm exterior dimension. Depth of insertion of the frame in the pipe 30 mm.



MODEL	GRATING DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	CERTIFICATE	CLASS
1190	Ø 378	Ø 475	100	Ø 345	IO-CERT	D400
1192	Ø 302	356 x 356	34	Ø 261	IO-CERT	D125
1192	Ø 302	356 x 356	34	Ø 261	IO-CERT	D400

Options: set available in class B125

**C250****MATERIAL:**

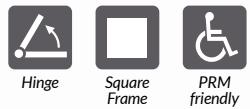
Casted device produced in micro alloy spheroidal graphite. Ductile cast iron according to EN -1563.

**COATING:**

EPOXY-POLYESTER BLACK ENAMEL, RAL-9004, thickness 100 microns, based on thermo stable plastic resins treated at high temperature. Compliant with Council Directive 1999/13/EC regarding exemption of solvents.



**MARE C250**  
GRATING WITH HINGE  
LIGHT TRAFFIC - PRM



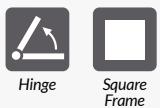
Set of grating and frame 700x280 mm with anti-theft hinge. Maximum opening range of 110°. Sinusoidal bars designed to prevent water accumulation at the ends of the set and provide maximum water drainage. Anti-slip surface. Opened by standard tools (crowbar, pick).

Opening force below 18 daN.

MODEL	GRATING DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	ABSORPTION SURFACE [dm <sup>2</sup> ]	CERTIFICATE	UNITS PER PALLET
5150	750 x 300	816 x 345	55	700 x 280	11,2	AFNOR	30



**MARE C250**  
RECTANGULAR HINGED GRATING  
LIGHT TRAFFIC



Set of grating and frame with anti-theft hinge. Opening of up to 100°. Bars special design with lateral opening to prevent water accumulation at the ends of the set and provide maximum water drainage. Opening force below 18 daN. Anti-slip surface. Opened by standard tools (crowbar, pick).

MODEL	GRATING DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	ABSORPTION SURFACE [dm <sup>2</sup> ]	CERTIFICATE	UNITS PER PALLET
5114*	375 x 320	530 x 350	100	375 x 310	5,35	BVC	14
5119	480 x 235	504 x 254	40	462 x 202	4,00	BVC	72
5128	650 x 300	685 x 383	38	622 x 271	10,04	AENOR	45
5122	735 x 282	820 x 350	100	700 x 250	9,70	AFNOR	24
5127	735 x 282	880 x 375	100	700 x 300	9	AFNOR	24
5129	735 x 280	815 x 359	100	700 x 295	4	AFNOR	24

**Options:** anti-theft bolt



**PERSEVERANCE C250**  
HINGED MANHOLE COVER AND HINGED GRATING  
WITH GASKET  
LIGHT TRAFFIC - PRM



Set of 604mm clear opening. Anti-slip surface. The elastomeric gasket ensures stability and noise reduction. With handle designed for lifting with multiple tools. Model 6177 grating cover. Opening force below 15 daN. Customization available.

MODEL	GRATING DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	CERTIFICATE	UNITS PER PALLET
1177*	Ø 645	Ø 850	75	Ø 604	AFNOR	12
6177	Ø 645	Ø 850	75	Ø 604	AFNOR	12

**Options:** locking system, ventilated cover

**BBR C250**

HYDRAULIC HINGED COVER FOR PIPE INSTALLATIONS WITH GASKET

**PREF C250 / B125**

HYDRAULIC HINGED COVER WITH CONCRETE FRAME

LIGHT TRAFFIC



Set of frame and cover for direct installation of pipe. With special round gasket for hermetic closing between pipe and frame. Hinge with anti-theft bolt. Hydraulic frame prevents odour leakage. Anti-slip surface. Opened by standard tools (crowbar, pick). Customization available. Opening force below 5 daN.

MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	PIPE [mm]	CERTIFICATE	UNITS PER PALLET
2145	Ø 206	Ø 302 x 282	125	Ø 180	Ø 250	AFNOR	24
2146-1	Ø 260	Ø 356 x 356	150	Ø 233	Ø 315	AFNOR	24
6146-1 grating	Ø 260	Ø 356 x 356	150	Ø 233	Ø 315	AFNOR	24
2147	Ø 360	Ø 446 x 426	185	Ø 330	Ø 400	AFNOR	12
2148*	Ø 265	Ø 390	150	Ø 225	Ø 315	AFNOR	18
2149	Ø 390	Ø 484	150	Ø 350	Ø 405	AFNOR	12

\*Options: locking bolt, model 2150 without hinge

**LLUM C250**

HALF HINGED HYDRAULIC ACCESS COVER

LIGHT TRAFFIC



Square Frame



Square manhole cover with hydraulic frame. Half-hinged cover with a stable opening position at 105°, equipped with guiding system for closing manoeuvres that ensures perfect fitting of cover in frame. The cover is supplied with a perimeter ridge that produces an hydraulic closing effect within the frame. Cover with a slot to facilitate lifting. Internal legs to improve installation. Opening force below 15 daN.

MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	CERTIFICATE	UNITS PER PALLET
31109	388 x 388	422 x 422	50	305 x 305	AFNOR	18
31962	463 x 480	509 x 489	48	425 x 425	AFNOR	16
31972	564 x 581	615 x 597	45	525 x 525	AFNOR	16
3194*	676 x 676	705 x 705	45	618 x 618	AFNOR	10
3182*	785 x 785	820 x 820	57	700 x 700	AFNOR	5

\*Options: locking bolt, anti-theft chain

**RON H C250**

FLAT GRATINGS PRM WITH ELASTIC CLOSING SYSTEM

LIGHT TRAFFIC - PRM



Set of grating and frame with anti-theft hinge. Opening of up to 110°. Closing system operated by two spring bars. Grating supported in frame by using "V" shaped legs to achieve better stability and avoid movements. Model 5158, 5139 have higher frame for better anchorage the product to pavement. Anti-slip surface. Opened by standard tools (crowbar, pick). Opening force below 12 - 26 daN.

MODEL	GRATING DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	ABSORPTION SURFACE [dm <sup>2</sup> ]	CERTIFICATE	UNITS PER PALLET
5154	262 x 264	325 x 325	45	235 x 235	3,7	AFNOR	36
5155	347 x 348	410 x 410	50	318 x 315	6,5	AFNOR	36
5156	448 x 448	510 x 510	50	418 x 415	10	AFNOR	20
5157	528 x 528	590 x 590	50	495 x 495	15,4	AFNOR	16
5158	627 x 627	690 x 690	60	600 x 600	19,3	AFNOR	8
5139	728 x 728	790 x 790	85	695 x 695	26	AFNOR	5





## RONEC H C250

CONCAVE GRATING WITH HINGE AND ELASTIC CLOSING SYSTEM

LIGHT TRAFFIC - PRM



Set of concave grate and frame with a 120 ° concave slope. Opening of up to 110°. Closing system operated by two spring bars. Grating supported in frame by using "V" shaped legs to achieve better stability and avoid movements. Special design bars with lateral opening to prevent water accumulation at the ends of the set and provide maximum water drainage. Opening effort below 15 daN. Anti-slip surface. Opened by standard tools (crowbar, pick).

MODEL	GRATING DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	ABSORPTION SURFACE [dm <sup>2</sup> ]	CERTIFICATE	UNITS PER PALLET
5165	364 x 364 mm	410 x 410 mm	70 mm	320 x 320 mm	6,4 dm <sup>2</sup>	AFNOR	36
5166	464 x 464 mm	510 x 510 mm	75 mm	422 x 422 mm	10,7 dm <sup>2</sup>	AFNOR	20
5167	574 x 574 mm	620 x 620 mm	70 mm	532 x 532 mm	15 dm <sup>2</sup>	AFNOR	8
5168	630 x 630 mm	720 x 720 mm	100 mm	610 x 422 mm	15,1 dm <sup>2</sup>	AFNOR*	5
5169	733,5 x 735 mm	820 x 820 mm	100 mm	710 x 710 mm	18,8 dm <sup>2</sup>	AFNOR*	5

\*In the process of certification



## OCEAN C250

CHANNEL GRATING WITH HINGE AND CLOSING SYSTEM

LIGHT TRAFFIC - PRM

Grating for modular mounting for perpendicular installation at the kerb or crossing of the intercepting road. Easy opening for gutter cleaning operations. Anti-slip surface. With closing system on one side and articulation on the other side.



MODEL	GRATING DIMENSIONS [mm]	FRAME HEIGHT [mm]	ABSORPTION SURFACE [dm <sup>2</sup> ]	CERTIFICATE	UNITS PER PALLET
7127	778 x 195	25	7	AFNOR	30
7128	750 x 300	27	11,0	AFNOR	20
7129	750 x 400	27	17	AFNOR	12
7130 non PRM	755 x 500	35	19	AFNOR	12



## DOURO / TEJO C250

GRATING

PRM



Hinged gratings with maximum opening range of 110°, safety blocking at 90° angle. Anti-theft hinge after installation. Closing system with interlocking perimeter edge. The grate in closed position keeps clamped with the frame, so to avoid rocking and clanking. The grating has an embossed design to impede the water flow and redirect it to fall inside. Frames with optimized supports to guarantee a correct fitting. Opened by standard tools (crowbar, pick).

MODEL	GRATING DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	ABSORPTION SURFACE [dm <sup>2</sup> ]	CERTIFICATE
5179	600 x 250	650 x 275	40	590 x 240	7,2	BVC
5180	660 x 355	700 x 375	40	650 x 345	10,7	BVC

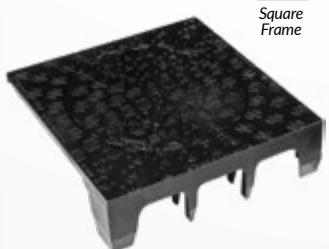


## BOR C250

KERB DRAIN WITH MANHOLE COVER



Kerb with round cover with clear opening 600 mm. Maximum water drainage. Anti-slip surface. Opened by standard tools (crowbar, pick). Customization available.



MODEL	KERB DIMENSIONS [mm]	COVER DIMENSIONS [mm]	KERB HEIGHT [mm]	ABSORPTION SURFACE [dm <sup>2</sup> ]	CERTIFICATE	UNITS PER PALLET
8122-1	800 x 781	Ø 600	200	4,4	AFNOR	6
8125	800 x 792	Ø 600	120	7,7	AFNOR	6

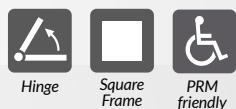


## BOR C250

### KERB DRAIN

Kerb with maximum water drainage. Anti-slip surface. Opened by standard tools (crowbar, pick). Customization available.

MODEL	KERB DIMENSIONS [mm]	KERB HEIGHT [mm]	ABSORPTION SURFACE [dm <sup>2</sup> ]	CERTIFICATE	UNITS PER PALLET
8104	800 x 150	195	7,76	AFNOR	20
8105	835 x 225	120	5,4	AFNOR	5
8121	540 x 140	250	7	-	24



## AMAZON C250

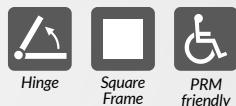
### KERB - GRATING WITH SQUARE COVER, WITH HINGE AND ELASTIC CLOSING SYSTEM

PRM



Kerb with grating and hinged cover. Maximum opening range of 110° leaving clear opening at 337mm. Anti-slip surface. Grating supported in frame by using "V" shaped legs to achieve better stability and avoid movement. Opening force below 10 daN.

MODEL	KERB DIMENSIONS [mm]	GRATING DIMENSIONS [mm]	KERB HEIGHT [mm]	CLEAR OPENING [mm]	ABSORPTION SURFACE [dm <sup>2</sup> ]	CERTIFICATE	UNITS PER PALLET
8126	499 x 499	600 x 537	125 / 90	337	10	AFNOR	8
8127	499 x 499	601 x 536	205 / 90	337	13,5	AFNOR	8



## NIL C250

### KERB - WITH SQUARE HINGED COVER AND GRATING PRM WITH ELASTIC CLOSING



Kerb opens at 110° and has clear opening of 405mm. Bar design according to PRM regulation and to provide maximum water drainage. Grating supported in frame by using "V" shaped legs to achieve better stability and avoid movement. Customization available.

MODEL	KERB DIMENSIONS [mm]	FRANE DIMENSIONS [mm]	KERB HEIGHT [mm]	CLEAR OPENING [mm]	ABSORPTION SURFACE [dm <sup>2</sup> ]	CERTIFICATE	UNITS PER PALLET
8128	503 X 488	584 x 523	235/122	405	11,2	AFNOR	8

**B125****MATERIAL:**

Casted device produced in micro alloy spheroidal graphite. Ductile cast iron according to EN -1563.

**COATING:**

EPOXY-POLYESTER BLACK ENAMEL, RAL-9004, thickness 100 microns, based on thermo stable plastic resins treated at high temperature. Compliant with Council Directive 1999/13/EC regarding exemption of solvents.

**PAS B125**

## PEDESTRIAN AREA ACCESS COVER WITH GASKET



Hinge

Octogonal frame



Cover equipped with anti-theft bolt in the hinge, opening of up to 120°. Anti-residue elastomeric gasket designed for stability and noise reduction. Anti-slip surface. Opened by standard tools (crowbar, pick). Opening force below 10,5 daN. Customization available.

MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	CERTIFICATE	UNITS PER PALLET
11725V2	Ø 620	Ø 730	60	Ø 600	AFNOR	12

**TROTTOIR B125**  
HINGED ACCESS COVER

Hinge

Square Frame

Square frame with round hinged cover. Opening of up to 110°. The cover is supplied with a perimeter ridge that produces an hydraulic closing effect in the frame. Hydraulic frame prevents odour leakage. Anti-slip surface. Opened by standard tools (crowbar, pick). Opening force below 5 daN. Customization available.



MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	CERTIFICATE	UNITS PER PALLET
2132	Ø 176	250 x 250	20	Ø 150	AFNOR	48
2133	Ø 199	317 x 317	29	Ø 173	AFNOR	36
2135	Ø 274	430 x 417	29	Ø 250	AFNOR	36
2136	Ø 374	530 x 530	29	Ø 350	AFNOR	20
2137	Ø 444	620 x 597	34	Ø 420	AFNOR	12
2138	Ø 531	694 x 694	40	Ø 500	AFNOR	10
2139	Ø 624	800 x 801	40	Ø 605	AFNOR	8

\*Options: locking system by hexagonal bolt





## LLUM B125

### HALF-HINGED ACCESS COVER WITH HYDRAULIC FRAME



Square manhole cover with hydraulic frame 45 mm high. Half-hinged cover with stable opening position of 105°, equipped with guiding system for closing manoeuvres that ensures perfect fitting of cover in frame.

The cover has a perimeter ridge that produces an hydraulic closing effect within the frame. Slot in the cover facilitates lifting. Normally used for installation in pedestrian areas, green areas, parks where vehicle access is only occasional. Anti-slip surface. Opened by standard tools (crowbar, pick). Opening force below 12 daN. Customization available.



MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	CERTIFICATE	UNITS PER PALLET
3140	239 x 239	250 x 249	37	213 x 213	AFNOR	36
3188	281 x 281	292 x 292	37	205 x 255	AFNOR	36
3145-10*	385 x 385	397 x 397	49	305 x 353	AFNOR/BVC	36
3196-1*	481 x 461	494 x 476	48	425 x 425	AFNOR	20
3197-1*	581 x 563	596 x 578	48	525 x 525	AFNOR	20
3138V2	686 x 686	720 x 720	48	604 x 604	AFNOR / BVC	10
3139	780 x 780	805 x 805	45	670 x 670	AFNOR	5
3180	875 x 875	900 x 900	42	805 x 805	AFNOR	5

\*Options: locking system.

\*\*In the process of certification

# TELECOMMUNICATIONS

## MATERIAL:

Casted device produced in micro alloy spheroidal graphite. Ductile cast iron according to EN -1563.

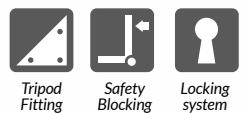
## COATING:

EPOXY-POLYESTER BLACK ENAMEL, RAL-9004, thickness 100 microns, based on thermo stable plastic resins treated at high temperature. Compliant with Council Directive 1999/13/EC regarding exemption of solvents.



## RETEL D400

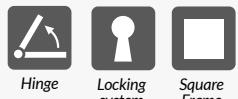
### TRIANGULAR ACCESS COVERS FOR TELECOMMUNICATIONS NORMAL TRAFFIC



Set formed by 2 or 4 triangular covers per frame. Hinged cover with maximum opening range of 110° and safety blocking at 90°. Hinges integrated into the frame. Anti-slip surface. Opened by standard tools (crowbar, pick). Customization available.

MODEL	COVER NR	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	CERTIFICATE	UNITS PER PALLET
10112	2 triangles	795 x 729	100	600 x 600	BVC	16
10101	2 triangles	870 x 870	100	760 x 760	AENOR	5
10101-S	2 triangles	925 x 925	100	760 x 760	AENOR	5
10108	2 triangles	914 x 902	100	800 x 700	AENOR	5
10103	4 triangles	1285 x 870	100	1180 x 760	AENOR	8
10103-S	4 triangles	1340 x 925	100	1180 x 760	AENOR	5
10113	4 triangles	1400 x 796	120	1200 x 600	BVC	8
10102	4 triangles	1650 x 870	100	1545 x 760	BVC	5
10102-S	4 triangles	1755 x 925	100	1545 x 760	BVC	5

Options: locking system



## RETEL DM B125

### TELECOM ACCESS COVER

Set formed by 1 or 2 rectangular covers on galvanized steel frame. Hinged cover with opening up to 110°. Hinges integrated into the frame. Closing system protected by flange joined to elastic closing with automatic return. Anti-slip surface. Opened by standard tools (crowbar, pick). Opening force below 12 daN. Customization available.

MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	TYPE	CERTIFICATE	UNITS PER PALLET
4124	896 x 580	1020 x 595	60	900 x 475		AENOR	10
4127	804 x 796	920 x 820	60	800 x 700	H		
4129	1084 x 1002	1210 x 1020	60	1066 x 900	D		
3145-10L	375 x 375	385 x 385	33	320 x 320	L		



Options: key with special head for opening the locking system



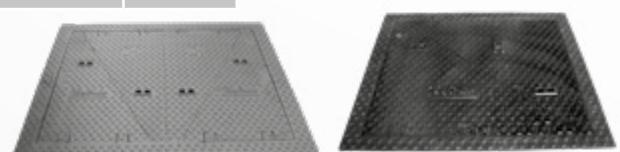
## RETEL D OR H D400, B125

Triangular access cover with maximum opening range of 110°, safety blocking at 90°angle and removable from the frame at 90°. Anti-slip surface. Special noise reduction design, optimising the fitting between the frame and the cover.



MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	CLASS	CERTIFICATE	UNITS PER PALLET
10107	4 triangles	1250 x 1060	80	1090 x 900	D400	AENOR	5
10107-S	4 triangles	1410 x 1220	80	1090 x 900	D400	AENOR	5
10108	2 triangles	914 x 902	100	800 x 700	D400	AENOR	5

Options: key with special head for opening the locking system





## RETEL B125

### RECTANGULAR ACCESS COVER FOR TELECOMMUNICATIONS



Rectangular access covers with cast-iron or angled steel frames. Cover equipped with lifting device for easy opening and closing. Anti-slip surface.

MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	CERTIFICATE	UNITS PER PALLET
4115	840 x 380	930 x 852	50	800 x 720	BVC	10

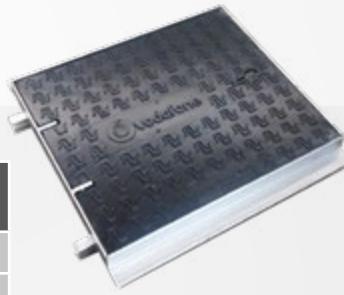


Options: locking system with pentagonal or hexagonal head bolt and key



## RETEL VODAFONE B125

### ACCESS COVER APPROVED BY VODAFONE



Set includes 1 or 2 rectangular covers on galvanized steel frame. Hinged cover with opening of up to 110°. Hinges integrated into the frame. Closing system protected by flange joined to elastic closing with automatic return. Anti-slip surface. Opened by standard tools (crowbar, pick). Opening force below 12 daN.

MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	CLASS	CERTIFICATE	UNITS PER PALLET
4118	700 x 595 mm	720 x 720*	110	600 x 600	B125	BVC	10
4119	1196 x 700mm	1316 x 720*	110	1200 x 600	B125	-	5

Options: locking system



## TELECOM / FIBRE / CABLE C250 B125



Rectangular access covers available in sets 1, 2, 3 covers with galvanized steel frame.

### LT B125

TYPE	MODEL	DISTRIBUTION	CLEAR OPENING [mm]	FRAME HEIGHT [mm]	FRAME DIMENSIONS [mm]	CERTIFICATE
LOT	4120		428 x 248	60	508 x 328	BVC
L1T	4121-L		527 x 389	60	647 x 509	BVC
L2T	4121-L		1161 x 389	60	1281 x 509	BVC
L3T	4121-L		1381 x 527	60	1501 x 647	BVC
½ L4T	4121-L		884 x 527	60	1000 x 643	BVC
	4120	Cover without frame			495 x 316	BVC
	4121-L	Cover without frame			633 x 495	BVC

Options: frames LOT, L1T, L2T, L3T

### LT C250

TYPE	MODEL	DISTRIBUTION	CLEAR OPENING [mm]	FRAME HEIGHT [mm]	FRAME DIMENSIONS [mm]	CERTIFICATE
L1T	4122-L		527 x 389	60	647 x 509	BVC
L2T	4122-L		1161 x 389	60	1281 x 509	BVC
L3T	4122-L		1381 x 527	60	1501 x 647	BVC
½ L4T	4122-L		884 x 527	60	1000 x 643	BVC
L5T	4132-L		1787 x 880	60	1907 x 1000	BVC
	4122-L	Cover without frame			633 x 495	BVC
	4122-L	Cover without frame			632 x 493	BVC

Options: frames LOT, L1T, L2T, L3T



## MANHOLE COVERS TELECOM D400

L1C, L2C, L3C, L4C



Triangular access covers on galvanized steel frame. Product customization available.

MODEL	DISTRIBUTION	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	CERTIFICATE
10115 L1C		647 x 509	120	527 x 389	BVC
10115 L2C		1281 x 509	120	1161 x 389	BVC
10115 L3C		1501 x 647	120	1381 x 527	BVC
10115 L4C		1890 x 647	120	1770 x 527	BVC



Options: locking system with internal bolt, ductile iron frame



## MANHOLE COVERS TELECOM D400

K1C, K2C, K3C, K4C



Triangular access covers on galvanized steel frame. Product customization available.

MODEL	DISTRIBUTION	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	CERTIFICATE
10116 K1C		913 x 910	145	752,5 x 750	BVC
10116 K2C		1662 x 910	145	1502 x 750	BVC
10116 K3C		2411 x 910	145	2251 x 750	BVC
10116 K4C		3163,5 x 910	145	3004 x 750	BVC



Options: locking system with internal bolt



# ELECTRICAL ACCESS COVERS

## MATERIALS:

Casted device produced in micro alloy spheroidal graphite.Ductile cast iron according to EN-1563

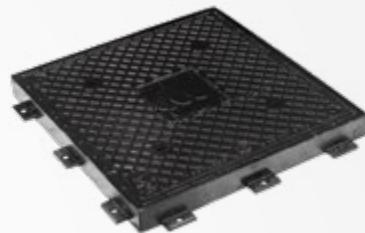
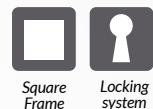
## COATING:

EPOXY-POLYESTER BLACK ENAMEL, RAL-9004, thickness 100 microns, based on thermo stable plastic resins treated at high temperature. Compliant with the exemption of solvents Council Directive 1999/13/EC.



## M2-T2 B125

REVERSIBLE COVER FOR PEDESTRIAN AREAS



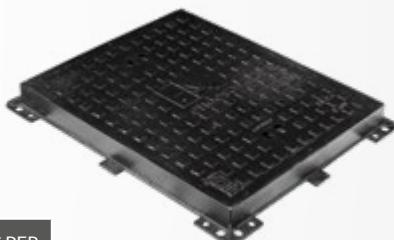
Access cover and frame. Opened with standard tools.

MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	CLASS	CERTIFICATE	UNITS PER PALLET
3121 - IBE - TM2	665 x 665	684 x 684	63,5	632 x 632	B125	AENOR	20
3121 - IBE - TM2 C/C	665 x 665	684 x 684	63,5	632 x 632	B125	AENOR	20



## ENDESA A1 D400

ROADWAY ACCESS COVER APPROVED BY ENDESA  
MEDIUM TRAFFIC



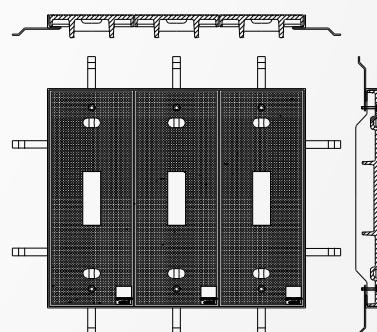
Manhole cover designed and produced in accordance with technical specifications from ENDESA. Frame equipped with gasket to prevent noise and vibration. Opened with standard tools. Includes personalized ENDESA anagram.

MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]	CLASS	CERTIFICATE	UNITS PER PALLET
3192-L	720 x 620	816 x 716	80	680 x 574	D400	AENOR	14



## TRENCH 40 KN

MODULAR ACCESS SOLUTIONS



MODEL	COVER DIMENSIONS [mm]	FRAME DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]
4114	1005 x 387(x3)	1200 x 1200	60	1080 x 900

# OTHER PRODUCTS

## MATERIALS:

Casted device produced in micro alloy spheroidal graphite. Ductile cast iron according to EN-1563

## COATING:

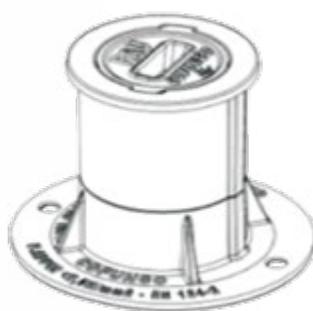
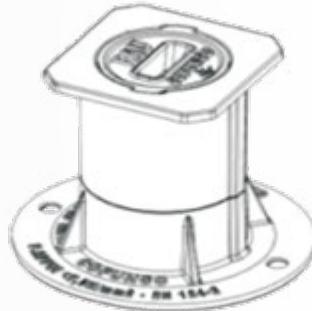
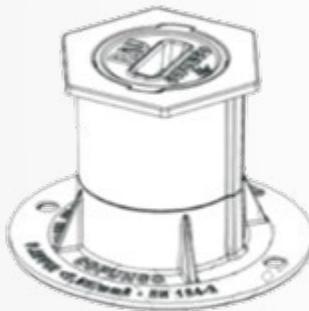
EPOXY-POLYESTER BLACK ENAMEL, RAL-9004, thickness 100 microns, based on thermo stable plastic resins treated at high temperature. Compliant with the exemption of solvents Council Directive 1999/13/EC.



## SERVICE BOXES

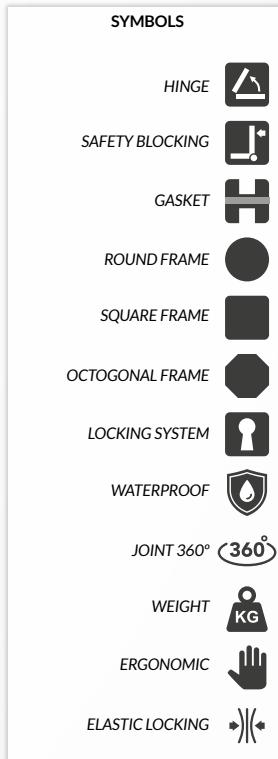


MODEL	FRAME FORM	FRAME DIMENSIONS [mm]	BASE DIMENSIONS [mm]	FRAME HEIGHT [mm]	CLEAR OPENING [mm]
2162-150 E	HEXAGONAL	130	Ø 150	160	Ø 80
2162-150 R	ROUND	Ø130	Ø 150	160	Ø 80
2162-150 Q	SQUARE	130 x 130	Ø 150	160	Ø 80
2162-205 E	HEXAGONAL	130	Ø 205	160	Ø 80
2162-205 R	ROUND	Ø130	Ø 205	160	Ø 80
2162-205 Q	SQUARE	130 x 130	Ø 205	160	Ø 80



## MANHOLE COVER BY TRAFFIC INTENSITY

Products range	D400			E600	F900
	LIGHT VEHICLES	LIGHT COMMERCIAL VEHICLE	HEAVY VEHICLES	HEAVY VEHICLES	HEAVY VEHICLES
Traffic intensity	2-AXLE VEHICLES WITH A MAXIMUM WEIGHT OF LESS THAN 3500 kg  • Cycles • Motorcycles • Cars	LIGHT TRUCKS  • Emergency vehicles • Vans • Light trucks • Mini bus	2-AXLE VEHICLES WITH A MAXIMUM WEIGHT OF MORE THAN 7500 kg  • Bus • Heavy trucks • Trailer	2-AXLE VEHICLES WITH A MAXIMUM WEIGHT OF MORE THAN 7500 kg  • Bus • Heavy trucks • Trailer	2-AXLE VEHICLES WITH A MAXIMUM WEIGHT OF MORE THAN 7500 kg  • Bus • Heavy trucks • Trailer
INTENSE TRAFFIC	5.000-8.000 vehicles/day >210 vehicles/hour	     	 	 	
MODERATE TRAFFIC	2.600-5.000 vehicles/day 110-210 vehicles/hour	     			
NORMAL TRAFFIC	>2.600 vehicles/day >110 vehicles/hour	 			



PRODUCTS			FUNCTIONALITIES											
	CLEAR OPENING (mm)	CLASS	TRAFFIC INTENSITY			HINGE	CAPTIVE JOINT	SAFETY BLOCKING	Nº NERVES	GASKET	360°	JOINT 360°	ERGONOMIC	WATERPROOF
			INTENSE	MODERATE	NORMAL									
	Ø 604	F900	✓			✓	✓	✓	7	✓	✓	✓	✓	
	Ø 604	E600	✓			✓	✓	✓	7	✓	✓	✓	✓	
	Ø 625	D400	✓			✓	✓	✓	8	✓	✓	✓	✓	
	Ø 600	D400	✓			✓	✓	✓	7	✓	✓	✓	✓	
	Ø 600	D400		✓		✓	✓	✓	7	✓		✓		
	Ø 600	D400		✓		✓	✓	✓	6	✓	✓	✓	✓	
	Ø 600	D400	✓			✓	✓	✓	8	✓	✓	✓	✓	
	Ø 600	D400			✓	✓	✓	✓	6	✓	✓	✓		
	Ø 700	D400	✓			✓		✓	10	✓	✓			
	Ø 700	D400	✓			✓	✓	✓	10	✓	✓			
	Ø 800	D400		✓		✓	✓	✓	7	✓				
	Ø 800	D400	✓						6	✓	✓		✓	

## MANHOLE COVERS

## CHARACTERISTICS

CLOSING				FRAME			FORMAT			TECHNICAL DATA		
VERROUILLAGE ÉLASTIQUE	KG	RECESSED HEIGHT *	LOCKING SYSTEM	FRAME * HEIGHT	OCTOGONAL	SQUARE	ROUND	VENTILATED	GRATING	PMR	SAFETY ** COEFFICIENT	dB TRAFFIC
	<input checked="" type="checkbox"/>	57	<input checked="" type="checkbox"/>	100		<input checked="" type="checkbox"/>					20%	76dB
	<input checked="" type="checkbox"/>	55	<input checked="" type="checkbox"/>	100			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	33%	76dB
	<input checked="" type="checkbox"/>	51	<input checked="" type="checkbox"/>	100			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			63%	73dB
	<input checked="" type="checkbox"/>	55	<input checked="" type="checkbox"/>	100	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	100%	76dB
<input checked="" type="checkbox"/>		NA	<input checked="" type="checkbox"/>	100	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	20%	76dB
<input checked="" type="checkbox"/>		NA	<input checked="" type="checkbox"/>	100			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		27%	77dB
	<input checked="" type="checkbox"/>	59		100 150			<input checked="" type="checkbox"/>				30%	77dB
	<input checked="" type="checkbox"/>	50		100			<input checked="" type="checkbox"/>				20%	72dB
	<input checked="" type="checkbox"/>	53		100 130		<input checked="" type="checkbox"/>					65%	78dB
	<input checked="" type="checkbox"/>	54	<input checked="" type="checkbox"/>	100							25%	76dB
<input checked="" type="checkbox"/>		NA	<input checked="" type="checkbox"/>	120	<input checked="" type="checkbox"/>						43%	77dB
		NA	<input checked="" type="checkbox"/>	75							40%	76dB

 Standard Optional

\* Millimeters (mm)

\*\* SAFETY COEFFICIENT ACCORDING TO STANDARD EN-124

# Manhole installation instructions from D400 to F900



## INSTALLATION PROCESS

The instructions to follow for good, effective and long-lasting installation can be found below.

### A. Flattening and levelling the exterior formwork

#### 0. Flattening

→ It must be flattened to slightly below the maximum level of the pit where the manhole is to be installed.

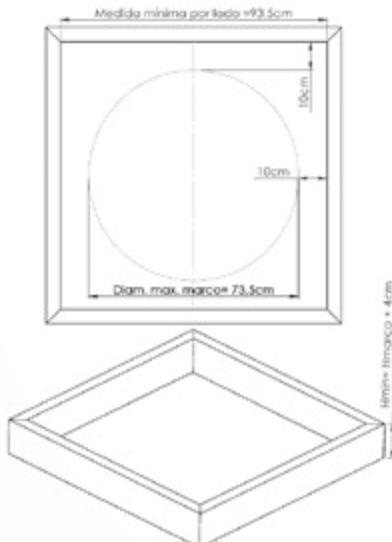
#### 1. Exterior formwork

→ After flattening, the exterior formwork must be positioned.

PROPERTIES:

→ The formwork must be well secured to the roadbed, ensuring a good seal.

→ The interior measurements of formwork will be at least **the maximum diameter of the frame + 10 cm on each side** and minimum depth must be **the maximum height of the frame + 4cm** to ensure the concrete slab is sufficiently consistent to properly absorb and distribute the loads upon the unit.



#### 2. Levelling the exterior formwork

→ Once the exterior formwork has been correctly installed and secured, it must be levelled to ensure that the result of the installation is aligned with the final asphalt of the road.

PROPERTIES:

→ Level the formwork using topographic tools, by measuring its four corners and ensuring they are at the corresponding elevations of the final asphalt..

**⚠** The main objective of this instruction is to obtain a slab in which the frame is integrated.

This guarantees these components are joined correctly and work together, while favouring the distribution and absorption of the loads transmitted to the cast unit.

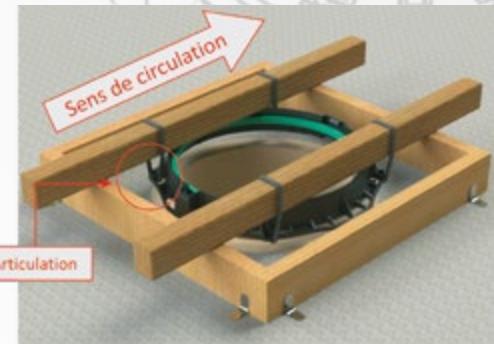
## B. Positioning, levelling and interior formwork of the frame

### 1. Positioning the manhole

→ Suspend the manhole cover frame **properly oriented** and centred over the gap using two levels tied to the base of frame with wire and resting on the road.

#### PROPERTIES:

- Orient the frame according to the traffic direction, as shown in the image.
- Ensure the levels are as long as possible, and tie them to the outer edge of the frame. Where possible, avoid tying them to the inner edges.
- Place the levels as far apart as possible, parallel to the traffic direction.
- DO NOT remove the gasket at any time during the installation..



#### ⚠️ IMPORTANT:

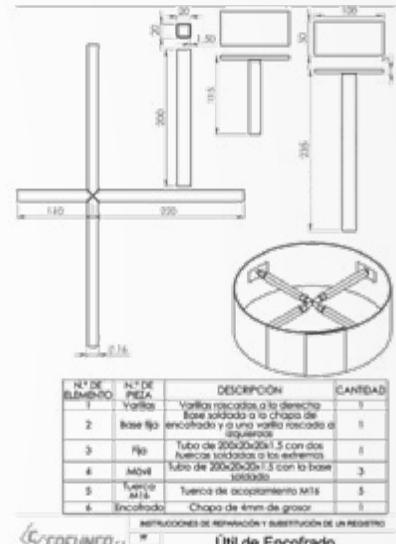
The positioning and levelling must be done with the cover removed.

### 2. Interior formwork

→ Once the frame has been correctly positioned, the interior formwork of the frame can be made.

#### PROPERTIES:

- The formwork must be strong and continuous throughout the whole inner perimeter of the frame. It must provide a good seal and not allow material to leak into the pit. This would also hinder any future gasket changes.
- The formwork must leave the gasket free. Place it underneath to avoid waste concrete residue compromising the correct function and/or durability of the manhole cover.
- The construction drawing of a tool recommended for this task can be supplied upon request.
- Before placing and securing the formwork against the frame, impregnate the formwork with a demoulding agent so that it can be easily removed.



## C. Filling the installation concrete

### 1. Preparing the concrete

→ Prepare/mix the concrete following the manufacturer's instructions, using the recommended ratio of water and concrete.

#### PROPERTIES:

- The concrete must be at least class R4. A high flowability fibre-modified micro concrete is recommended.
- Mix within the temperature range specified by the manufacturer.
- Standard reference values:
  - Mean mix ratio w/p > 0.12-0.15 (3-4L / 25kg).
  - Temperature range for pouring → 5 ° < T° < 35 °





## 2. Concreting

→ Fill the box with the concrete previously prepared, with frame and formwork correctly in place.

### PROPERTIES:

→ This must be done ensuring the structural continuity of the concrete used, thus controlling the dosage and pouring.

→ Check all the hollows in the frame are properly filled to ensure a correct bond and satisfactory load distribution. To do so, compact, vibrate or tap the concrete against the formwork.

**⚠ Real concreting taking great care to fill the hollows in the frame.**



### ⚠ IMPORTANT:

It is very important to concrete quickly and continuously, with at least two workers so that the concrete does not set in layers but does so evenly, forming the uniform slab required.

## 3. Concreting height

→ Fill the formwork leaving the thickness required for the asphalt. This asphalt thickness will directly depend on the type of traffic on the road planned and must be calculated by the engineering company responsible for the project.

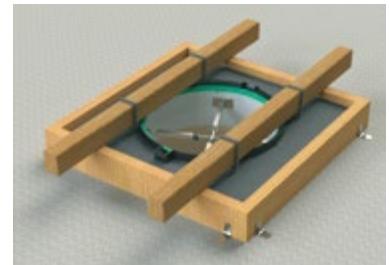


## 4. Setting time

→ Once the exterior formwork has been filled with concrete, fit the manhole cover to prevent accidental falls, maintain the humidity throughout the setting period and wait the time necessary for this reaction to occur.

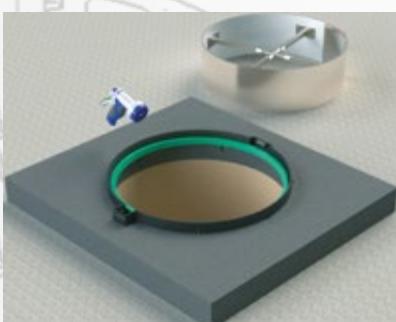
### PROPERTIES:

→ Place suitably resistant protection for the time required. This is a minimum of 24 hours, although the recommended time is 7 days for the concrete to set correctly and without overloading before it reaches absolute resistance.



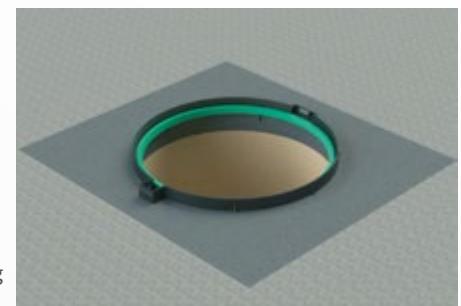
**⚠ Under no circumstances may traffic be allowed to pass until the installation of the product is complete. ⚡**

## D. Removing formwork, asphalting and completing the work



## 1. Removing the formwork

→ Once the setting time has passed, remove the formwork and immediately moisten all exposed sides with clean water.



## 2. Second filling of the roadbed

→ Once the formwork has been removed, fill the surrounding perimeter up to the level of the correctly set mortar. The perimeter filling material shall be the same used for the filling and compaction of the road.

### 3. Asphalting and compacting

- Prior to asphalting, impregnate the upper surface of the manhole cover with an anti-adherent liquid to prevent the asphalt sticking.
- Once the bituminous mixture has been poured over the manhole cover, any mixture deposited on the cover must be removed.
- Once the roller has done its first sweep, any material remaining on the cover must be removed before the road roller passes a second time.

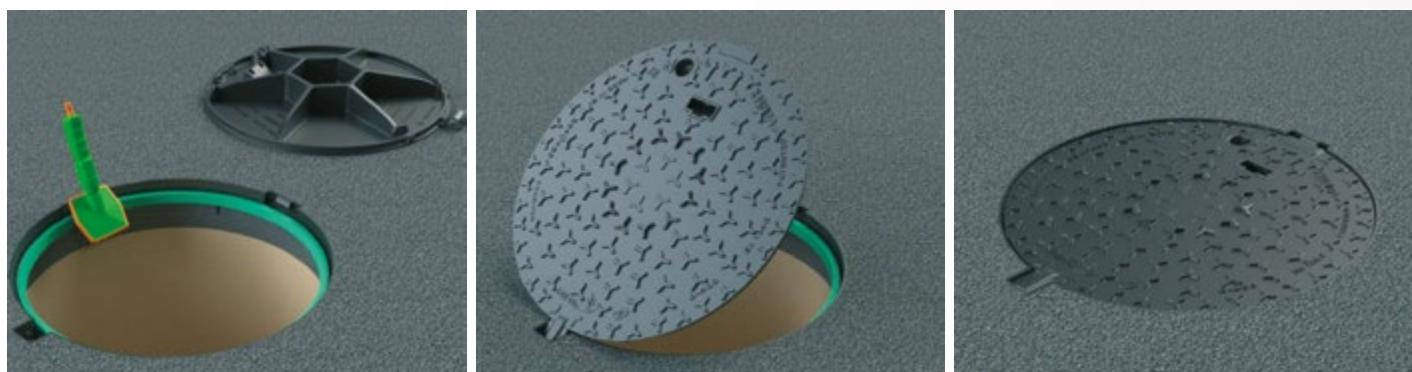
**⚠️ IMPORTANT:**

The manhole cover frame must NEVER be above the surface of the asphalt; it must be fully flush or slightly below this surface.



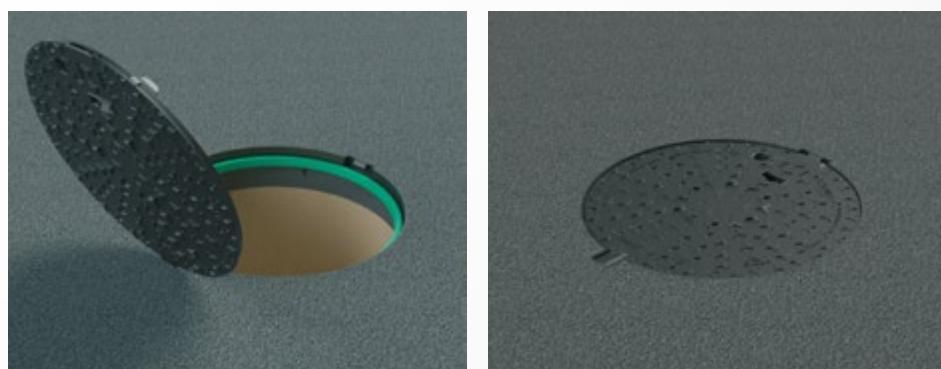
### 4. Cleaning and checks

- Once all the previous steps have been completed correctly, clean the whole gasket and frame, paying particular attention to the cover seating area, ensuring it is free from gravel, asphalt or any type of dirt that may affect the manhole cover.
- It is also important to ensure that there is no excess concrete and/or asphalt that will prevent the hinge and/or the manhole's elastic closure system from working properly (if it has one). If there is any excess, remove it meticulously before moving on to the next step.
- Check that the cover closes correctly, and fits well without rocking, noise or vibrations.



### 5. Checks and completion of the work

- Open the cover for another visual inspection of the components described above (gasket, hinge, closure, etc.) to check there is no asphalt and that the components work properly, with no hindrance at all. If they do not, remove the cover and clean the manhole cover again.
- Once you are sure the manhole cover is clean, with the gasket in good condition, and the hinge and closure working properly, you can close the cover and consider the installation complete.



## ⚠️ IMPORTANT NOTES ⚠️

- Manhole covers must be handled gently, without denting.
- It is advisable, although not necessary, to remove the cover from the frame for installation.
- If you remove the cover, handle it with care and avoid knocking it which could deform the closure (fork).
- When installing the manhole cover, never remove the elastic gasket fitted in the frame due to the high risk of loss, subsequent incorrect assembly or interior soiling.
- Never apply mortar inside the frame and, in particular, in the area of the closure housing or hinge. Both areas must be kept free from waste mortar. See photo 1.
- Never apply mortar under the gasket. This may alter the correct position of the elastic gasket or hinder its replacement in future. See photo 2.
- Once the manhole cover and the final surrounding paving is in place, clean away any waste from the area where the cover rests on the gasket, the housing of the hinge and the closure using soft manual tools such as brushes. See photo 3.
- In some areas where the street slopes excessively, technical consultation is advisable to ensure the manhole cover has the characteristics for optimum installation in these situations.
- To prevent the asphalt layer adhering to the surface of the cover, apply sand to the cover. Then remove the asphalt left on it..
- If any other waste material from the installation (concrete, asphalt, etc.) is left on it, it must be removed immediately before it solidifies, leaving the etching of the casting in good condition so as to ensure its non-slip function..
- It is prohibited to use any pneumatic or manual tools to remove any solidified material from the surface of the cover. In extreme cases, these actions can damage the cover or the support gasket.
- Never pave over the upper face of the cover, and in particular carry out any type of asphalt vibration over the assembly. This can prevent the frame being properly secured and cause internal structural damage to the assembly, limiting the functions of the manhole cover during its useful life. See photo 5-6.
- Excessive mechanical vibration of the assembly can even damage the manhole under the frame, forcing the contractor to replace all of the prefabricated sewerage and drainage components. See photo 7.
- In any event, wherever possible, it is important to avoid any one manhole cover being affected by traffic in two directions at the same time. See photo 8.
- Never rest the frame on perforated or hollow bricks. When the asphalt compactor runs over it, they may break and start to damage the paving around the frame.
- It is strictly prohibited to throw and/or drop the cover+frame assembly from heights greater than 1.5 m.
- It is forbidden to drive (especially with construction machinery) over manhole covers that are not yet fully installed, especially those that are above surface level during the construction stage. See image 9.



1



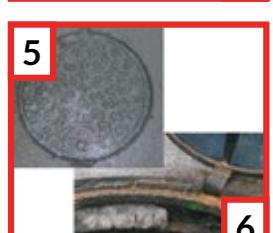
2



3



4



## NOTES



## Contact us

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