



Acces covers & gratings Ductile iron

03-2019



PIPELINE SOLUTIONS FOR THE FUTURE

PAM
SAINT-GOBAIN

SELECTION CRITERIA FOR MANHOLE COVERS

PLACES OF INSTALLATION

Standard EN 124 divides products into minimum level groups and classes according to their intended place of installation :

Some manhole covers are capable of passing a test load which exceeds that specified for their class. Others are fitted with a reinforced frame in order to ensure stability in especially severe traffic conditions, while remaining in compliance with the installation conditions considered in the standard.

Group 6	CLASS F900	Areas imposing particularly high wheel loads, such as aircraft pavements, etc..
Group 5	CLASS E600 mini	Areas imposing high wheel loads, such as docks, port areas, aircraft pavements, airports, factory yards, etc..
Group 4	CLASS D400 mini	Carriageways of roads - including pedestrian streets, hard shoulders and parking areas for all types of road vehicles.
Group 3	CLASS C250 mini	For gully tops installed in the area of kerbside channels of roads which, when measured from the kerb edge, extend to a maximum of 0.50 m into the carriageway and a maximum of 0.20 m into the footway.
Group 2	CLASS B125 mini	Footways, pedestrian areas and comparable areas, car parks and car parking decks.

TRAFFIC STRESSES

In addition to the group and class concepts specified in EN 124, it is recommended that specific traffic and operating stresses should also be taken into account in order to select the most suitable product.

The following three parameters:

- number of vehicles,
- speed,
- type of vehicles (cars or heavy vehicles using the carriageway, are combined and contribute to the definition of the concept of the type of traffic).

TYPE OF TRAFFIC	NUMBER OF VEHICLES	SPEED	TYPE OF VEHICLES
• Intense	• High	• Speed authorized on large urban roads	• Regular use by heavy vehicles
• Normal	• Irregular	• Stabilized urban speed	• Essentially light vehicles • Transit of heavy vehicles
• Low	• Low	• Limited speed	• Occasional truck traffic (deliveries, etc.)

Saint-Gobain PAM designs their manhole covers in accordance with traffic stresses in terms of stability, safety and silence.

The type of technical solutions implemented depends on the intended use of the casting.

TYPE OF TRAFFIC	SECURING OF COVER GRATING IN FRAME	STABILITY BEARING	DEPTH OF INSERTION	FRAME DEPTH
• Intense	• Weight of cover	• Elastomer ring	• $l \geq 80$ mm	• F = 100 mm
• Normal	• Locking • Metal seating	• Composite ring	• Locking or $l \geq 50$ mm	• F = 100 mm or F = 75 mm with anchoring means

NOTE: Standard EN 124 specifies that, where there is any doubt on the class to be used, the higher class must be selected.

OPERATING STRESSES

Efficient management of sewer systems requires more frequent inspections and checks. The handling of municipal castings designed without due care can lead to damage in the lumbar region of the back and spine.

All PAM manhole covers are designed to facilitate opening and closing operations with a minimum of force and to provide service teams with more ergonomic working conditions.

RANGE MAPPING

Saint-Gobain PAM offers a very wide range of carriageway manhole covers in accordance with all the requirements of standards and satisfying the specific criteria of each place of installation.

CLASS	TRAFFIC STRESSES	Occasional inspections	Periodic inspections	Frequent inspections
CLASS F900	Specific areas (airports, docks, plants yards, etc)	PAMREX 900 / URBAMAX 900		
CLASS E600		PAMREX 600 / URBAMAX 600		
CLASS D400	Intense traffic	AMBER	KORUM	PAMREX VIATOP
	Normal traffic	PAMTIGHT QUAD REXESS 2		-
	Low traffic	G-TEX	PLANET ASTRA	-
CLASS C250	Car parks Kerbsides Pedestrian streets	PAYSAGE 2 / PARXESS		
CLASS B125	Pavements and pedestrian streets	AKSESS / PASSUS / PAVEMENT / TEK		
		Occasional inspections	Periodic inspections	Frequent inspections
OPERATING STRESSES				

TECHNICAL CHARACTERISTICS OF MANHOLE COVERS

STRENGTH CLASS	TYPE OF MANHOLE COVER	pages	FRAME		COVER		STRENGTH		STABILITY				OPERATING-FACTORS	
			shape	dimensions	clear opening	type of traffic	breaking margin	resistance compound	frame depth	frame/cover seating/material	depth of insertion	stability factor	special device	operating factor
CLASS F900	URBAMAX® F900	9	circular & square	850	600	INTENSE	○○	++++	100	elastomer	85	++++	no hinge	++
	PAMREX® F900	11	circular & square	850	600	INTENSE	○○	++++	100	elastomer	85	++++	ball joint hinge	++++
CLASS E600	URBAMAX® E600	9	circular & square	850	600	INTENSE	○○	++++	100	elastomer	85	++++	no hinge	++
	PAMREX® E600	11	circular & square	850	600	INTENSE	○○	++++	100	elastomer	85	++++	ball joint hinge	++++
CLASS D400	PAMREX® 600	10	circular & square	850 / 840	610	INTENSE	○○○	++++	100	elastomer	85	++++	ball joint hinge	++++
	PAMREX® apparent frame	10	square	850	610	INTENSE	○○○	++++	160	elastomer	85	++++	ball joint hinge	++++
	PAMREX® 700	11	circular & square	900 / 950	700	INTENSE	○○○	++++	100	elastomer	85	++++	ball joint hinge	++++
	PAMREX® 800	11	circular & square	1000 / 1000	800	INTENSE	○○○	++++	125	elastomer	76	++++	double ball joint hinge	+++
	VIATOP NIVEAU	14	circular	1135 / 1138	610	INTENSE	○○○	++++	140 / 200	elastomer	72	++++	ball joint hinge	++++
	KORUM®	18	circular & square	811 / 811	606	INTENSE	○○	+++	100	composite	locked	+++	ball joint hinge	++++
	REXESS2®	20	circular	842	600	MEDIUM	○○	++	100	composite	locked	+++	hinge + spring bar	+++
	PLANET	21	circular	785	600	LOW	○○	++	100	PE	locked	+++	hinge + spring bar	+++
	ASTRA	21	circular	725 / 685	600	LOW	○○	+	100	PE	locked	+++	hinge + spring bar	++
	G-TEX®	22	circular & square	850 / 830	600	LOW	○○	++	100	PE	locked	++	spring bar	++
	QUAD	22	square	550 / 650 / 750	400 / 500 / 600	LOW	○○	++	100	dynamic metallic contact	locked	++	hinge + spring bar	+++
	PAMTIGHT 600	15	circular	850	600	MEDIUM	○○	++	100	elastomer + PE	bolted	+++	6 bolted clamps	+
	PAMTIGHT 800	15	circular	989	800	MEDIUM	○○	++	100	elastomer + PE	bolted	+++	8 bolted clamps	+
CLASS C250	PAYSAGE 2	24	circular & square	850 / 850	600	LOW	○	+++	75	composite	not applicable (EN 124)	+++	hinge + spring bar	+++
	PARXESS®	23	square	450 à 730	303 à 600	MEDIUM	○○○	++++	56	dynamic metallic contact	not applicable (EN 124)	++++	2 opening modes	++++
	HEIGHT ADJUSTABLE inspection covers	25	circular & square	360 / 318	225 / 180	LOW	○	+++	180 / 154	metallic	not applicable (EN 124)	+++	for PPIC Ø 250, 300 et 400	++++
CLASS B125	PASSUS®	29	circular	782 / 720	600	LOW	○○	+	70	PE	locked	+++	hinge + spring bar	++++
	AKSESS®	26	square	310 à 820	220 à 700	LOW	○○○	++	37 to 41	dynamic metallic contact	not applicable (EN 124)	++++	2 operating modes	++++
	TEK	29	circular	785	600	LOW	○○	++	100	PE	locked	+++		++++

STABILITY AND OPERATING FACTORS, RESISTANCE COMPOUND =

- Multiple-criteria comparison between products within the same class only (Class D 400, for example).
- Resistance compound aggregates various frame and cover design features

NOTE • Strength margins are specified with regard to the classes of utilization to which the respective products correspond.
 • The field of application of products is limited to their utilization class by design

BREAKING STRENGTH MARGIN =

Comparison between average breaking strength of the product and the EN 124 requirement.

- = average breaking strength up to 20% higher than EN 124 requirement.
- = average breaking strength up to between 20% and 30% higher than EN 124 requirement.
- = average breaking strength more than 30% higher than EN 124 requirement.

MANHOLE COVERS

Technical characteristics of manhole covers page 6

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PAMREX pages 10/11

Accessories for all PAMREX manholes and gratings range pages 12/13

VIATOP NIVEAU | VIATOP STANDARD page 14

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Double triangular covers | **OPT-EMAX | INTER-AX2 | ULT-EMAX** pages 16/17

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REXESS 2 page 20

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PARXESS | PARXESS AR page 23

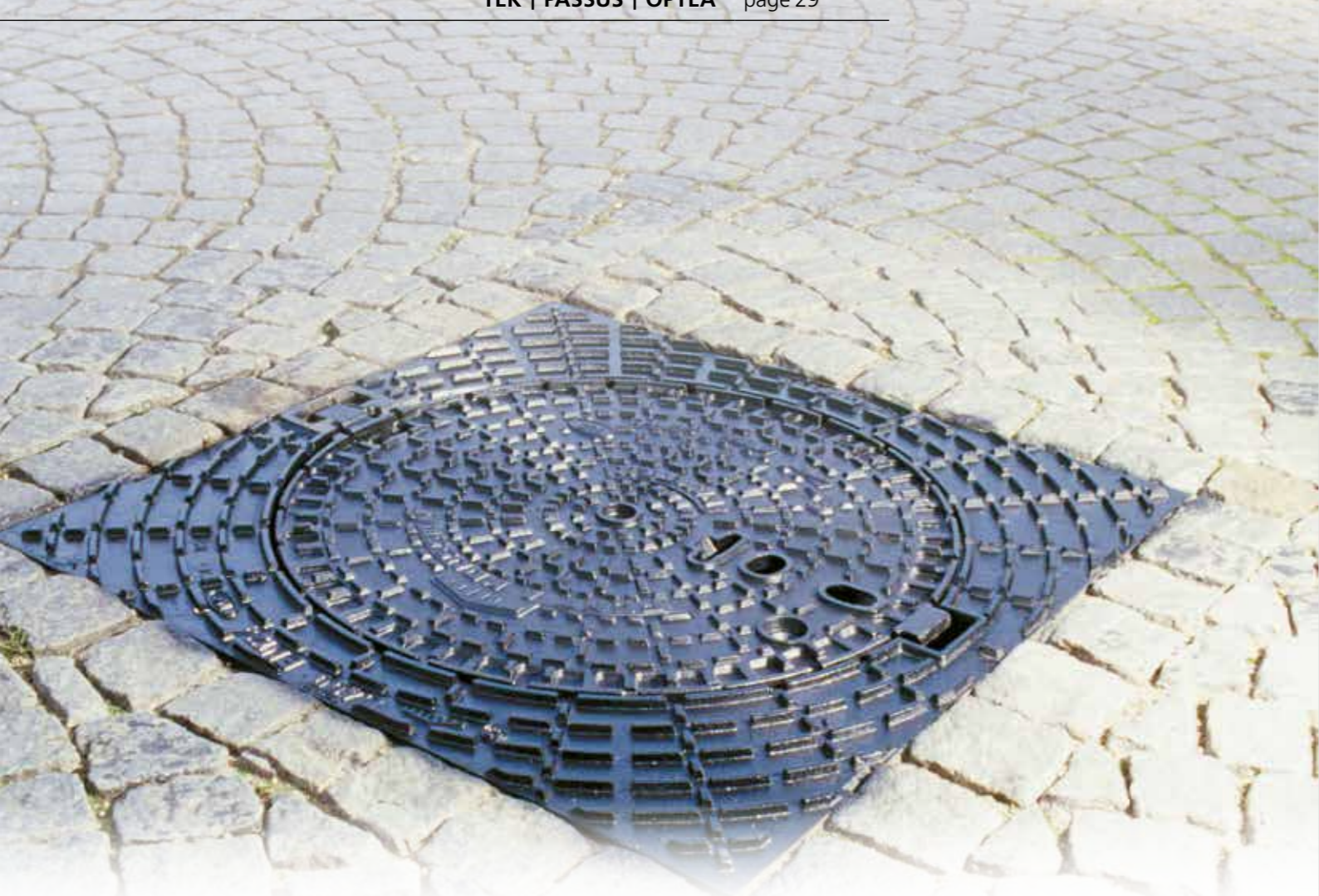
PAYSAGE 2 | TERRITORIALES by PAM page 24

Manhole covers for parking areas page 25

AKSESS | AKSESS AR pages 26/27

Other B125 Manhole covers page 28

TEK | PASSUS | OPTEA page 29



F900 **E600**

URBAMAX

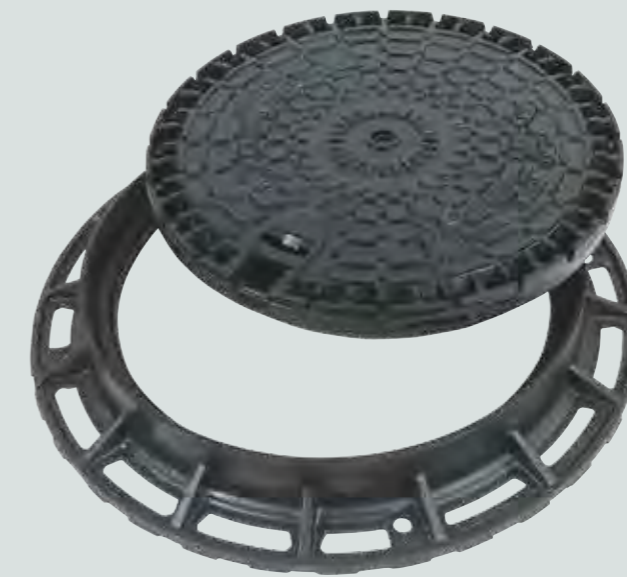
Ductile iron

Elastomer ring

Push-in central pad

Sealed handling box

EN 124  



URBAMAX®

STRENGTH
URBAMAX, class E 600 and F 900, has a high tensile strength.

STABILITY
The weight of the cover (63 kg in the non-ventilated version) and the addition of an elastomer ring and a double skirt dampens vibrations caused by traffic, ensuring total stability.

OPERATION
A handling box allows URBAMAX to be handled with traditional site tools: such as a pointed or flat end pick-axe, or crowbar. The cover is specially designed to ease closing.

Designed to withstand all types of traffic, URBAMAX can be installed on roads subjected to super heavy duty loading in addition to airports and dock areas, etc..

TYPE	FRAME	MASS		DIMENSIONS		REFERENCE
		total	cover	clear opening	frame depth	
F 900 Non-ventilated	circular	89	59	600	100	CFUR60AF
	square	100	59	600	100	CFUR60KF
F 900 Ventilated	circular	89	59	600	100	CFUR60BF
	square	100	59	600	100	CFUR60LF

URBAMAX F 900





TYPE	FRAME	MASS		DIMENSIONS		REFERENCE
		total	cover	clear opening	frame depth	
E 600 Non-ventilated	circular	89	59	600	100	CEUR60AF
	square	100	59	600	100	CEUR60KF
E 600 Ventilated	circular	89	59	600	100	CEUR60BF
	square	100	59	600	100	CEUR60LF

URBAMAX E 600





D400

- Ductile iron
- Hinged
- Elastomer ring
- Sealed handling box
- Optional anti-theft cover lock
- Lifting rings int
- EN 124  

PAMREX 600 only is available as «Territoriales by Pam» option
For more information, see page 24



TYPE	FRAME	MASS		DIMENSIONS		REFERENCE
		total	cover	clear opening	frame depth	
non-ventilated	round	84	53	610	100	CDPA60EF
	square	95	53	610	100	CDPA60MF
ventilated	round	84	53	610	100	CDPA60FF
	square	95	53	610	100	CDPA60PF

- Opens to 130° → for sewage pipeworks
- Blocks at 90° when closing

TYPE	FRAME	MASS		DIMENSIONS		REFERENCE
		total	cover	clear opening	frame depth	
non-ventilated	round	85	53	610	100	CDPA60AF
	square	95	53	610	100	CDPA60KF
ventilated	round	85	53	610	100	CDPA60BF
	square	95	53	610	100	CDPA60LF

- Opens to 130°, without blocking at 90° when closing → for pipeworks inspection from road surface

TYPE	FRAME	MASS		DIMENSIONS		REFERENCE
		total	cover	clear opening	frame depth	
non-ventilated	apparent	156	55	610	160	CDPA603F
ventilated	apparent	139	53	610	160	CDPA604F

- Frame designed for easy cobbles and paving installation → for paved and pedestrian streets
- Height= 160 mm

The PAMREX grating is interchangeable with any cover of PAMREX 600 series
The PAMREX grating is interchangeable with the cover
Special versions of PAMREX fitted with a water-tightness plug are also available. Please consult us.

THE PAMREX® RANGE



PAMREX® 600
SAFETY
D400



PAMREX® 600
OPERATION
D400



PAMREX® 600
WITH APPARENT
FRAME
D400

TYPE	FRAME	MASS		DIMENSIONS		REFERENCE
		total	cover	clear opening	frame depth	
non-ventilated	round	108	71	700	100	CDPA70EF
	square	118	71	700	100	CDPA70MF
ventilated	round	108	71	700	100	CDPA70FF
	square	118	71	700	100	CDPA70PF

PAMREX®700 has the same functional features as PAMREX®600 (see page 8). Access is made through a wide 700mm opening specifically designed for systems requiring special safety conditions for operators.

TYPE	FRAME	MASS		DIMENSIONS		REFERENCE
		total	cover	clear opening	frame depth	
non-ventilated	rond	117	73	800	125	CDPA80EF
	square	127	73	800	125	CDPA80MF
ventilated	rond	117	73	800	125	CDPA80FF
	square	127	73	800	125	CDPA80PF

PAMREX®800 provides easy opening, while continuing to offer the high performance levels of the successful Pamrex 600 mm and 700 mm clear opening designs.
The 800mm clear opening enables maintenance personnel to enter the manhole with their safety equipment, or to lower bulky equipment into the below ground network

TYPE	FRAME	MASS		DIMENSIONS		REFERENCE
		total	cover	clear opening	frame depth	
non-ventilated	round	120	73	800	125	CDPA80EFX37
	square	130	73	800	125	CDPA80MFX37
ventilated	round	120	73	800	125	CDPA80FFX37
	square	130	73	800	125	CDPA80PFX37

This version has the same features as the PAMREX®800 standard version. The lifting effort and the stresses transmitted to the chamber are reduced with its assistance stainless steel gas arm. This product is systematically fitted with a SCS locking system.

E600

TYPE	FRAME	MASS		DIMENSIONS		REFERENCE
		total	cover	clear opening	frame depth	
ventilated	round	90	59	610	100	CEPA60EF

F900

TYPE	FRAME	MASS		DIMENSIONS		REFERENCE
		total	cover	clear opening	frame depth	
ventilated	round	90	59	610	100	CFPA60EF

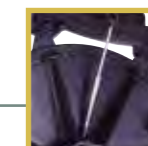
PAMREX® 700
SAFETY
D400



PAMREX® 800
SAFETY
D400



PAMREX® 800
SAFETY D400
opening assisted
by gas jack
Closing with SCS locking kit
(key not-provided)



PAMREX® E 600
SAFETY
E600



PAMREX® F 900
SAFETY
F900



ACCESSORIES FOR PAMREX MANHOLES AND GRATINGS

1/4 turn lock actuated by an asymmetrical five-sided bolt head (PENTA) or unique notched cylindrical head (SCS).

On site installation takes 5 minutes:

- Punch out the centre of the locking bolt area.
- Install the kit in compliance with the instructions supplied.

Lock must be operated with the handling key supplied separately.

LOCKING KITS



→ Locking clip, PENTA or SCS bolt



→ 1/4 turn lock system



→ PENTA plus ductile locking clip

It is recommended not to use the SCS key to open the cover.

KITS PENTA for PAMREX 600, 700 & 800



→ PENTA bolt and key

DN	MODEL	REFERENCE
PENTA - locking clip in stainless steel		
600	kit without locking key Penta	C6
700	kit without locking key Penta	C14
800	kit without locking key Penta	C14
PENTA Plus - locking clip in ductile iron		
600	kit without locking key Penta	C56
700	kit without locking key Penta	C76
800	kit without locking key Penta	C76
-	locking key Penta	C17

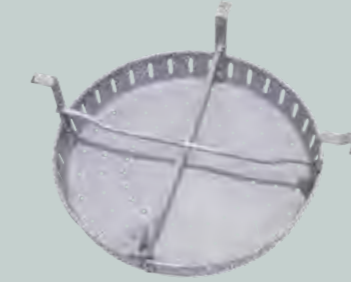
KITS SCS for PAMREX 600, 700 & 800



→ SCS bolt and key

DN	MODEL	REFERENCE
SCS - locking clip in stainless steel		
600	kit without locking key SCS	C8
700	kit without locking key SCS	C16
800	kit without locking key SCS	C16
SCS Plus - locking clip in ductile iron		
600	kit without locking key SCS	C58
700	kit without locking key SCS	C78
800	kit without locking key SCS	C78
-	locking key SCS	C18

Designed for ventilated covers and grating
Four suspension legs rest on elastomer ring
High resistance to load of sand and mud
Mudpans do not impair manhole covers or gratings normal functioning



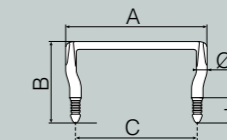
MODEL	REFERENCE
steel mudpan for PAMREX 600	C1
steel mudpan for PAMREX 700	C2
steel mudpan for PAMREX 800	C3

GALVANISED STEEL MUDPAN for PAMREX



TYPE	DIMENSIONS					MASS	REFERENCE
	Ø D	C	B	I	A		
1 BS1247 galvanised	-	153	365	60	153	2	C25
2 standard	25	300	200	60	350	2.4	C26
3 with handbar cross	25	300	200	60	350	2.5	C27
4 with handbar holder	25	300	200	60	350	2.5	C28
5 handbar	25	-	-	-	1200	5.3	C29

□ complies with EN 124 functional requirements



INSPECTION MANHOLE STEPS DUCTILE IRON



MAINTENANCE RING	TYPE OF JOINT	REFERENCE
600	elastomer	CDPA60EF-L
700	elastomer	CDPA70EF-L
800	elastomer	CDPA80EF-L

PAMREX® RUN OFF WATER SEAL	REFERENCE
600 tightness joint	C45

TIGHTNESS RUN OFF PAMREX® CAP	REFERENCE
600-700 tightness plug	170902
800 tightness plug	178808

The seal association with the PAMREX cap reduces the entry of runoff water to 0.5 l/min under a 3 cm water layer.



VIATOP

D400

VIATOP NIVEAU
 Ductile iron manhole cover
 Hinged with 90° blocking
 Interchangeable cover with Viatop
 Clear opening: 610 mm or 700 mm
 Height adjustable
 Elastomer ring
 EN 124



TYPE	FRAME	MASS		DIMENSIONS			CONCRETE INFILLED COVER	REFERENCE
		total	cover	clear opening	frame overall	frame depth		
VIATOP NIVEAU 600 H 200								
ventilated	round	128	49	610	815	200	-	CDVM60RG
non-ventilated	round	129	51	610	815	200	-	CDVM60QG
VIATOP NIVEAU 600 H 140								
ventilated	round	108	49	610	815	140	-	CDVM60RGX40
non-ventilated	round	109	51	610	815	140	-	CDVM60QGX40
VIATOP NIVEAU 700 H 200								
ventilated	round	118	71	700	932	217	-	CDVT70RU
non-ventilated	round	118	71	700	932	217	-	CDVT70QU

MODEL	MASS	DIMENSIONS	REFERENCE
To be used with Viatop Niveau frames. Compliant with DIN 4034-1. 2 heights available.			
For NIVEAU 200	25	H = 100	C23
For NIVEAU 140	17	H = 60	123581

D400

VIATOP STANDARD
 Ductile iron manhole cover
 Hinged cover
 Interchangeable cover with Viatop Niveau

Ergonomic handling
 Height adjustable
 Elastomer ring
 EN 124

TYPE	FRAME	MASS		DIMENSIONS			CONCRETE INFILLED COVER	REFERENCE
		total	cover	clear opening	frame overall	frame depth		
ventilated	round	85.0	49.0	610	785	110	-	CDVM60BG
non-ventilated	round	58.0	49.0	610	785	110	-	CDVM60AG

DESCRIPTION	MODEL	REFERENCE
steel mudpan	for VIATOP NIVEAU 600	C4
	for VIATOP NIVEAU 700	C2



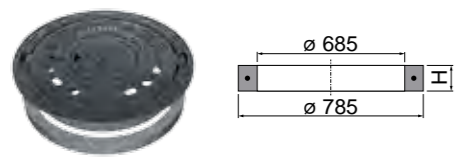
→ VIATOP NIVEAU 140

VIATOP NIVEAU D400



→ VIATOP NIVEAU 200

CONCRETE ADAPTATION RINGS



VIATOP STANDARD D400



GALVANISED STEEL MUDPAN

D400

PAMTIGHT 600
 Ductile iron manhole cover
 PAMTIGHT manhole covers are water resistant (backflow) up to 1 bar of water pressure, Also prevents ingress of surface water.
 2 rings: polyethylene seating ring or elastomer sealing ring
 Fastened by 6 bolts and clamping claws
 Sealed handling box
 EN 124



TYPE	FRAME	MASS		DIMENSIONS			REFERENCE
		total	cover	clear opening	frame overall	frame depth	
non-ventilated	round	95.0	48.8	610	850	100	CDPE60AA

D400

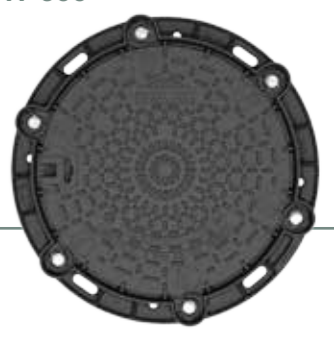
PAMTIGHT 800
 Ductile iron manhole cover
 2 joints: E Sound proof joint or Elastomer Tightness joint
 Fastened by 8 bolts and clamping claws
 Occasional inspection
 EN 124

TYPE	FRAME	MASS		DIMENSIONS			REFERENCE
		total	cover	clear opening	frame overall	frame depth	
non-ventilated	round	129.5	66.5	820	1060	100	CDPE80AZ

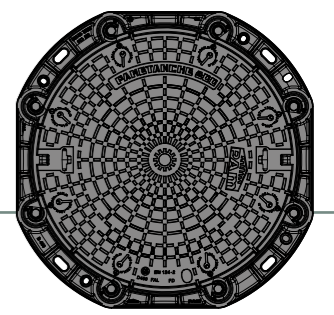
□ Hard shoulders and parking areas for all types of road vehicles

PAMTIGHT

PAMTIGHT 600 D400



PAMTIGHT 800 D400

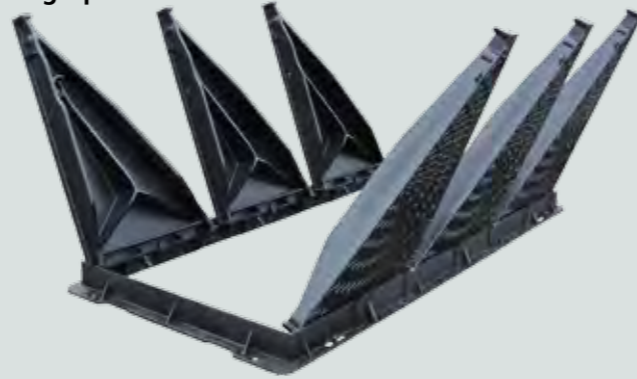


OPT-EMAX

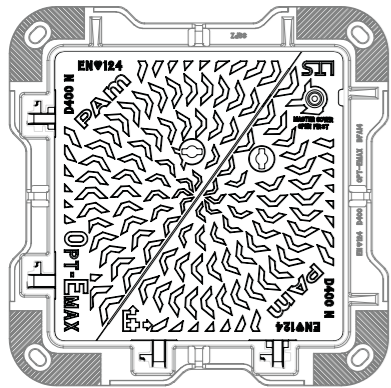
D400

OPT-EMAX

- Ductile iron
- Hinged access cover range
- Master and Slave Cover System
- Retro fit Locking Option
- LTS Feature
- EN 124



OPT-EMAX
D400

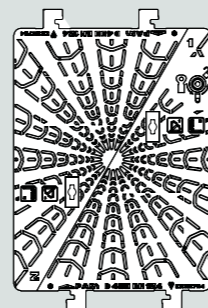
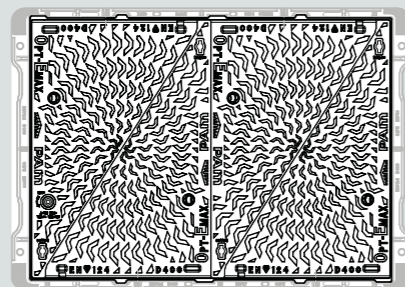


RECOMMENDED FOR USE IN: City roads carrying continuous traffic where frequent access to below ground assets is required. Available in a wide range of clear openings and in 100 mm or 150 mm frame depths, OPT-EMAX is the ergonomic solution for the frequent maintenance and inspection of below ground assets.

MASS		COVERS number	overbase C x D	DIMENSIONS		REFERENCES
total	cover			clear opening A x B	frame depth	
77	22	2	800 x 850	600 x 450	100	185719
91	27	2	800 x 800	600 x 600	100	172472
117	38	2	875 x 875	675 x 675	100	CDOP67MK
121	41	2	940 x 745	750 x 600	100	186787
124	38.5	2	950 x 825	750 x 700	100	242791
129	43	2	905 x 940	750 x 750	100	186785
128	23 & 36 ⁽⁴⁾	3	1100 x 800	900 x 600	100	185735
211	68	2	1163 x 1155	910 x 900	125	228735 ⁽³⁾
175	38.5 & 43 ⁽⁴⁾	3	1210 x 850	1060 x 700	100	186789 ⁽¹⁾
218	39	4	1380 x 885	1220 x 685	100	185744
221	41	4	1350 x 945	1200 x 750	100	205457
278	55	4	1500 x 1060	1340 x 900	100	230384 ⁽²⁾
239	43	4	1660 x 940	1500 x 750	100	CDOP19GK
325	41	6	1995 x 940	1800 x 750	100	186795
407	55	6	2170 x 1060	2010 x 900	100	230385 ⁽²⁾
349	43	6	2420 x 940	2250 x 750	100	230108

⁽¹⁾ MK 1 Type hinge (Not Tilt & Push)
⁽²⁾ Tilt & Push In-Board hinge type

⁽³⁾ This unit requires on Lock in each Corner
⁽⁴⁾ Covers are triangular and by design are of different sizes



D400

INTER-AX2

- Ductile iron
- Double Triangular Access Cover
- Off centre split
- Notched frame
- LTS Feature
- EN 124



RECOMMENDED FOR USE IN: Inter Ax, features 2 double tri fastened covers and can be operated by 2 men using lifting keys, to offer a man-entry aperture

MASS		overbase	DIMENSIONS		REFERENCE
total	cover		clear opening	frame depth	
74.4	44.1	800x800	600x600	100	185892
83.5	44.1	800x800	600x600	150	185904
92.0	59.1	878x828	675x675	100	211603
102.9	59.1	878x828	675x675	150	211604

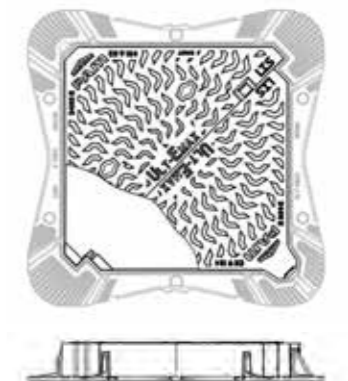
INTER-AX2
D400



D400

ULT-EMAX

- Ductile iron
- Semi-Hinged and Locked Access Cover
- Spring Bar Locking Device
- Ergonomically Positive Hinge
- LTS Feature
- EN 124



RECOMMENDED FOR USE IN: ULT-EMAX is the ideally installed on chambers which mainly require inspection from surface, Its smallest cover, spring-bar locked can be first opened to provide visual access to chamber, Where necessary, the 2 covers can be removed by 1 man only to offer a man-entry aperture.

MASS		overbase	DIMENSIONS		PACK.	REFERENCE
total	cover		clear opening	frame depth		
84.0	27.3 / 20.7	806x806	600x600	100	10	205763
94.0	27.3 / 20.7	806x806	600x600	100	10	205765
97.0	35.5 / 26.2	880x830	675x675	100	10	211605
107.5	35.5 / 26.2	880x830	675x675	150	5	211606

ULT-EMAX
D400



install PLUS

Opt-Emax, Inter Ax, & Ult-Emax frames can be fitted with **INSTALL PLUS**, levelling inserts which facilitates frame levelling & bedding, when using flowable bedding mortar.

Set of 4x **INSTALL PLUS** levelling inserts for the bedding of one Recess 2 frame

C103





KORUM



D400

KORUM

- Ductile iron
- Hinged
- Composite ring
- Sealed handling box
- Spring bar
- Optional anti-theft spline
- Optional anti-intrusion lock
- EN 124  

OPERATING SAFETY

ERGONOMICS

KORUM has been designed for operators who want to provide maintenance agents with safe and easy operating conditions. KORUM's design limits efforts to be made during visual inspections and sanitation visits.

→ Practical and safe manoeuvres thanks to the kneecap

- Easy manoeuvres: reduction of slack and interstices prevention of manhole cover clogging.
- Accurate and safe guiding of the cover by the ball joint, at the opening and the closing.
- Prevention of jamming risks.
- The durability of KORUM is ensured for a very long period of service: lack of contact between the frame and the ball of KORUM once locked.

→ Cover security lock open 90°

- Prevention of any sudden and accidental closure during handling and visits.

→ Lifting rings integrated into the frame

- Facilitate the transport of KORUM and its installation on the chimney, in complete safety.

→ Automatic locking without accessories

- Without key or screw, the KORUM cover is automatically locked when closed
- No adjustment or maintenance of the elastic bar, which remains safe and effective, after many cycles of unlocking / locking

→ Unlocking and opening the cover effortlessly

- Unlocking the cover with the peak of the pickaxe
- Reduce effort during handling : opening with pickaxe
- Significantly reduced physiological constraints : no need to bend over to manoeuvre

SECURITY OF THE PUBLIC

HIGH-LEVEL ROBUSTNESS

KORUM is a very robust cover, designed and manufactured to cope with the repeated loads of high traffic. Numerous laboratory and road site tests carried out over a period of several months under demanding traffic conditions have validated a design combining safety of use and longevity. KORUM is built to sustainably resist the flow of cars and trucks in urbanized areas and on major highways. KORUM has an average breaking strength of more than 25% compared to the requirement of EN124, Class D400.

DESIGN INTELLIGENCE

In case of network overloads, the KORUM cover opens up while remaining attached to the frame. Guided precisely by its ball joint, it closes naturally under the effect of its own weight, and re-locks, thanks to the elastic bar, the passage of the first vehicle.

→ Ergonomics

- Safe and effortless handling thanks to the ball-joint hinge.
- Effortless unlocking and opening of cover with pickaxe point

→ Operation

- The hinge blocks at 90° when closing and ensures operating safety

→ Strength

- New frame and ribs design prevent the deformation of the KORUM under intense traffic conditions

→ Stability

- The spring locking mechanism under constant tension locks the KORUM cover in place in its frame in complete safety.

TYPE	FRAME	MASS		DIMENSIONS		REFERENCE
		total	cover	clear opening	frame depth	
non-ventilated	round	62	38	606	104	CDKO60EF
	square	70	38	606	104	CDKO60MF
ventilated	round	62	38	606	104	CDKO60FF
	square	70	38	606	104	CDKO60PF
New KORUM H75						
non-ventilated	round	59.6	38.0	602	75	CDKO60EZX51

DESCRIPTION	REFERENCE
Anti-intrusion kit	
kit without handling key	C47
handling key	C46
□ The D50 locks have a cast iron bar for high resistance to vandalism attempts.	
Anti-theft key kit	
anti-theft spline	170900
kit of 10 splines	C59
□ Made of ductile iron, it can be added on site in the joint to prevent the removal of the cover from its frame.	
Maintenance ring	
joint EVA (vinyl acetate)	CDKO60BF-J



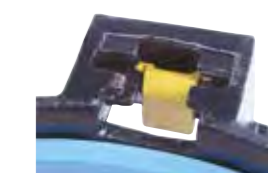
→ Pressure test



KORUM D400



KORUM ACCESSORIES



ACCESSORIES

REXESS 2



D400

REXESS-2

- Ductile iron
- Automatic locking by ductile iron spring bar
- Hinged cover with 90° safety blocking
- Optional anti-theft spline and locking system
- Composite seating ring
- EN 124 ÜA
- Compatible with **INSTALL PLUS**



Ergonomy
A new way to open covers, taking a greater care of physical stress and pain.

NEW ANTI-THEFT SPLINE
C104

Customization

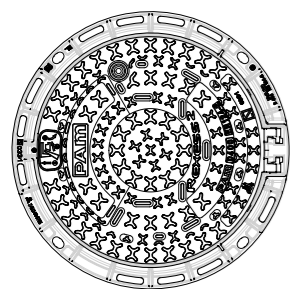
A fully customizable area to better and wider promote your identity.

Installation

An innovative bedding technique, more reliable and less time demanding.

Durability

An heavy-duty joint material providing extended durability.



REXESS-2
D400

DIMENSIONS					MASS		REFERENCE
A	C	O	H	E	total	cover	
785	645	608	104	92	55.0	33.5	CDRL60FYX44
785	645	608	104	92	56.3	31.5	CDRL60EYX44



Rexess 2 frame is compatible with **INSTALL PLUS**, levelling inserts which facilitates frame levelling & bedding, when using flowable bedding mortar.

Set of 4x **INSTALL PLUS** evelling inserts for the bedding of one Rexess 2 frame **C103**



D400

PLANET

- Ductile iron
- Round frame
- Non Ventilated
- Water base coating
- PE ring
- EN 124



	AxB	DIMENSIONS				MASS		REFERENCE
		C	O	H	E	total	cover	
non-ventilated	785	643	608	100	93	41.3	26.5	CDPL60AZ
ventilated	785	643	608	100	93	41.3	26.5	CDPL60BZ

PLANET

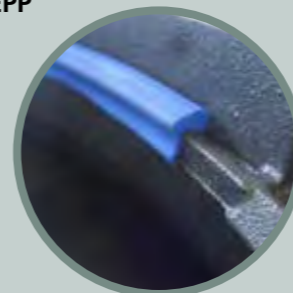
PLANET
D400



D400

ASTRA

- Ductile iron
- Round frame
- Hinged cover
- Ductile iron spring bar
- Ring in PEPP
- EN 124



→ Ring in PEPP

	AxB	DIMENSIONS				MASS		REFERENCE
		C	O	H	E	total	cover	
non-ventilated	725x685	624	605	100	96	36.0	24.0	CDAS60AD
ventilated	725x685	624	605	100	96	36.0	24.0	CDAS60BD

ASTRA

ASTRA
D400





G-TEX

D400

G-TEX

Ductile iron

Automatic locking by ductile iron spring bar

Pull and slide concept

Polyethylene ring

Optional anti-intrusion lock

EN 124



→ Easy pull-and-drag handling



→ Strength

The G-TEX safety factor compared to EN124 requirements intends it for moderate traffic areas.

→ Stability

G-TEX offers a safe and stable automatic locking system combined with a polyethylene ring.

→ Operation

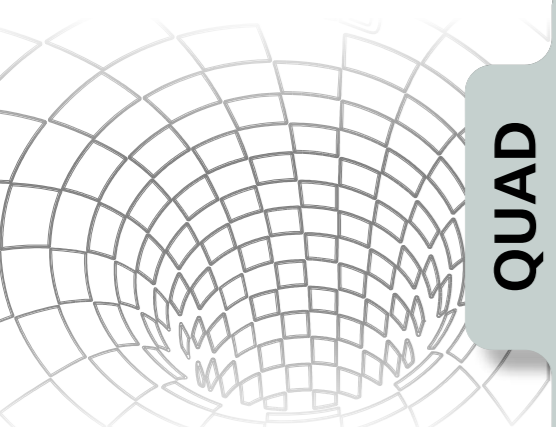
Unlocking, removal and reinstallation of the cover are carried out using a simple pickaxe, risk-free of pinching.

G-TEX



G-TEX
D400

TYPE	FRAME	MASS		DIMENSIONS		REFERENCE
		total	cover	clear opening	frame depth	
non-ventilated	round	57	33.5	600	100	CDGX60AF
ventilated	round	57	33.5	600	100	CDGX60BF
non-ventilated	square	63	33.5	600	100	CDGX60KF
ventilated	square	63	33.5	600	100	CDGX60LF



QUAD

D400

QUAD

Ductile iron automatic locking, 2 spring bars

Hinged covers non ventilated

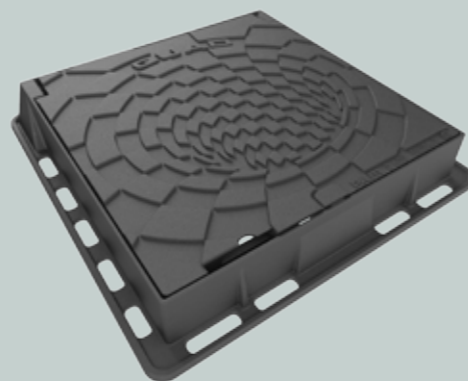
Dynamic stability systems for quiet use under all traffic conditions

Flanged frames compatible with Install Plus levelling devices

EN 124

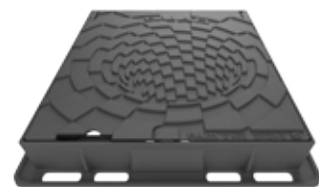


RECOMMENDED FOR USE IN: All square chambers connected to sewers, data & cable networks



QUAD
D400

TYPE	FRAME	MASS	DIMENSIONS		REFERENCE
		total	clear opening	frame depth	
non ventilated	500x500	51,3	400	102	CDQD40KF
	600x600	57,8	500	102	CDQD50KF
	800x800	75	600	102	CDQD60KF



C250

PARXESS

Ductile iron

Single sear cover

EN 124



PARXESS

The new PARXESS single sear range is designed to provide an innovative, reliable and efficient response to new needs for access covers located in pavements and similar locations, where they may have to withstand the occasional load of passing vehicles. PARXESS offers the same benefits as AKSESS.

→ Ergonomics

- Convenient, easy opening and handling of cover.

→ Operation

- New cover seatings system with improved dynamic cover location within the frame.

→ Strength

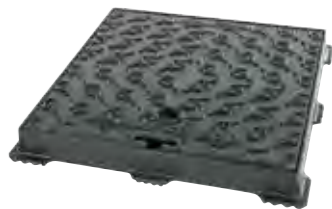
- Frames and covers are designed to provide rigidity, resistance to deflection and durability.

→ Easy installation

- Wide flanged frames give optimal seating and efficient, durable bedding on square concrete boxes.

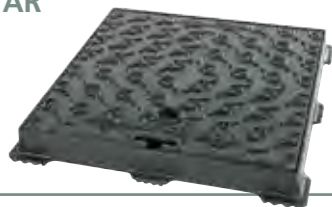
MASS	DIMENSIONS	REFERENCE			
			total	cover	clear opening
24.4	14.5	430x450	300x300	56	CBPK40HF
32.3	20.7	530x550	400x400	56	CBPK50HF
40.6	31.0	630x650	500x500	56	CBPK60HF
55.6	40.0	730x750	600x600	56	CBPK70HF

PARXESS
C250



MASS	DIMENSIONS	REFERENCE			
			total	cover	clear opening
44.0	26.0	592x670	508x430	80	CCPK50UZ

PARXESS AR
EN 124 C250



- Opening of 510x430 mm.
- Opens at 110° by double articulated system.

→ handling box on the front for ergonomic use with the usual tools

Identification of underground networks: four different caps are provided, each marked with a symbol representing an underground network, are available as an option.



DESCRIPTION	REFERENCE
plate of 4 identification caps	C42

IDENTIFICATION



DESCRIPTION	REFERENCE
locking kit PENTA without operating key	C41
operating key PENTA	C17

LOCKING KITS
PARXESS



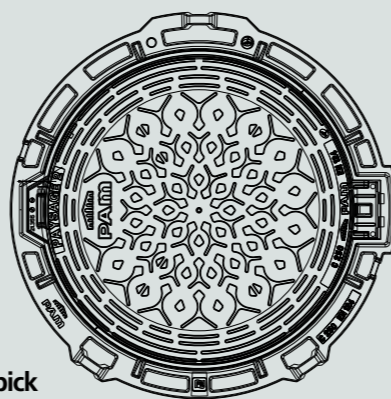
→ PENTA bolt and key

PAYSAGE 2



PAYSAGE 2

- Hinged cover, 90° safety blocking,
- Hinge restricting entry of soils
- Handling box for pickaxe
- Operating handle preventing opening without pick
- Honeycomb frame for easy sealing
- Lifting eyes on the frame for easy handling
- Antitheft kit for frame and cover (optional)



PAYSAGE 2
C250

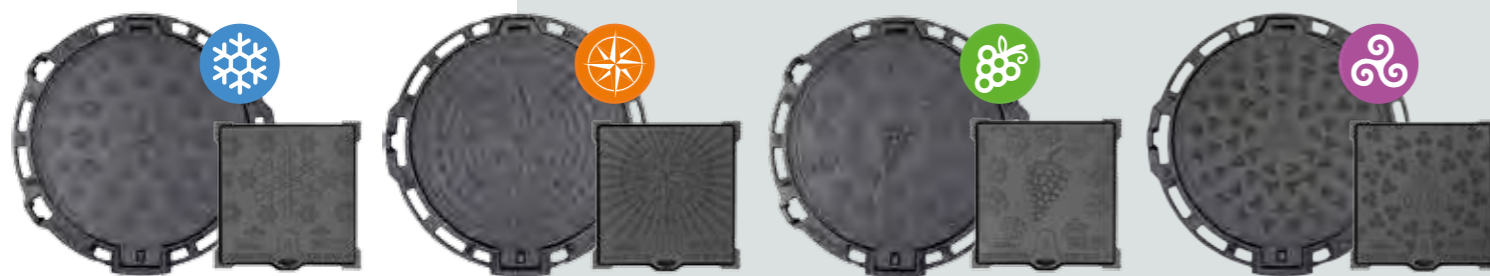
TYPE	FRAME	DIMENSIONS			MASS		REFERENCE
		A	O	H	total	cover	
non-ventilated	round	830	600	75	43.92	24.80	CCPG60AF

"TERRITORIALES BY PAM"

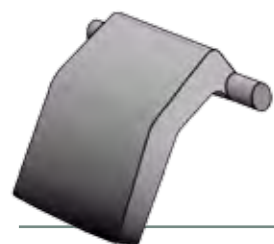
Four special versions to display and celebrate territories, cultural and regional identities.

To ensure the aesthetic coherence of sidewalks and squares, AKSESS and PAMREX are also available in «TERRITORIAL» versions.

MODEL	TYPE	FRAME	DIMENSIONS			MASS		REFERENCE
			A	O	H	total	cover	
triskell	non-ventilated	round	830	600	75	43.92	24.80	CCPG60AFM04
vines	non-ventilated	round	830	600	75	43.92	24.80	CCPG60AFM05
snowflakes	non-ventilated	round	830	600	75	43.92	24.80	CCPG60AFM06
wind rose	non-ventilated	round	830	600	75	43.92	24.80	CCPG60AFM07



ANTI-THEFT SPLINE PAYSAGE 2



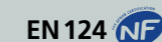
DESCRIPTION	REFERENCE
Spline alone	170900
Box with 1 spline and installation note	C38
Box with 10 splines (to equip 10 manhole covers)	C59

MANHOLES COVERS FOR INSPECTION CHAMBERS



HEIGHT ADJUSTABLE INSPECTION COVERS FOR PPIC

Ductile iron
Single seal



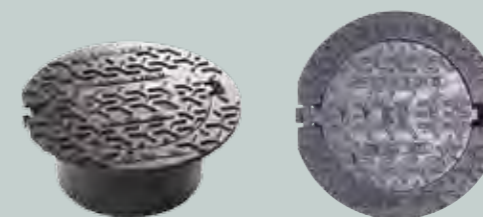
These manhole covers are fitted on DN 400, DN 300 and DN 250 extensions installed on DN 300 and DN 250 inspection chambers.

The hinged cover is tamper-proof once bedded. Height adjustment up to 95 mm by sliding the frame.

Units are fitted with earth-tight rings compliant with PVC / ductile iron extensions, see table for the appropriate code.



PIPE EXTENSION DN size mm	FRAME DIMENSIONS material	MASS		DIMENSIONS		REFERENCE	
		total	cover	clear opening	adjustability		
400	PVC	450	28.0	8.7	303	80	CCBR40BF
	cast iron						CCBR30AF
300	PVC	360	20.0	6.0	225	95	CCBR30BF
	cast iron						CCBR25AF
250	PVC	318	15.5	4.5	181	95	CCBR25BF



PIPE EXTENSION DN size mm	FRAME DIMENSIONS material	MASS		DIMENSIONS		REFERENCE	
		total	cover	clear opening	adjustability		
400	PVC	460	26.2	8.7	303	80	CCBR40SFX27
	cast iron						CCBR30SFX26
300	PVC	380	19.0	6.0	225	95	CCBR30SFX27
	cast iron						CCBR25SFX26
250	PVC	330	14.5	4.5	181	95	CCBR25SFX27

INSPECTION CHAMBERS



SQUARE FRAME C250



ROUND FRAME C250



AKSESS



B125

AKSESS: PAVEMENT SINGLE SEAL MANHOLE COVER

Ductile iron
Single seal manhole cover
EN 124  

Also available with
"Territoriales by PAM" cover designs.
For more information, see page 24.
Please consult for detailed products data.



AKSESS, FOLLOW THE STAR OF MANHOLE COVERS

STABLE, QUIET AND STRONG

→ Thanks to their perfect stability, AKSESS (water) manhole covers ensure quiet, trouble-free use for pedestrians and residents alike.

- 3-point non-rock system ensures the cover remains firmly seated in its frame
- Rigid and stable frames incorporating the LTS® system
- The underside of the wide seating pads located at each corner of the frame have a unique corrugated design that improves embedment and increases resistance to lateral shear by upto 5 times more than conventional designs

APPEARANCE

→ AKSESS is a range of attractive and functional manhole covers for pavement applications featuring:

- A new dynamic non-skid surface pattern
- A universal lifting point with integral usage indicator
- A specific diagram for the locked versions

EASY OPERATION

→ AKSESS, the fast and ergonomic solution for access to networks installed under pavements

- Opens effortlessly and remains stable in the vertical position in its frame
- Slides effortlessly for practical handling
- The lifting point for non-locked AKSESS covers is ergonomic and designed for use with standard tools

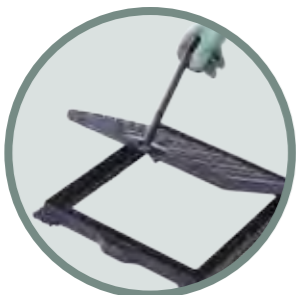
LOCKED AKSESS COVERS

SECURITY AND THEFT DETERRENCE

→ The locked version of AkseSS covers meets specific requirements for the prevention of theft, vandalism and intrusion

- Protection of appliances and equipment installed under pavements
- Deterrent against cover theft
- Locked AKSESS covers have a special opening that can only be operated using the AKSESS key, which operates the special 1/4-turn lock

→ Guaranteed protection of your equipment.



TYPE	DIMENSIONS			MASS total	REFERENCE
	outside of frame	clear opening	frame height		
STANDARD version (non locked)					
AKSESS 300	310x310	220	37	8.2	CBAK30HF
AKSESS 400	410x410	300	37	11.8	CBAK40HF
AKSESS 450	460x460	350	38	14.8	CBAK45HF
AKSESS 500	510x510	400	38	18.4	CBAK50HF
AKSESS 550	550x580	450	38	26.0	CBAK55HF
AKSESS 550x 700	560x710	450x600	38	32.9	CBAK75HF
AKSESS 600	610x610	500	38	30.3	CBAK60HF
AKSESS 700	720x720	600	38	43.8	CBAK70HF
AKSESS 800	820x820	700	41	56.4	CBAK80HF

TYPE	DIMENSIONS			MASS total	REFERENCE
	outside of frame	clear opening	frame height		
Locked version					
AKSESS 300	310x310	220	37	8.2	CBAK30HFX16
AKSESS 400	410x410	300	37	11.8	CBAK40HFX16
AKSESS 450	460x460	350	38	14.8	CBAK45HFX16
AKSESS 500	510x510	400	38	18.4	CBAK50HFX16
AKSESS 550	550x580	450	38	26.0	CBAK55HFX16
AKSESS 550x 700	560x710	450x600	38	32.9	CBAK75HFX16
AKSESS 600	610x610	500	38	30.3	CBAK60HFX16
AKSESS 700	720x720	600	38	43.8	CBAK70HFX16
AKSESS 800	820x820	700	41	55.2	CBAK80HFX16

DESCRIPTION	REFERENCE
AKSESS handling key	C17

B125

AKSESS AR

Articulated cover, opening at 110°

Handling box

Frame with notched flange enabling an effective bedding

Compatibility with standardized concrete forms

Anti-theft protection optional

Possibility of epoxy coating (on request)

Possibility of custom marking (on request)

FRAME	DIMENSIONS		MASS		REFERENCE
	clear opening	frame depth	total	cover	
square	510x430	39	32.0	21.0	CBAK50UZ

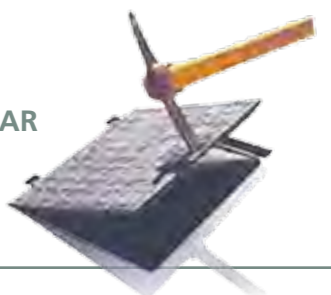
AKSESS STANDARD B125



AKSESS LOCKED B125



AKSESS AR EN 124 B125



OTHER B125 MANHOLE COVERS

SQUARE SINGLE SEAL MANHOLE COVER

B 125
NF



FRAME DIMENSIONS mm	MASS		DIMENSIONS		REFERENCE
	total	cover	clear opening	frame depth	
Square frame with square cover					
250	6.8	3.9	188	29	CBHY25HF
300	8.6	5.0	233	29	CBHY30HF
415	12.2	7.4	329	30	CBHY40HF
520	25.2	14.2	404	39	CBHY50HF
600	38.2	23.9	500	48.5	CBHY60HF
700	50.3	33.0	601	48.5	CBHY70HF
830	69.0	48.0	700	50	CBHY80HF

B125

TEK

Automatic locking by spring bar
Hinged cover, opens to 115°
Optional locking system

TYPE	FRAME	MASS		DIMENSIONS			REFERENCE
		total	cover	frame overall	clear opening	frame depth	
ventilated	round	46.0	26.0	785	600	100	CBTE60DU
non-ventilated	round	46.0	26.0	785	600	100	CBTE60EU

TEK

TEK
B 125
ÜA



CIRCULAR SINGLE SEAL MANHOLE COVER

B 125
NF



FRAME DIMENSIONS mm	MASS		DIMENSIONS		REFERENCE
	total	cover	clear opening	frame depth	
Round frame with round cover					
360	9.2	5.6	250	30	CBHY36SF
437	11.6	7.3	340	30	CBHY40SF
537	20.9	12.0	407	48	CBHY50SF
705	39.4	27.4	600	60	CBHY70SF

B125

PASSUS

Ductile iron according to ISO 1083
with bituminous coating

PE ring
EN 124

FRAME	MASS		DIMENSIONS		REFERENCE
	total	cover	clear opening	frame depth	
round	27.5	17.2	600	70	CBPU60EZ

- Opening 600mm. Opens at 100° with 90° safety lock.
- Automatic locking system with elastic bar made of ductile cast iron.

→ Working area

- Class B 125 (Group 2) according to EN124 standard, sidewalks, pedestrian zones and comparable areas, parking areas and car parking spaces.
- Inspections and periodic network visits.

→ Options

- Locking system optional.
- Anti-theft protection optional.
- Possibility of epoxy coating (on request).
- Possibility of custom marking (on request).

PASSUS

PASSUS
B 125



PAVEMENT MANHOLE COVER WITH SQUARE FRAME

B 125
NF



FRAME DIMENSIONS mm	MASS		DIMENSIONS		REFERENCE
	total	cover	clear opening	frame depth	
Square frame with round cover					
250	3.8	1.2	150	16	CBTB25RF
300	5.4	1.6	175	16	CBTB30RF
400	10.1	3.8	250	17	CBTB40RF
500	16.6	5.9	350	29	CBTB50CF
600	23.0	9.5	425	29	CBTB60RF
700	36.0	15.0	500	34	CBTB70RF
830	50.8	24.3	610	35	CBTB80CF

B125

OPTEA

Ductile iron
Single seal function
EN 124

FRAME	MASS		DIMENSIONS			REFERENCE
	total	cover	frame overall	clear opening	frame depth	
square	5.9	3.7	300	235	25	CBOP30HK
	9.2	6.4	400	325	25	CBOP40HK
	15.0	11.0	500	400	30	CBOP50HK
	24.2	19.6	600	500	30	CBOP60HK

OPTEA

OPTEA
B 125



PAVEMENT MANHOLE COVER WITH CIRCULAR FRAME

B 125
NF



FRAME DIMENSIONS mm	MASS		DIMENSIONS		REFERENCE
	total	cover	clear opening	frame depth	
Round frame with round cover					
500	12.5	5.9	350	30	CBTB50RF
800	36.8	24.3	610	35	CBTB80RF

HOW TO INSTALL D400 MANHOLE COVERS

Installation guides, bedding instructions provide recommendation & best practices for the installation of manhole covers & gratings are available for download in various languages.

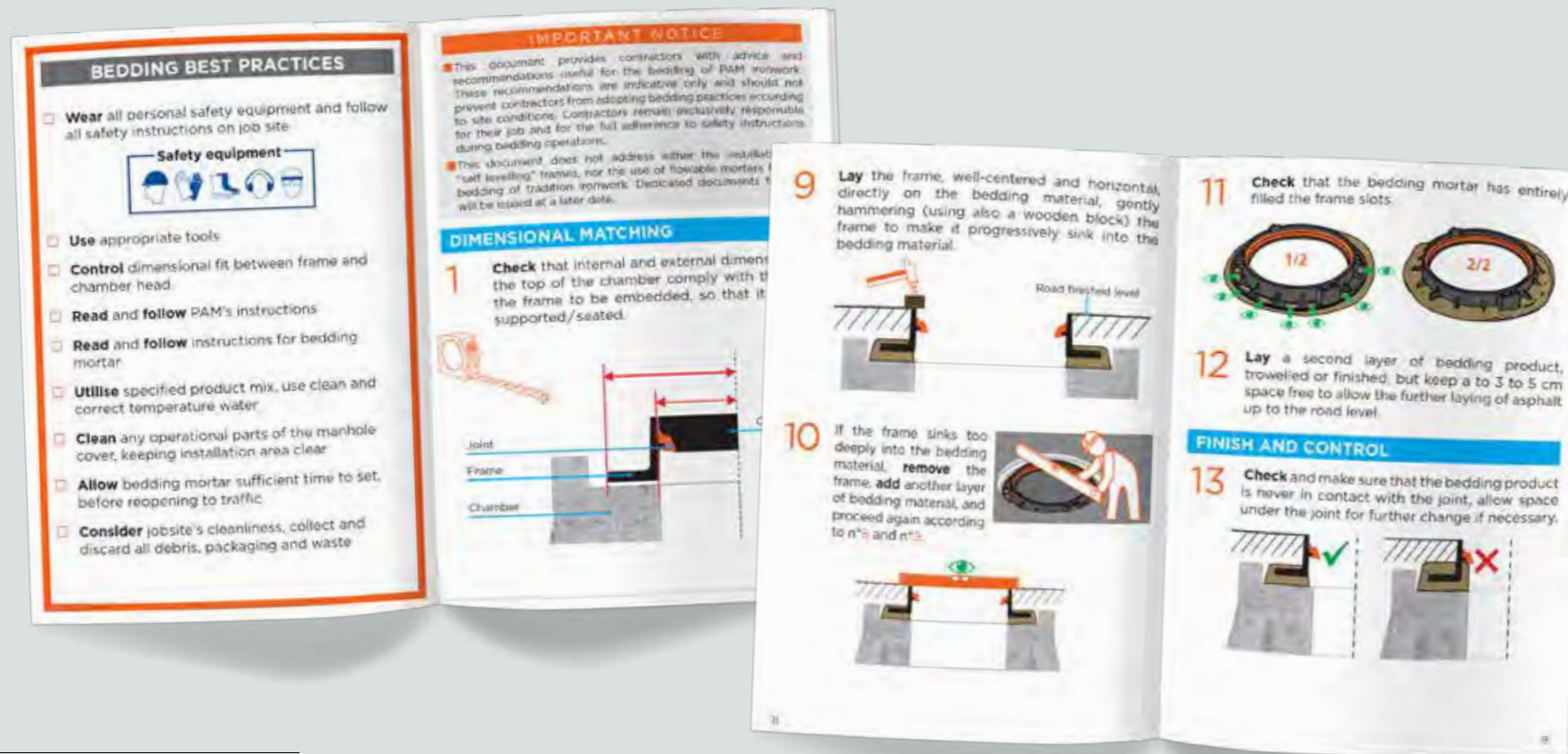
Videos also available.
Please consult your local Saint-Gobain PAM.



Download...



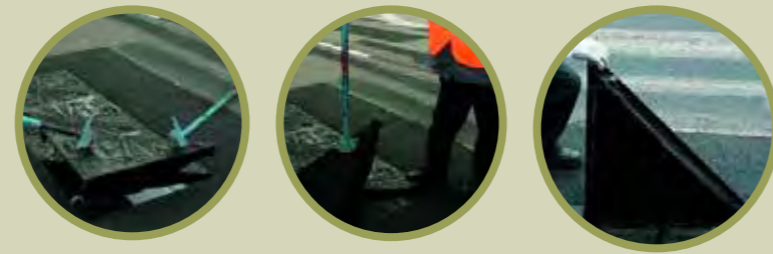
Continental types of products, circular frames
UK double triangular products, square / rectangular frames



D400

DUCT COVERS T-MAX i D 400

- **Built-in hinge into the basic version:**
 - Covers lifted horizontally by 2 operators using lifting hammers
 - Hinging: allows cover opening by one operator
 - 90° safety blocking position
- **100% ductile iron frame:**
 - Ductile iron frame welded by robots
 - Total height 120 mm
- **Retrofit of safety or opening assistance devices:**
 - To be installed further to the bedding of the unit
 - Quick & easy installation, no preparation required
 - Mounting just requires hammer & 19mm-wrench, Instruction notice provided



CHAMBER TYPE	Nr of COVERS	CxO	MASS	PACKING	REFERENCE	
					with telecom logo	without logo
D400 type K - Ductile iron frame and triangular with built-in-hinge						
K1C	2	750x750	128.5	4	DDK1ARTXTEL	DDK1ARTX
K2C	4	1500x750	238.0	4	DDK2ARTXTEL	DDK2ARTX
K3C	6	2250x750	349.0	4	DDK3ARTXTEL	DDK3ARTX



DUCT COVER T-MAX D 400

→ K2C

KITS T-MAX to be installed on site

TYPE	DESCRIPTION	MASS	REFERENCE
D400 type K - Ductile iron frame and triangular with built-in-hinge			
Opening assistance kit for 2 covers ⁽¹⁾	2 anti-ejection clips to be screwed on the frame 2 oscillating fasteners to be installed under the cover 2 gas springs with stainless steel quick couplings	2.8	D28
Safety kit for K1C duct cover	Lock with SCS head ⁽²⁾ Safety clamp for master cover 2 safety clamps for slave covers	2.2	D25
Safety kit for K2C duct cover	Lock with SCS head ⁽²⁾ Safety clamp for master cover 6 safety clamps for slave covers	4.0	D26
Safety kit for K3C duct cover	Lock with SCS head ⁽²⁾ Safety clamp for master cover 10 safety clamps for slave covers	5.8	D27
SCS key for safety kit		0.4	C18

⁽¹⁾ If assistance is required for all covers, order 2 kits for a K2C duct cover and 3 for a K3C duct cover
⁽²⁾ Other locks are developed for special work sites or specific operators.

DESCRIPTION	REFERENCE
FT homologated plate hammer	D10
Simplified plate hammer	D11

→ Unit Installation manual included

Ask for the specific catalogue.



COVER LIFTING HAMMER

C250

DUCT COVERS T-MAX i C 250

- **Standard units with possible retrofit options:**
 - Optional features available as retrofit patented kits; for a quick & reliable installation
 - Prefabricated galvanised steel frames already prepared for further retrofit of optional kits, Ductile iron covers, seatings fitted with sound-proof pads

CHAMBER TYPE	Nr of COVERS	CxO	MASS	PACKING	REFERENCE	
					with telecom log	without logo
C250 type L1T to L4T - Optimised steel angle bar frame and ductile iron covers						
L1T	1	527x389	38.3	5	DCL1TMIXTEL	DCL1TMIX
L2T	2	1161x389	71.7	5	DCL2TMIXTEL	DCL2TMIX
L3T	3	1381x527	101.3	5	DCL3TMIXTEL	DCL3TMIX
L4T	4	1876x527	132.6	5	DCL4TMIXTEL	DCL4TMIX
1/2L4T	2	884x527	69.9	5	DC1LTMIXTEL	DC1LTMIX
C250 type P2T to M2T - Optimised steel angle bar frame and ductile iron covers						
L1T	2	1161x884	146.7	5	DCP2MIXTEL	DCP2TMIX
L2T	3	1795x884	214.6	5	DCL5MIXTEL	DCL5TMIX
L3T	4	2429x884	282.7	5	DCL6MIXTEL	DCL6TMIX
L4T	5	3062x884	350.8	5	DCM2TMIXTEL	DCM2TMIX

Retrofit kits to be installed further to the bedding of the unit

CHAMBER TYPE	SAFETY	HINGE	CHAMBER TYPE	SAFETY	ASSISTED OPENING
L1T	1 kit D29	0	P2T	1 kit D31	1 kit D32
L2T & 1/2 L4T	1 kit D29	1 kit D30	L5T	2 kits D31	1 kit D32
L3T	1 kit D29	2 kits D30	L6T	2 kits D31	2 kits D32
L4T	2 kits D29	2 kits D30	M2T	3 kits D31	2 kits D32

□ The kits quantity to be ordered depending on the type of chamber

C250

DUCT COVERS T-MAX optimised C250 or B 125

- **Angle bar frame: galvanized steel 50x30x5 mm**
C250 type LOT / C250 type L1T to L4T

CHAMBER TYPE	Nr of COVERS	DIMENSIONS outside frame	OxL	MASS	PACKING	REFERENCE	
						with telecom log	without logo
C250 type L1T - Steel angle bar frame 50x30x5 mm and optimised frame 578x468 mm fitted with sound-proof pad							
LST1	1	641x481	581x421	28.0	10	DCL1LIGXTEL	DCL1LIGX
L2T	2	481x1221	1161x421	53.5	5	DCL2LIGXTEL	DCL2LIGX
L3T	3	591x1469	1409x531	77.7	5	DCL3LIGXTEL	DCL3LIGX
L4T	4	591x1938	1878x531	102.4	5	DCL4LIGXTEL	DCL4LIGX
1/2L4T	2	591x1000	940x531	52.8	5	DC1LLIGXTEL	DC1LLIGX
C250 type LT - Steel angle bar frame 50x30x5 mm and optimised frame 578x468 mm fitted with sound-proof pad							
LOT	1	308x488	428x248	13.4	10	DBL0LIGXTEL	DBL0LIGX



DUCT COVER T-MAX C250

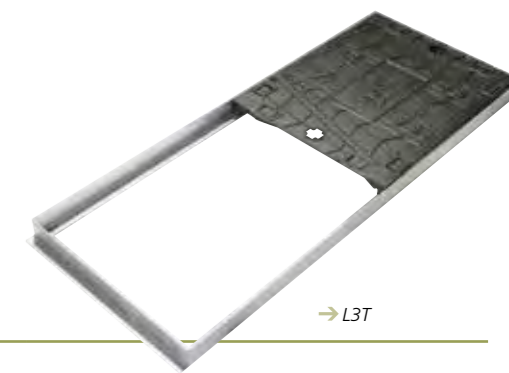


→ L3T

Ask for the specific catalogue.



DUCT COVER T-MAX OPTIMISED C250



→ L3T

F900

E600

D400

C250

B125

DUCT COVERS PAMETIC
Specific areas like: airports, bridges, industrial sites, laboratories, ... require a high level of sealing on duct covers for pit and specific chambers

→ **3 main fields of application:**

- Sealed duct covers with 1 to 3 covers on a row
- Sealed access covers for technical channels
- Sealed multispan duct covers

→ **Performances :**

- The bearing surface between frames and covers is completely machined : the precision of the components and the absence of gap provide sealing, stability and complete silence
- Water and odours tight sealing assisted with special sealing grease
- Easy and safety opening with handling keys
- For multispan duct covers possibility of opening the selected cover



- **Gas & Water tightness:** contact surfaces between covers and frames / beams are machined.
- **Stability:** accuracy of machined seatings prevent covers from any movement or rocking, for safe, reliable & durable life span in toughest conditions.
- **Resistance and stiffness:** both single units and multi-covers ducts or channels are built with extremely resistance frames, beams & covers, tested in accordance with EN 124.
- **A comprehensive range of solutions,** making every project a tailor-made achievement, with specific load classes, dimensions, layouts, and covers surfaces: full ductile or ductile recessed tops
- **Dimensioning software** allow precise calculation of BOM (quantification of covers, frames, beams, etc.)

F900



→ Gas arm-fitted F900 gas & water tight units, to provide man / material entry on airport tarmacs & taxiways, in safe & easy lifting conditions.



	DIMENSIONS			MASS total	REFERENCE
	outside of frame	clear opening	frame depth		
450 x 450	750 x 750	118	202	DFAL75AX75X99	
600 x 450	900 x 900	118	252	DFAL90AX90X99	
600 x 600	1000 x 1000	154	343	DFAL10AX10X99	



→ Gas arm-fitted covers allow easy a painless opening and closing, without loss of stability and resistance.



The Pametic 2 ranges comprise more than 6.000 product codes, depending on classes, sizes, combinations possibilities etc. As a consequence, it is not possible to fully display the ranges contents and data. Therefore, we thank you to contact your local Saint-Gobain PAM sales organisations to get access to the products details.

→ Please consult us for any further technical data, technical sheets, assistance or quotes, bespoke or standard.



GULLY GRATES

The collection of run-off water has become a major concern :

- the development of impermeable surfaces considerably increases the volumes to be drained,
- while, at the same time, sewer system operating constraints are changing user needs, especially with regard to the filtering of debris and access for maintenance operations.

On the strength of its recognized experience in sewerage and its know-how as the leading European manufacturer of municipal castings, **PAM** offers a range of drain gratings that provide users with efficient, reliable and durable solutions. Always attentive to customer needs, **PAM** is constantly seeking to improve its product ranges to satisfy future requirements.

	GRATING GATIC for airport F900	page 41
CIRCULAR GRATINGS	PAMREX	page 42
	REXEL PAYSAGE	page 43
	AQUAMAX AQUAVANTAGE	page 44
SQUARE GRATINGS	DEDRA	page 45
	SQUADRA	pages 46/47
	ITALIA LAZIO MILANO	page 48
SQUARE GRATINGS FOR KERBSIDES AND CAR PARKS	Traditionnal flat gratings Concave gratings	page 49
	SOLE ESKOA	page 50
RECTANGULAR GRATINGS	SELECTA	pages 51/53
	Gully covers Gully gratings COMMUNAL	page 54
GULLY UNITS	OPTEA Other channel gratings	page 55
	AUTOLINEA	pages 56/57
LONGITUDINAL CHANNEL GRATINGS	TRANSLINEA MECALINEA	pages 58/59
GRATINGS FOR CROSSWISE CHANNEL	PAVA Other surface boxes	pages 60/61

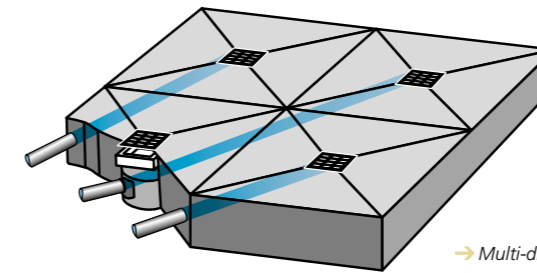


SELECTION CRITERIA FOR GULLY GRATES

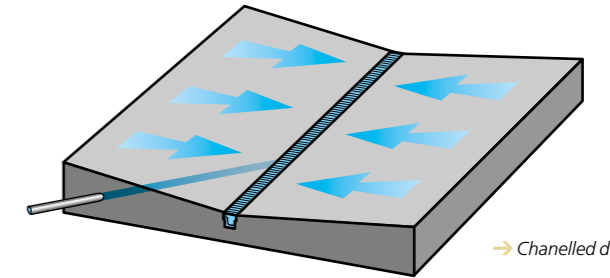
TYPE OF COLLECTION

Run-off water can be collected either :

- by gully grates in a road carriageway or in a parking area, or by kerbside gully units.
- Linear collection, by channel gratings.



→ Multi-directional drainage

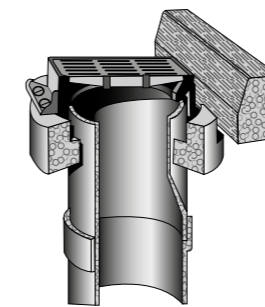


→ Channelled drainage

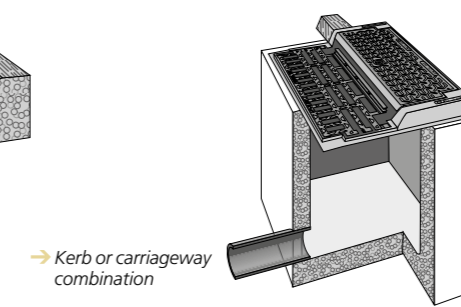
LOCATION OF GULLY POT

The type of grating to be used is generally determined by the location of gully pots and the design of the drainage network.

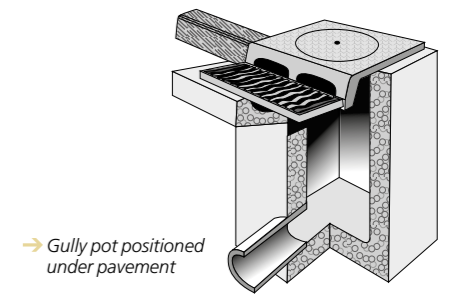
- When the gully pot is situated directly under the carriageway, a square flat grating is used.
- When the gully pot is positioned to provide kerb and carriageway drainage, either a gully grate or a SELECTA inlet should be used.



→ Gully pot positioned under carriageway



→ Kerb or carriageway combination



→ Gully pot positioned under pavement

TRAFFIC RESISTANCE

Like manhole covers, gully grates must be selected according to their place of installation as this determines their strength class in accordance with the definition in EN 124 (see page 3).

FLOW CAPACITY SELECTION SOFTWARE

In order to help customers make their choice among the various gully units, frame gratings and channel gratings in the gully grates range, Saint-Gobain PAM has prepared a dimensioning and decision-making aid software package.

It can be used to determine the following points on the basis of the characteristics of the site studied :

- the type of grates,
- the number of grates to be used,
- the spacing between two successive castings,
- the quantity of rainwater drained by the sewer system.

Please consult our sales engineering teams.

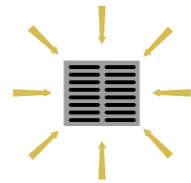


SELECTION CRITERIA FOR GULLY GRATES

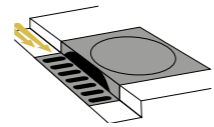


To meet national regulations addressing disabled people (PMR) access conditions to public areas, Saint-Gobain PAM proposes a wide range of flat & concave gratings featuring reduced slots widths and apertures diameters.

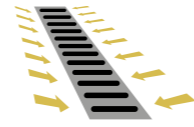
These gratings bear the logo



multidirectional drainage



kerbside drainage



longitudinal drainage

TYPE OF DRAINAGE

RANGE

Confronted to the wide diversity of situations encountered, users are increasingly choosing specific drain inlet devices in order to optimize the collection of rainwater.

In response to this demand, Saint-Gobain PAM provides a wide range of products constituting suitable technical solutions for each specific configuration.

According to EN 124:2015, D400 concave gratings have restricted places of installation: parking areas only

GRATING GATIC FOR AIRPORTS



Ductile iron
Machined and greased seating faces
2 levelling bolts on each side bar
(level setting)



GATIC



CLASS	TRAFFIC RESISTANCE	TYPE OF DRAINAGE			CHANNEL
		PAMREX	DEDRA* flat DEDRA* concave**	AQUAMAX* flat AQUAVANTAGE concave**	
CLASS E600					TRANSLINEA channel
CLASS D400	Reinforced stability				TRANSLINEA channel
	Standard				AUTOLINEA* channel
CLASS C250	Reinforced stability		SQUADRA* flat	SELECTA* gully units	AUTOLINEA* channel
			SQUADRA* concave**	SELECTA* kerb	
	Standard	PAYSAGE	TRADITIONNAL flat	gully gratings rectangular flat gratings	MECALINEA channel
			TRADITIONNAL concave	simple gullies and cover plates	

* with spring bar locking
** according to EN 124:2015, D400 concave gratings have restricted places of installation: parking areas only

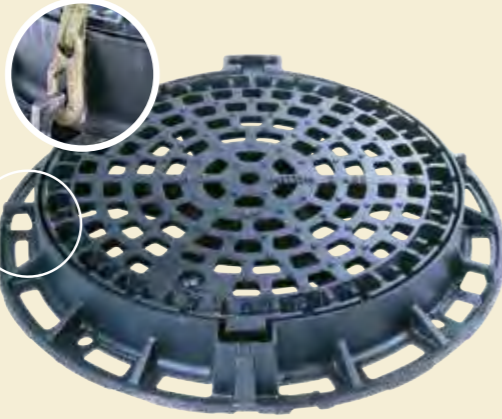
TYPE	DIMENSIONS		MASS total	REFERENCE
	clear opening	outsideframe		
Grate with frame		900x570x140	107.5	EFGR83ZX
Grate on 2 side bars	850x300	850x570x140	85.0	EFCL30JX
End plate*		-	5.5	E14
Grate with frame		900x720x140	135.8	EFGR84ZX
Grate on 2 side bars	850x450	850x720x140	108.0	EFCL45JX
End plate*		-	7.0	E15
Grate with frame		900x870x140	191.1	EFGR86ZX
Grate on 2 side bars	850x600	850x870x140	210.0	EFCL60JX
End plate*		-	8.5	E16
Grate with frame		750x1020x140	270.3	EFGR77GX
Grate on 2 side bars	700x750	700x1020x140	228.0	EFGR77JX
End plate*		-	10.0	E17

* for channel application : use gratings with side bars and 2 end plates

GATIC GRATING F900



PAMREX



D400

PAMREX GRATING

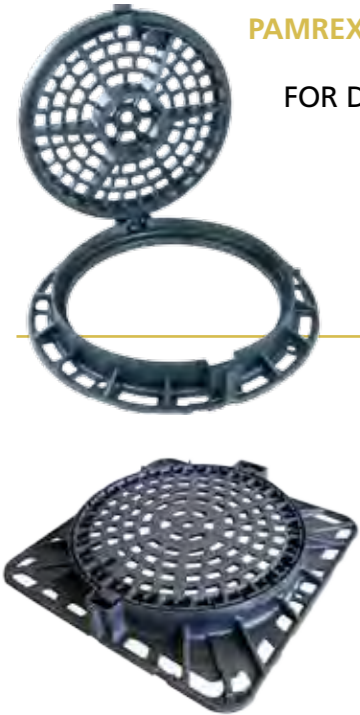
- Ductile iron
- Hinged
- 1 handling box
- Lifting rings integral with the frame
- Optional anti-theft grate locking
- Interchangeable with PAMREX cover
- EN 124

FRAME	MASS		DIMENSIONS		WATERWAY AREA dm ²	REFERENCE
	total	grating	clear opening	frame depth		
round	87.2	58.0	610	100	10.75	EDPA60AF
square	97.8					EDPA60

- Cover opening to 130°
- Blocks at 90° when closing



PAMREX SAFETY «PMR» FOR DISABLED PEOPLE D400



D400

REXEL GRATING

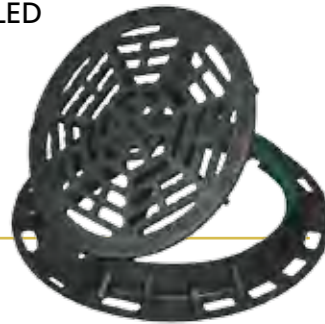
- Ductile iron
- Automatic locking by ductile iron spring bar (patented system)
- Hinge
- Unlocking box
- Optional anti-theft grate locking
- Rexel grate is interchangeable with cover
- EN 124

FRAME	MASS		DIMENSIONS		WATERWAY AREA dm ²	REFERENCE
	total	grating	clear opening	frame depth		
circular	57	32	600	100	11.9	EDRX 60BF
square	65	32	600	100	11.9	EDRX 60DF

- The REXEL grating is specially designed to withstand medium-density traffic. Its design ensures performance, long-life and stability.

REXEL

REXEL GRATING «PMR» FOR DISABLED PEOPLE D400



C250

PAYSAGE GRATING

- Ductile iron
- Polyethylene ring
- Interchangeable with PAYSAGE cover
- EN 124

FRAME	MASS		DIMENSIONS		WATERWAY AREA dm ²	REFERENCE
	total	grating	clear opening	frame depth		
circular	56	36	600	75	13.5	ECPG60BF
square	63	36	600	75	13.5	ECPY60DF

- The PAYSAGE grating is installed on shafts sited in traffic-free locations.
- The concave shape of the concentric bars optimizes multi-directional collection.

PAYSAGE

PAYSAGE GRATING «PMR» FOR DISABLED PEOPLE C250



AQUA-MAX

D400

AQUA-MAX

Ductile iron
Hinged and locked grating
Multi-directional wedge
Integral spring Bar
LTS Feature
EN 124 ♡



AQUA MAX
D 400



CLEAR OPENING	OVERBASE	DEPTH	TOTAL MASS	WATERWAY AREA dm²	REFERENCE
450x450	660x550	100	45.5	12.4	205864
450x450	660x550	150	50.0	12.4	205865

D400

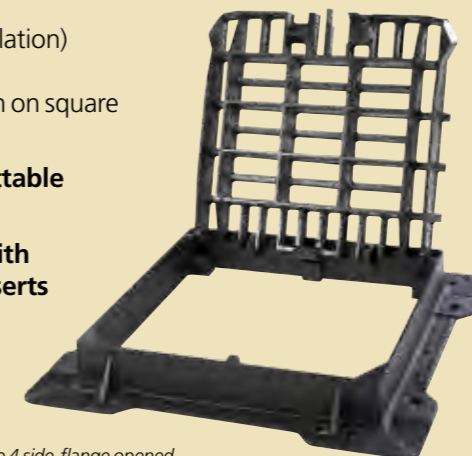
DEDRA HINGED GRATING

Ductile iron
Hinged spring-bar locked gratings
Disabled / not disabled options
Frames with 3 flanges
(kerb installation)
4 flanges
(installation on square chambers)

Frames fittable / not fittable with mud pan

Frames can be fitted with Install Plus levelling inserts

LTS Feature
EN 124 NF



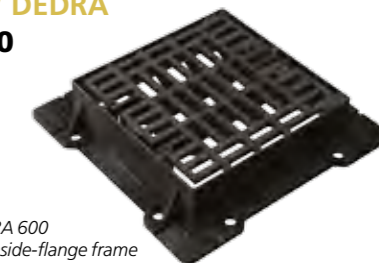
→ Frame 4 side-flange opened

FRAME	MUDPAN	MASS total	WATERWAY area dm²	DIMENSIONS		REFERENCE	
				clear opening	frame depth		
flat grating for disabled people (PMR)							
4 side-flanged ♿	no	31,6	8,6	450x450	300	102	EDDE30EFX11
3 side-flanged ♿	compatible	60	8,1	600x450	350	102	EDDE35IFX11
3 side-flanged ♿	no	60	8,1	600x600	400	102	EDDE40IFX11
4 side-flanged ♿	compatible	53	8,1	600x450	350	102	EDDE35EFX11
4 side-flanged ♿	no	54	8,1	600x600	400	102	EDDE40EFX11
4 side-flanged ♿	no	63,6	10,5	650x650	500	102	EDDE30EFX11
4 side-flanged ♿	no	91,9	16,2	750x750	600	102	EDDE60EFX11
flat grating							
3 side-flanged	no	85		800x714	600	102	EDDE60RFX14
4 side-flanged	no	88		800x800	600	102	EDDE40EFX11
concave grating							
4 side-flanged	compatible	60	11,3	600x600	400	127	EDDE40DFX15
4 side-flanged	no	55	11,3	600x600	350	127	EDDE35DFX15

DEDRA

DEDRA

DEDRA 600 FLAT & CONCAVE* NEW DEDRA D400

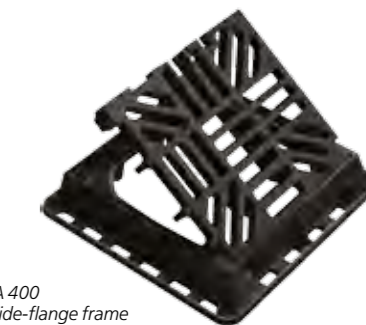


→ DEDRA 600 flat 4 side-flange frame



→ DEDRA 400 concave 4 side-flange frame

*according to EN 124:2015, D400 concave gratings have restricted places of installation: parking areas only



→ DEDRA 400 flat 4 side-flange frame

AQUAVANTAGE

D400

AQUAVANTAGE

Ductile iron
Captive Hinged Grating
Spring bar locking feature as standard
Optional retro-fit locking kit
V Profile
EN 124 ♡

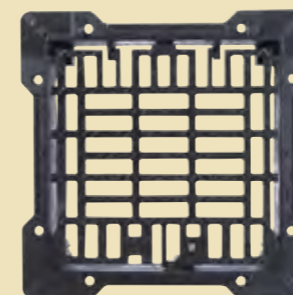


AQUAVANTAGE
D 400

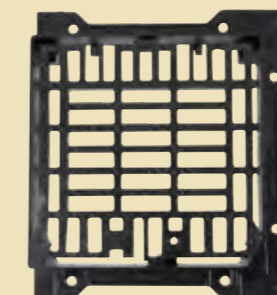


CLEAR OPENING	OVERBASE	DEPTH	TOTAL MASS	WATERWAY AREA dm²	REFERENCE
600x600	738x742	150	81.5	22.0	234850
600x600 (*)	738x742	150	81.5	52.5	242564
900x900	1050x1020	180	183.6	48.8	241255
675x1200	830x1355	150	188.0	51.1	251830
1200x675	1356x809	200	180.0	51.1	251829

(*) removable grate version
according to EN 124:2015, D400 concave gratings have restricted places of installation: parking areas only



→ Frame 4 side-flange



→ Frame 3 side-flange

SQUADRA GRATINGS WITH FRAME AND AUTOMATIC LOCKING

SQUADRA

C250

SQUADRA FLAT AND CONCAVE

Ductile iron

Secured by patented ductile iron spring-lock mechanism

EN 124  



Successfully developed with AUTOLINEA gratings and the REXEL manhole cover, the ductile iron spring locking mechanism equips SQUADRA gratings. Locking of the gratings and a newly designed frame provide maximum stability and more precise installation on the gully pot.

STABILITY ++++

SQUADRA gratings incorporate a feature considered by users to be increasingly important: stability.

The «T» frame ensures optimum seating of the grating, and better assembly fit on the concrete gully pot.

INSTALLATION AND OPERATION ++++

- flat soled frame for practical and effective embedment
- compatible with prefabricated concrete manholes
- easy to open by system service teams using a crowbar or pickaxe as lever
- easy to close automatically : place the grating into its frame, exert pressure on the grating with foot or tool to lock it safely»

SAFETY ++++

- Flat SQUADRA gratings can be rotated 90° : the click-in system operates whatever the position of the grating in its frame. This feature means the bars can be placed perpendicular to the flow of traffic, irrespective of the way in which the frame has been sealed into place.
- Concave SQUADRA gratings also provide maximum safety with bi-directional bars ensuring safety for cyclists and pedestrians.

ABSORPTION ++++

- The bars have been specially developed to optimize absorption. In particular, the presence of a range of directional facets facilitates the washing away of leaves, and also breaks up the water sheet.
- Flat SQUADRA: rotate the grating in the frame to optimize absorption.
- Concave SQUADRA: dual bar orientation for maximum performance.

MASS		DIMENSIONS			WATERWAY AREA	REFERENCE
total	grating	frame	clear opening	depth	dm ²	
15.3	10.0	350	250	39	2.7	ECSQ35PF
18.5	12.0	410	300	39	5.2	ECSQ40PF
26.0	17.5	510	400	39	9.8	ECSQ50PF
36.6	25.6	620	500	39	15.1	ECSQ60PF
59.5	59.5	720	600	39	20.6	ECSQ70PF
71.5	71.5	820	700	39	28.5	ECSQ80PF

MASS		DIMENSIONS			WATERWAY AREA	REFERENCE
total	grating	frame	clear opening	depth	dm ²	
32.7	17.5	510	350	100	9.8	ECSQ50LF

MUDPAN FOR SQUADRA 500 FLAT GRATING WITH HIGH FRAME

7.0	-	385	325	600	-	E4
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□ for paved areas and pavements, can be fitted with mudpan

MASS		DIMENSIONS			WATERWAY AREA	REFERENCE
total	grating	frame	clear opening	depth	dm ²	
14.9	9.6	350	250	39	3.0	ECSQ35PFX11
19.0	12.0	410	300	39	3.9	ECSQ40PFX11
36.2	21.0	510	400	100	7.8	ECSQ50LFX11
29.5	21.0	510	400	39	7.8	ECSQ50PFX11
40.0	29.0	620	500	39	12.8	ECSQ60PFX11
62.1	48.9	720	600	39	17.6	ECSQ70PFX11
79.0	64.1	820	700	39	24.7	ECSQ80PFX11

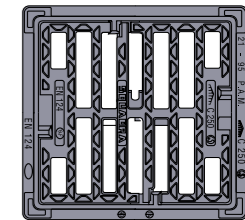
MASS		DIMENSIONS			WATERWAY AREA	REFERENCE
total	grating	frame	clear opening	depth	dm ²	
20.6	13.2	410	300	58/40	5	ECSQ40CF
30.4	19.5	510	400	63/40	9.8	ECSQ50CF
41.5	29.0	620	500	68/40	14.8	ECSQ60CF
61.2	45.5	720	600	73/40	20.7	ECSQ70CF
78.1	60.0	820	700	78/40	27.4	ECSQ80CF

MASS		DIMENSIONS			WATERWAY AREA	REFERENCE
total	grating	frame	clear opening	depth	dm ²	
20.0	12.5	410	300	58/40	4.8	ECSQ40CFX11
31.8	20.9	510	400	63/40	7.0	ECSQ50CFX11
44.1	31.5	620	500	68/40	12.8	ECSQ60CFX11
63.6	48.0	720	600	73/40	18.4	ECSQ70CFX11
81.5	63.2	820	700	78/40	26.4	ECSQ80CFX11

SQUADRA FLAT GRATING WITH FRAME C250



SQUADRA 500 FLAT GRATING WITH HIGH FRAME C250

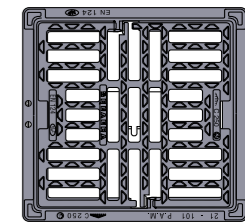


SQUADRA 500 FLAT GRATING «PMR»

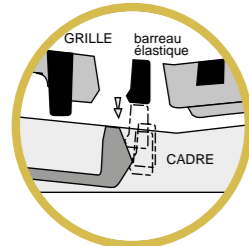
ACCESS FOR DISABLED PEOPLE C250



SQUADRA CONCAVE WITH FLAT FRAME C250



SQUADRA CONCAVE «PMR» WITH FLAT FRAME FOR DISABLED PEOPLE C250



SQUARE GRATINGS

SQUARE GRATINGS FOR KERSIDES AND CAR PARKS



GRATINGS WITH HIGH FRAME

Ductile iron
Surrounding bedding flange
EN 124



The ITALIA, LAZIO and MILANO gratings have a raised frame and a surrounding flange which reinforce the strength of their bedding and provide greater safety under traffic load. The absence of ribs on the outer face of the frame facilitates the installation of the gratings on paved roads or areas.

BASE SIZE mm	MASS		frame	DIMENSIONS		WATERWAY AREA dm ²	REFERENCE
	total	grating		clear opening	depth		
400x400	27.3	13.7	500	360	80	7.7	ECIT36PF



SQUARE GRATINGS WITH FRAME

Ductile iron
Bedding lugs
EN 124



Flat and concave square gratings provide a simple solution for the top of gully pots located in traffic-free areas.

BASE SIZE mm	MASS		frame	DIMENSIONS		WATERWAY AREA dm ²	REFERENCE
	total	grating		clear opening	depth		
200x200	5.8	3.4	218	165	27	1.7	ECGP20PF
250x250	8.3	5.0	269	215	27	2.4	ECGP25PF
300x300	12.4	7.4	319	255	27	4.2	ECGP30PF
400x400	21.3	13.7	422	351	27	7.7	ECGP40PF
500x500	29.4	20.1	543	450	27	11.8	ECGP56PF
600x600	47.6	35.6	624	549	27	16.8	ECGP60PF
700x700	71.6	55.5	725	647	27	20.2	ECGP70PF
800x800	91.3	70.9	827	744	29	27.6	ECGP80PF

SQUARE FLAT GRATINGS WITH FRAME C250



SQUARE CONCAVE GRATINGS WITH CONCAVE FRAME C250



FLAT GRATING ITALIA C250



FLAT GRATING LAZIO C250



FLAT GRATING MILANO C250



BASE SIZE mm	MASS		frame	DIMENSIONS		WATERWAY AREA dm ²	REFERENCE
	total	grating		clear opening	depth		
500x500	38.5	23.5	570	450	70	11.8	ECLZ57CF

BASE SIZE mm	MASS		frame	DIMENSIONS		WATERWAY AREA dm ²	REFERENCE
	total	grating		clear opening	depth		
500x500	31.8	22	560x500	440	45	11.8	ECGP50PF



BASE SIZE mm	MASS		frame	DIMENSIONS		WATERWAY AREA dm ²	REFERENCE
	total	grating		clear opening	depth		
400x400	21.1	13.3	422	351	40	7.7	ECGC40CF
500x500	31.1	21.0	523	450	40	11.8	ECGC50CF
600x600	49.4	37.0	624	549	40	16.8	ECGP60CF
700x700	74.5	58.0	725	647	42.5	20.2	ECGP70CF
800x800	96.5	75.0	827	744	42.5	27.6	ECGP80CF

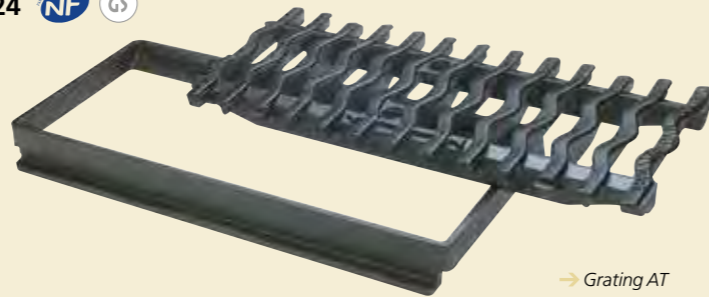
RECTANGULAR GRATINGS FOR KERSIDES

AT

C250

GRATING AT - FLAT GRATING WITH FRAME

Ductile iron
EN 124  



→ Grating AT

TYPE	BASE SIZE	MASS		DIMENSIONS			WATERWAY AREA dm ²	REFERENCE
		total	grating	frame	clear opening	depth		
AT	750x300	40	25	776	746	41	8.7	ECCL30DF
Flat	750x300	41	20	776	746	41	7.5	ECML30ZF

Flat rectangular gratings with frames are usually installed at the kerbside, alone or in addition to a cover plate or a gully.

GRATING AT C250

→ Flat grating





SOLE

C250

SOLE

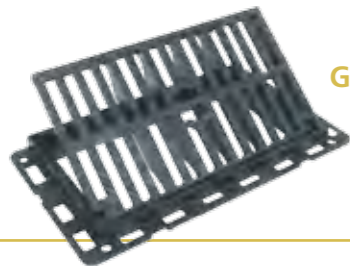
Ductile iron
400 kN test load
Hinging on lengthwise
Handling box

Anti-theft grating
Reinforced frame
EN 124  

BASE SIZE	MASS		DIMENSIONS clear opening	WATERWAY AREA dm ²	REFERENCE
	total	grating			
600x350	37.5	22.0	725x420 600x350	9.22	EC5063EF

Easy to open, the SOLE grating is designed to allow quick access to sewer systems. Its raised frame is fitted with a three sides bedding flange, allowing solid and durable bedding at the kerbside, opposite a gully for example. The grating is anti-theft once it has been bedded.

SOLE GRATING C250



ESKOA

D400

ESKOA
Ductile iron
EN 124

TYPE	FRAME	MASS		DIMENSIONS		REFERENCE
		total	cover	clear opening	frame depth	
D400	square	43.0	28.0	810x290	80	EDEK80PK



Automatic locking system with elastic ductile iron bar with handling box located in front of the grate for ergonomic opening with usual tools and integrated anti-theft system.

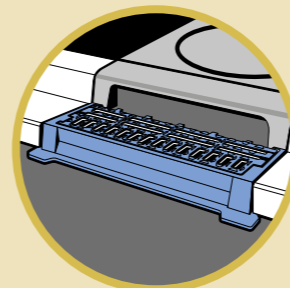
ESKOA D400



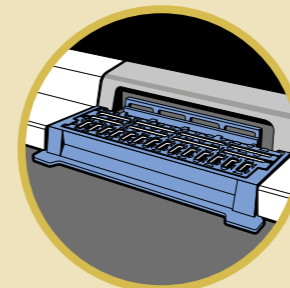
C250

SELECTA KERB GRATINGS

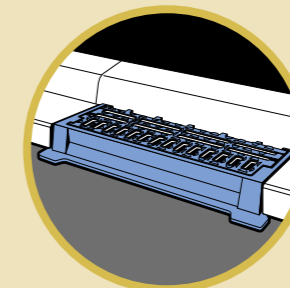
Ductile iron
Articulated grating
Locking feature due to spring-lock device
EN 124  



→ SELECTA kerb grating combined with gully plate



→ Selecta kerb grating combined with gully inlet



→ SELECTA grating installed alone

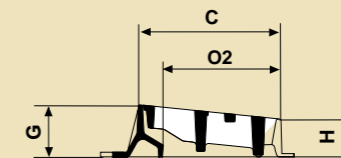
SELECTA kerb gratings are fully compatible with standard kerb dimensions as defined in French standard NF P 98-302.

They are easy to install and are impeccably finished.

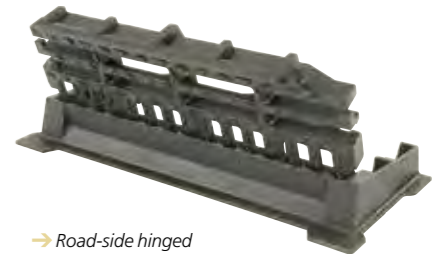
→ Reinforced frame for complete stability and effective seating on concrete structures.

The SELECTA grating with T-profile raised selector bars is compatible with:

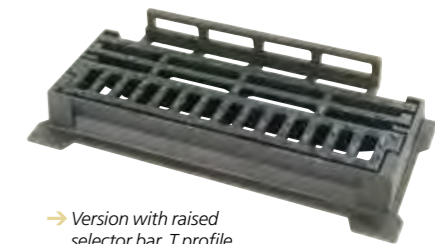
- T-profile cover plate, ref.: ECRV80TF,
- T-profile gully, ref.: ECAV80TF



→ Road-side hinged



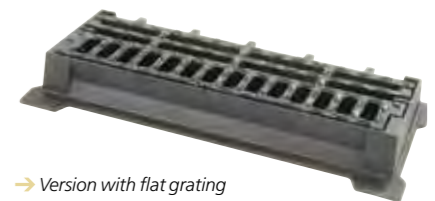
→ Version with raised selector bar, T profile



SELECTA KERB GRATINGS

OVERALL DIMENSIONS	MASS	DIMENSIONS			WATERWAY AREA dm ²	REFERENCE
		overall HT	clear opening O	depth H/h		
Flat grating version						
800x320	33.8	800x320	650x200	90/68	7.6	ECSE80PF
With selector bar						
800x320	39.5	800x320	660x205	90/68	8.45	ECSE80UF

→ Version with flat grating



OVERALL DIMENSIONS	MASS	DIMENSIONS			WATERWAY AREA dm ²	REFERENCE
		overall HT	clear opening O	depth H/h		
Flat grating version with studs inlet support						
800x320	34.5	800x320	660x205	90/68	6.1	ECSE80PFX11
Flat grating version without studs inlet support						
800x320	34.5	800x320	650x200	65	6.1	ECSE80PFX31

SELECTA KERB GRATINGS "PMR" ACCESS FOR DISABLED PEOPLE



SELECTA



SELECTA

Ductile iron
EN 124

Cover and gratings by spring-bar locked
Adjustable to pavement and kerb levels

Selecta is available in 3 versions:

- 1 SELECTA MAXI height adjustable
 - A or T profile
 - raised selector bar grating
 - flat grating
- 2 SELECTA 500
 - A or T profile
 - raised selector bar grating
 - flat grating
- 3 SELECTA MAXI 20-40
 - for ultra-low kerbs
 - fits for disabled people crossing kerbs
 - height adjustable

→ Easy access & maintenance

- Spring-bar locked can be open independently for rodding, cleaning, sucking.

→ Screening of debris

- The presence of a raised bar prevents access into the gully for debris of too large a size and keeps certain solid objects carried by run-off water out of the sewer system.

→ Anti-obstruction

- The surfaces of the bars are equipped with facets that are oriented in such a way as to prevent leaves or litter from blocking the drain.

→ Adjustability

- Three bolts allow the height adjustment (up to 50 mm) of the cover frame with respect to the kerb.

→ Automatic locking

- Ductile iron spring bar integral with grate and cover.

→ Safety for pedestrians

- On the pavement side, the elimination of clearance on the hinge system and of any roughness on the surface of the cover ensure safety for pedestrians (high heels, walking sticks, crutches, etc.).

→ Drainage

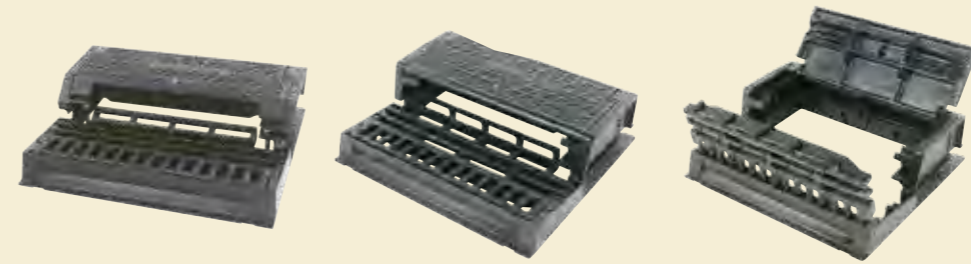
- In the lower section of the gutter, the bars are arranged longitudinally in order to maximize water drainage. Simulations carried out on a test bench show increases of between 10 % and 15 % in absorption, in certain circumstances, compared with a traditional design consisting of a rectangular grating and a gully.

→ Safety for cyclists

- On the carriageway, the bars are perpendicular to the direction of the traffic in order to ensure safety for cyclists.

SELECTA MAXI LEVEL ADJUSTMENT AND MAXIMUM CAPACITY

- SELECTA Maxi gullies are designed for mixed roadway/pavement installation.
- Cover and kerb leveled using 3 adjustment bolts integrated into the frame.
- Raised selector grating or flat grating.
- Cover and grating spring-bar locked and hinged

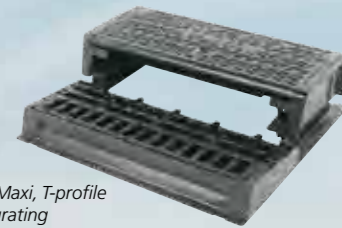


→ 1 SELECTA Maxi, A-profile with raised selector bar grating. → 1 SELECTA Maxi, T-profile with raised selector grating → 1 SELECTA Maxi, A-profile with raised selector bar grating

KERB PROFILE	MASS				DIMENSIONS overall	DIMENSIONS depth H/h	DIMENSIONS effective opening	DIMENSIONS depth adjustment	WATERWAY AREA dm ²	REFERENCE
	total	grating	Cover	frame						
with raised selector bar grating										
T-profile	94	27	24	44	750x640	225/90	540x450	50	10.1 à 13	ECSE75UFX11
A-profile	83	25	22	39	750x640	155/90	540x450	20	9.4 à 10.7	ECSE75SFX11
with flat grating										
T-profile	89	21	24	44	750x640	225/90	540x450	50	11.6 à 14.5	ECSE75UFX16

SELECTA MAXI

SELECTA MAXI LEVEL ADJUSTMENT & MAXIMUM CAPACITY



→ 1 SELECTA Maxi, T-profile with flat grating

SELECTA 500

SELECTA 500 COMPACT & HIGH-CAPACITY NOT HEIGHT ADJUSTABLE

- SELECTA 500 drain gullies are installed on standardized gully pots (500 mm), and are designed for mixed roadway/pavement installation.
- Broad soled frame for effective seating on concrete structures. Dimensions compatible with gratings, gullies, bases, and concrete kerbing.
- Raised selector bar grating or flat grating (without selector bar).
- Cover and grating spring-bar locked and hinged.

→ 2 SELECTA 500, A-profile with raised selector bar grating



→ 2 SELECTA 500, T-profile with flat grating



KERB PROFILE	MASS				DIMENSIONS overall	DIMENSIONS depth H/h	DIMENSIONS effective opening	WATERWAY AREA dm ²	REFERENCE
	total	grating	cover	frame					
with raised selector bar grating									
T-profile	54.5	16.5	14.0	24.0	610x570	205/90	385	8.5	ECSE61TF
A-profile	50.5	16.5	13.0	21.0	610x570	125/90	385	7.6	ECSE61SF
with flat grating									
T-profile	53.0	15.0	14.0	24.0	610x570	205/90	385	9.8	ECSE61UF

SELECTA 500 COMPACT & HIGH-CAPACITY



→ 2 SELECTA 500, T-profile with raised selector bar grating

SELECTA MAXI 20-40 "ULTRA-LOW KERBS" FOR DISABLED CIRCULATION C250

Debris-selecting gully for use on places, streets & areas where vertical kerb faces are only 20 to 40 mm high, facilitating the crossing of wheel chairs and mobility trolleys

Selecta Maxi 20-40 comprises 2 independent components:

- A road-side unit (grating + frame), to be bedded flush with road level
- B kerb-side unit (cover + frame), to be bedded flush with kerb upper surface
- Wide frames bearing surfaces for perfect bedding on mortar
- Units A & B are not linked but installed face to face, allowing easy & precise setting to the exact finish levels



MASS total	MASS grating + frame	MASS cover	DIMENSIONS overall	DIMENSIONS depth H/h	DIMENSIONS effective opening	WATERWAY AREA dm ²	REFERENCE
92.0	37.0	55.0	800x675	155/90	385	ECSE75UFX13	

SELECTA MAXI 20-40



SELECTA MAXI PMR 20-40 ULTRA-LOW KERBS



GULLY UNITS

C250

GULLY COVER PLATES AND INLETS

Ductile iron
 Classe C 250 (frame) Classe B 125 (cover)
 EN 124  

The cover plates are designed to be fitted on large sized gully pots under pavements (kerb or carriageway combination).
 Inlets are simple versions of cover plates without cover

KERB PROFILE	MASS		DIMENSIONS overall	DIMENSIONS clear opening		WATERWAY AREA dm ²	REFERENCE
	total	cover		clear opening	depth		
Profile A	69.3	24.3	800x830	610	120	4.3	ECRV80AF
Profile T	72.3	24.3	800x830	610	200	6.0	ECRV80TF

GULLY COVER PLATES
C250





GULLY INLETS
C250

KERB PROFILE	MASS kg	DIMENSIONS		WATERWAY AREA dm ²	REFERENCE
		overall	depth		
Profile A	21.0	800x225	120	4.2	ECAV80AF
Profile T	24.5	800x225	200	6.0	ECAV80TF

C250

GULLY GRATING

Ductile iron
 EN 124  

These inlet gratings are fitted on small gully pots (500 mm) of a mixed road/pavement type installation. The grating's profile is specially designed to prevent obstruction by leaves or other debris whilst allowing the maximum drainage.

KERB PROFILE	MASS		DIMENSIONS overall	DIMENSIONS clear opening		WATERWAY AREA dm ²	REFERENCE
	total	cover		clear opening	depth		
Profile A	55.6	31.0	605x502	405	176	9.0	ECGA60AF
Profile T	61.6	32.0	605x502	405	233	10.1	ECGA60TF

GULLY GRATINGS
C250



OPTEA

C250

OPTEA FLAT SQUARE GRATING

Ductile iron
 EN 124



	MASS		DIMENSIONS overall	DIMENSIONS clear opening	depth	WATERWAY AREA dm ²	REFERENCE
	total	grating					
	8.1	4.8	300	200	36	2.3	ECOP30PK
	13.8	9.7	400	303	36	5.2	ECOP40PK
	19.2	14.0	500	400	36	9.5	ECOP50PK
	29.2	22.7	600	500	36	15.3	ECOP60PK

OPTEA FLAT GRATING
C250



C250

COMMUNAL GRATINGS

Ductile iron
 EN 124  

Sloped reinforced frame
 Available with or without centring lug
 Seating flange on 3 sides

The COMMUNAL grating is equipped with a sloped frame which automatically ensures a crossways slope. The bedding flange on three sides facilitates fitting along the kerb and ensures optimum stability.

TYPE	BASE SIZE	MASS		DIMENSIONS			WATERWAY AREA dm ²	REFERENCE
		total	grating	frame	clear opening	depth		
With lugs	500x500	53	23.5	670x600	405	119	11.8	ECGP67PFX20
Without lugs	500x500	51.5	23.5	670x600	405	119	11.8	ECGP67PFX19

□ NB : In case of intense traffic, we recommend the installation of the range DEDRA 400. See page 45.

COMMUNAL




COMMUNAL FLAT GRATING
C250

C250

D400

E600

CHANNEL GRATINGS

Ductile iron
 EN 124 

TYPE	MASS	DIMENSIONS			WATERWAY AREA dm ²	REFERENCE
		length	width	depth		
GRATINGS 500x124						
thickness = 20 mm						
C 250	3.5	500	124	20	3.0	EECL12PX
D 400	4.5	500	124	28.5	2.6	EDCL51PX
E 600	4.5	500	124	28.5	2.6	EECL12PX
Connecting device: 168044						
FRAME FOR GRATINGS 500x124						
	3	500	164	50	-	EECL120

CHANNEL GRATING



CHANNEL GRATING

AUTOMATIC ODOUR-TIGHT INLETS "PAG"

This device, fitted in shafts topped with all types of gratings, acts as an automatic odour-trap and prevents the escape of smells. For bottom of shaft / chambers with inside dimensions of 500 and 700 mm.

TYPE	MASS	DIMENSIONS			WATERWAY AREA dm ²	REFERENCE
		overall	clear opening	depth		
PAG n°2	44.0	540x525	456	310	4.0	ECPG452X
PAG n°3	80.0	738x738	590	460	4.0	ECPG593X

PAG



ODOUR-TIGHT INLETS PAG

LONGITUDINAL CHANNEL GRATINGS

AUTOLINEA

D400

AUTOLINEA

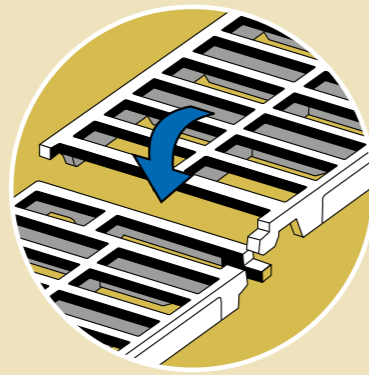
Ductile iron

Automatic ductile iron spring bar (patented system)

EN 124  

C250

A brand new generation of channel gratings, AUTOLINEA gratings are linked together by a ductile iron spring bar. They are usually installed on cast iron T section frames or steel angle fittings which protect the concrete channel and maintain the support level.

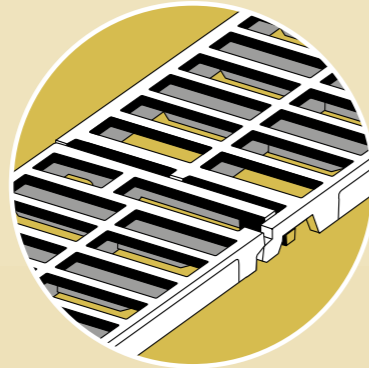


Functional diagrams of AUTOLINEA C 250 locking/unlocking

1) SIMPLE !

Easy to install. Gratings are simply snapped into place through a ductile spring lock.

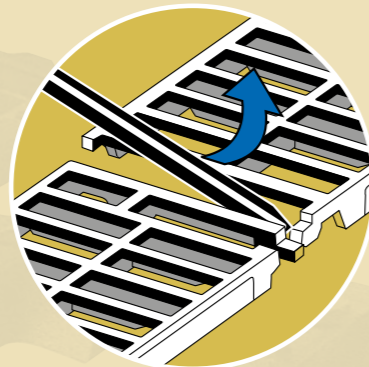
With AUTOLINEA, no accessories are needed.



2) SAFE !

AUTOLINEA provides safety in service :

- no danger of accidental displacement,
- limit vandalism,
- anti-dilatation effects.



3) QUICK !

Removal by professionals is instantaneous, using a crowbar as a lever.

D400

AUTOLINEA D 400

FIELD OF APPLICATION:

Channels located at the side of motorways and roads carrying intense traffic, excluding singular points which may be subject to crosswise traffic, such as : interchanges, lay-bys, and telephone call stations, breaks in central reservations and crossroads, in which case the TRANSLINEA grating designed for crossing carriageway are required. (See page 58).

BASE SIZE	MASS	DIMENSIONS			WATERWAY AREA dm ²	REFERENCE
		clear opening*	depth	thickness		
750 x 300	24	250	60	35	11	EDAL30PF
750 x 400	33	350	85	35	15	EDAL40PF
750 x 500	43	450	85	35	20	EDAL50PF

* when using cast iron T section frame

C250

AUTOLINEA C 250

FIELD OF APPLICATION:

Street channels along pavements, excluding singular points which may be subject to crosswise traffic in the field of class C 250 and for which the linked MECALINEA grating is required. (See page 59).

BASE SIZE	MASS	DIMENSIONS			WATERWAY AREA dm ²	REFERENCE
		clear opening*	depth	thickness		
750 x 200	11.8	150	35	30	7.6	ECAL20PF
750 x 250	18.1	200	50	30	9.0	ECAL25PF
750 x 300	21.8	250	56	30	11.2	ECAL30PF
750 x 400	24.8	350	75	30	15.0	ECAL40PF
750 x 500	36.3	450	80	30	20.4	ECAL50PF
750 x 600	49.5	550	85	30	24.6	ECAL60PF
750 x 700	59.8	650	85	30	28.4	ECAL70PF

* when using cast iron T section frame

AUTOLINEA D 400

AUTOLINEA C 250

GRATINGS FOR LONGITUDINAL CHANNELS

TRANSLINEA

E600

TRANSLINEA

Ductile iron
Mechanical chaining

Securing to channel
EN 124  

D400

TRANSLINEA gratings are used, above all, for crossing carriageways.

They must be installed with the chaining devices joining the gratings together and the end pieces securing the gratings to the channel. This complete, modular system ensures optimum safety under traffic load. Please see the fitting instructions.

TRANSLINEA E 600

FIELD OF APPLICATION:

All areas involving high axle loads such as: aircraft and port areas, plants, in particular.

CLASS	BASE SIZE	MASS	DIMENSIONS			WATERWAY AREA dm ²	REFERENCE
			clear opening*	depth	area		
E 600	750 x 400	43.1	350	85	35	12.1	EETL40PF

* when using cast iron T section frame

TRANSLINEA D 400

FIELD OF APPLICATION:

All carriageway crossing points, roads carrying intense traffic and other singular points such as: interchanges, lay-bys and telephone call stations, breaks in central reservation and crossroads.

CLASS	BASE SIZE	MASS	DIMENSIONS			WATERWAY AREA dm ²	REFERENCE
			clear opening*	depth	area		
D 400	750x400	43.1	350	85	35	12.1	EDTL40PF

* when using cast iron T section frame



TYPE	MASS kg	DIMENSIONS		REFERENCE
		length	depth	
length 750 mm	10	350	85	E7

- Note : To ensure that channel gratings in classes D 400 and E 600 provide optimum strength and stability when subjected to traffic stresses, approval is granted to complete units comprising the grating, its cast iron T section frame and, where applicable cast iron end pieces.
- If other types of T section frame or angle fitting are used, i.e. steel in particular, their dimensioning and their anchoring in the masonry must be ensured by the specifier, taking into account the stresses due to traffic.

TYPE	MASS	DIMENSIONS		REFERENCE
		length	depth	
T section frame piece 800 mm long	10.6	800	100	E8
→ A Cast iron end piece	4.4	400	85	E10
→ B Chaining device	0.5	-	-	E9

C250

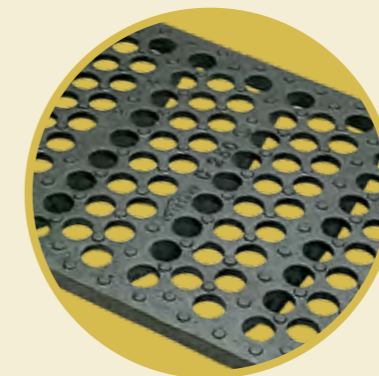
MECALINEA

Ductile iron
Chaining of gratings
EN 124  

MECALINEA gratings are traditional gratings with mechanical chaining that are installed on cast iron T section frame or steel angle fittings.

FIELD OF APPLICATION:

As per class C 250 : street channels along the side of pavements and, in particular, singular points which may be subject to crosswise traffic and where chaining is necessary.



MECALINEA

BASE SIZE	MASS	DIMENSIONS			WATERWAY AREA dm ²	REFERENCE
		clear opening*	depth	thickness		

GRATINGS WITH BARS

750x200	16.1	150	40	27	5.46	ECML20PF
750x250	18.0	200	45	27	6.06	ECML25PF
750x300	22.5	250	50	27	8.04	ECML30PF
750x350	30.0	300	60	27	10.18	ECML35PF
750x400	30.0	350	60	27	12.24	ECML40PF
750x500	42.0	450	55	27	14.90	ECML50PF
750x600	50.0	550	60	27	17.15	ECML60PF
750x700	62.3	550	65	27	20.13	ECML70PF

* when using cast iron T section frame

BASE SIZE	MASS	DIMENSIONS			WATERWAY AREA dm ²	REFERENCE
		clear opening*	depth	thickness		

GRATINGS WITH ROUND HOLES

750x400	32.0	350	60	27	10.88	ECML40RF
750x600	50.0	550	60	27	17.10	ECML60RF

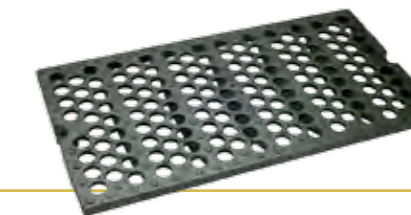
* when using cast iron T section frame

TYPE	MASS	DIMENSIONS		REFERENCE
		length	depth	
Frame pieces	4.0	750	27	E5
Connecting piece	0.5	-	75	E6

MECALINEA GRATING WITH BARS C250



MECALINEA GRATING WITH ROUND HOLES C250



MECALINEA ACCESSORIES

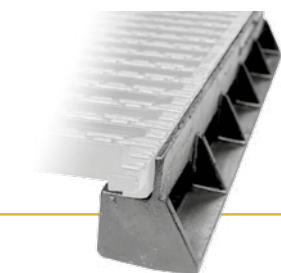
TRANSLINEA E 600



TRANSLINEA D 400



CAST IRON SECTION FRAME FOR AUTOLINEA D 400 AND TRANSLINEA E 600 / D 400



T SECTION FRAME ACCESSORIES SPECIFIC TO TRANSLINEA E 600 / D 400

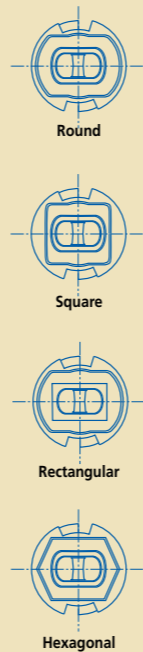
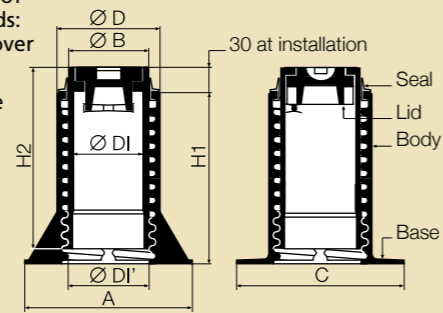


EXTENDABLE SURFACE BOXES

Saint-Gobain PAM proposes four separate product ranges which cater to different requirements. Specific catalogue available on request.

PAVA surface boxes feature built-in extension capabilities. The lower base of the body features screw nut type threads and is designed to allow the unit to be raised during road resurfacing operations by simply "unscrewing" the assembly. The design includes:

- A self-locking system which prevents the cover from being removed by street cleaning equipment or by vandalism.
- A wide base reduces the risk of subsidence under traffic loads: stability and silence of the cover on its seat.
- Side bonding ribs at the base of the body to prevent its rotation during height adjustment operations.



H1	H2	Ø DI	A	C	Ø DI'	Ø B	Ø D	MASS	EXTEN-DIBILITY	REF.
145	170	102	240	220	137	114	147	8.4	105	F1PVAC

Other lid versions and options (shape and chain) are available, please contact us for details.

H1	H2	Ø DI	A	C	Ø DI'	Ø B	Ø D	MASS	EXTEN-DIBILITY	REF.
250	250	102	240	220	137	114	147	12.8	184	F2PVAC

Other lid versions and options (shape and chain) are available, please contact us for details.

H1	H2	Ø DI	A	C	Ø DI'	Ø B	Ø D	MASS	EXTEN-DIBILITY	REF.
192	222	120	300	282	148	162	216	21.40	140	F3PVAC

Other lid versions and options (shape and chain) are available, please contact us for details.



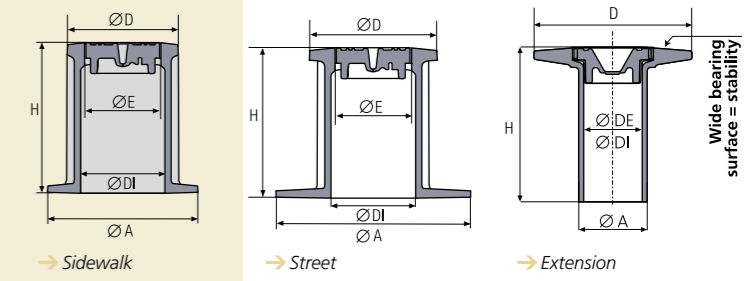
Designed to simplify the extension operation, the covers of the PAVA 10 and 14 can be turned over and used as a tool to limit the operating force. Equipped with two studs forming an operating nut, the inside face of the lid can be used to adjust the extension height using a plain 30 mm wrench or with a Tee wrench used for valve operation. The PAVA 19 requires the use of a specific operating cover.

Reference: F3PVR-C-T

TOTALE SURFACE BOXES RANGE

Two versions are available: "Sidewalks and streets". The base of the "street" version offers a wide bearing surface for enhanced stability under traffic loads.

Surface boxes with "water" badging have a hook-opener type lid with no through hole, chainless*



TYPE	H	Ø A	Ø DI	Ø E	Ø D	MASS	REFERENCE		
							round	square	hexagonal
Sidewalk	160	150	102	77	120	3.5	FTTOAB	FTTOBB	FTTODB
Street	160	210	102	77	140	4.8	FRTTOAB	FRTTOBB	FRTTODB
Extension	166	74	63	87	170	3.6	FRTTO63U	FRTTO63V	FRTTO63W

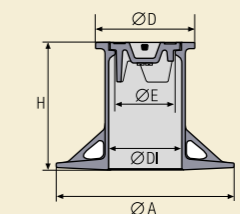


Other lid versions and options (shape and chain) are available, please contact us for details.

SURFACE BOX TOTALE



TOTALE MAXI SURFACE BOXES



H	Ø A	Ø DI	Ø E	Ø D	MASS	REFERENCE		
						round	square	hexagonal
180	250x220	102	84	140	6.4	FTTOAB	FRTTO63U	FRTTOAB

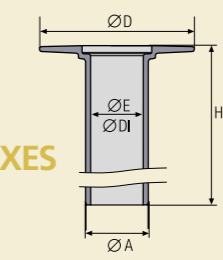


SURFACE BOX TOTALE MAXI



HEIGHT ADJUSTABLE EXTENSION FOR SURFACE BOXES

Height adjustable surface boxes (used as Extension for TOTAL MAXI)



H	Ø A	Ø DI	Ø E	Ø D	MASS	REFERENCE		
						round	square	hexagonal
370	81	68	68	200	7	FRRHACT	FRRHBCT	FRRHDCT



SURFACE BOX HEIGHT ADJUSTABLE



SURFACE BOXES ACCESSORIES

TYPE	REFERENCE
Hammer for surface box	162 098