GREENPIPE

THE **LEADING EDGE** OF SURFACE **WATER** COLLECTING SYSTEMS

certified quality respecting the **environment**

price list 2017


GREENPIPE
THE LEADING EDGE OF SURFACE WATER COLLECTING SYSTEMS

summary

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trailblazers in the surface

GREENPIPE Srl **was established in 1997 on the basis of the business experience and skills acquired by the Ponti brothers in the field of drainage pipes and systems**.
GREENPIPE Srl is located in Correggio, in the province of Reggio Emilia, and thanks to its central geographic position, operates throughout Italy.

GREENPIPE Srl has an **extensive distribution network which avails itself of a fast and efficient logistics service** as to be able to easily reach all the Italian regions, islands included; this means being able to supply a tight network of partners throughout the country: retailers and major building firms.

Ever since it was first established, the primary aim of **GREENPIPE** Srl has been to **offer the Italian market top-quality products for the flow of drinking water, irrigation water and wastewater.** Starting in 2000, the Company began diversifying its activities in the water treatment field, **including, alongside pipes, also drainage channels with gratings**.

In just a short time, the company has been able to develop a broad range of products suitable for all types of use, from residential areas right up to more demanding applications inside ports and airports.

GREENPIPE Srl is currently among Italian leaders in the surface water harvesting sector.

GREENPIPE Srl is a benchmark company for **Local Authorities, Port and Airport Authorities, Industrial Complexes, Engineering Firms, Building material companies and Retailers** involved in drainage, and rainwater treatment and control.

The support services provided to Authorities, designers and companies are entrusted to **technical-sales staff with over twenty years of work experience acquired in the specific industry** of pipes for aqueducts and sewers, production of concrete articles and the water harvesting and management world.

CERTIFIED MANAGEMENT SYSTEM FOR QUALITY ISO 9001:2008

water harvesting field

THE COMPANY **MISSION**
"to capture rain"

We are committed to finding the best solution for everyone. If you have a drainage problem, **GREENPIPE** Srl can solve it. Leading the way in innovation.

THE **VISION**

GREENPIPE Srl's goal is to assert itself, over the years, as a company recognized by its customers and by industry operators as a **market reference for the quality of the products** it is able to offer, as well as for the performance of its organization and the high operating standards of its staff.
The goal is to **foster acquired customer loyalty and extend the market areas** where it already operates **focusing on constant area expansion** including onto export markets and **extending its product range**.

THE **VALUES**
"costumer care"

For **GREENPIPE** Srl this translates into the **ability to listen, adapt and anticipate customer requirements**, reflecting its commitment to build solid and long-lasting relations.

Upgrading the Quality of products and services is a priority reflected in a strong desire to obtain the **most updated certifications** and the **most high-performing solutions** in compliance with applicable standards.

Research and Development of Innovative Technologies are combined to ensure the **on-going improvement of environmental solutions**, for both the present and the future.

FIELDS OF **APPLICATION**

PRIVATE **HOUSING** | **URBAN** DESIGN | **INDUSTRIAL** SITES | **ROAD** NETWORKS | MAJOR **INFRASTRUCTURES**

Information, assistance, technical and commercial collaboration, frequent meetings with the most important professionals, such as building distributors, design offices and construction companies.

This is all **GREENPIPE**

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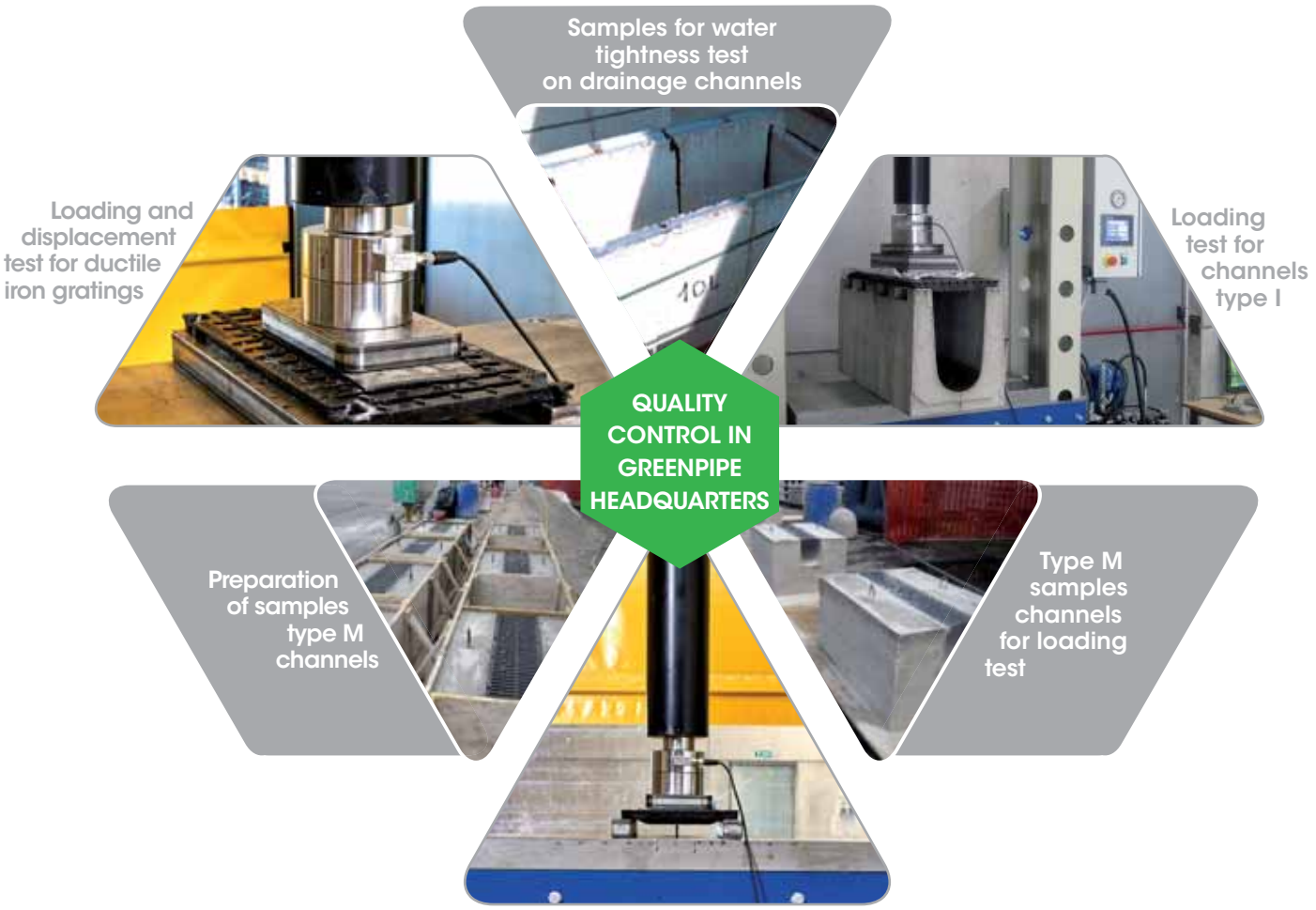
certified environ

QUALITY CONTROL AND CERTIFICATION OF PRODUCT EN 1433

GREENPIPE Srl is provided with a perfectly equipped laboratory for testing quality products.



Besides observing the obligations laid down by E.U. REGULATION 305/2011, **GREENPIPE** Srl has decided to acquire an **additional voluntary certification as a yet further guarantee of quality**:

Quality certification **EN1433** released from third party with accreditation **ACCREDIA**
Istituto Giordano SpA - Via Rossini 2 - 47814 Bellaria-Igea Marina (RN)
Identification number: 0407

After performing **initial type tests** and **initial visits** to each channel and grating production facility, Istituto Giordano has issued **Conformity Certificate No.099/CP and Licence to use the Istituto Giordano (M Q) quality mark**. The certificate indicates the articles which benefit from such quality mark.

ment-friendly quality

REGULATION U.E. 305/2011

The E.U. regulation 305/2011, which replaced directive 89/106 "Building products", requires the manufacturer to **issue a performance declaration (DoP)** which must be drawn up on the basis of the specimen shown on annex III of the regulation itself.

The DoP describes the performance of building products in relation to the essential characteristics of such products, in compliance with pertinent harmonized technical specifications.

Before placing drainage channels on the market, distributors must ensure such products bear the **EC mark** and are accompanied by the **DoP** and **safety information** (article 14).

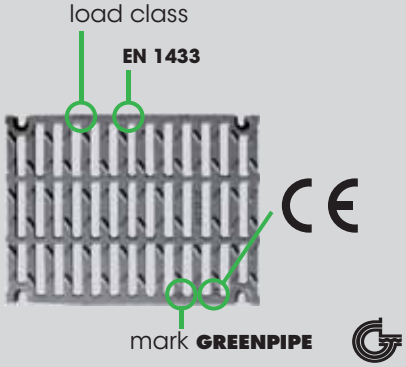
GREENPIPE Srl's gratings and channels bear the EC mark or labelling required by **EN 1433**.

GREENPIPE Srl provides DoPs for all currently supplied channels and gratings.

D.o.P

labeling

marking



Instructions and safety information for installation and on-site handling of the products are shown in the list.

ISTITUTO GIORDANO

CERTIFICATO DI CONFORMITÀ E LICENZA D'USO DEL MARCHIO DI QUALITÀ ISTITUTO GIORDANO

099/CP/3

ISTITUTO GIORDANO

Si certifica che i prodotti

CANALETTE E GRIGLIE DI DRENAGGIO PER AREE SOGGETTE AL PASSAGGIO DI VEICOLI E PEDONI SECONDO LA NORMA UNI EN 1433:2008

con denominazione commerciale

vedi allegato

fabbricati da

GREENPIPE S.r.l.

Via Modena, 48/B - 42015 CORREGGIO (RE) - Italia

nelle unità produttive

Codici: nr. 06.1, nr. 01.1, nr. 03.1, nr. 07.1, nr. 08.1 e nr. 09.1

sono stati sottoposti, in conformità ai regolamenti interni dell'istituto:
– alle prove iniziali di tipo per le caratteristiche e con i risultati illustrati in allegato;
– alla verifica iniziale del controllo della produzione in fabbrica.

Considerato che gli esiti delle verifiche effettuate sono conformi ai requisiti stabiliti nel "Regolamento per il rilascio della certificazione di prodotto e del marchio di qualità" REG-CP e nelle regole particolari di schema n. RP014/CP, il fabbricante è autorizzato a contrassegnare i suddetti prodotti con il Marchio di Qualità Istituto Giordano.

Le caratteristiche dei prodotti sono riportate in allegato.

Firmato digitalmente da GIORDANO SARA LORENZA

Luogo e data di emissione
Bellaria-Igea Marina - Italia, 21/01/2016

ACCREDIA

Luogo e data di prima emissione
Bellaria-Igea Marina - Italia, 31/10/2013

Il Direttore Tecnico della Divisione Certificazione Prodotti
(Dott. Ing. Giuseppe Persano Adorno)

L'Amministratore Delegato
(Dott. Arch. Sara Lorenza Giordano)

Foglio 1 di 16

ISTITUTO GIORDANO S.p.A. - Via Rossini, 2 - 47814 Bellaria-Igea Marina (RN) - Italia
www.giordano.it - info@giordano.it - PEC: ist-giordano@legalmail.it - tel. +39/0541/343030

The channel and grating **production facilities** undergo **constant factory production monitoring**, as required by article 10.3 of the **EN 1433** standard, by the Istituto Giordano, according to the provisions of APPENDIX D of the EN 1433 standard.

Istituto Giordano has been authorized to carry out lab activities in **GREENPIPE** Srl's facility regarding tests on "Drainage channels for areas subject to vehicle and pedestrian transit" with decree of the Ministry of Economic Development – CENTRAL DEPARTMENT FOR THE MARKET, COMPETITION, CONSUMERS AND TECHNICAL STANDARDS dated 24 June 2014.

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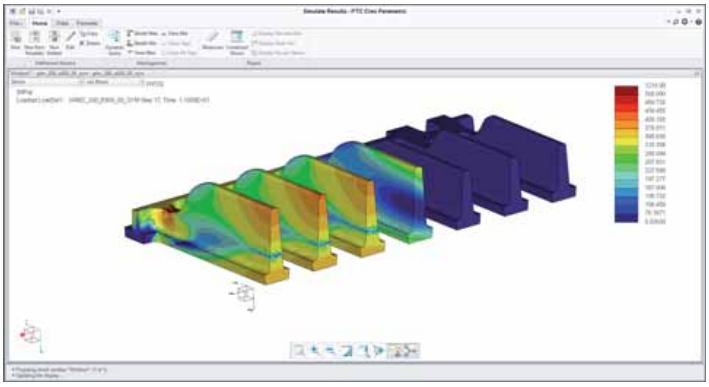
design phase

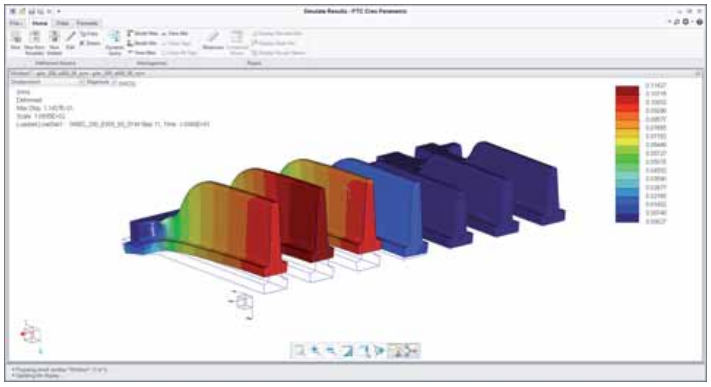
Products released by **GREENPIPE** Srl are the result of an **accurate design phase** conducted by long-time experienced technicians, assisted by cutting-edge CAD 3D software.

GRATINGS

After being designed and before making a mould, **gratings undergo parametric simulations**, which reproduce loading and displacement tests according to the **EN 1433** standard. By means of this procedure, the exact loading class can be established for each designed grating. Gratings are available in **ductile iron** or in **galvanised iron steel S385J**.



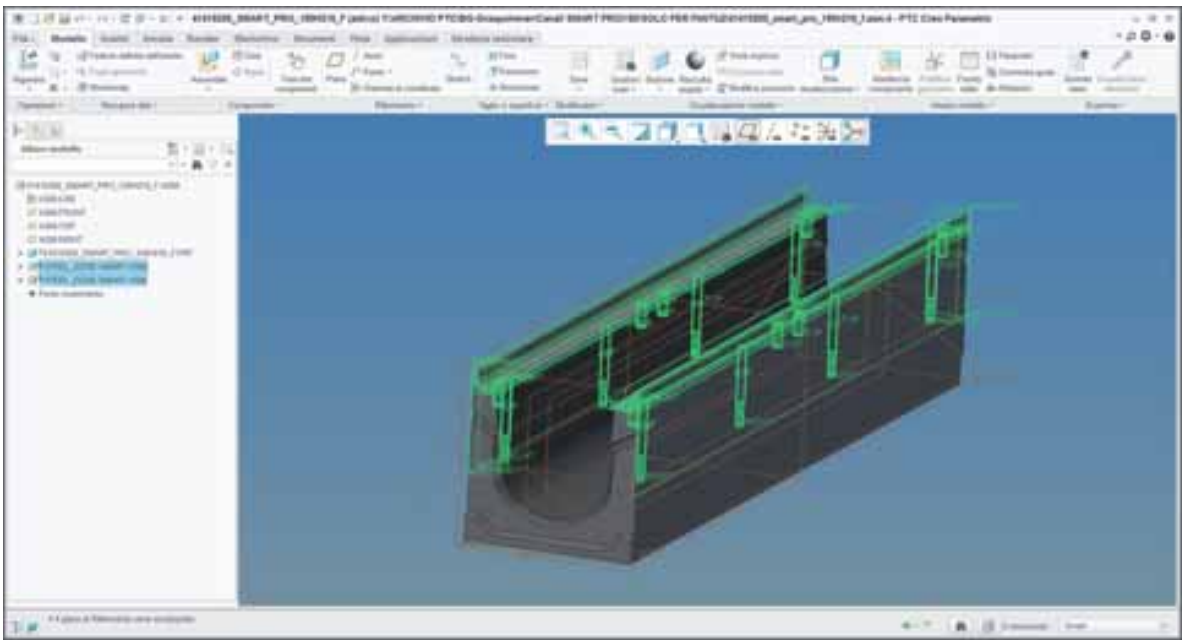
Preview of digital test results on grating class E600. It is possible to have a realistic preview of calculated loading stress in MPa, according to criterion of von Mises, which must always be less than a value of 500 Mpa.



Residual displacement (deformation) after five cycles at 2/3 of the maximum load (<0.11 mm, maximum value accepted 1mm).

CHANNELS

Concrete and reinforced concrete channels are the result of **meticulous design carried out internally** (in partnership with Italian universities).



FOCUS ON CONCRETE CHANNELS

GREENPIPE Srl type M drainage channels are made of high resistance vibrocompressed concrete:

- Minimum **compression** strength class C 35/45 (NSC - Normal Strength Concrete, according to EN 206:2006 and UNI 11104:2004, Rck = 45 N/mm2)
- **Frost and defrost** cycle (classification +R according to EN 1433:2008)
- Weather and **atmospheric agent** resistance (classification W according to EN1433:2008).

The mixture consists of inert (granulometry from 0,2 to 10 mm) and Portland cement characterized by a low water to concrete ratio, and in fact it is also known as "moist soil".

The products, made in moulds filled with moist concrete, are at the same time mechanically vibrated, hydraulically compressed and extracted in few seconds.

The **GREENPIPE** Srl self-supporting drainage channels (type I) are made with reinforced concrete which is resistant to weather conditions and to the frost and defrost cycle (W+R) with minimum strength class C35/45.

The mixture is fluid and self-levelling designed for the use of stone aggregates, suitable granulometry (with appropriate quantity of filler which diminishes the percentage of empty spaces in the conglomerate thanks to its reduced dimensions). The water to cement ratio must be defined according to standard and be constant during production.

The mixture is poured by gravity into moulds. The extraction of the piece is deferred for a few hours to enable the concrete to begin a chemical grip and hardening reaction in order to ensure, after 28 days, the best mechanical performance.

Initially, the products made from this kind of material look particularly smooth (the filler has a fundamental role) and have a Gauckler-Stickler coefficient of 100 (similar to a clay pipe) which is beneficial for water outflow.

The steel reinforcement is properly calculated to react to the tension and shearing stress.

What does self- supporting mean?

Drainage channels can be described as **"self-supporting", or type I** according to the EN1433 standard, "they do not require additional support for horizontal and vertical loads". (EN1433, §3.2.).

FOCUS ON DUCTILE CAST IRON

Ductile cast iron is a ferrous alloy with standard carbon ratio of more than 2%, which can, in its free state, be **graphite** (grey cast iron) or can be in the form of **ferrous carbide Fe3C (cementite or white cast iron)**. Grey cast iron is preferable for the production of gratings and covers.

White cast iron is very brittle and has elevated hardness. This kind of cast iron is used for producing tools.

In the group of Grey Cast Iron, two categories can be distinguished: lamellar cast iron and ductile cast iron.

Lamellar cast iron is formed by thousands of lamellae which interrupt the continuity of the metallic matrix compromising mechanical resistance and facilitating cracks and breakages.

Ductile cast iron has a composition made up of spheroids obtained by introducing, before casting, a certain amount of magnesium in the bath. This addition gives the product a **high breaking load and high elasticity.** The graphite spheroidal shape produces a minor stress concentration than the lamellar type.

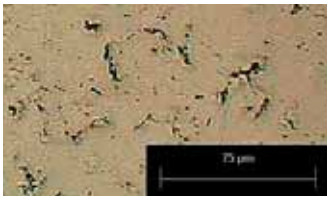
The spherical shape has a smaller surface, consequently its cast iron matrix turns out to be less damaged, and manages to properly exploit its mechanic characteristics.

From the comparison it appears that **spheroidal cast iron has a higher safety coefficient to breakage** because it deforms without breaking and remains in its initial state when stress decreases.

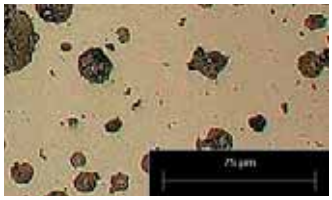
It takes more mass to produce a lamellar cast iron product with the same loading class than it does to produce a cast iron product: therefore, the product will be heavier and the cost of transport will be higher.

In conclusion, **ductile cast iron is a construction material of considerable value**. Because of its mechanic characteristics which are similar to those of a well-made steel product.

lamellar cast iron



ductile cast iron



Minimum tensile strength Rm: **500 N/mm²**
Unit load proof strength at 0,2 Rp: **320 N/mm²**
Min.stretching %: **7**
Brinell hardness: **170÷230 (ferrite+pearlite)**

GREENPIPE Srl is always very careful in following and developing new materials and technologies for **high performances** required for construction products and **respecting nature and sustainability.**

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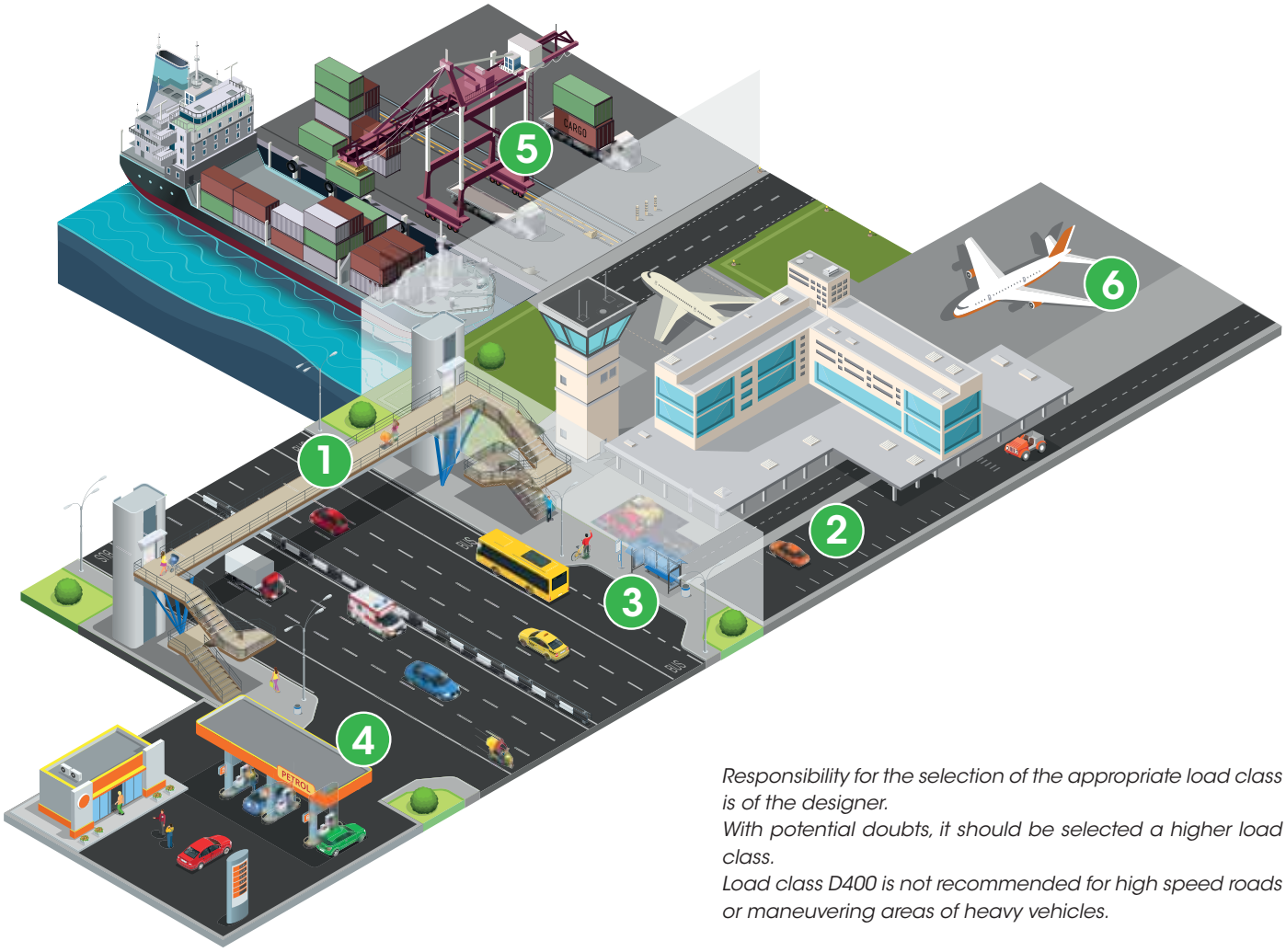
application fields

Standard **EN 1433:2008** provides guidance for the **appropriate load class** according to place of installation of channels.

groups for installations

GROUP 1	(minimum Class **A 15**, breaking load >15kN) For use in areas where only pedestrians and cyclists have access
GROUP 2	(minimum Class **B 125**, breaking load >125kN) For use in car parks and pedestrian areas where only occasional vehicular access is likely
GROUP 3	(minimum Class **C 250**, breaking load >250kN) For use in car parks, forecourts, industrial sites and areas with slow moving traffic
GROUP 4	(minimum Class **D 400**, breaking load >400kN) For use in areas where cars and lorries have access, including carriageways and hard shoulders
GROUP 5	(minimum Class **E 600**, breaking load >600kN) For use in areas where high wheel loads are imposed such as loading areas, docks or aircraft pavements
GROUP 6	(minimum Class **F 900**, breaking load >900kN) For use in areas where particularly high wheel loads are imposed such as aircraft pavements



Responsibility for the selection of the appropriate load class is of the designer.
With potential doubts, it should be selected a higher load class.
Load class D400 is not recommended for high speed roads or maneuvering areas of heavy vehicles.

and **load class**

load class	applications	channels	page
 **A15**	Areas where **only pedestrians** and **cyclists** have access	• BASIC+	26
 **B125**	**Car parks** and **pedestrian areas** where only occasional vehicular access is likely Passing speed: < 20 Km/h	• BASIC+ • SMART PRO	26 36
 **C250**	**Car parks, forecourts, industrial sites** and areas with slow moving traffic	• BASIC+ • SMART PRO	26 36
 **D400**	Areas where **cars and lorries** have access, including **carriageways** and **hard shoulders** Passing speed: < 50 Km/h	• SMART PRO • BIG47 • BIG I	36 50 64
 **E600**	Areas where **high wheel loads** are imposed such as loading areas, docks or aircraft pavements Passing speed: > 50 Km/h	• SMART PRO • BIG47	36 50
 **F900**	Areas where **particularly high wheel loads** are imposed such as aircraft pavements	• BIG47 • STRONG	50 70

GREENPIPE
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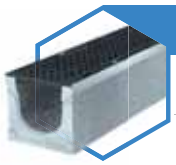
hydraulic flow

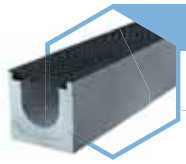


BASIC+

CHANNEL	BASIC+ 100	BASIC+ 150	BASIC+ 200
Q max (l/s)	3,58	8,18	17,76

SMART PRO

CHANNEL	SMART PRO 100 H185	SMART PRO 100 H90	SMART PRO 150 H210	SMART PRO 150 H95	SMART PRO 200 H275	SMART PRO 200 H150	SMART PRO 200 H100	SMART PRO 300 H335	SMART PRO 300 H150
Q max (l/s)	3,81	0,71	8,46	1,42	18,21	6,94	2,42	42,87	9,98

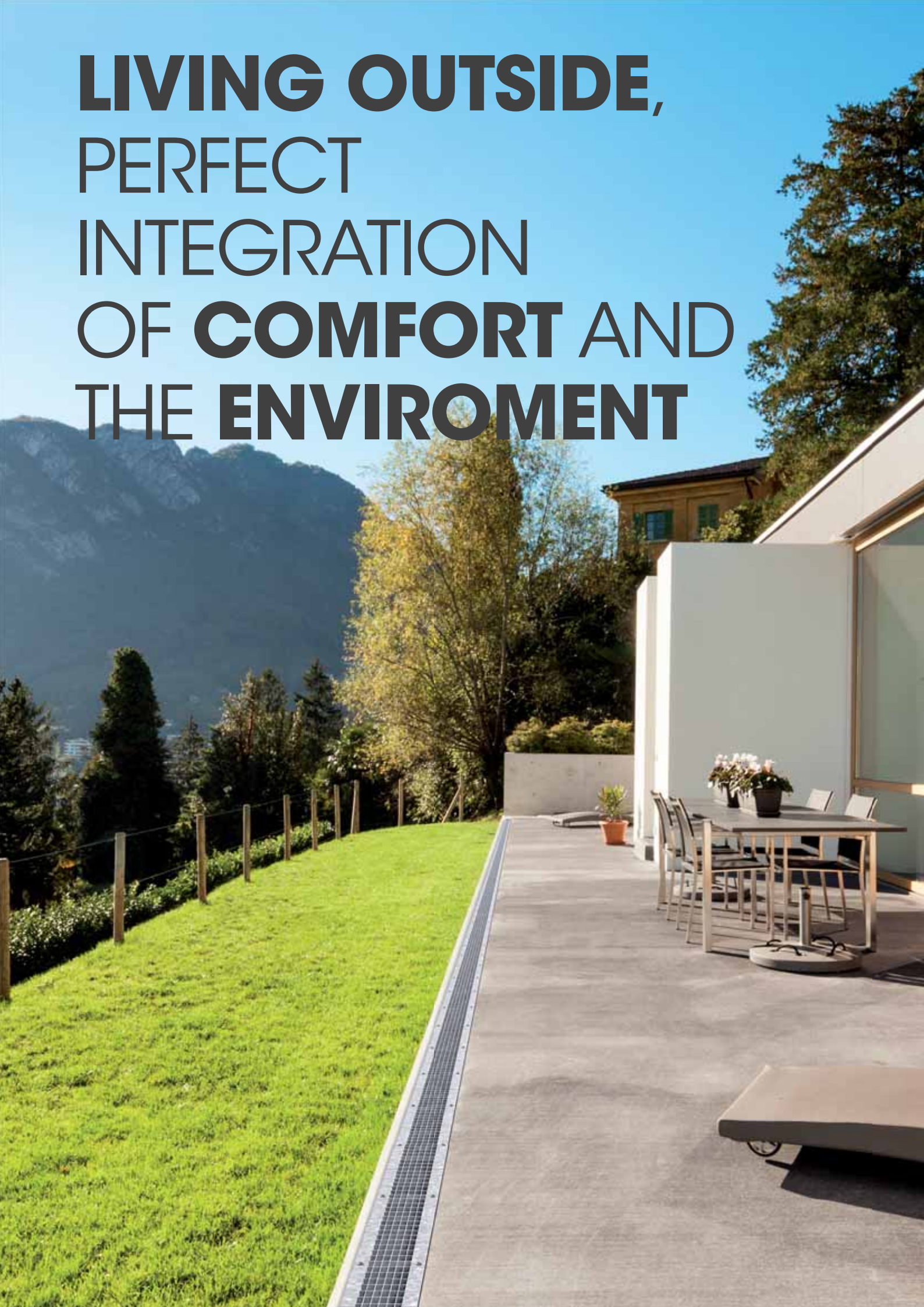


BIG47

CHANNEL	BIG47 100 H210	BIG47 100 H285	BIG47 150 H240	BIG47 150 H290	BIG47 200 H320	BIG47 200 H395	BIG47 300 H395	BIG47 300 H615	BIG47 400	BIG47 500
Q max (l/s)	4,65	6,55	10,27	13,89	21,13	29,83	53,70	100,78	116,26	223,84

Values are listed for information purposes. Calculations were made assuming:
- uniform motion in pressureless pipes
- filling level equal to 90%
- rectangular section
- rate of roughness equal to 100 (Strickler's method)
Greenpipe's technical department is available for further clarification.

our **products**



LIVING OUTSIDE, PERFECT INTEGRATION OF **COMFORT** AND THE **ENVIROMENT**

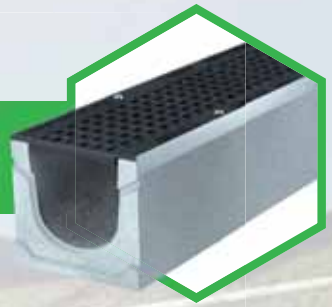
private housing

In a newly-built home or for property renovation with the **highest standards of quality**, energy-saving and environment-friendliness, it is essential to take into consideration the management of rainwater and quick and efficient drainage. It is especially important at this time when climate change makes our houses vulnerable to floods.

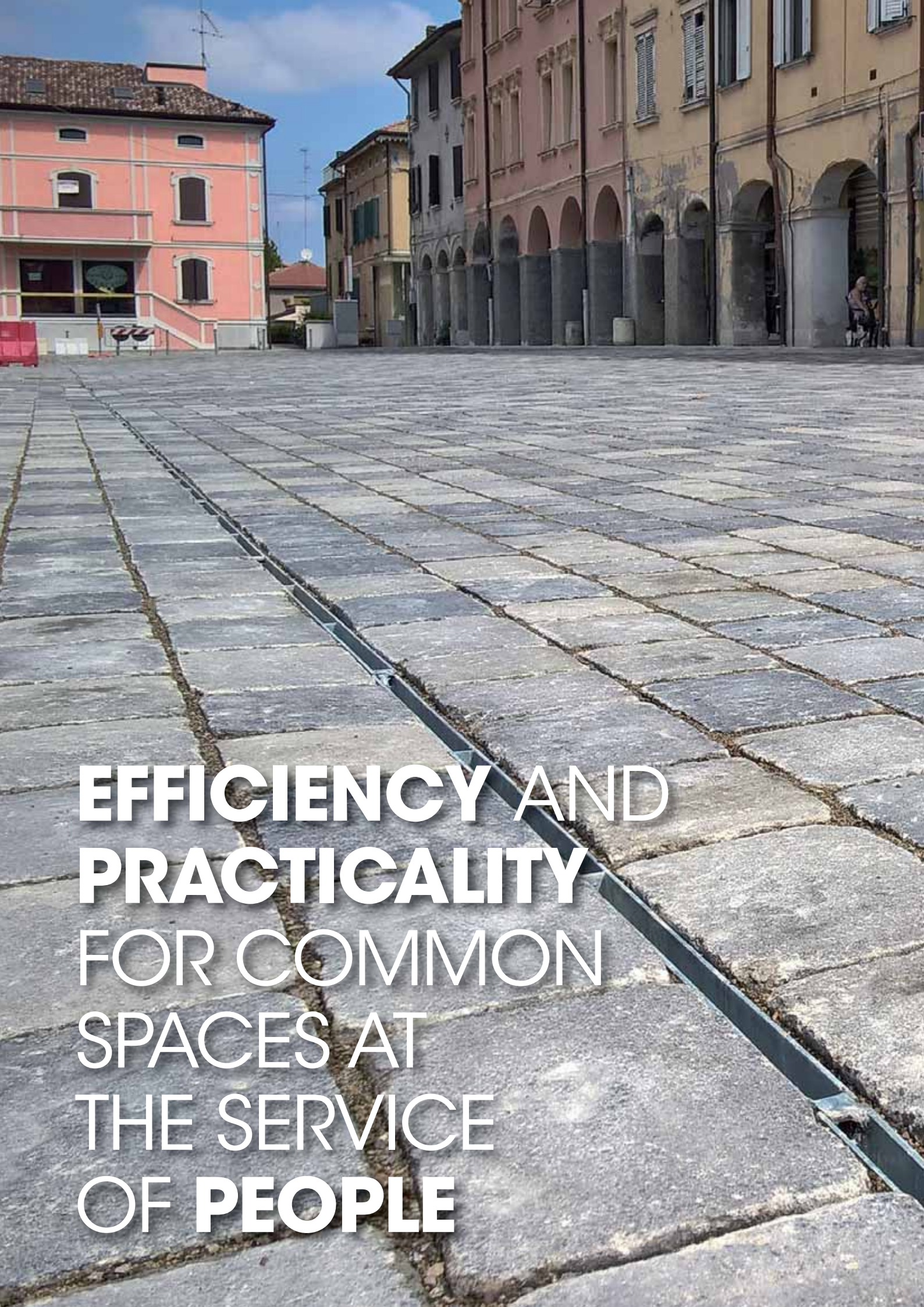
Protecting your home from flood risk is our aim. Guaranteeing **the best rainwater drainage** is possible thanks to simple, reliable and low environmental impact solutions.

BASIC+

pag. 26



A15 B125



EFFICIENCY AND **PRACTICALITY** FOR COMMON SPACES AT THE SERVICE OF **PEOPLE**

urban design and **residential** areas

Our **cities**, **old town centres**, villages, urban parks, artisan areas are places where people live, work and spend their free time.
We want all these areas to be **clean, dry and safe**, protecting the environment.

For this purpose, flawless rainwater drainage is essential, along with other jobs, in order to **defend road safety** and ensure the best conditions for vehicle traffic, bikes, **pedestrians and people with reduced mobility**.
In addition to **attention for aesthetics**, product study is a fundamental aim: historic monuments, old town centers, modern installations, are real heritages of the past, and modern architectural works require **"invisible" drainage lines** or which are perfectly integrated in the background without reducing practicality.

BASIC+

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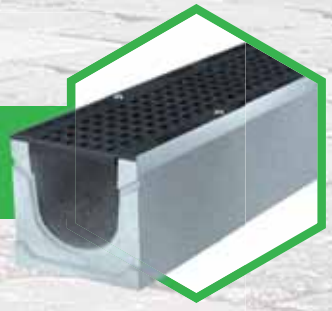
A15 B125



SMART PRO

pag. 36

B125

SAFETY

industrial sites and **commercial** areas

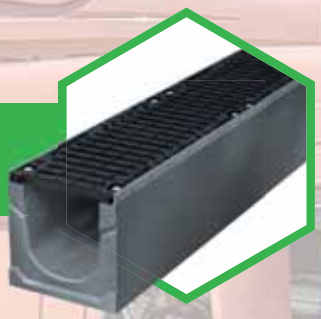
Industrial sites and **commercial areas** require **larger intensely cemented surfaces** able to support many kinds of users. What they have in common is that they have their cars and are all in a hurry. Workers, employees, clients...are just some of the people who frequent these zones.

Managing rainwater drainage on these areas, **fighting against the waterproofing of soil**, treating areas polluted not only by industrial production, but also from leaching of contaminated soil.These are the goals to pursue for determining a drainage line suitable for this sector.

SMART PRO

pag. 36

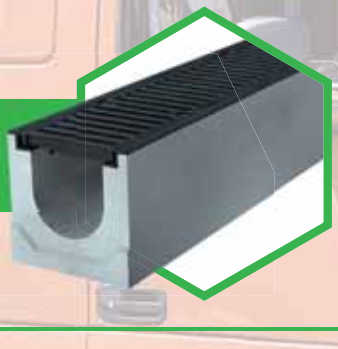
C250 D400 E600



BIG47

pag. 50

D400 E600



BIG I

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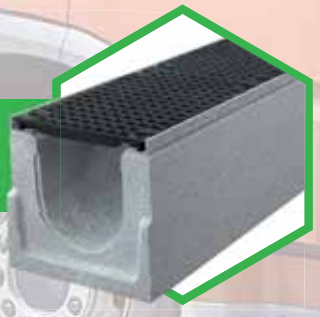
D400




DRY ROADS
ALLOW
RAPID AND SAFE
TRANSPORT

road networks and **motorways**, **logistic** and **marine** terminals

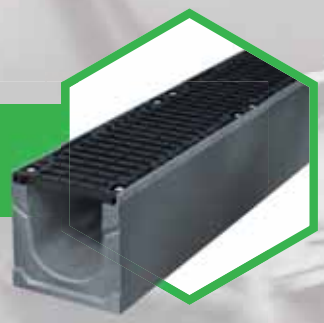
Our ambitious goal is to successfully drain large road networks where people and the majority of our goods travel daily.
Road safety should never be overshadowed and should represent a guideline for every engineer or professional person at the service of a public authority.

Guaranteeing **safety to people and vehicles** in industrial parks subject to heavy loads, such as loading and unloading areas, container movements and warehouses with heavy forklifts. Avoiding slippery surfaces is the duty of each designer.
Solutions in this sense are **guaranteed by drainage systems with high capabilities** and high mechanical resistance to use.

SMART PRO

pag. 36

D400 E600



BIG47

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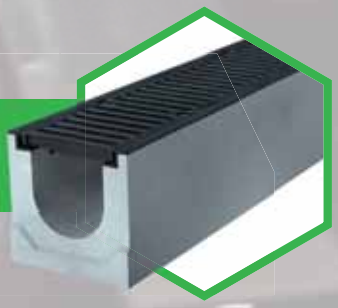
D400 E600



BIG I

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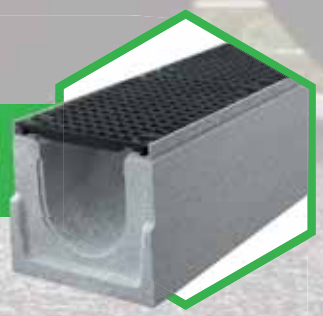
D400




PLANES
NEED
DRY
RUNWAYS

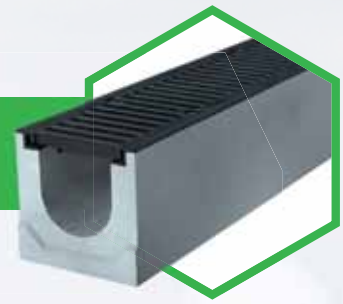
major **airport infrastructures**

Hydraulic problems which can be found in an **airport infrastructure**, such as those underlined for the other types of installations, concern especially **safety.**
In fact, a **runway which is not properly drained can be very dangerous**: phenomena such as aquaplaning would make planes take-offs and landings extremely unsafe.

In addition to that, frequent **high vertical and lateral loads** should be considered.
Guaranteeing the best solution and consequently **the proper operation** of an airport infrastructure is **the most ambitious goal for a drainage system**.

BIG47 pag. 50

F900



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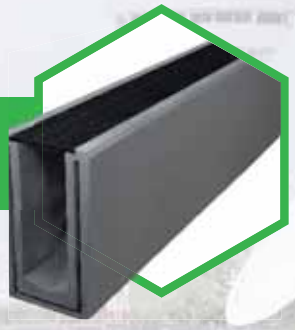
F900

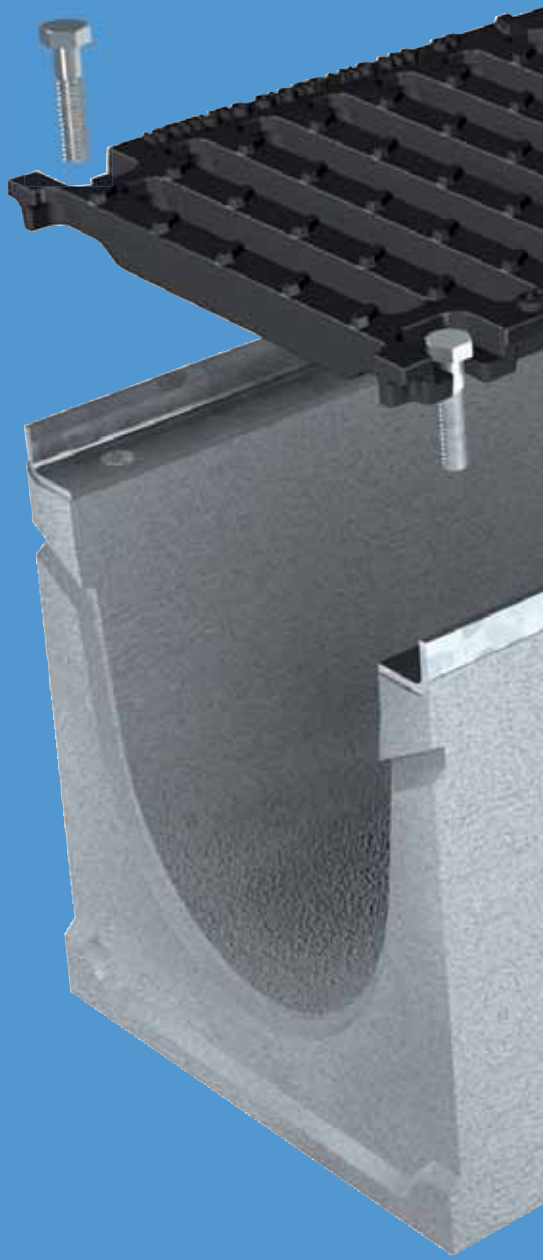


VIBRO-COMPRESSED CONCRETE

High quality standards during all production phases (carefully selected raw materials, systematic monitoring of the process and use of new generation molds) with regular controls on the end product (EN1433), make GREENPIPE's drainage channels a **high quality manufactured article**.

Together with the high quality of produced channels comes constant research into the regular improvement of gratings.

The result is BASIC+, SMART PRO, BIG 47, three channel ranges in vibro-compressed concrete that together provide a solution to any water drainage problem.



All gratings in this range are **suitable for the transit of people with reduced mobility** (PRM).

100% recyclable

Production and use of materials aims at the **conservation of resources**.
No high-energy consumption is required, such as, for example, the injection molding of plastic channels.
Concrete is 100% recyclable.

Non-Flammable

Unlike plastic channels, concrete channels can be considered **non-combustible because they are made of minerals**.

Resistant to heat, frost and UV rays

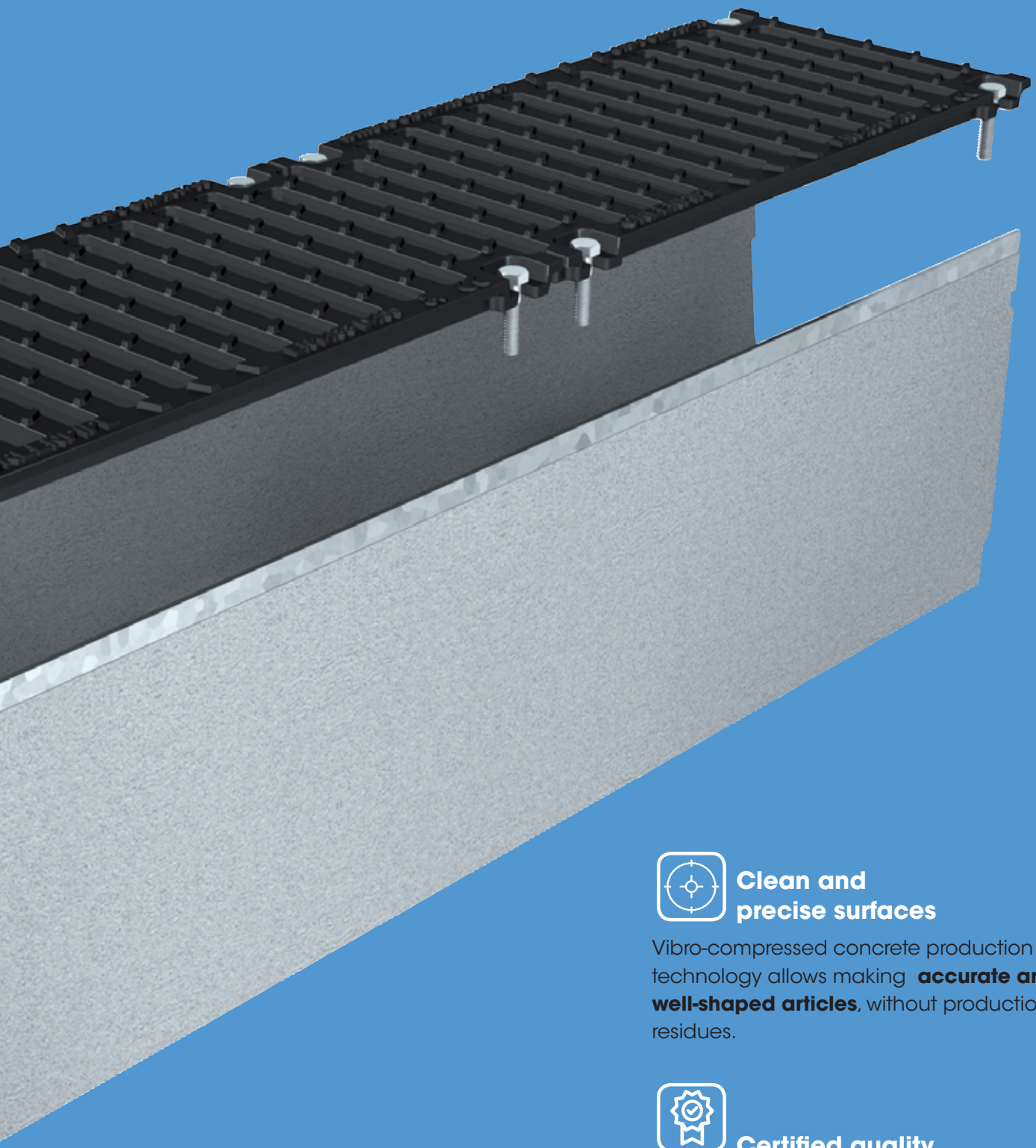
The channels, made with **high quality concrete**, react to temperature changes in the same way as concrete side supports. Almost comparable to a single continuous construction, they facilitate a long life drainage system.
GREENPIPE channels are **resistant to weathering** (W marking) and to **the presence of stagnant water** containing **de-icing salts** (+R marking) in accordance with European standard EN 1433.

Solidity

The main feature of concrete is **high compression resistance**.
Vibro-compressed concrete, with the same quantity of raw materials, ensures a higher performance compared to cast concrete.

solidity, neatness, precision

these are the sensations perceived by looking at
a GREENPIPE concrete vibro-compressed channel



Clean and precise surfaces

Vibro-compressed concrete production technology allows making **accurate and well-shaped articles**, without production residues.

Certified quality

The attention of **GREENPIPE to compliance with European standards** is extremely high.
Every product made by GREENPIPE complies with current European standards, both voluntary and mandatory. **An accredited and independent institution certifies GREENPIPE quality**.

0% harmful substances

GREENPIPE channels are **free of artificial resins and solvents**. They are therefore harmless for the environment and for workers during the production phase.

BASIC+

The Basic+ range supports, according to Standard EN 1433, 3 different load classes: A15, B125 and C250. The series of gratings combinable with the channels is wide and available in different versions: slotted grating in galvanised steel (A15), square mesh grating or anti-heel mesh grating in galvanised steel (A15 and B125) and ductile iron mesh grating (C250).

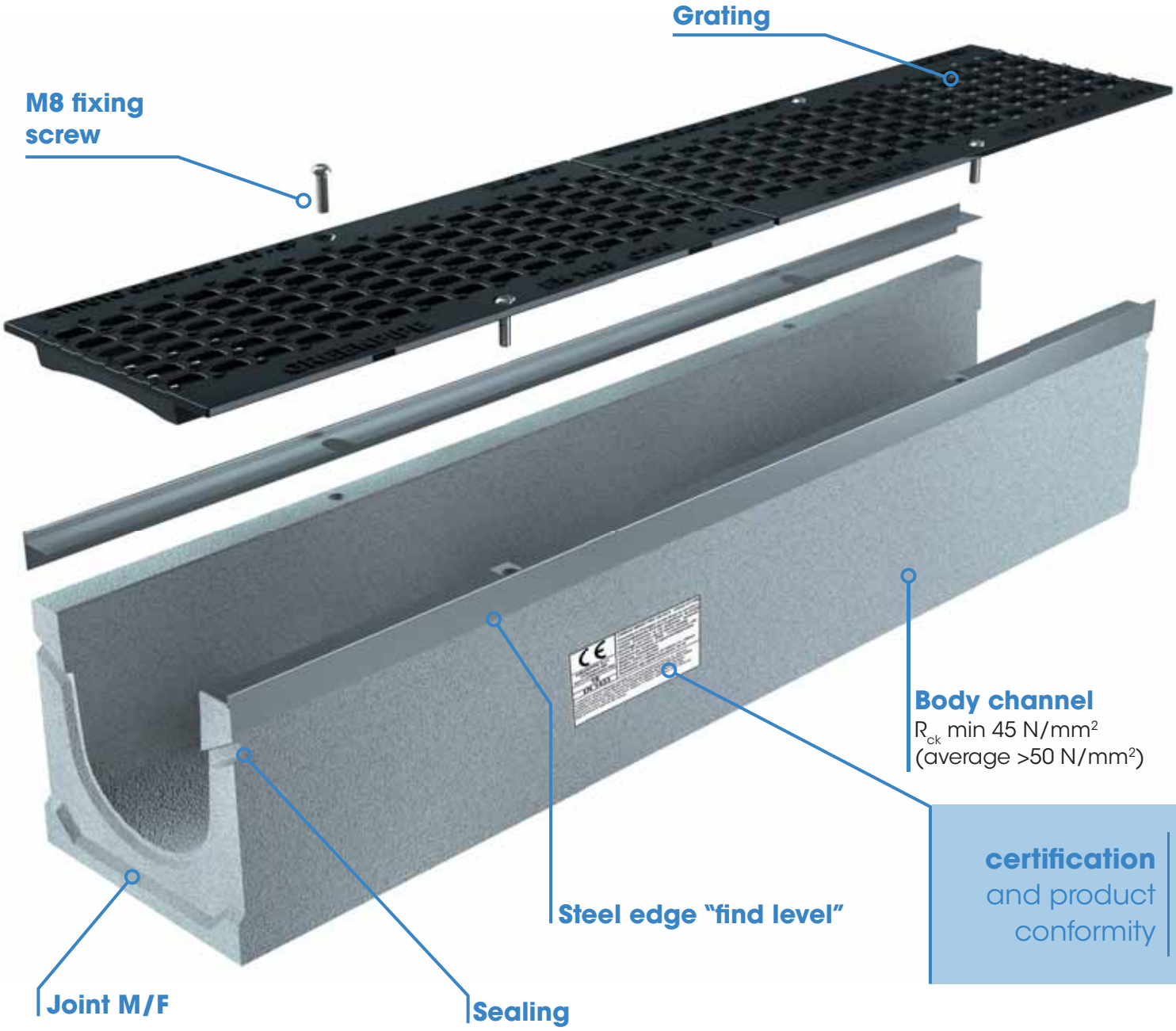
Basic+ channels **are provided with gratings already assembled and fixed** with M8 screws when paired with B125 and C250 gratings. Channels with ductile iron mesh gratings are provided with two **galvanised steel edges** with multiple purposes: aesthetic, protection against wear, aid to the operator during the installation of channels (the galvanized steel edge gives an indication of the exact height for final coating).

All channels have a **male-female coupling system** to provide improved stability during installation and a dedicated groove for perfect joint sealing.

In addition to the Basic+ range, also available are sump units with plastic slit buckets and front/end cap in galvanised steel.

The Basic+ **range is certified** according to European standard EN 1433 and bears the mandatory CE marking.

The Basic+ drainage channel range is produced in high-grade, vibro-compressed concrete ensuring high resistance to **compression** (minimum strength class C35/45 – f_{ck} = 35 N/mm^2 and **R_{ck} = 45 N/mm^2**), resistant to **frost and de-icing salts** ("+R" marking for European standard EN 1433) and **attacks caused by atmospheric agents** ("W" marking for European standard EN 1433)



certification and product conformity

load **classes**

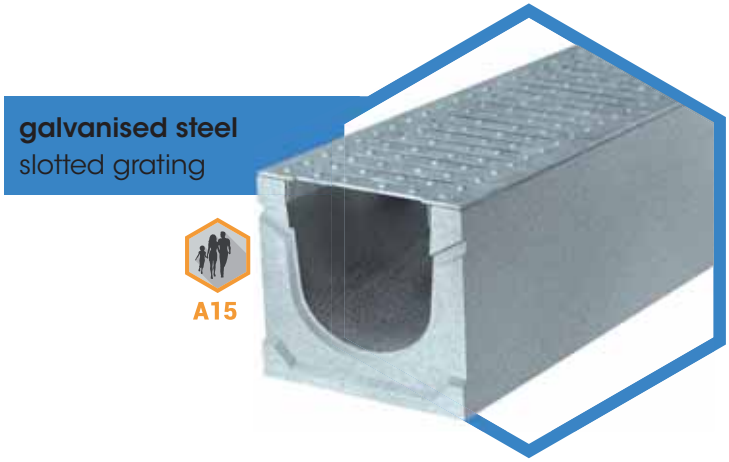
A15 B125 C250

channels

Nominal width **100** – height 160
Nominal width **150** – height 185
Nominal width **200** – height 250

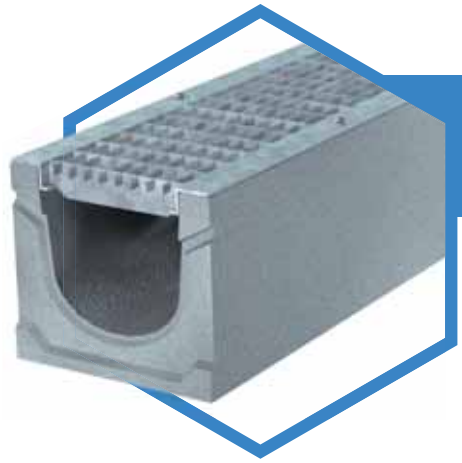
gratings

- Galvanised steel slotted grating load class A15
- Galvanised steel square mesh 30x30 grating load class A15
- Galvanised steel anti-heel mesh 30x10 grating load class B125
- Ductile iron mesh grating load class C250 with galvanised steel edge "find level"



galvanised steel
slotted grating

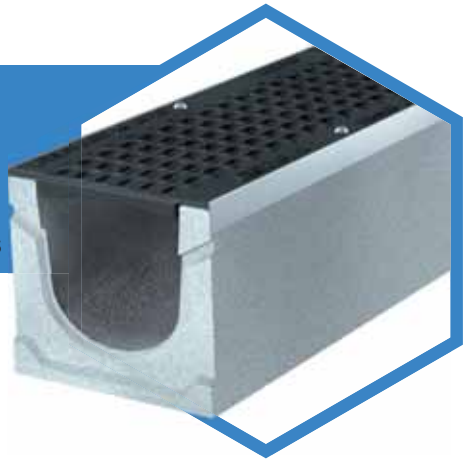
A15



galvanised steel
square or anti-heel mesh grating

A15 B125*

*fixed with M8 screws



ductile iron
mesh grating with galvanised steel edge "**find level**", fixed with M8 screws

C250

Application fields

PRIVATE HOUSING
private entrances, private gardens, cortilive pavements

URBAN DESIGN
cycling and pedestrian zones, sidewalks, public parks, squares, historical centers

CE

CERTIFICAZIONE PRODOTTO ISTITUTO GIORDANO CERTIFICATO N. 015/CP

Product certification EN1433 granted by a third party institution with accreditation ACCREDIA Istituto Giordano SpA Bellaria RN

GREENPIPE
THE LEADING EDGE OF SURFACE WATER COLLECTING SYSTEMS

BASIC+ 100

The Basic+ drainage channel range is produced in high-grade vibro-compressed concrete.
The series of gratings combinable with the channels is wide and available in different versions: slotted grating in galvanised steel (A15), square mesh grating or anti-heel mesh grating in galvanised steel (A15 and B125) and ductile iron mesh grating (C250)

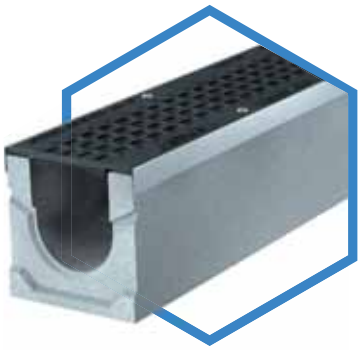
load **classes**

A15

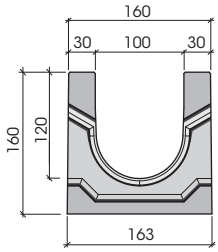
B125

C250

CE
EN1433



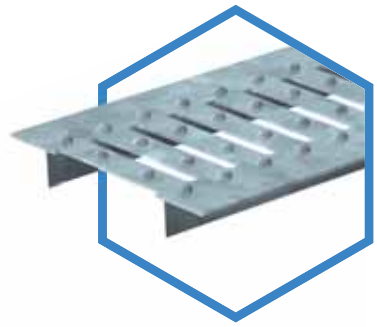
BASIC+ 100 H160



channel L = 1 m **+ 1 galvanised steel** slotted **grating A15**	BASIC+ 100 H**160**	5110050	price € **36,00**

A15

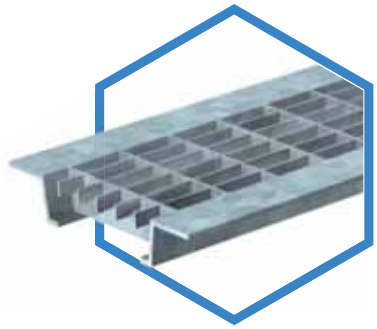
description		code	weight Kg	piece/pallet	
CHANNEL BASIC+ 100	H160	5151026	35,4	35	29,10
GRATING L=1m		2650050	1,8		6,90



channel L = 1 m **+ galvanised anti-heel** 30x10 **steel grating B125** **+ 4 fastening screws**	BASIC+ 100 H**160**	5112325	price € **56,00**

B125

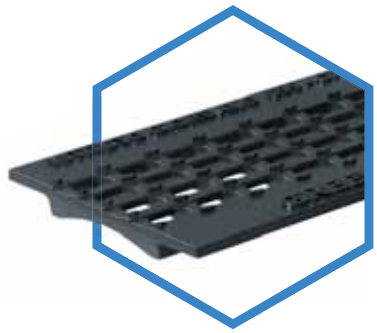
description		code	weight Kg	piece/pallet	
CHANNEL BASIC+ 100 socket anchors M8	H160	5141026	35,4	35	29,10
GRATING L=1m		2402325	3,8		26,90
FASTENING SCREW		1900330			-*



channel L = 1 m **+ 2 ductile cast iron gratings C250** **+ steel edge "find level"** **+ 4 fastening screws**	BASIC+ 100 H**160**	5112360	price € **62,00**

C250

description		code	weight Kg	piece/pallet	
CHANNEL BASIC+ 100 socket anchors M8	H160	5141026	35,4	35	29,10
GRATING L=0,5m		2402360	3,7		16,45
FASTENING SCREW		1900330			-*
STEEL EDGE "FIND LEVEL"		2403010			-*



*included in total price

BASIC+ 150

The Basic+ drainage channel range is produced in high-grade vibro-compressed concrete.
The series of gratings combinable with the channels is wide and available in different versions: slotted grating in galvanised steel (A15), square mesh grating or anti-heel mesh grating in galvanised steel (A15 and B125) and ductile iron mesh grating (C250)

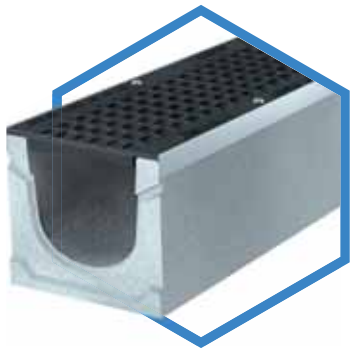
load **classes**

A15

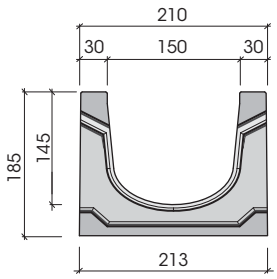
B125

C250

CE
EN1433

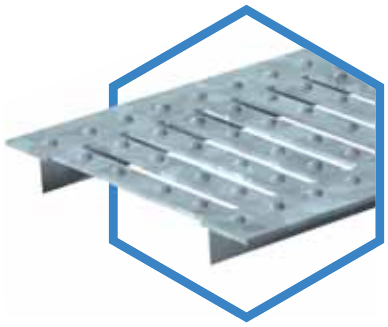


BASIC+ 150 H185



channel L = 1 m **+ 1 galvanised steel** slotted **grating A15**	BASIC+ 150 H**185**	5120080	price € **50,00**

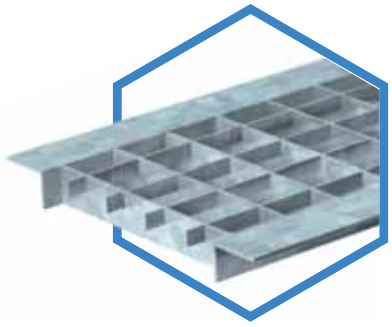
A15



description		code	weight Kg	piece/pallet	
CHANNEL BASIC+ 150	H185	5151520	48,2	25	37,40
GRATING L=1m		2650080	3,2		12,60

channel L = 1 m **+ 1 galvanised** 30x30 **steel grating A15** **+ 4 fastening screws**	BASIC+ 150 H**185**	5120390	price € **57,00**

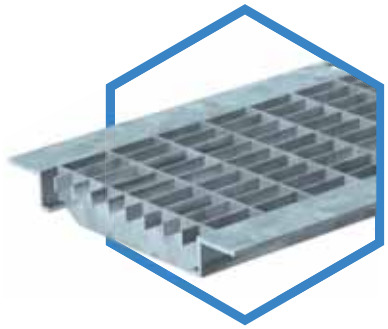
A15



description		code	weight Kg	piece/pallet	
CHANNEL BASIC+ 150 socket anchors M8	H185	5141520	48,2	20	37,40
GRATING L=1m		1800390	3,2		19,60

channel L = 1 m **+ galvanised anti-heel** 30x10 **steel grating B125** **+ 4 fastening screws**	BASIC+ 150 H**185**	5122365	price € **72,00**

B125



description		code	weight Kg	piece/pallet	
CHANNEL BASIC+ 150 socket anchors M8	H185	5141520	48,2	20	37,40
GRATING L=1m		2402365	6,4		34,60
FASTENING SCREW		1900330			-*

*included in total price

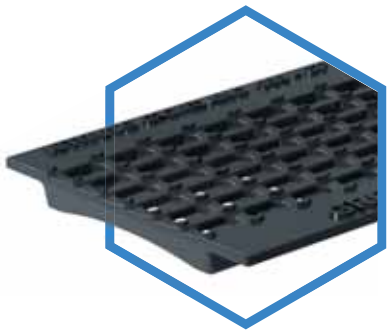
BASIC+ 150

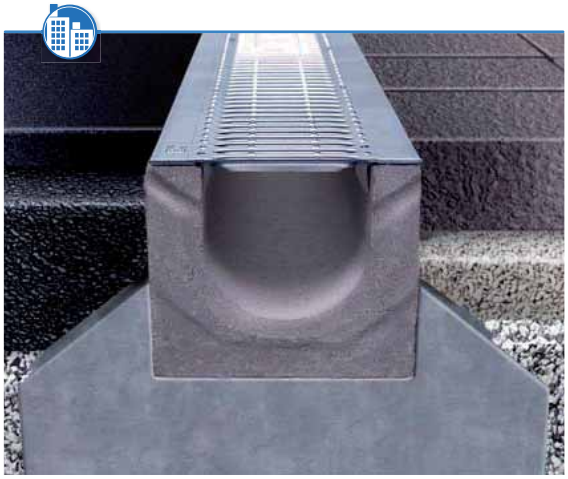
channel L = 1 m **+ 2 ductile cast iron gratings C250** **+ steel edge "find level"** **+ 4 fastening screws**				price €
	BASIC+ 150 H**185**		5122370	**85,00**

description		code	weight Kg	piece/pallet	
CHANNEL BASIC+ 150 socket anchors M8	H185	5141520	48,2	20	37,40
GRATING L=0,5m		2402370	6,0		23,80
FASTENING SCREW		1900330			-*
STEEL EDGE "FIND LEVEL"		2403010			-*

*included in total price

C250





BASIC+ 200

The Basic+ drainage channel range is produced in high-grade vibro-compressed concrete.
The series of gratings combinable with the channels is wide and available in different versions: slotted grating in galvanised steel (A15), square mesh grating or anti-heel mesh grating in galvanised steel (A15 and B125) and ductile iron mesh grating (C250)

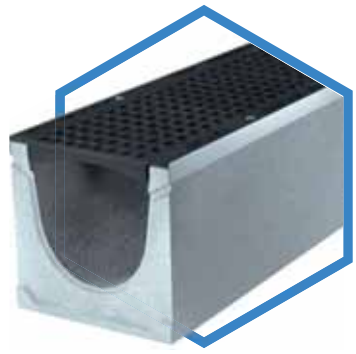
load **classes**

A15

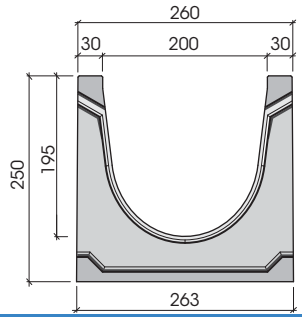
B125

C250

CE
EN1433



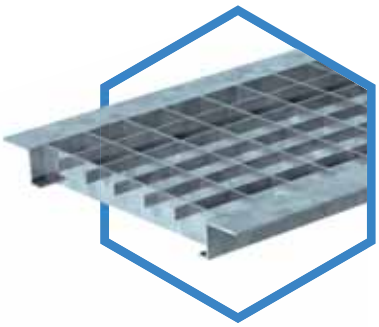
BASIC+ 200 H250



channel L = 1 m **+ 1 galvanised** 30x30 **steel grating A15**	BASIC+ 200 H**250**	5132305	price € **85,00**

description		code	weight Kg	piece/pallet	
CHANNEL BASIC+ 200	H250	5152020	79,5	12	54,90
GRATING L=1m		2402305	5,5		30,10

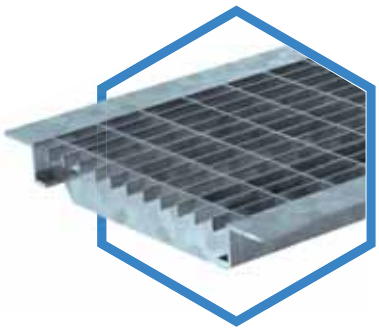
A15



channel L = 1 m **+ 1 galvanised anti-heel** 30x10 **steel grating B125** **+ 4 fastening screws**	BASIC+ 200 H**250**	5131735	price € **102,00**

description		code	weight Kg	piece/pallet	
CHANNEL BASIC+ 200 avec douilles M8	H250	5142020	79,5	12	54,90
GRATING L=1m		2401735	8,6		47,10
FASTENING SCREW		1900330			-*

B125



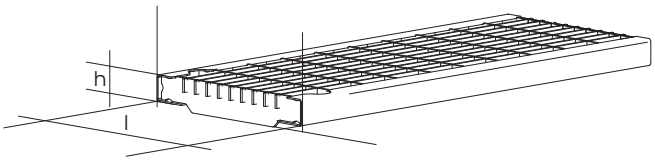
channel L = 1 m **+ 2 ductile cast iron** **gratings C250** **+ steel edge "find level"** **+ 4 fastening screws**	BASIC+ 200 H**250**	5131475	price € **114,00**

description		code	weight Kg	piece/pallet	
CHANNEL BASIC+ 200 avec douilles M8	H250	5142020	79,5	12	54,90
GRATING L=0,5m		2401745	8,0		29,55
FASTENING SCREW		1900330			-*
STEEL EDGE "FIND LEVEL"		2403010			-*

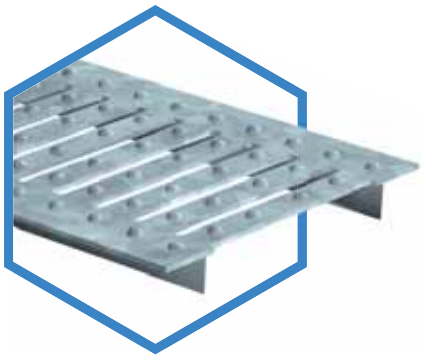
C250

*déjà compris dans le prix total

BASIC+ gratings

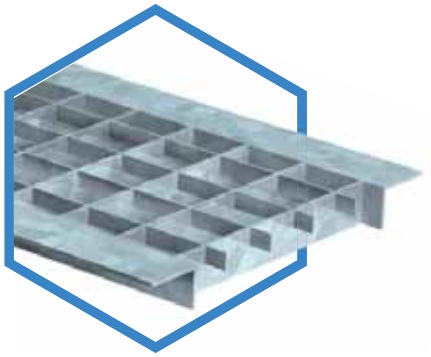


load **classes**



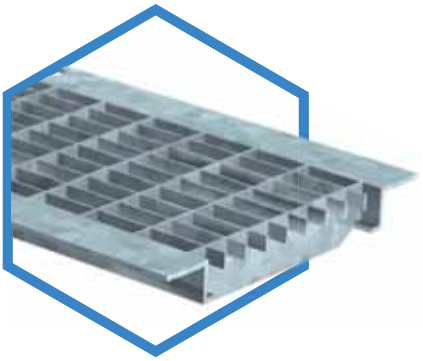
Galvanised steel slotted grating

description	l (mm)	class
BASIC+ 100	157	A15
BASIC+ 150	206	A15



Galvanised 30x30 steel grating

description	l (mm)	class
BASIC+ 150	206	A15
BASIC+ 200	256	A15



Galvanised anti-heel 30x10 steel grating

description	l (mm)	class
BASIC+ 100	157	B125
BASIC+ 150	206	B125
BASIC+ 200	256	B125

Ductile cast iron mesh grating

description	l (mm)	h (mm)	class
BASIC+ 100	157	6	C250
BASIC+ 150	206	6	C250
BASIC+ 200	256	7	C250

BASIC+ installation

load **classes**

A15

B125

C250

The Basic+ drainage channel range is produced in high-grade vibro-compressed concrete.
The series of gratings combinable with the channels is wide and available in different versions: slotted grating in galvanised steel (A15), square mesh grating or anti-heel mesh grating in galvanised steel (A15 and B125) and ductile iron mesh grating (C250)

NOTE

1. Installation instructions are provided for reference purposes; the customer (or designer) must ensure them are compatible with the nature of the soil.

2. The channel, in order to perform its drainage function and not to overload the supporting surface of grating of huge efforts, it must be installed at least 3-5 mm below the level the surrounding paving (view Installation drawings).

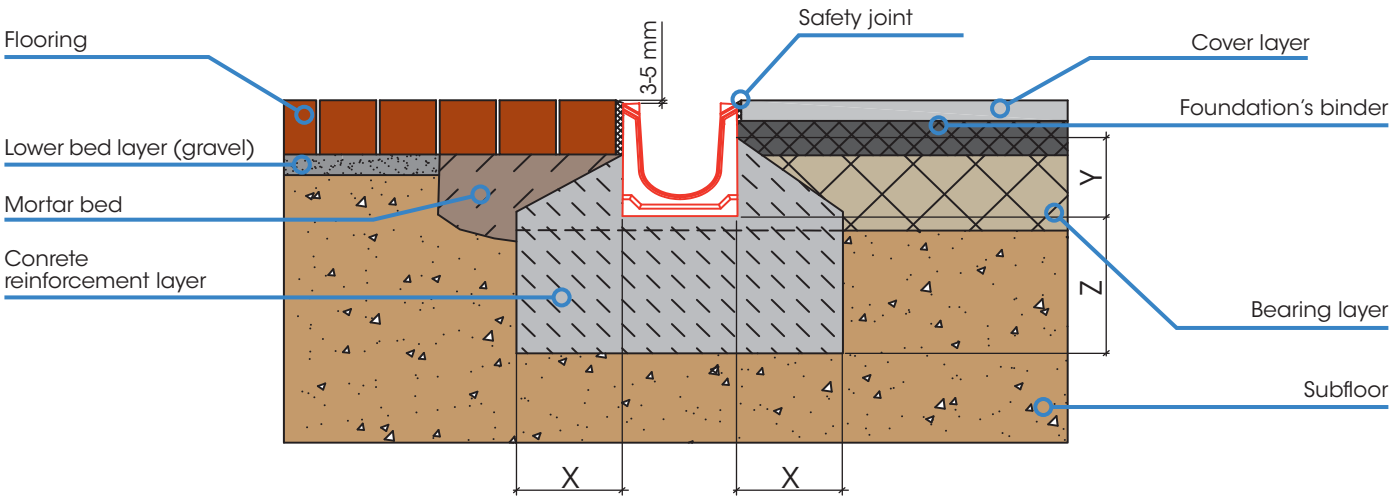
3. The channel is already provided with gratings already assembled: if during installation it should be necessary disassemble them, it is advisable to tighten screws in their respective threads without lock them just to protect the same threads from construction's site wastes.

4. In order to guarantee waterproofness between each component of the drainage line, it is possible to apply low modulus silicone-based sealant for concrete joints in designated points of channels on the side "male".

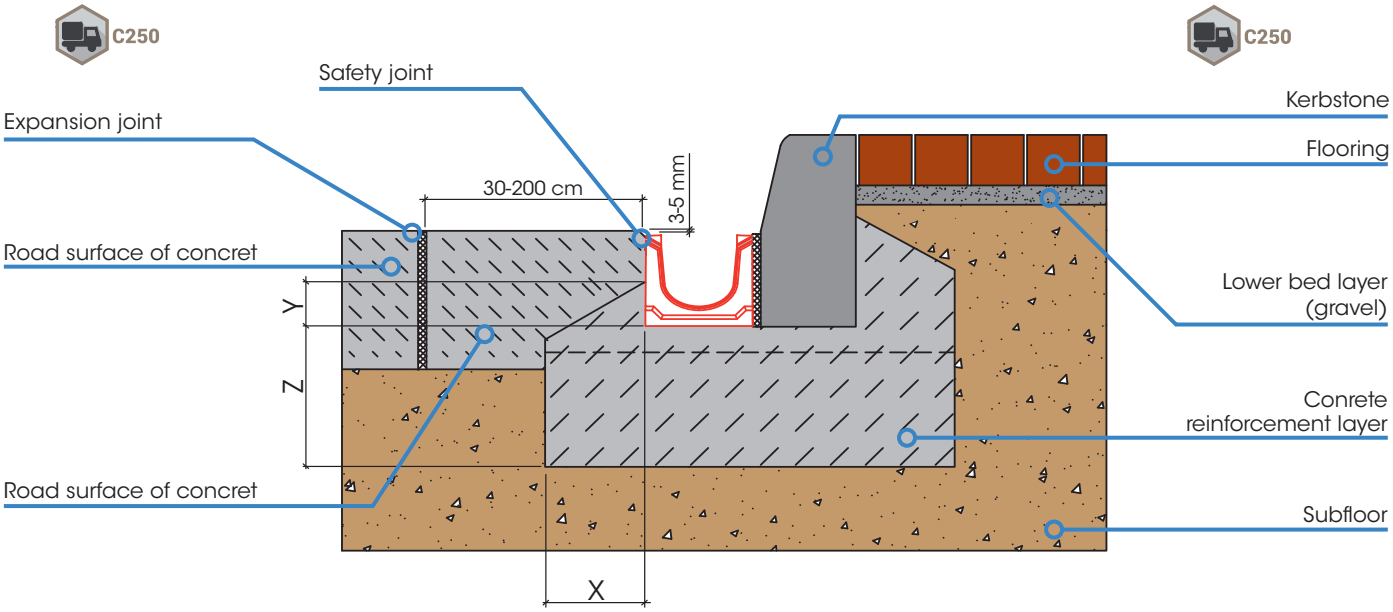
Flooring-Ashpalt

A15 B125

B125 C250



Ashpalt-Kerb



Load class	**A15**	**B125**	**C250**
Concrete compression strength class	C 20/25	C 20/25	C 20/25
X (width) cm	≥ 5	≥ 10	≥ 15
Y (height) cm	channel height - 5 mm	channel height - 5 mm	channel height - 5 mm
Z (thickness) cm	≥ 6	≥ 10	≥ 15
Reinforcing frame	not necessary	not necessary	not necessary

The designer is responsible for verifying the bearing capacity of the ground and, accordingly, to dertermine the size of X - Y - Z, the most specific concrete and reinforcing frame for the project. The choice of load class is designer's responsibility: when in doubt it is recommended to select an higher load class. In cases of concrete exposed to freeze-thaw cycles, use an exposure class XF4.

SMART PRO

Smart Pro range channels have 30 mm wall thickness and are provided with **galvanised steel edge reinforcement profiles** which are perfectly anchored to the main concrete body, preventing any detachment.

Smart Pro profiles are made of materials **resistant to corrosion** caused by contact with the surrounding environment, giving the product **compactness** and **protection against wear** caused by traffic.

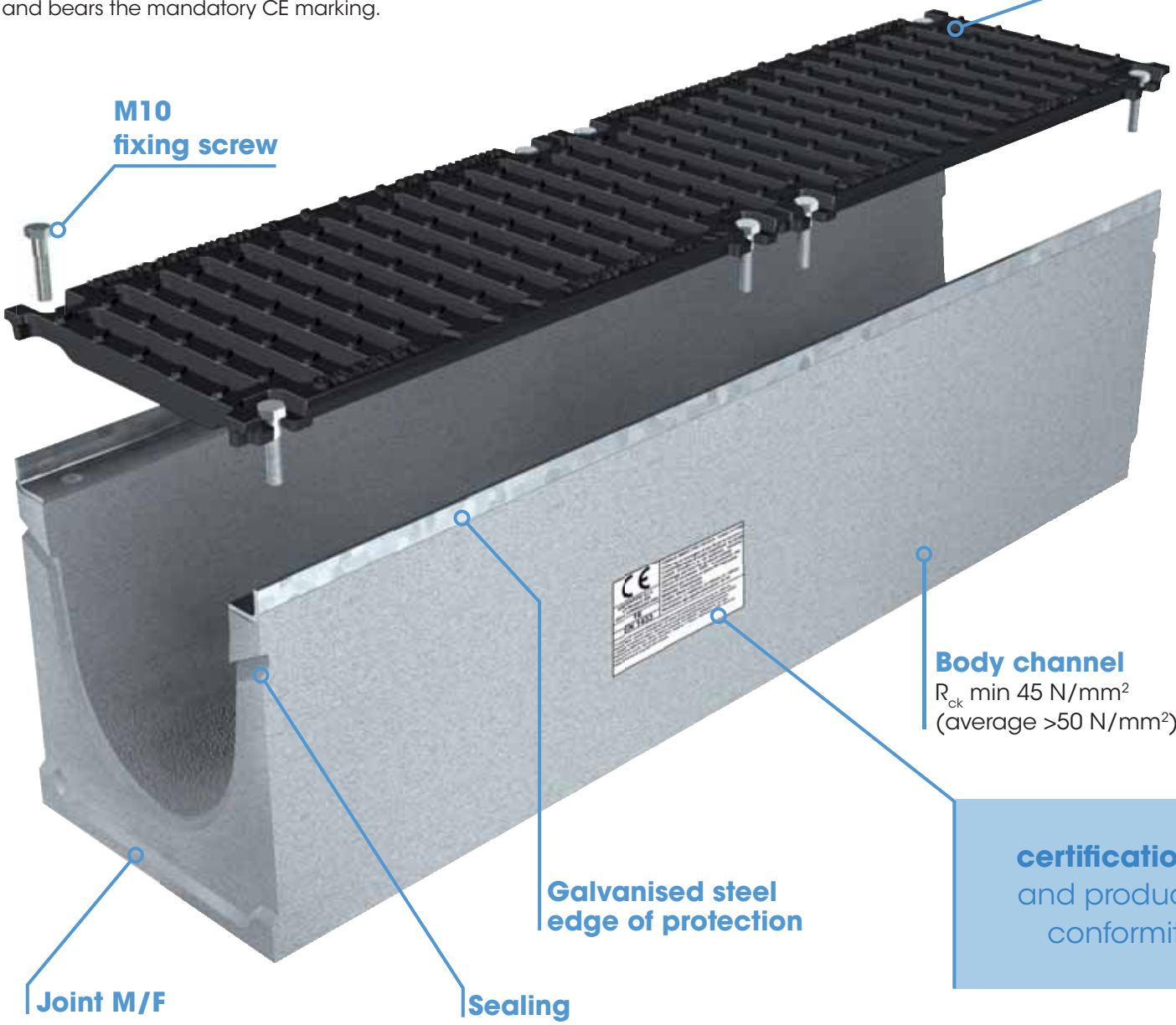
The Smart Pro range supports, according to Standard EN 1433, 4 different load classes: B125, C250, D400 and E600.The series of gratings combinable with the channels is wide and available in different versions: anti-heel mesh grating in galvanised steel (B125), ductile iron slotted grating with width of less than 20 cm, legally **suitable for transit of people with limited mobility** (C250, D400 and E600) and ductile iron mesh gratings "Urbe" (C250 and D400).

All channels have a **male-female coupling system** to provide improved stability during installation and a dedicated groove for perfect joint **sealing**. Smart Pro channels are provided with assembled gratings, fixed with M10 self-locking screws.

In addition to the Smart Pro range, also available are channels with length of 0.5 m, lower drain outlet, sump units with plastic slit buckets and front/end cap in galvanised steel.

The Smart Pro **range is certified** according to European standard EN 1433 and bears the mandatory CE marking.

Smart Pro drainage channel range is produced in high-grade, vibro-compressed concrete ensuring high resistance to **compression** (minimum strength class C35/45 - f_{ck} = 35 N/mm² and **R_{ck} = 45 N/mm²**), resistant to **frost and de-icing salts** (marking "+R" for European standard EN 1433) and **attacks caused by atmospheric agents** ("W" marking for European standard EN 1433)



certification and product conformity

load **classes**

B125 C250 D400 E600

channels

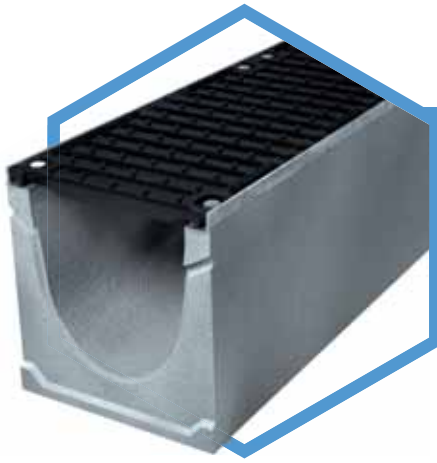
Nominal width **100** – heights 90, 185
Nominal width **150** – heights 95, 210
Nominal width **200** – heights100, 150, 275
Nominal width **300** – heights 150, 335

gratings

- Galvanised steel anti-heel mesh 30x10 grating load class B125
- Ductile iron anti-heel slotted grating load class C250, D400 and E600
- Ductile iron anti–heel mesh grating "Urbe" load class C250 and D400

galvanised steel
anti-heel mesh 30x10 grating fixed with M10 self-locking screws

B125



ductile iron
slotted grating fixed with M10 self-locking screws

C250 D400 E600

ductile iron
mesh grating fixed with M10 self–locking screws

C250 D400

Application fields

URBAN DESIGN
cycling and pedestrian zones, sidewalks, public parks, squares, historical centers

INDUSTRIAL SITES
car parks (multilevel, public and shopping areas), industrial areas, loading bays

ROAD NETWORKS
roads and highways, underpasses, intermodal terminals, harbor quays

CE

CERTIFICAZIONE PRODOTTO
ISTITUTO GIORDANO
CERTIFICATO N. 015/CP

Product certification EN1433 granted by a third party institution with accreditation ACCREDIA Istituto Giordano SpA Bellaria RN

GREENPIPE
THE LEADING EDGE OF SURFACE WATER COLLECTING SYSTEMS

SMART PRO 100

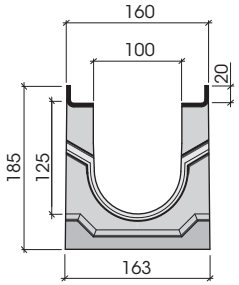
The Smart Pro drainage channel range is produced in high-grade vibrocompressed concrete.
The series of gratings combinable with the channels is wide and available in different versions: anti-heel mesh grating in galvanised steel (B125), ductile iron mesh grating "Urbe" (C250 and D400) and ductile iron slotted grating (C250, D400 and E600)

load **classes**

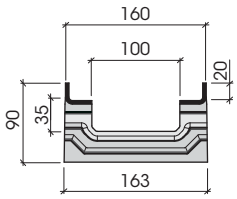
B125
C250
D400
E600

CE
EN1433

SMART PRO 100 H185



SMART PRO 100 H90

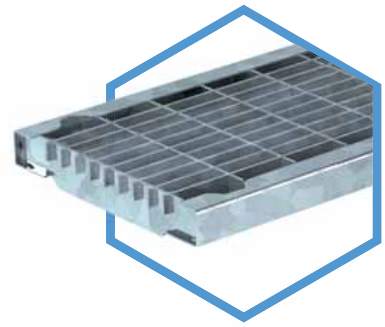


channel L = 1 m
+ 1 galvanised anti-heel 30x10 **steel grating B125**
+ 4 fastening screws

		price €
SMART PRO 100 H**185**	4181165	**71,00**
SMART PRO 100 H**90**	4171165	**62,00**

B125

description		code	weight Kg	piece/pallet	
CHANNEL SMART PRO 100	H185	4141026	38,5	35	45,10
CHANNEL SMART PRO 100	H90	4131020	21,5	49	36,10
GRATING L=1m		2401165	2,9		25,10
FASTENING SCREW		1900090			0,20

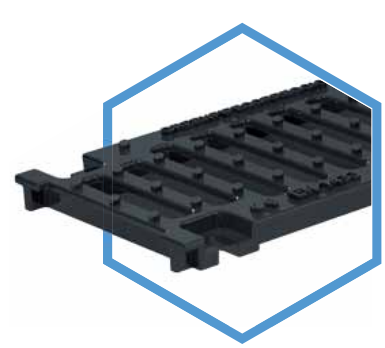


channel L = 1 m
+ 2 ductile cast iron gratings C250
+ 8 fastening screws

		price €
SMART PRO 100 H**185**	4181050	**73,00**
SMART PRO 100 H**90**	4171050	**64,00**

C250

description		code	weight Kg	piece/pallet	
CHANNEL SMART PRO 100	H185	4141026	38,5	35	45,10
CHANNEL SMART PRO 100	H90	4131020	21,5	49	36,10
GRATING L=0,5m		2401056	3,7		13,15
FASTENING SCREW		1900090			0,20

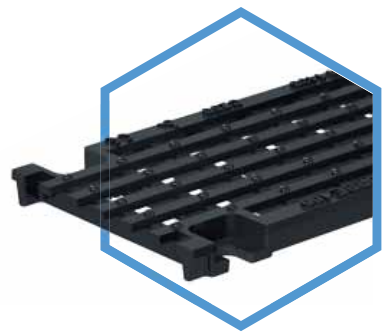


channel L = 1 m
+ 2 ductile cast iron gratings type URBE C250
+ 8 fastening screws

		price €
SMART PRO 100 H**185**	4181055	**73,00**
SMART PRO 100 H**90**	4171055	**64,00**

C250

description		code	weight Kg	piece/pallet	
CHANNEL SMART PRO 100	H185	4141026	38,5	35	45,10
CHANNEL SMART PRO 100	H90	4131020	21,5	49	36,10
GRATING L=0,5m		2401055	3,15		13,15
FASTENING SCREW		1900090			0,20

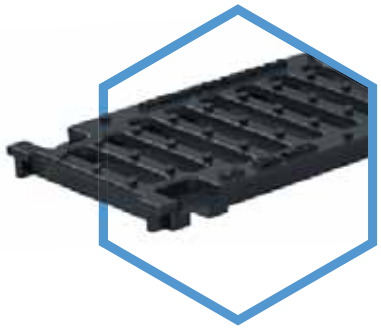


channel L = 1 m
+ 2 ductile cast iron gratings D400
+ 8 fastening screws

		price €
SMART PRO 100 H**185**	4181060	**76,00**
SMART PRO 100 H**90**	4171060	**67,00**

description		code	weight Kg	piece/pallet	
CHANNEL SMART PRO 100	H185	4141026	38,5	35	45,10
CHANNEL SMART PRO 100	H90	4131020	21,5	42	36,10
GRATING L=0,5m		2401066	4,3		14,65
FASTENING SCREW		1900090			0,20

D400

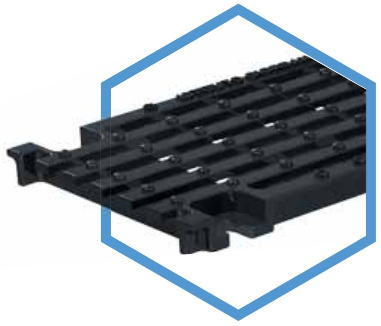


channel L = 1 m
+ 2 ductile cast iron gratings type URBE D400
+ 8 fastening screws

		price €
SMART PRO 100 H**185**	4181065	**76,00**
SMART PRO 100 H**90**	4171065	**67,00**

description		code	weight Kg	piece/pallet	
CHANNEL SMART PRO 100	H185	4141026	38,5	35	45,10
CHANNEL SMART PRO 100	H90	4131020	21,5	49	36,10
GRATING L=0,5m		2401065	4,3		14,65
FASTENING SCREW		1900090			0,20

D400



channel L = 1 m
+ 2 ductile cast iron gratings E600
+ 8 fastening screws

		price €
SMART PRO 100 H**185**	4181025	**79,00**
SMART PRO 100 H**90**	4171025	**70,00**

description		code	weight Kg	piece/pallet	
CANALE SMART PRO 100	H185	4141026	38,5	35	45,10
CANALE SMART PRO 100	H90	4131020	21,5	49	36,10
GRIGLIA L=0,5m		2401046	4,7		16,15
BULLONE FISSAGGIO		1900090			0,20

E600

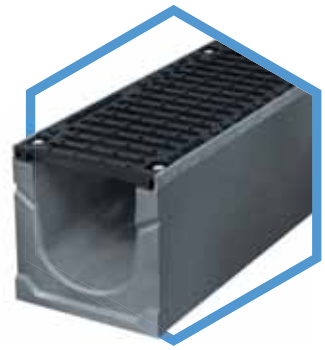
SMART PRO 150

The Smart Pro drainage channel range is produced in high-grade vibrocompressed concrete.
The series of gratings combinable with the channels is wide and available in different versions: anti-heel mesh grating in galvanised steel (B125), ductile iron mesh grating "Urbe" (C250 and D400) and ductile iron slotted grating (C250, D400 and E600)

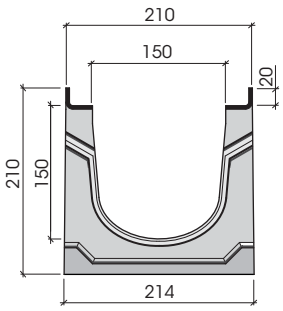
load **classes**

B125
C250
D400
E600

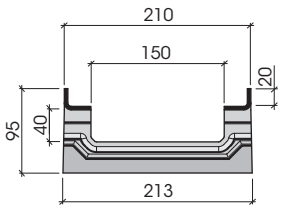
CE
EN1433



SMART PRO 150 H210



SMART PRO 150 H95

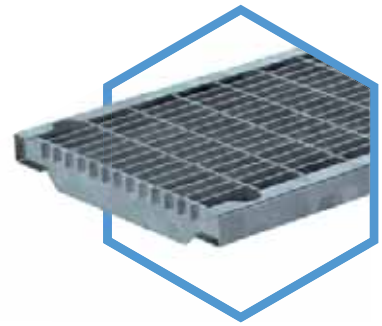


channel L = 1 m
+ 1 galvanised anti-heel 30x10 **steel grating B125**
+ 4 fastening screws

		price €
SMART PRO 150 H**210**	4181175	**92,00**
SMART PRO 150 H**95**	4171175	**76,00**

B125

description		code	weight Kg	piece/pallet	
CHANNEL SMART PRO 150	H210	4141520	51,8	20	56,80
CHANNEL SMART PRO 150	H95	4131520	26,3	35	40,80
GRATING L=1m		2401175	3,5		34,40
FASTENING SCREW		1900090			0,20

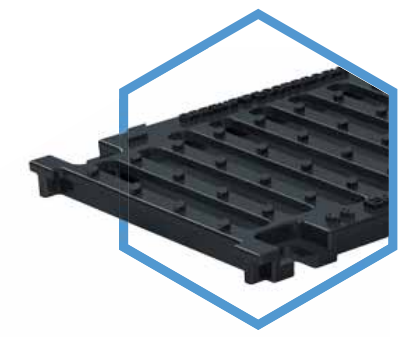


channel L = 1 m
+ 2 ductile cast iron gratings C250
+ 8 fastening screws

		price €
SMART PRO 150 H**210**	4181080	**94,00**
SMART PRO 150 H**95**	4171080	**78,00**

C250

description		code	weight Kg	piece/pallet	
CHANNEL SMART PRO 150	H210	4141520	51,8	20	56,80
CHANNEL SMART PRO 150	H95	4131520	26,3	35	40,80
GRATING L=0,5m		2401086	5,2		17,80
FASTENING SCREW		1900090			0,20



channel L = 1 m
+ 2 ductile cast iron gratings type URBE C250
+ 8 fastening screws

		price €
SMART PRO 150 H**210**	4181085	**94,00**
SMART PRO 150 H**95**	4171085	**78,00**

C250

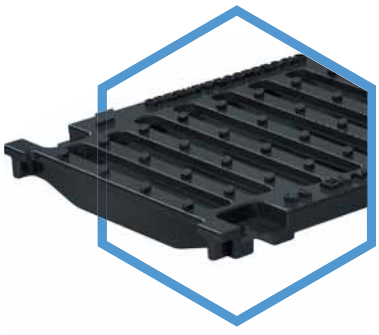
description		code	weight Kg	piece/pallet	
CHANNEL SMART PRO 150	H210	4141520	51,8	20	56,80
CHANNEL SMART PRO 150	H95	4131520	26,3	35	40,80
GRATING L=0,5m		2401085	4,9		17,80
FASTENING SCREW		1900090			0,20

channel L = 1 m
+ 2 ductile cast iron gratings D400
+ 8 fastening screws

		price €
SMART PRO 150 H**210**	4181090	**96,00**
SMART PRO 150 H**95**	4171090	**80,00**

D400

description		code	weight Kg	piece/pallet	
CHANNEL SMART PRO 150	H210	4141520	51,8	20	56,80
CHANNEL SMART PRO 150	H95	4131520	26,3	35	40,80
GRATING L=0,5m		2401096	5,7		18,80
FASTENING SCREW		1900090			0,20

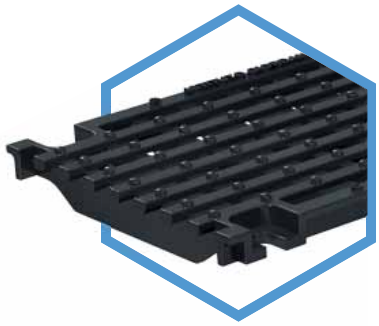


channel L = 1 m
+ 2 ductile cast iron gratings type URBE D400
+ 8 fastening screws

		price €
SMART PRO 150 H**210**	4181095	**98,00**
SMART PRO 150 H**95**	4171095	**82,00**

D400

description		code	weight Kg	piece/pallet	
CHANNEL SMART PRO 150	H210	4141520	51,8	20	56,80
CHANNEL SMART PRO 150	H95	4131520	26,3	35	40,80
GRATING L=0,5m		2401095	5,8		19,80
FASTENING SCREW		1900090			0,20

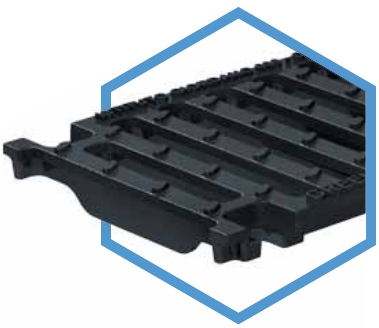


channel L = 1 m
+ 2 ductile cast iron gratings E600
+ 8 fastening screws

		price €
SMART PRO 150 H**210**	4181035	**103,00**
SMART PRO 150 H**95**	4171035	**87,00**

E600

description		code	weight Kg	piece/pallet	
CHANNEL SMART PRO 150	H210	4141520	51,8	20	56,80
CHANNEL SMART PRO 150	H95	4131520	26,3	35	40,80
GRATING L=0,5m		2401035	6,5		22,30
FASTENING SCREW		1900090			0,20



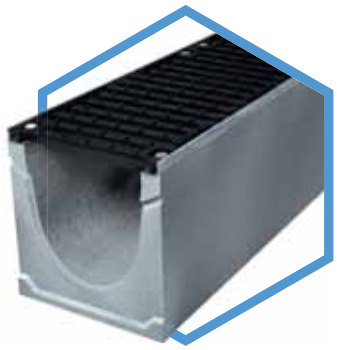
SMART PRO 200

The Smart Pro drainage channel range is produced in high-grade vibrocompressed concrete.
The series of gratings combinable with the channels is wide and available in different versions: anti-heel mesh grating in galvanised steel (B125), ductile iron mesh grating "Urbe" (C250 and D400) and ductile iron slotted grating (C250, D400 and E600)

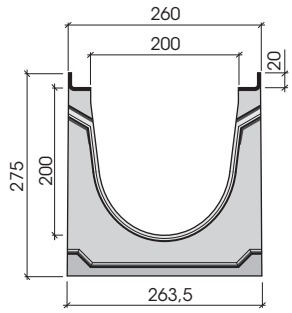
load **classes**

- B125
- C250
- D400
- E600

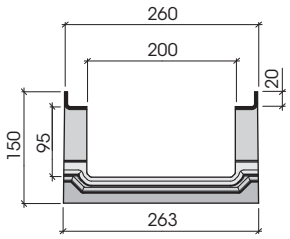
CE
EN1433



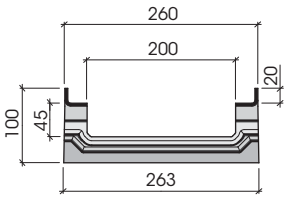
SMART PRO 200 H275



SMART PRO 200 H150



SMART PRO 200 H100

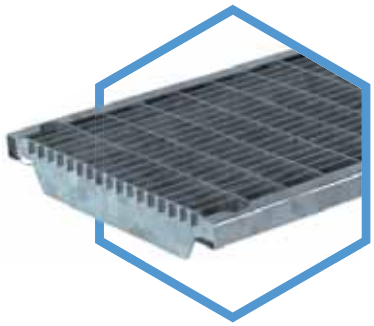


channel L = 1 m
+ 1 galvanised anti-heel 30x10 **steel grating B125 +**
4 fastening screws

		price €
SMART PRO 200 H**275**	4181565	**123,00**
SMART PRO 200 H**150**	4171565	**103,00**
SMART PRO 200 H**100**	4161565	**103,00**

B125

description		code	weight Kg	piece/pallet	
CHANNEL SMART PRO 200	H275	4142020	83,0	12	74,10
CHANNEL SMART PRO 200	H150	4132020	38,7	24	54,10
CHANNEL SMART PRO 200	H100	4162020	31,8	24	54,10
GRATING L=1m		2401565	5,4		48,10
FASTENING SCREW		1900090			0,20

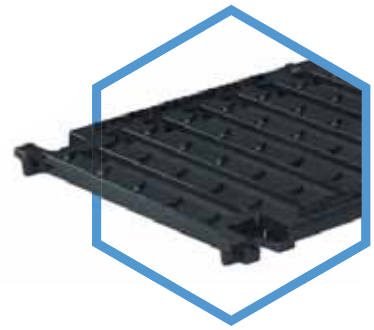


channel L = 1 m
+ 2 ductile cast iron gratings C250
+ 8 fastening screws

		price €
SMART PRO 200 H**275**	4181135	**122,00**
SMART PRO 200 H**150**	4171135	**102,00**
SMART PRO 200 H**100**	4161135	**102,00**

C250

description		code	weight Kg	piece/pallet	
CHANNEL SMART PRO 200	H275	4142020	83,0	12	74,10
CHANNEL SMART PRO 200	H150	4132020	38,7	24	54,10
CHANNEL SMART PRO 200	H100	4162020	31,8	24	54,10
GRATING L=0,5m		2401135	6,9		23,15
FASTENING SCREW		1900090			0,20



channel L = 1 m
+ 2 ductile cast iron gratings D400
+ 8 fastening screws

		price €
SMART PRO 200 H**275**	4181145	**130,00**
SMART PRO 200 H**150**	4171145	**110,00**
SMART PRO 200 H**100**	4161145	**110,00**

D400

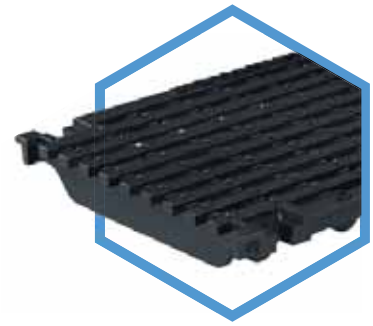
description		code	weight Kg	piece/pallet	
CHANNEL SMART PRO 200	H275	4142020	83,0	12	74,10
CHANNEL SMART PRO 200	H150	4132020	38,7	24	54,10
CHANNEL SMART PRO 200	H100	4162020	31,8	24	54,10
GRATING L=0,5m		2401145	8,1		27,15
FASTENING SCREW		1900090			0,20

channel L = 1 m
+ 2 ductile cast iron gratings type URBE D400
+ 8 fastening screws

		price €
SMART PRO 200 H**275**	4181115	**131,00**
SMART PRO 200 H**150**	4171115	**111,00**
SMART PRO 200 H**100**	4161115	**111,00**

D400

description		code	weight Kg	piece/pallet	
CHANNEL SMART PRO 200	H275	4142020	83,0	12	74,10
CHANNEL SMART PRO 200	H150	4132020	38,7	24	54,10
CHANNEL SMART PRO 200	H100	4162020	31,8	24	54,10
GRATING L=0,5m		2401115	8,4		27,65
FASTENING SCREW		1900090			0,20

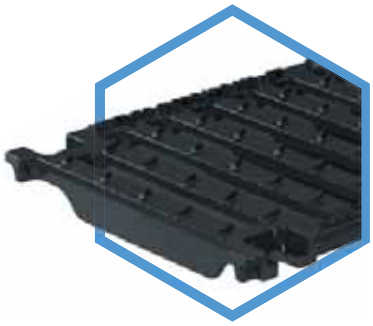


channel L = 1 m
+ 2 ductile cast iron gratings E600
+ 8 fastening screws

		price €
SMART PRO 200 H**275**	4181125	**137,00**
SMART PRO 200 H**150**	4171125	**117,00**
SMART PRO 200 H**100**	4161125	**117,00**

E600

description		code	weight Kg	piece/pallet	
CHANNEL SMART PRO 200	H275	4142020	83,0	12	74,10
CHANNEL SMART PRO 200	H150	4132020	38,7	24	54,10
CHANNEL SMART PRO 200	H100	4162020	31,8	24	54,10
GRATING L=0,5m		2401125	9,3		30,65
FASTENING SCREW		1900090			0,20



SMART PRO 300

The Smart Pro drainage channel range is produced in high-grade vibrocompressed concrete.
The series of gratings combinable with the channels is wide and available in different versions: anti-heel mesh grating in galvanised steel (B125), ductile iron mesh grating "Urbe" (C250 and D400) and ductile iron slotted grating (C250, D400 and E600)

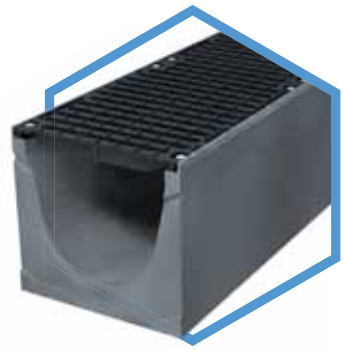
load **classes**

B125

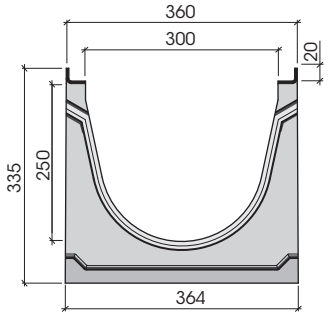
C250

D400

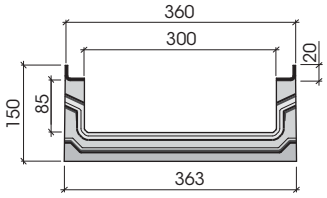
CE
EN1433



SMART PRO 300 H335



SMART PRO 300 H150

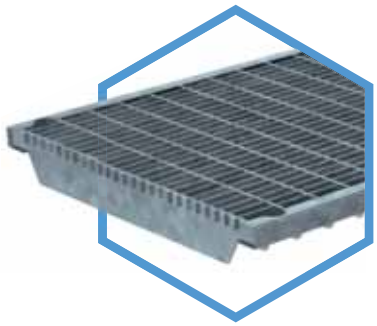


channel L = 1 m
+ 1 galvanised anti-heel 30x10 **steel grating B125**
+ 4 fastening screws

		price €
SMART PRO 300 H**335**	4181585	**178,00**
SMART PRO 300 H**150**	4171585	**148,00**

B125

description		code	weight Kg	piece/pallet	
CHANNEL SMART PRO 300	H335	4143020	130,9	9	93,00
CHANNEL SMART PRO 300	H150	4133020	54,3	18	63,00
GRATING L=1m		2401585	10,4		84,20
FASTENING SCREW		1900090			0,20



channel L = 1 m
+ 2 ductile cast iron gratings C250
+ 8 fastening screws

		price €
SMART PRO 300 H**335**	4181350	**168,00**
SMART PRO 300 H**150**	4171350	**138,00**

C250

description		code	weight Kg	piece/pallet	
CHANNEL SMART PRO 300	H335	4143020	130,9	9	93,00
CHANNEL SMART PRO 300	H150	4133020	54,3	18	63,00
GRATING L=0,5m		2401350	13,5		36,70
FASTENING SCREW		1900090			0,20

channel L = 1 m
+ 2 ductile cast iron gratings D400
+ 8 fastening screws

		price €
SMART PRO 300 H**335**	4181365	**189,00**
SMART PRO 300 H**150**	4171365	**159,00**

D400

description		code	weight Kg	piece/pallet	
CHANNEL SMART PRO 300	H335	4143020	130,9	9	93,00
CHANNEL SMART PRO 300	H150	4133020	54,3	18	63,00
GRATING L=0,5m		2401365	15,2		47,20
FASTENING SCREW		1900090			0,20

SMART PRO accessories

load classes
B125
C250
D400
E600

Sump unit

description	code	weight Kg	price €
SMART PRO 100 H510	2600935	47,7	230,00
SMART PRO 150 H690	2600945	80,7	264,00
SMART PRO 200 H740	2600955	95,7	280,00
SMART PRO 300 H990	2605185	212,0	485,00

Slit buckets

description	code	weight Kg	price €
SMART PRO 100 PVC	2600960	0,4	20,00
SMART PRO 150 PVC	2600970	0,7	36,00
SMART PRO 200 PVC	2600980	0,7	32,00
SMART PRO 300 GALVANISED STEEL	2604400	3,2	131,00

Front/end closed cap in galvanised steel

description	code	weight Kg	price €
SMART PRO 100	2600740	0,4	10,60
SMART PRO 150	2600580	0,6	12,70
SMART PRO 200	2600590	0,7	14,40
SMART PRO 300	2601750	1,3	13,10

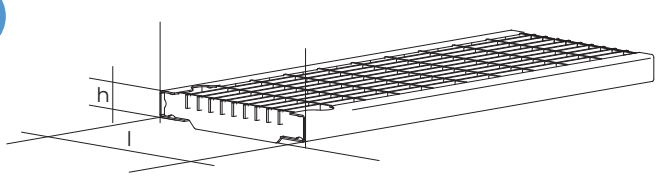
Front/end cap with outlet in galvanised steel

description	code	weight Kg	price €
SMART PRO 100 ø100	2600990	0,5	21,70
SMART PRO 150 ø150	2600600	0,7	29,60
SMART PRO 200 ø200	2600610	0,9	30,40
SMART PRO 300 ø200	2601280	1,2	33,90

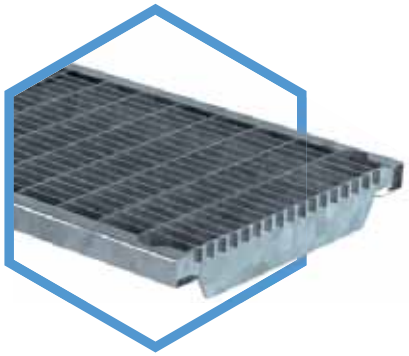
Channel with lenght 0,50 m

description	code	weight Kg	price €
SMART PRO 100 H185	4041026	20,0	31,00
SMART PRO 100 H90	4031020	11,0	26,00
SMART PRO 150 H210	4041520	26,0	36,00
SMART PRO 150 H95	4031520	13,0	29,00
SMART PRO 200 H275	4042020	41,0	45,00
SMART PRO 200 H150	4032020	19,0	35,00
SMART PRO 200 H100	4032020	19,0	34,00
SMART PRO 300 H335	4043020	65,0	54,00
SMART PRO 300 H150	4033020	27,0	40,00

SMART PRO gratings

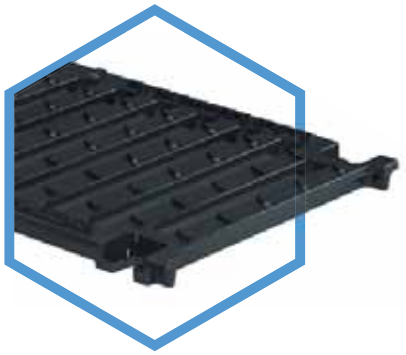


load **classes**



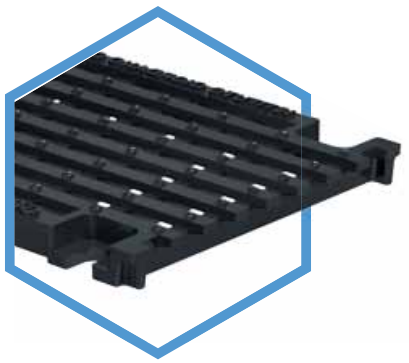
Galvanised anti-heel 30x10 steel grating

description	l (mm)	h (mm)	class
SMART PRO 100	150	20	B125
SMART PRO 150	200	20	B125
SMART PRO 200	250	20	B125
SMART PRO 300	350	20	B125



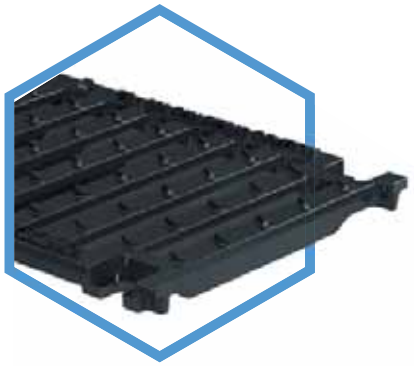
Ductile cast iron anti-heel slotted grating

description	l (mm)	h (mm)	class
SMART PRO 100	150	20	C250
SMART PRO 150	200	20	C250
SMART PRO 200	250	20	C250
SMART PRO 300	350	20	C250



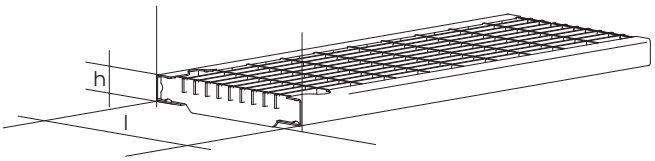
Ductile cast iron mesh grating type "URBE"

description	l (mm)	h (mm)	class
SMART PRO 100	150	20	C250
SMART PRO 150	200	20	C250



Ductile cast iron anti-heel slotted grating

description	l (mm)	h (mm)	class
SMART PRO 100	150	20	D400
SMART PRO 150	200	20	D400
SMART PRO 200	250	20	D400
SMART PRO 300	350	20	D400



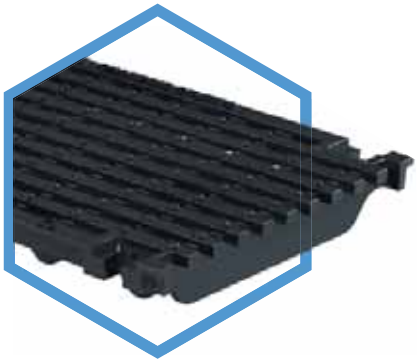
load **classes**

B125

C250

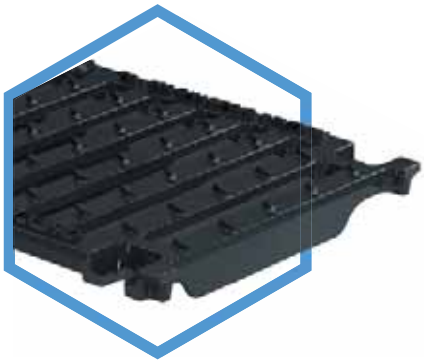
D400

E600



Ductile cast iron mesh grating type "URBE"

description	l (mm)	h (mm)	class
SMART PRO 100	150	20	D400
SMART PRO 150	200	20	D400
SMART PRO 200	250	20	D400



Ductile cast iron anti-heel slotted grating

description	l (mm)	h (mm)	class
SMART PRO 100	150	20	E600
SMART PRO 150	200	20	E600
SMART PRO 200	250	20	E600

SMART PRO installation

The Smart Pro drainage channel range is produced in high-grade vibrocompressed concrete. The series of gratings combinable with the channels is wide and available in different versions: anti-heel mesh grating in galvanised steel (B125), ductile iron mesh grating "Urbe" (C250 and D400) and ductile iron slotted grating (C250, D400 and E600)

load **classes**

B125

C250

D400

E600

NOTE

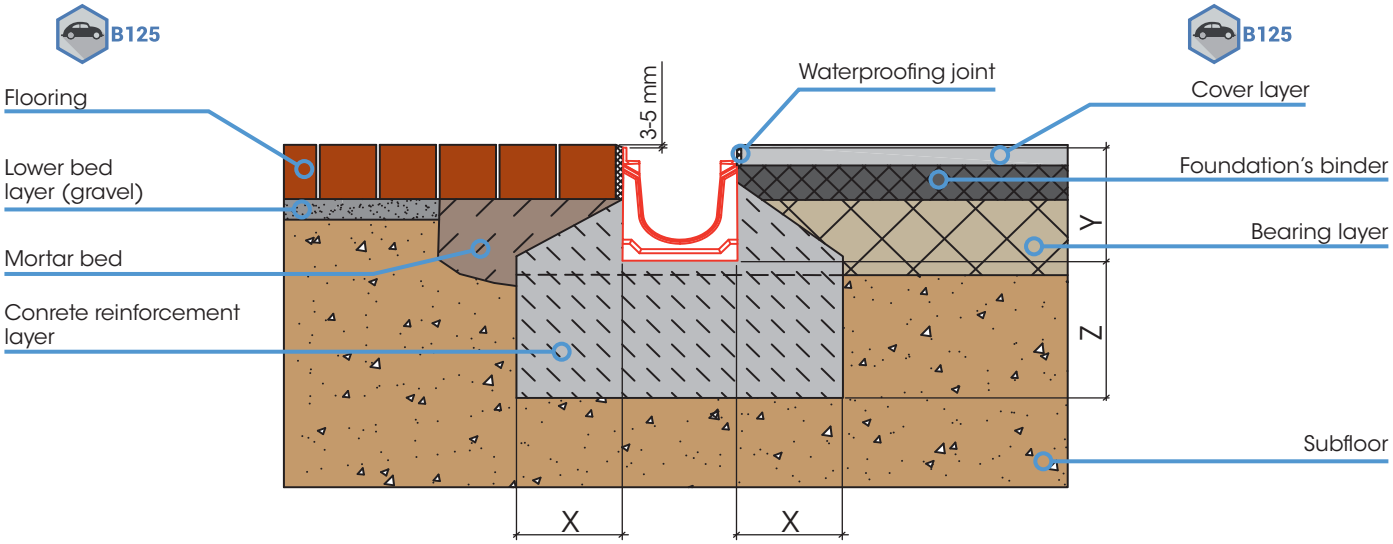
1. Installation instructions are provided for reference purposes; the customer (or designer) must ensure them are compatible with the nature of the soil.

2. The channel, in order to perform its drainage function and not to overload support steel edge profiles of huge efforts, it must be installed at least 3-5 mm below the level the surrounding paving (view Installation drawings).

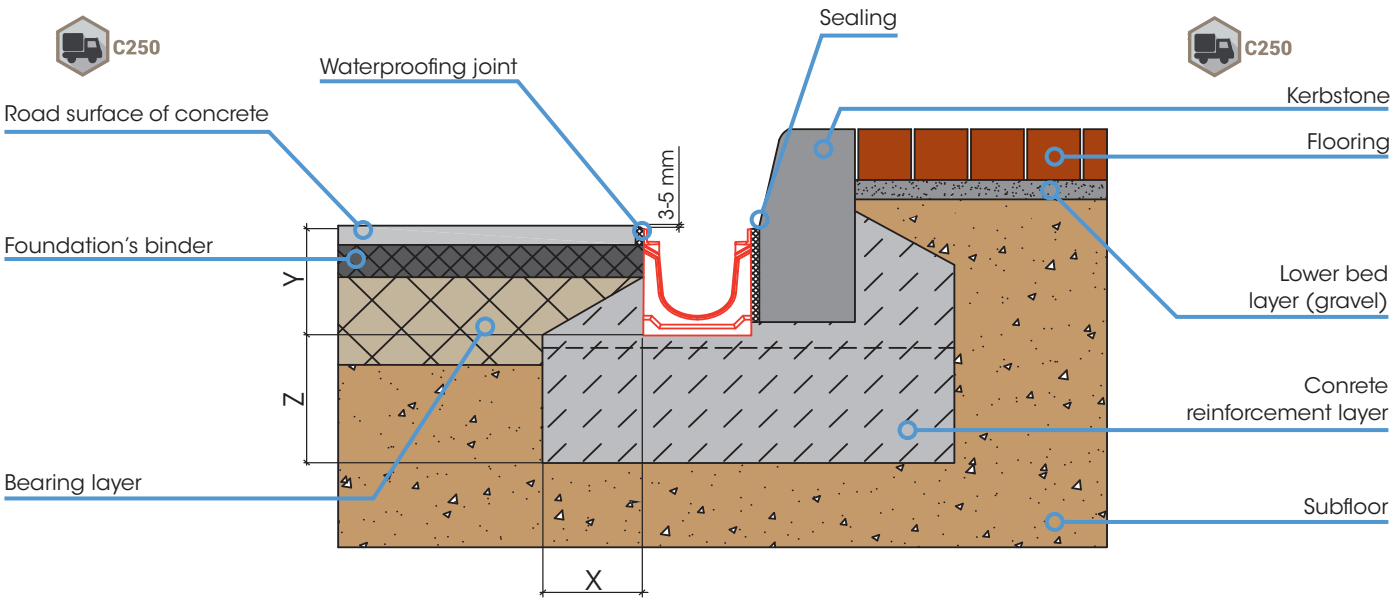
3. The channel is already provided with gratings already assembled: if during installation it should be necessary disassemble them, it is advisable to tighten screws in their respective threads without lock them just to protect the same threads from construction's site wastes.

4. In order to guarantee waterproofness between each component of the drainage line, it is possible to apply low modulus silicone-based sealant for concrete joints in designated points of channels on the side "male".

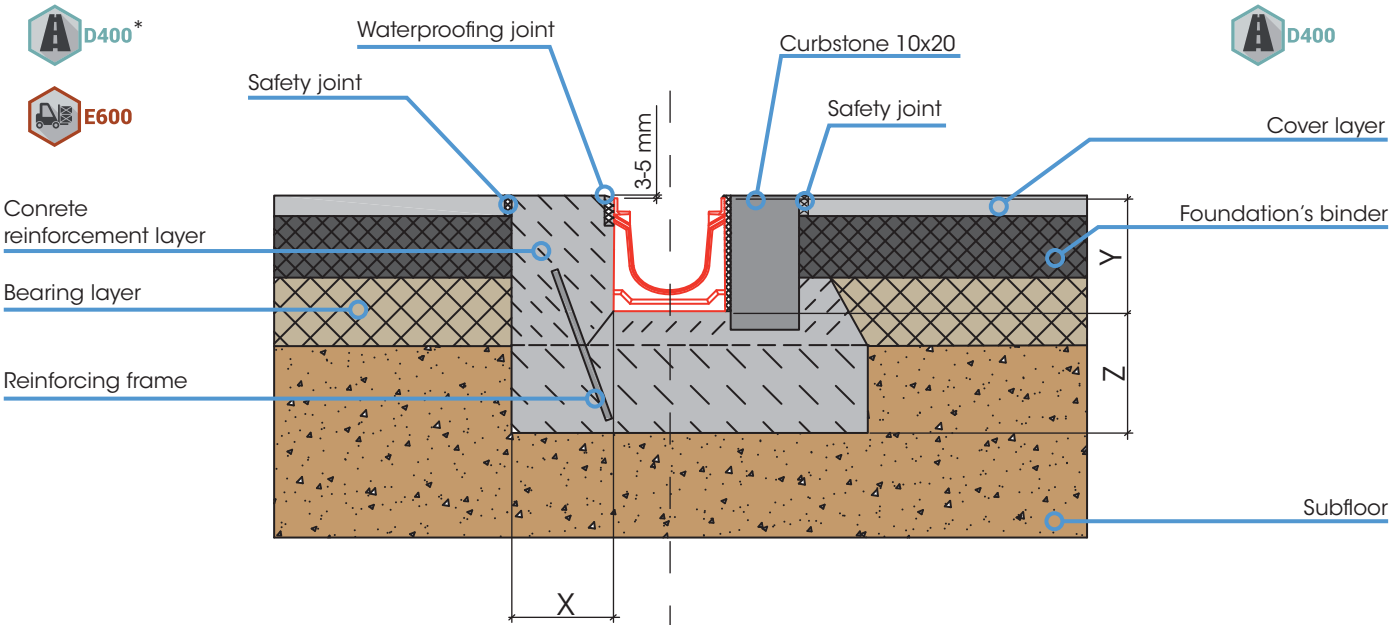
Flooring-Ashpalt



Ashpalt-Flooring/Kerb

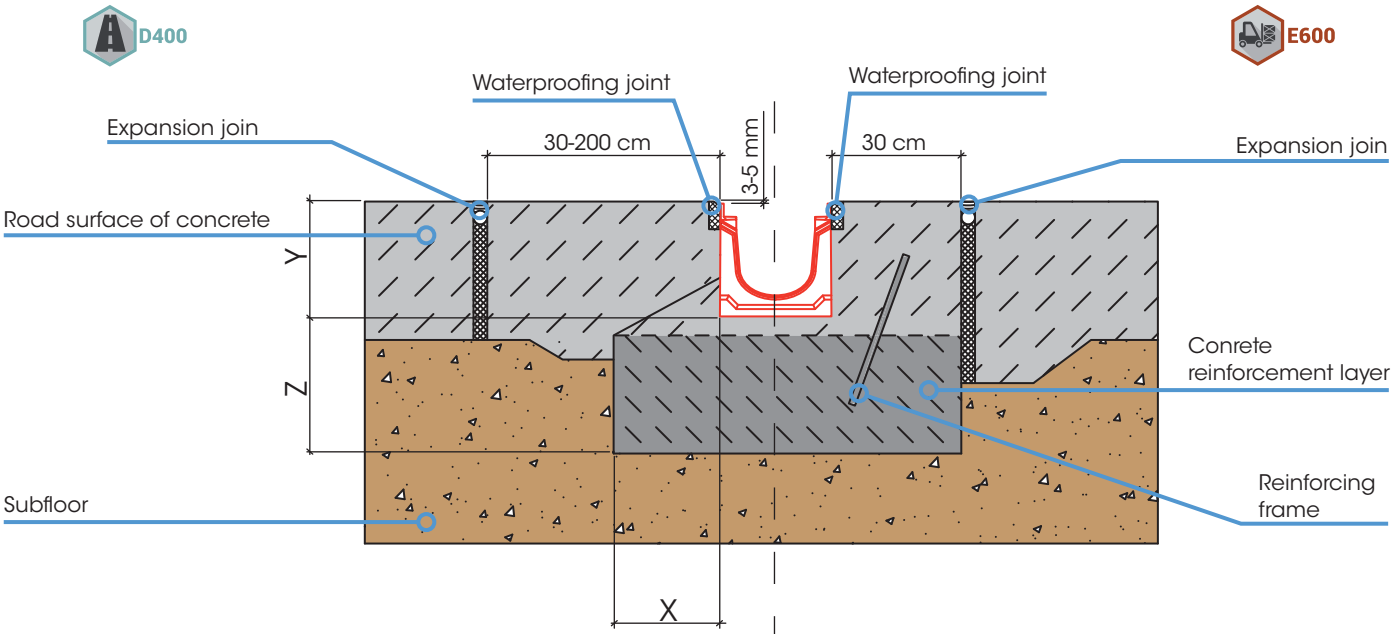


Ashpalt



*Suggested scheme in case of road crossing; However, it is strongly advised not to install in the presence of frequent transit areas of heavy vehicles and underpasses.

Conrete screed



Load class	**B125**	**C250**	**D400**	**E600**
Concrete compression strength class	C 20/25	C 20/25	C 25/30	C 25/30
X (width) cm	≥ 10	≥ 15	≥ 15	≥ 18
Y (height) cm	channel height - 5 mm	channel height - 5 mm	channel height	channel height
Z (thickness) cm	≥ 10	≥ 15	≥ 20	≥ 20
Reinforcing frame	not necessary	not necessary	*net ø8, mesh 20x20	net ø8, mesh 15x15

*Recommended in case of a road crossing

The designer is responsible for verifying the bearing capacity of the ground and, accordingly, to dertermine the size of X – Y – Z, the most specific concrete and reinforcing frame for the project. The choice of load class is designer's responsibility: when in doubt it is recommended to select an higher load class. In cases of concrete exposed to freeze-thaw cycles, use an exposure class XF4.

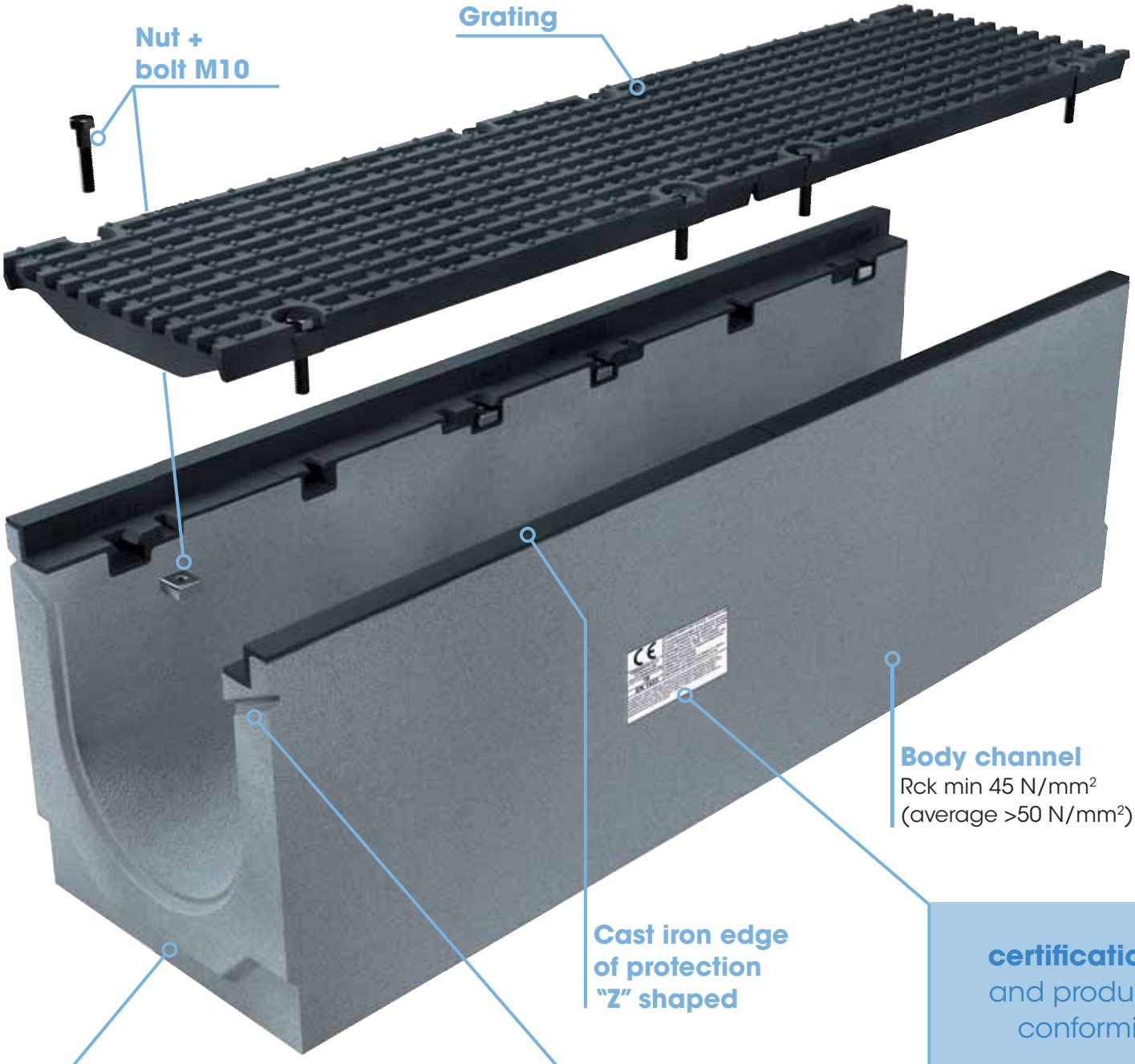
BIG47

BIG47 range channels have 47 mm wall thickness and are provided with **cast iron edge reinforcement profiles** . These profiles are perfectly anchored to the main concrete body, preventing any detachment.

BIG47 profiles are made of materials **resistant to corrosion** caused by contact with the surrounding environment, giving the product **compactness** and **protection against wear** caused by traffic.

All channels have a **male-female coupling system** to provide improved stability during installation and a dedicated groove for perfect j**oint sealing**.

BIG47 drainage channel range is produced in high-grade vibro-compressed concrete ensuring high resistance to **compression** (minimum strength class C35/45 - f_{ck} = 35 N/mm² and **R_{ck} = 45 N/mm²**), resistant to **frost and de-icing salts** (marking "+R" for European standard EN 1433) and **attacks caused to atmospheric agents** ("W" marking for European standard EN 1433)



certification and product conformity

The BIG47 range supports, according to Standard EN 1433, 3 different load classes: D400, E600 and F900. The series of gratings combinable with the channels is wide and available in different versions: ductile iron slotted grating with width of less than 20 cm, legally suitable for the transit of people with limited mobility (D400 and F900) and ductile iron mesh gratings (E600)

BIG47 channels are **provided with assembled gratings, fixed with a system of M10 nuts and bolts** (unscrewing bolt).

In addition to the BIG47 range, also available are lower drain outlets, sump units with plastic slit buckets and front/end cap in galvanised steel.

The BIG47 **range is certified** according to European standard EN 1433 and bears the mandatory CE marking.

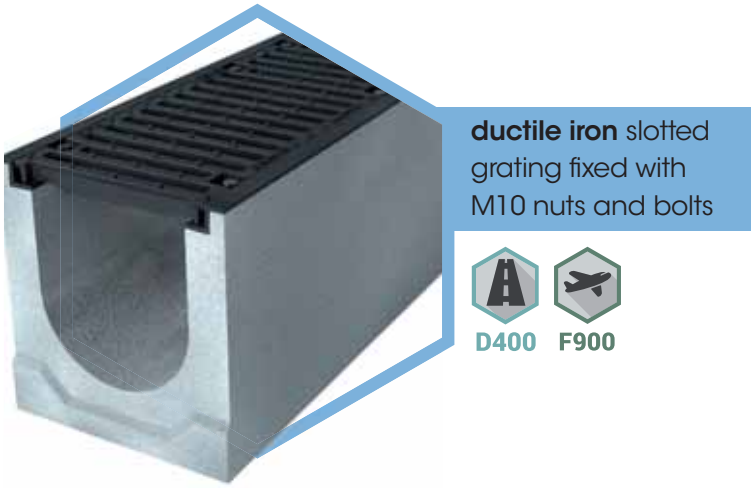
load **classes**

channels*

Nominal width **100** – heights 210, 285
Nominal width **150** – heights 240, 290
Nominal width **200** – heights 320, 395
Nominal width **300** – heights 395, 615
Nominal width **400** – height 495
Nominal width **500** – height 625
*on demand other heights are available

gratings

- Ductile iron load class D400, E600 and F900



ductile iron slotted grating fixed with M10 nuts and bolts

ductile iron mesh grating fixed with M10 nuts and bolts

Application fields

INDUSTRIAL SITES
car parks (multilevel, public and shopping areas), industrial areas, loading bays

ROAD NETWORKS
roads and highways, underpasses, intermodal terminals, harbor quays

MAJOR INFRASTRUCTURES
airports, major projects

CE

CERTIFICAZIONE PRODOTTO
ISTITUTO GIORDANO
CERTIFICATO N. 015/CP

Product certification EN1433 granted by a third party institution with accreditation ACCREDIA Istituto Giordano SpA Bellaria RN

GREENPIPE
THE LEADING EDGE OF SURFACE WATER COLLECTING SYSTEMS

BIG47 100

The BIG47 drainage channel range is produced in high-grade vibrocompressed concrete.
The series of gratings combinable with the channels is wide and available in different versions: ductile iron slotted grating with slots with width less than 20 cm (D400 and F900) and ductile iron mesh gratings (E600)

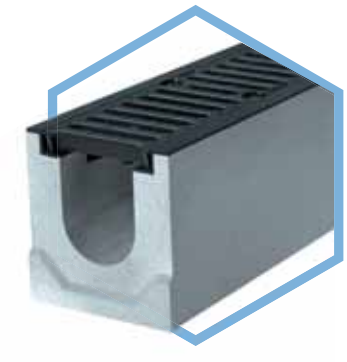
load **classes**

D400

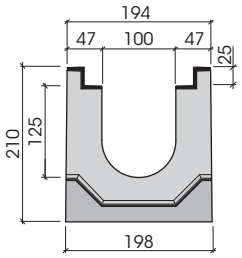
E600

F900

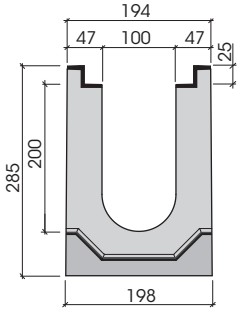
CE
EN1433



BIG47 100 H210



BIG47 100 H285



channel L = 1 m **+ 2 ductile cast iron gratings D400** **+ 4 fastening screws**			price €
BIG47 100 H**210**	4710214		**156,00**
BIG47 100 H**285**	4710284		**164,00**

description		code	weight Kg	piece/pallet	
CHANNEL BIG47 100	H210	4716501	68,0	20	108,40
CHANNEL BIG47 100	H285	4716504	83,0	15	116,40
GRATING L=0,5m		4623002	4,0		22,60
FASTENING SCREW		2600100			0,60

D400

channel L = 1 m **+ 2 ductile cast iron gratings E600** **+ 8 fastening screws**			price €
BIG47 100 H**210**	4710216		**160,00**
BIG47 100 H**285**	4710286		**168,00**

description		code	weight Kg	piece/pallet	
CHANNEL BIG47 100	H210	4716501	68,0	20	108,40
CHANNEL BIG47 100	H285	4716504	83,0	15	116,40
GRATING L=0,5m		4622703	4,3		23,40
FASTENING SCREW		2600100			0,60

E600

channel L = 1 m **+ 2 ductile cast iron gratings F900*** **+ 8 fastening screws**			price €
BIG47 100 H**210**	4710219		**178,00**
BIG47 100 H**285**	4710289		**186,00**

description		code	weight Kg	piece/pallet	
CHANNEL BIG47 100	H210	4716501	68,0	20	108,40
CHANNEL BIG47 100	H285	4716504	83,0	15	116,40
GRATING L=0,5m		4622002	5,4		32,40
FASTENING SCREW		2600100			0,60

F900

*on demand ductile cast iron cover F900

BIG47 150

The BIG47 drainage channel range is produced in high-grade vibrocompressed concrete.
The series of gratings combinable with the channels is wide and available in different versions: ductile iron slotted grating with slots with width less than 20 cm (D400 and F900) and ductile iron mesh gratings (E600)

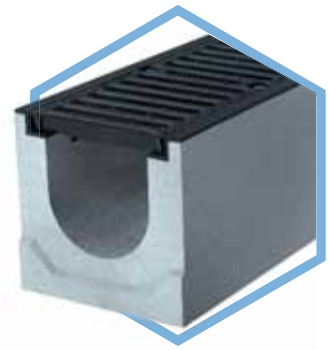
load **classes**

D400

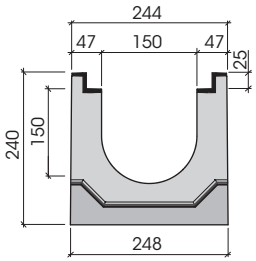
E600

F900

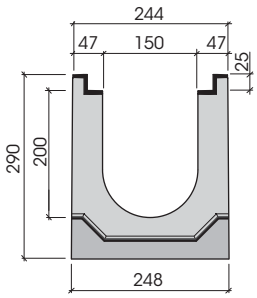
CE
EN1433



BIG47 150 H240



BIG47 150 H290



channel L = 1 m
+ 2 ductile cast iron gratings D400
+ 4 fastening screws

	price €
BIG47 150 H**240** 4715244	**188,00**
BIG47 150 H**290** 4715294	**194,00**

D400

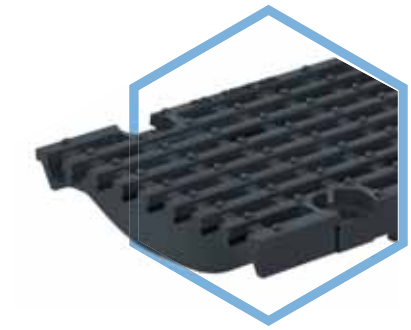
description		code	weight Kg	piece/pallet	
CHANNEL BIG47 150	H240	4716600	86,0	16	120,40
CHANNEL BIG47 150	H290	4716602	96,0	16	126,40
GRATING L=0,5m		4622038	6,0		32,60
FASTENING SCREW		2600100			0,60

channel L = 1 m
+ 2 ductile cast iron gratings E600
+ 8 fastening screws

	price €
BIG47 150 H**240** 4715246	**212,00**
BIG47 150 H**290** 4715296	**218,00**

E600

description		code	weight Kg	piece/pallet	
CHANNEL BIG47 150	H240	4716600	86,0	16	120,40
CHANNEL BIG47 150	H290	4716602	96,0	16	126,40
GRATING L=0,5m		4622712	7,3		43,40
FASTENING SCREW		2600100			0,60

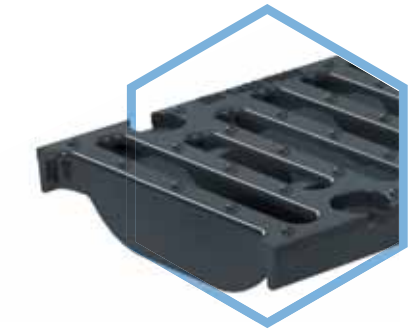


channel L = 1 m
+ 2 ductile cast iron gratings F900*
+ 8 fastening screws

	price €
BIG47 150 H**240** 4715249	**246,00**
BIG47 150 H**290** 4715299	**252,00**

F900

description		code	weight Kg	piece/pallet	
CHANNEL BIG47 150	H240	4716600	86,0	16	120,40
CHANNEL BIG47 150	H290	4716602	96,0	16	126,40
GRATING L=0,5m		4622005	11,4		60,40
FASTENING SCREW		2600100			0,60



*on demand ductile cast iron cover F900

BIG47 200

The BIG47 drainage channel range is produced in high-grade vibrocompressed concrete.
The series of gratings combinable with the channels is wide and available in different versions: ductile iron slotted grating with slots with width less than 20 cm (D400 and F900) and ductile iron mesh gratings (E600)

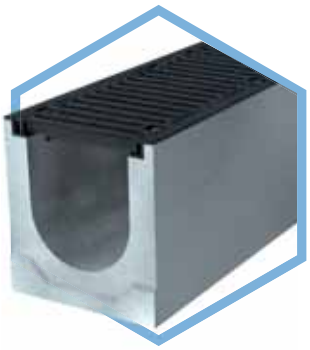
load **classes**

D400

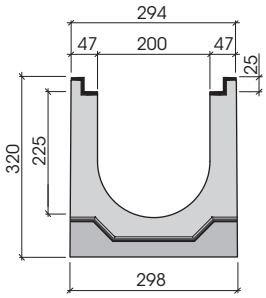
E600

F900

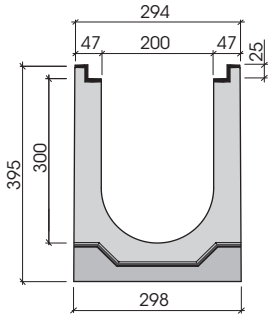
CE
EN1433



BIG47 200 H320



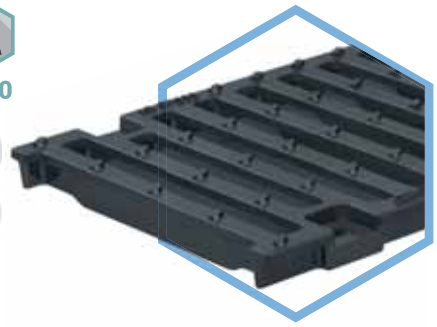
BIG47 200 H395



channel L = 1 m **+ 2 ductile cast iron gratings D400** **+ 8 fastening screws**			price €
BIG47 200 H**320**	4720324		**207,00**
BIG47 200 H**395**	4720394		**217,00**

description		code	weight Kg	piece/pallet	
CHANNEL BIG47 200	H320	4716701	119,0	8	147,00
CHANNEL BIG47 200	H395	4716727	134,0	8	157,00
GRATING L=0,5m		4622039	8,3		27,60
FASTENING SCREW		2600100			0,60

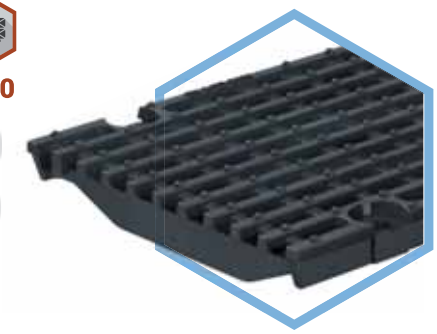
D400



channel L = 1 m **+ 2 ductile cast iron gratings E600** **+ 8 fastening screws**			price €
BIG47 200 H**320**	4720326		**251,00**
BIG47 200 H**395**	4720396		**261,00**

description		code	weight Kg	piece/pallet	
CHANNEL BIG47 200	H320	4716701	119,0	8	147,00
CHANNEL BIG47 200	H395	4716727	134,0	8	157,00
GRATING L=0,5m		4622722	9,1		49,60
FASTENING SCREW		2600100			0,60

E600



channel L = 1 m **+ 2 ductile cast iron gratings F900** **+ 8 fastening screws**			price €
BIG47 200 H**320**	4720329		**278,00**
BIG47 200 H**395**	4720399		**288,00**

description		code	weight Kg	piece/pallet	
CHANNEL BIG47 200	H320	4716701	119,0	8	147,00
CHANNEL BIG47 200	H395	4716727	134,0	8	157,00
GRATING L=0,5m		4622008	11,1		63,10
FASTENING SCREW		2600100			0,60

F900

BIG47 300

The BIG47 drainage channel range is produced in high-grade vibrocompressed concrete.
The series of gratings combinable with the channels is wide and available in different versions: ductile iron slotted grating with slots with width less than 20 cm (D400 and F900) and ductile iron mesh gratings (E600)

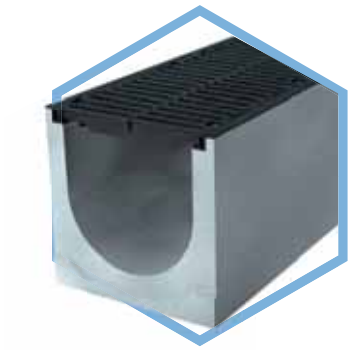
load **classes**

D400

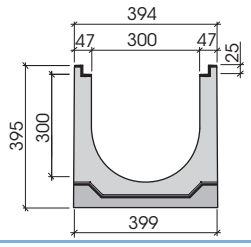
E600

F900

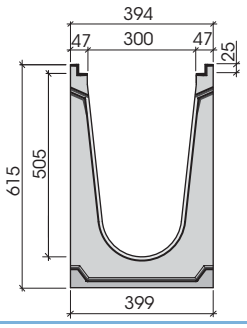
CE
EN1433



BIG47 300 H395



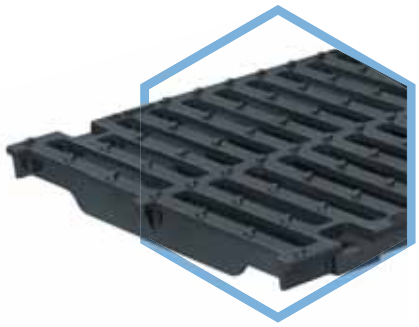
BIG47 300 H615



channel L = 1 m **+ 2 ductile cast iron gratings D400** **+ 8 fastening screws**			price €
BIG47 300 H**395**	4730394		**275,00**
BIG47 300 H**615**	4730614		**380,00**

description		code	weight Kg	piece/pallet	
CHANNEL BIG47 300	H395	4716800	169,0	6	172,80
CHANNEL BIG47 300	H615	4716831	256,0	3	277,80
GRATING L=0,5m		4622043	15,2		48,70
FASTENING SCREW		2600100			0,60

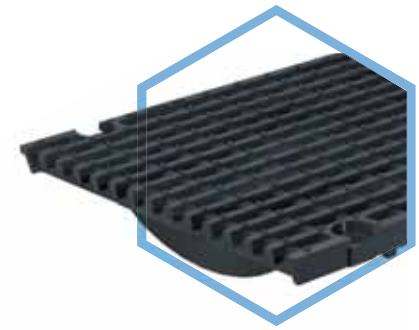
D400



channel L = 1 m **+ 2 ductile cast iron gratings E600** **+ 8 fastening screws**			price €
BIG47 300 H**395**	4730396		**344,00**
BIG47 300 H**615**	4730616		**449,00**

description		code	weight Kg	piece/pallet	
CHANNEL BIG47 300	H395	4716800	169,0	6	172,80
CHANNEL BIG47 300	H615	4716831	256,0	3	277,80
GRATING L=0,5m		4622732	15,7		83,20
FASTENING SCREW		2600100			0,60

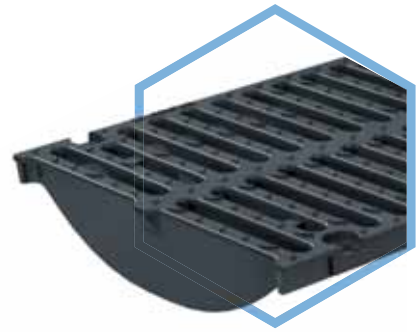
E600



channel L = 1 m **+ 2 ductile cast iron gratings F900*** **+ 8 fastening screws**			price €
BIG47 300 H**395**	4730399		**468,00**
BIG47 300 H**615**	4730619		**573,00**

description		code	weight Kg	piece/pallet	
CHANNEL BIG47 300	H395	4716800	169,0	6	172,80
CHANNEL BIG47 300	H615	4716831	256,0	3	277,80
GRATING L=0,5m		4622016	30,9		145,20
FASTENING SCREW		2600100			0,60

F900



*on demand ductile cast iron cover F900

BIG47 400

The BIG47 drainage channel range is produced in high-grade vibrocompressed concrete.
The series of gratings combinable with the channels is wide and available in different versions: ductile iron slotted grating with slots with width less than 20 cm (D400 and F900) and ductile iron mesh gratings (E600)

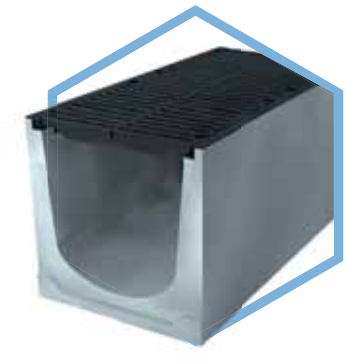
load **classes**

D400

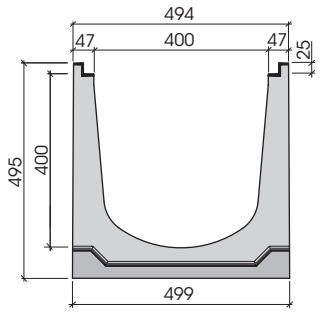
E600

F900

CE
EN1433

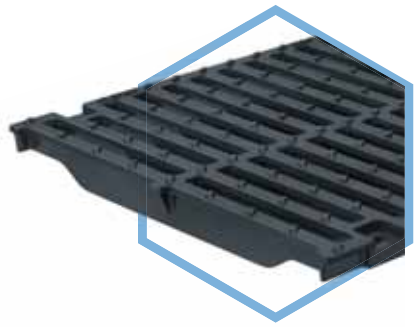


BIG47 400 H**495**



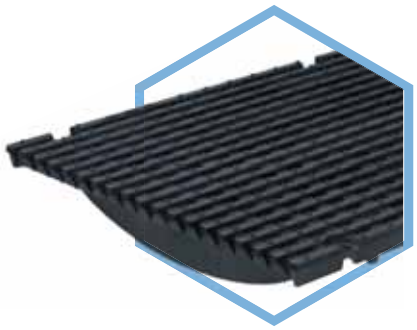
channel L = 1 m **+ 2 ductile cast iron gratings D400 + 8 fastening screws**		BIG47 400 H**495**	4740494	price € **344,00**	
description		code	weight Kg	piece/pallet	
CHANNEL BIG47 400	H495	4716850	225,0	4	209,40
GRATING L=0,5m		4622041	20,6		64,90
FASTENING SCREW		2600100			0,60

D400



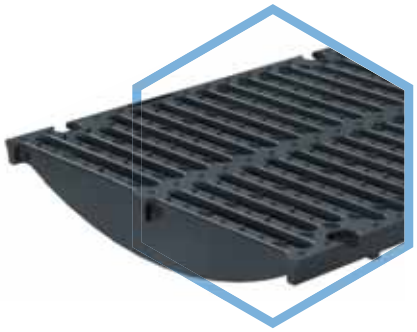
channel L = 1 m **+ 2 ductile cast iron gratings E600 + 8 fastening screws**		BIG47 400 H**495**	4740496	price € **547,00**	
description		code	weight Kg	piece/pallet	
CHANNEL BIG47 400	H495	4716850	225,0	4	209,40
GRATING L=0,5m		4622045	27		166,40
FASTENING SCREW		2600100			0,60

E600



channel L = 1 m **+ 2 ductile cast iron gratings F900 + 8 fastening screws**		BIG47 400 H**495**	4740499	price € **701,00**	
description		code	weight Kg	piece/pallet	
CHANNEL BIG47 400	H495	4716850	225,0	4	209,40
GRATING L=0,5m		4622019	40,6		243,40
FASTENING SCREW		2600100			0,60

F900



BIG47 500

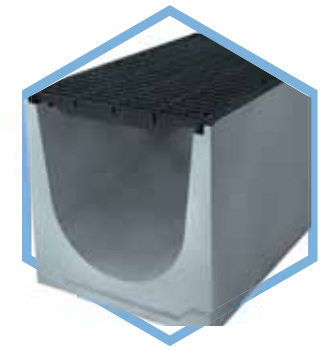
The BIG47 drainage channel range is produced in high-grade vibrocompressed concrete.
The series of gratings combinable with the channels is wide and available in different versions: ductile iron slotted grating with slots with width less than 20 cm (D400 and F900) and ductile iron mesh gratings (E600)

load **classes**

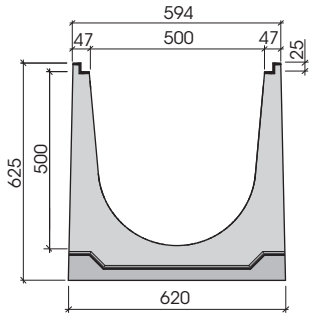
D400

E600

CE
EN1433



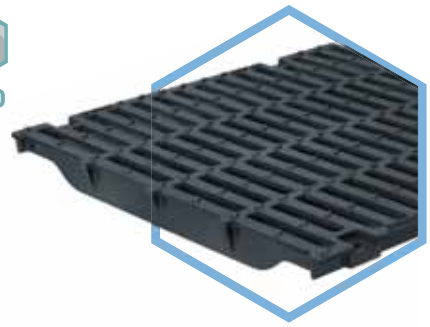
BIG47 500 H**625**



channel L = 1 m **+ 2 ductile cast iron gratings D400 + 8 fastening screws**		BIG47 500 H**625**	4750624	price € **542,00**

description		code	weight Kg	piece/pallet	
CHANNEL BIG47 500	H625	4716901	360,0	2	348,60
GRATING L=0,5m		4622042	30,0		94,30
FASTENING SCREW		2600100			0,60

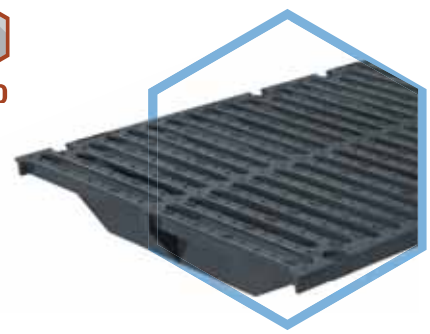
D400



channel L = 1 m* **+ 2 ductile cast iron gratings E600 + 8 fastening screws**		BIG47 500 H**625**	4750626	price € **693,00**

description		code	weight Kg	piece/pallet	
CHANNEL BIG47 500	H625	4716901	360,0	2	348,60
GRATING L=0,5m		4622015	31,0		169,80
FASTENING SCREW		2600100			0,60

E600



*on demand channel L = 2,5 m

BIG47 accessories

load classes
D400
E600
F900

Sump unit

description	code	weight Kg	price €
BIG47 100 H510	2601740	67,0	172,20
BIG47 150 H690	2601160	95,0	193,50
BIG47 200 H740	2601170	105,0	253,20
BIG47 300 H990	2622198	214,0	428,70
BIG47 400 H990	2622194	200,0	428,00

Slit buckets

description	code	weight Kg	price €
BIG47 100 PVC	2600960	0,4	19,50
BIG47 150 PVC	2600970	0,7	35,50
BIG47 200 PVC	2600980	0,7	31,20
BIG47 300 GALVANISED STEEL	2622213	3,2	130,90
BIG47 400 GALVANISED STEEL	2622214	3,6	132,30

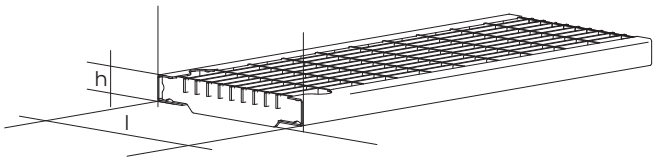
Front/end closed cap in galvanised steel

description	code	weight Kg	price €
BIG47 100	2600740	0,4	10,60
BIG47 150	2600580	0,6	12,70
BIG47 200	2600590	0,7	14,40
BIG47 300	2601750	1,3	13,10
BIG47 400	2601740	2,1	17,00
BIG47 500	2601760	3,1	33,50

Front/end cap with outlet in galvanised steel

description	code	weight Kg	price €
BIG47 100 ø100	2600990	0,5	21,70
BIG47 150 ø150	2600600	0,7	29,60
BIG47 200 ø200	2600610	0,9	30,40
BIG47 300 ø200	2601280	1,2	33,90
BIG47 400 ø200	2601290	2,1	38,50
BIG47 500 ø200	2622271	3,1	41,50

BIG47 gratings

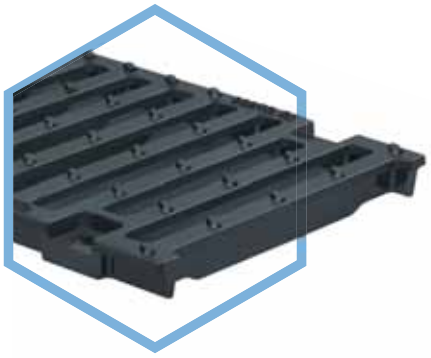


load **classes**

D400

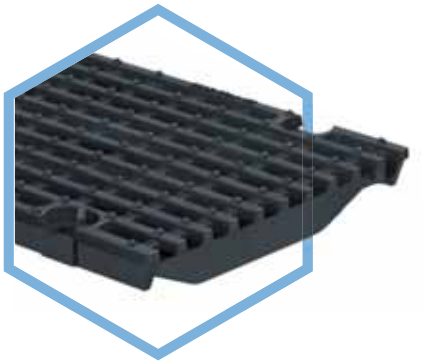
E600

F900



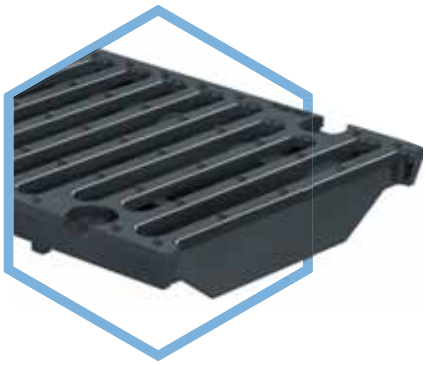
Ductile cast iron anti-heel slotted grating

description	l (mm)	h (mm)	class
BIG47 100	147	25	D400
BIG47 150	197	25	D400
BIG47 200	247	25	D400
BIG47 300	347	25	D400
BIG47 400	447	25	D400
BIG47 500	547	25	D400



Ductile cast iron anti-heel mesh grating

description	l (mm)	h (mm)	class
BIG47 100	147	25	E600
BIG47 150	197	25	E600
BIG47 200	247	25	E600
BIG47 300	347	25	E600
BIG47 400	447	25	E600
BIG47 500	547	25	E600



Ductile cast iron anti-heel slotted grating

description	l (mm)	h (mm)	class
BIG47 100	147	25	F900
BIG47 150	197	25	F900
BIG47 200	247	25	F900
BIG47 300	347	25	F900
BIG47 400	447	25	F900

BIG47 installation

The BIG47 drainage channel range is produced in high-grade vibrocompressed concrete. The series of gratings combinable with the channels is wide and available in different versions: ductile iron slotted grating with slots with width less than 20 cm (D400 and F900) and ductile iron mesh gratings (E600)

load **classes**

D400

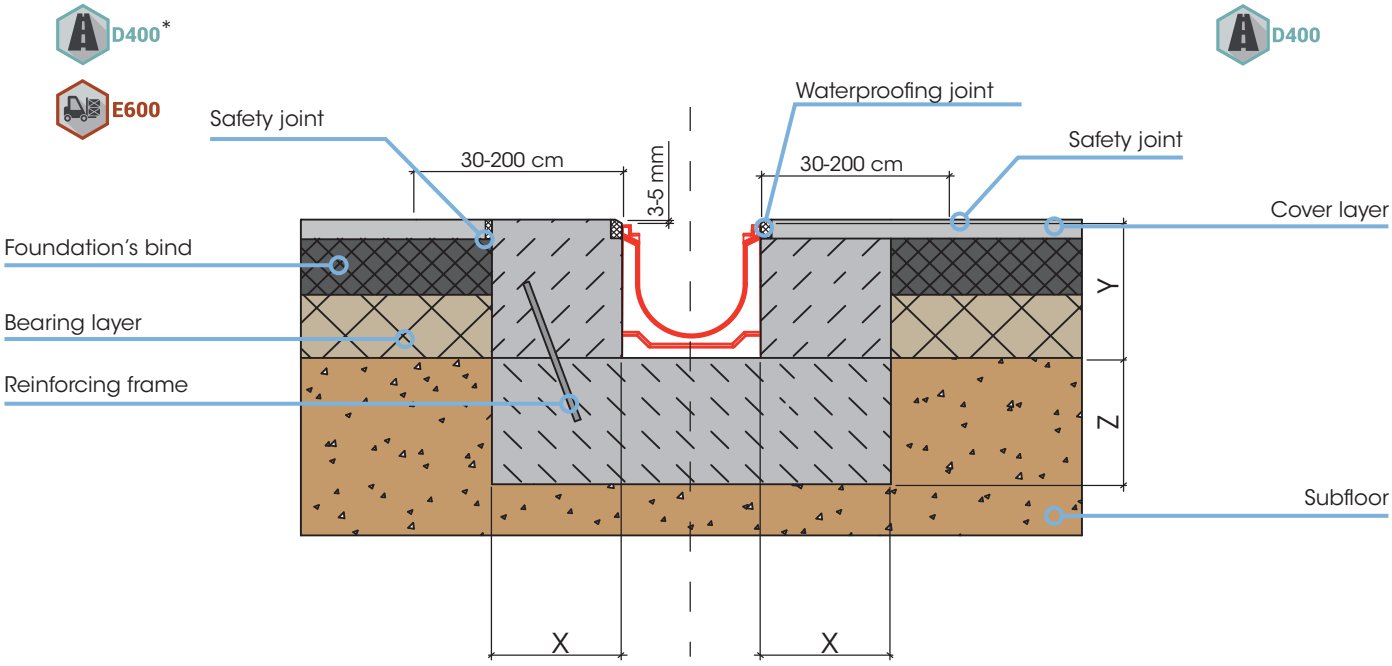
E600

F900

NOTE

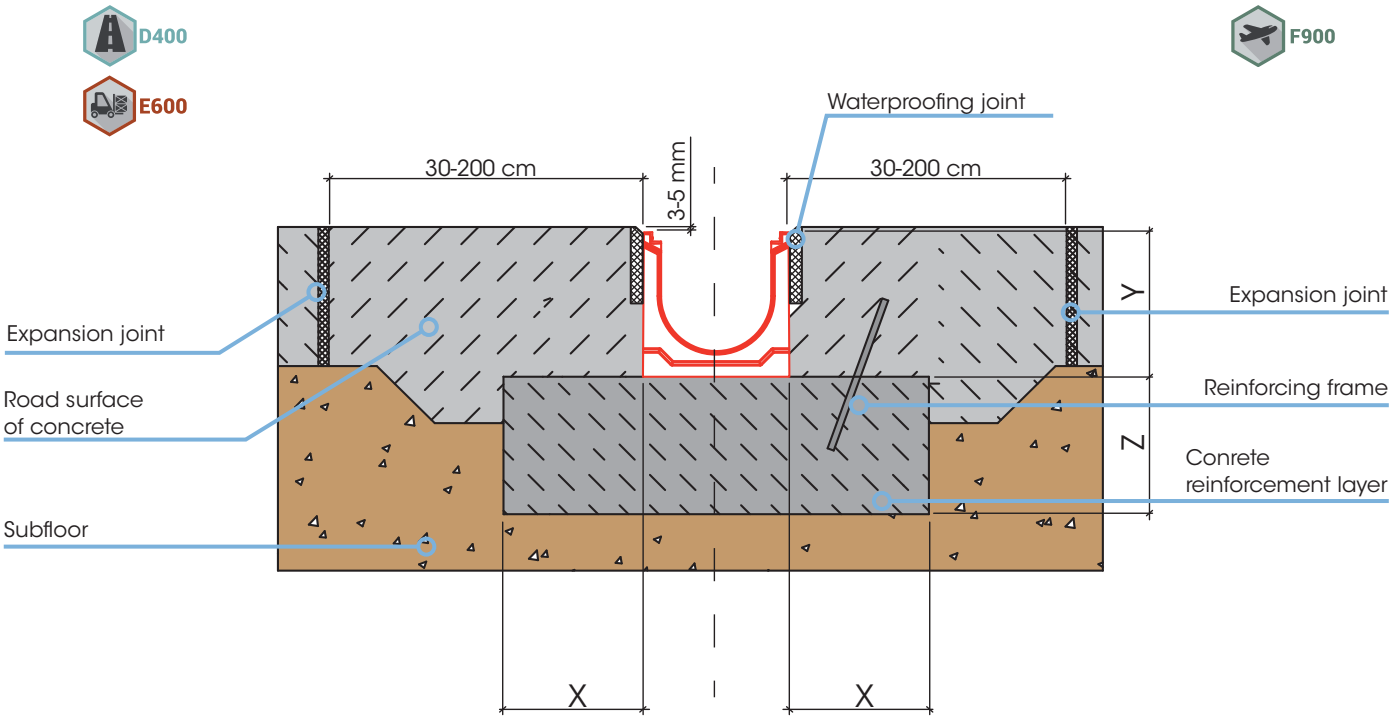
1. Installation instructions are provided for reference purposes; the customer (or designer) must ensure them are compatible with the nature of the soil.
2. The channel, in order to perform its drainage function and not to overload support cast iron edge profiles of huge efforts, it must be installed at least 3-5 mm below the level the surrounding paving (view Installation drawings).
3. The channel is already provided with gratings already assembled: if during installation it should be necessary disassemble them, it is advisable to tighten screws in their respective threads without lock them just to protect the same threads from construction's site wastes.
4. In order to guarantee waterproofness between each component of the drainage line, it is possible to apply low modulus silicone-based sealant for concrete joints in designated points of channels on the side "male".

Ashpalt



*Suggested scheme in case of road crossing; However, it is strongly advised not to install in the presence of frequent transit areas of heavy vehicles and underpasses.

Conrete screed



	D400	E600	F900
Load class			
Concrete compression strength class	C 25/30	C 25/30	C 30/35
X (width) cm	≥ 15	≥ 18	≥ 25
Y (height) cm	channel height	channel height	channel height
Z (thickness) cm	≥ 20	≥ 20	≥ 25
Reinforcing frame	*net ø8, mesh 20x20	*net ø8, mesh 15x15	specific design

*Recommended in case of a road crossing

The designer is responsible for verifying the bearing capacity of the ground and, accordingly, to dertermine the size of X – Y – Z, the most specific concrete and reinforcing frame for the project. The choice of load class is designer's responsibility: when in doubt it is recommended to select an higher load class. In cases of concrete exposed to freeze-thaw cycles, use an exposure class XF4.

SELF-SUPPORTING CHANNELS

The **high levels of quality** during the **production phase** (selected raw materials, regular checks of the process, use of clean and well-kept molds), periodic checks on finished manufactured products (EN1433), makes GREENPIPE self-supporting channels range a very **high quality product**.

All gratings in this range are suitable for the transit of people with reduced mobility.

0% harmful substances

GREENPIPE channels are **free of artificial resins and solvents**. They are therefore harmless for the environment and for workers during the production phase.

High-performance materials

The reinforced concrete C35/45 guarantees maximum resistance to extreme loads and to the dynamic stresses of the environment where the channels are installed . The frames, made in galvanised steel or ductile cast iron, give durability to manufactured parts.
The gratings, made of ductile cast iron and 50 cm long, are fixed perfectly to the frames with 4 M12 anti-loosening bolts (or M14 on request) and are designed to ensure resistance according to own load class and provide perfect drainage.

Certified quality

The attention of **GREENPIPE** to **compliance with the European standards** is extremely high.
Every product made by GREENPIPE complies with current European standards, both voluntary and mandatory.
An accredited and independent institution certifies the quality of GREENPIPE.

Customized solutions

On demand, it is possible to make **customized channels** (height, length and wall thickness) and to create special parts and customized outputs.

high resistance, indestructibility and large drainage capacity

these are the sensations perceived by looking at a GREENPIPE self-supporting channel

Type I

Self-supporting channels require **no further support** to accommodate the vertical and horizontal loads in service.

Maintenance and fast installation

The channels can be handled safely despite their size and heavy weight. BIG I and STRONG are ready to install and therefore do not require any additional support to withstand vertical and horizontal loads. This way **installation is fast and economical.**

Resistant to heat, frost and UV rays

The channels, made with high quality concrete, react to temperature changes in the same way as the concrete side support and are **non-flammable**. Almost comparable to a single continuous construction, they facilitate a long life drainage system. GREENPIPE channels are **resistant to weathering** (W marking) and to the presence of stagnant water containing **de-icing salts** (+R marking) in accordance with European standard EN 1433.

Smooth and precise surfaces

GREENPIPE self-supporting channel production technology allows making accurate and well-shaped articles, without production residues. Manufactured products have good finishes, without imperfections and smooth surfaces allowing a **perfect maximum flow rate**.

BIG I

BIG I range channels have 60 mm wall thickness and are provided with cast iron edge reinforcement profiles. These profiles are perfectly anchored to the main concrete body, preventing any detachment.
BIG I profiles are made of materials resistant to corrosion caused by contact with the surrounding environment, and completely cover and protect edges, giving the product compactness, protection against wear caused by traffic and high stability to fixed gratings.

All channels have a male-female coupling system to provide improved stability during installation and extremly smooth inside walls for better water flow.

The **BIG I** drainage channel range is produced in high-grade pre-cast reinforced concrete ensuring high resistance to **compression** (minimum strength class C35/45 - f_{ck} = 35 N/mm² and **R_{ck} = 45 N/mm²**), resistant to **frost and de-icing salts** ("+R" marking for European standard EN 1433) and attacks caused by atmospheric agents ("W" marking for European standard EN 1433)

certification and product conformity

The BIG I range is **certified** according to European standard EN 1433 up to load class **D400/type I** and bears the mandatory CE marking.

BIG I channels are provided with pre-assembled gratings and fixed with M12 self-locking screws and are ideal for applications in areas with heavy and intense traffic, like roads, highways and underpasses.

The BIG I range consists of channels with two internal widths (CO = 200 and CO = 300), each of them with different heights to provide the best solution for all needs. In addition to standard models. The BIG I range includes the channel **BIG I DRAIN 200** suitable for draining pavements and channel **BIG I/S 200**, assembled with a narrower grating, recommended for less intense traffic zones. BIG I gratings have load class D400 and are available with mesh pattern version (CO = 200) or with slotted pattern version (CO = 300) made in ductile iron.

All the channels of the BIG I range have a standard length of **1 meter, but on request can also be made with length of 2 or 3 meters** . On request BIG I channels can be made with preinstalled lower drain outlets.

load **classes**

D400

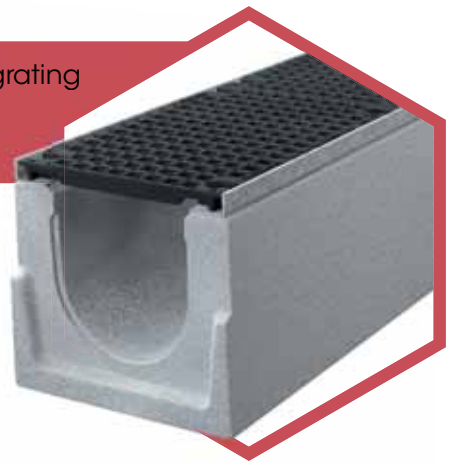
channels

Nominal width **200** – heights 320, 400, 450
Nominal width **300** – heights 435, 605

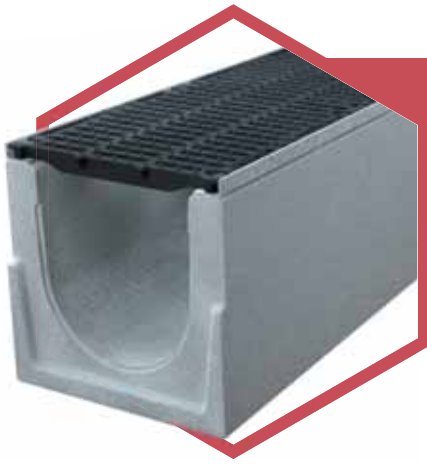
gratings

- Mesh ductile iron load class D400
- Slotted ductile iron load class D400

ductile iron mesh grating (CO=200) fixed with M12 screws



D400



ductile iron slotted grating (CO=300) fixed with M12 screws

D400

Application fields

ROAD NETWORKS
roads and highways, underpasses, intermodal terminals, harbor quays

CE

CERTIFICAZIONE PRODOTTO
ISTITUTO GIORDANO
CERTIFICATO N. 015/CP

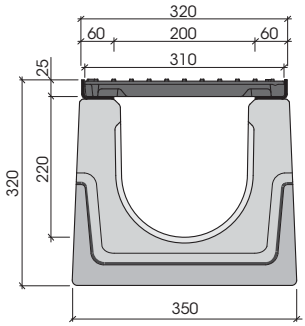
Product certification
EN1433 granted
by a third party institution with
accreditation ACCREDIA
Istituto Giordano SpA Bellaria RN

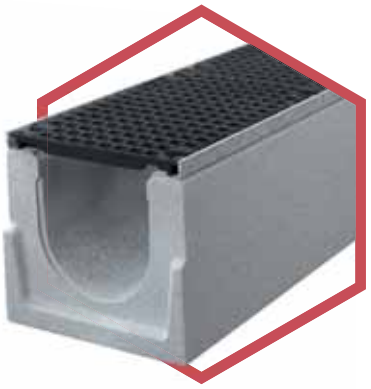
GREENPIPE
THE LEADING EDGE OF SURFACE WATER COLLECTING SYSTEMS

BIG I 200 H320
with ductile cast iron mesh grating

load **classes**
D400

CE
EN1433



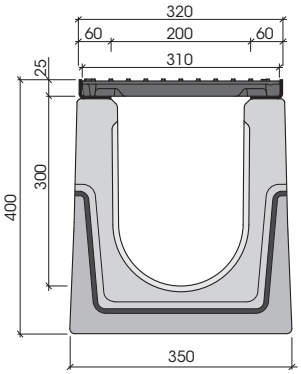


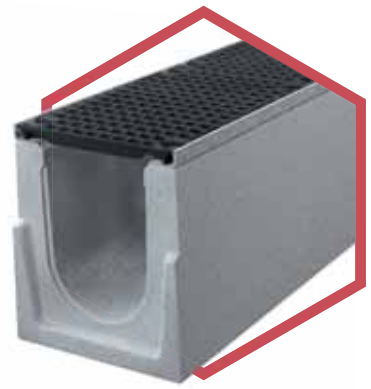
description	lenght mm	external width mm	internal width mm	height mm	channel + gratings weight Kg	drainage surface cm²	channel section with grating cm²
BIG I 200 H320	1000	320	200	320	150	1352	380
BIG I 200 H320	2000	320	200	320	300	2704	380
BIG I 200 H320	3000	320	200	320	450	4056	380

BIG I 200 H400
with ductile cast iron mesh grating

load **classes**
D400

CE
EN1433



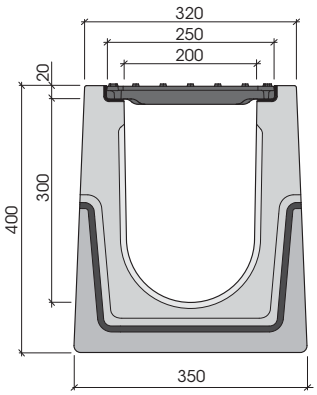


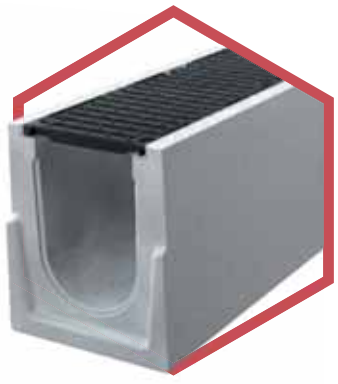
description	lenght mm	external width mm	internal width mm	height mm	channel + gratings weight Kg	drainage surface cm²	channel section with grating cm²
BIG I 200 H400	1000	320	200	400	200	1352	500
BIG I 200 H400	2000	320	200	400	400	2704	500
BIG I 200 H400	3000	320	200	400	600	4056	500

BIG I S 200 H400
with ductile cast iron mesh grating

load **classes**
D400

CE
EN1433





description	lenght mm	external width mm	internal width mm	height mm	channel + gratings weight Kg	drainage surface cm²	channel section with grating cm²
BIG I S 200 H400	1000	320	200	400	200	981	550
BIG I S 200 H400	2000	320	200	400	400	1962	550
BIG I S 200 H400	3000	320	200	400	600	2943	550

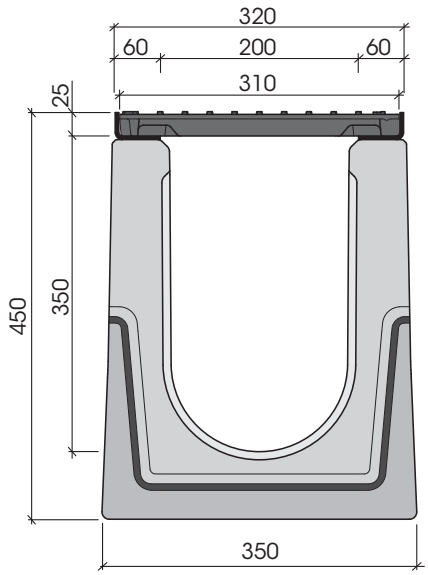
BIG I DRAIN 200 H450

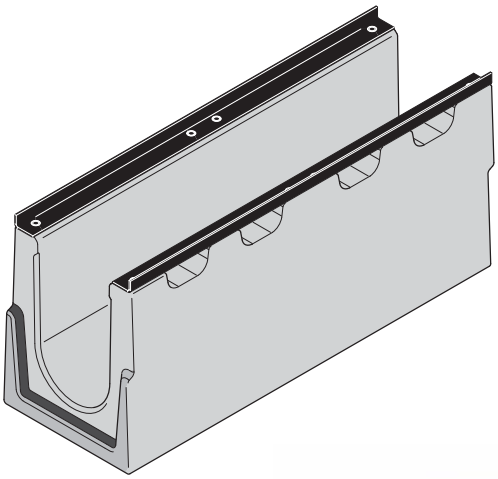
with ductile cast iron mesh grating

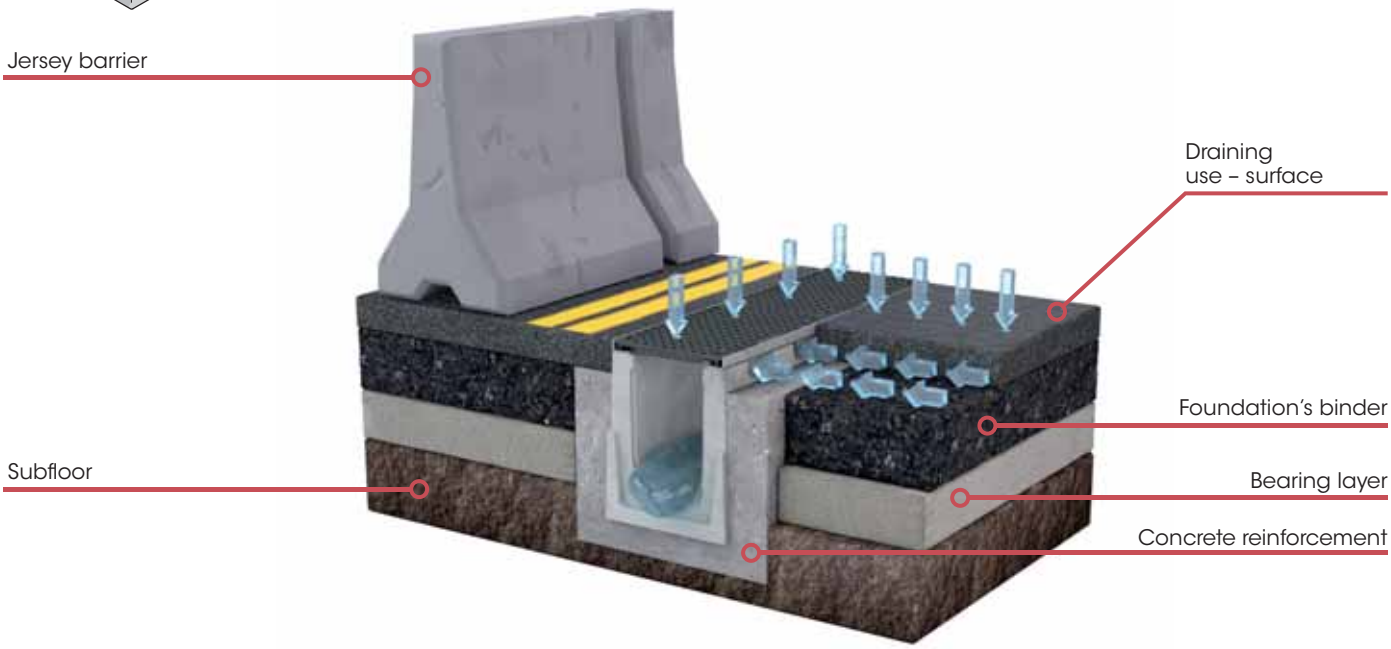
load classes

D400

CE
EN1433







description	lenght mm	external width mm	internal width mm	height mm	channel + gratings weight Kg	drainage surface cm^2	lateral drainage surface cm^2	channel section with grating cm^2
BIG I DRAIN 200 H450	1000	320	200	450	210	1352	293	650
BIG I DRAIN 200 H450	2000	320	200	450	420	2704	586	650
BIG I DRAIN 200 H450	3000	320	200	450	630	4056	879	650

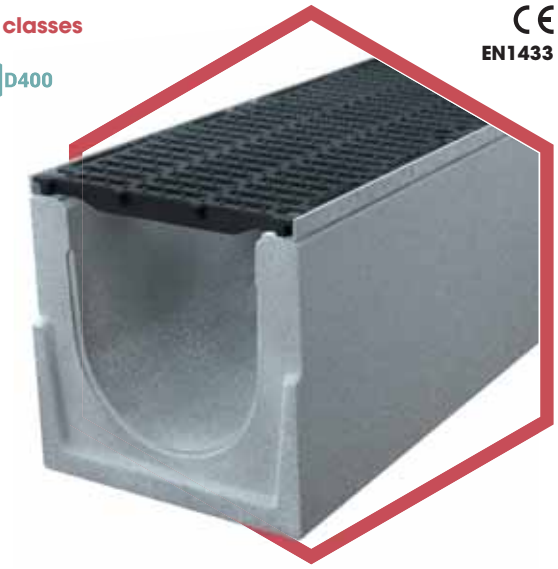
BIG I 300 H435

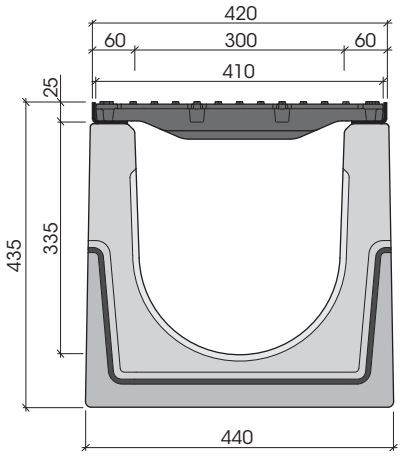
with ductile cast iron slotted grating

load **classes**

D400

CE
EN1433





description	lenght mm	external width mm	internal width mm	height mm	channel + gratings weight Kg	drainage surface cm²	channel section with grating cm²
BIG I 300 H435	1000	420	300	435	260	1438	836
BIG I 300 H435	2000	420	300	435	520	2876	836
BIG I 300 H435	3000	420	300	435	780	4314	836

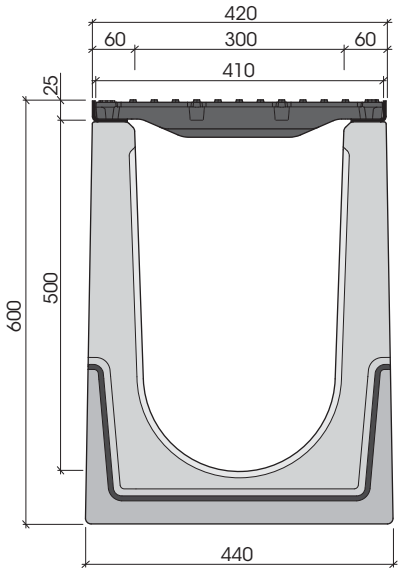
BIG I 300 H600

with ductile cast iron slotted grating

load **classes**

D400

CE
EN1433



description	lenght mm	external width mm	internal width mm	height mm	channel + gratings weight Kg	drainage surface cm²	channel section with grating cm²
BIG I 300 H600	1000	420	300	600	310	1438	1345
BIG I 300 H600	2000	420	300	600	620	2876	1345
BIG I 300 H600	3000	420	300	600	930	4314	1345

BIG I installation

load **classes**

D400

Drainage channels in high-grade pre-cast reinforced concrete, provided with steel iron edge profiles of reinforcement, perfectly anchored to the main body. BIG I channels are provided with pre-assembled gratings and fixed with M12 self-locking screws and are ideals for applications in areas with heavy and intense traffic

NOTE

1. Installation instructions are provided for reference purposes; the customer (or designer) must ensure them are compatible with the nature of the soil.

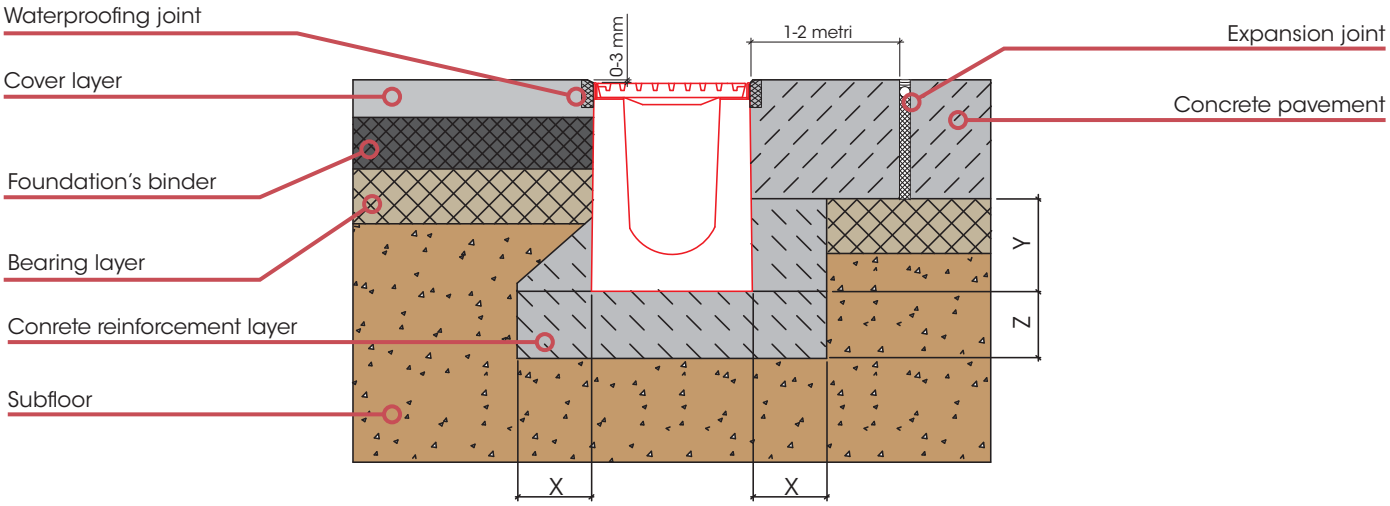
2. The channel, in order to perform its drainage function and not to overload support steel edge profiles of huge efforts, it must be installed at least 3 mm below the level the surrounding paving (view Installation drawings).

3. The channel is already provided with gratings already assembled: if during installation it should be necessary disassemble them, it is advisable to tighten screws in their respective threads without lock them just to protect the same threads from construction's site wastes.

4. In order to guarantee waterproofness between each component of the drainage line, it is possible to apply low modulus silicone-based sealant for concrete joints in designated points of channels on the side "male".

5. During movement of channels in installation process or loading/unloading operations from trucks or containers, it is recommended to hook them with steel cables and hooks to the geometric centers of both gratings. Handle them very carefully (slow movements). It is forbidden to lift channels using different solutions other than those specifically recommended by the manufacturer.

Ashpalt-Concrete screed



Load class	**D400**
Concrete compression strength class	C 30/37
X (width) cm	≥ 10
Y (height) cm	≥ 10
Z (thickness) cm	≥ 20
Reinforcing frame	a designer care
Expansion joints	transversal: 20-25 per linear metre longitudinal: as in the installation drawings

The designer is responsible for verifying the bearing capacity of the ground and, accordingly, to dertermine the size of X – Y – Z, the most specific concrete and reinforcing frame for the project. The choice of load class is designer's responsibility: when in doubt it is recommended to select an higher load class. In cases of concrete exposed to freeze-thaw cycles, use an exposure class XF4.

STRONG

STRONG range channels have **120 or 150 mm wall thickness** and are provided with reinforcement profiles. These profiles are perfectly anchored to the main concrete body, preventing any detachment.
STRONG profiles are made of different materials resistant to corrosion caused by contact with the surrounding environment, and completely cover and protect edges, giving the product compactness, protection against wear caused by traffic and high stability to fixed gratings.

All channels have a male-female coupling system to provide improved stability during installation and extremly smooth inside walls for better water flow.

The **STRONG** drainage channel range is produced in high-grade pre-cast reinforced concrete ensuring high resistance to **compression** (minimum strength class C35/45 - f_{ck} = 35 N/mm² and **R_{ck} = 45 N/mm²**), resistant to **frost and de-icing salts** ("+R" marking for European standard EN 1433) and **attacks caused by atmospheric agents** ("W" marking for European standard EN 1433)

M12 screws
On demand it is possible to use M14 screws in stainless steel matched with cast iron profiles

Wide bearing surface

Smooth surface
Provides the best characteristics of drainage and self-cleaning

Joint M/F

certification and product conformity

The STRONG channel range is **certified according** to European standard EN 1433 up to load class **F900/type I** and bears the mandatory CE marking.

The STRONG range consists of channels with three internal widths (CO 200, CO=300 and CO=400), each of them with different heights to provide the best solution for all needs. STRONG gratings have load class F900 and are available with mesh pattern version (CO=200) or with slotted pattern version (CO= 300 and CO=400) made of ductile iron.

STRONG channels are provided with pre-assembled gratings and fixed with M12 self-locking screws and are ideal for applications in areas with heavy and intense traffic, like docks or airports with container loading/unloading, trackside airports and airport's bys.

All channels have a standard length of 5 meters.

load **classes**

F900

channels

Nominal width **200** – heights from 300 to 1000
Nominal width **300** – heights from 400 to 1200
Nominal width **400** – heights from 750 to 1350

gratings

- Mesh ductile iron (CO=200)
  load class F900
- Slotted ductile iron (CO=300 and 400)
  load class F900

Grating

ductile iron grating (mesh or slotted pattern) fixed with M12 screws

F900

Body channel
R_{ck} min 45 N/mm^2 (average >50 N/mm^2)
On demand is possible to provide channels with armor ad hoc and static calculation reports (finite element method, FEM)

Wall thickness
Thickness of 120 mm or 150 mm.
On demant is possible to provide channels with wall thickness of 250 mm

Application fields

MAJOR INFRASTRUCTURES
airports, major projects

CE

CERTIFICAZIONE PRODOTTO
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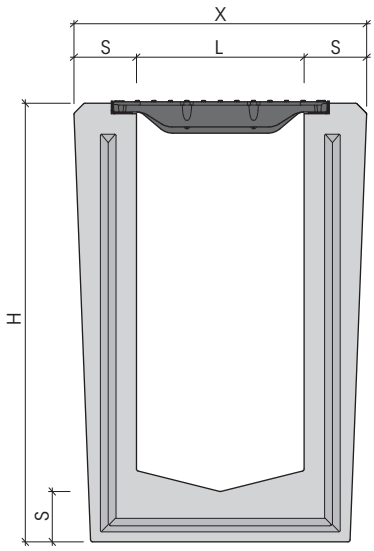
GREENPIPE
THE LEADING EDGE OF SURFACE WATER COLLECTING SYSTEMS

STRONG 200 - 300 - 400
with ductile cast iron grating

load **classes**
F900

CE
EN1433



description	channel lenght mm	L mm	S mm**	X mm	H mm*
STRONG 200 with ductile cast iron grating D400	5000	200	120	440	from 300 to 1000
STRONG 200 with ductile cast iron grating F900	5000	200	120	440	from 300 to 1000
STRONG 300 with ductile cast iron grating D400	5000	300	120	540	from 400 to 1200
	5000	300	150	600	from 400 to 1200
STRONG 300 with ductile cast iron grating F900	5000	300	120	540	from 400 to 1200
	5000	300	150	600	from 400 to 1200
STRONG 400 with ductile cast iron grating D400	5000	400	150	700	from 750 to 1350
STRONG 400 with ductile cast iron grating F900	5000	400	150	700	from 750 to 1350

*increments of 50 mm
**on demant it is possible to realize channels with wall thickness of 250 mm

STRONG installation

Drainage channels in high-grade pre-cast reinforced concrete, provided with profiles of reinforcement, perfectly anchored to the main body. STRONG channels are provided with pre-assembled gratings and fixed with M12 self-locking screws and are ideals for applications in areas with heavy and intense traffic

load **classes**

F900

NOTE

1. Installation instructions are provided for reference purposes; the customer (or designer) must ensure them are compatible with the nature of the soil.

2. The channel, in order to perform its drainage function and not to overload support profiles of huge efforts, it must be installed at least 3 mm below the level the surrounding paving (view Installation drawings).

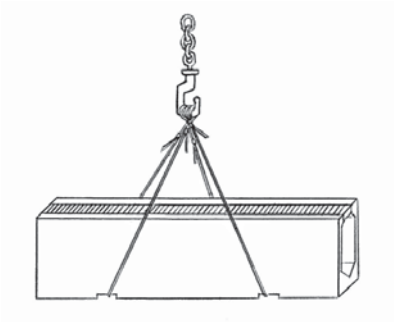
3. The channel is already provided with gratings already assembled: if during installation it should be necessary disassemble them, it is advisable to tighten screws in their respective threads without lock them just to protect the same threads from construction's site wastes.

4. In order to guarantee waterproofness between each component of the drainage line, it is possible to apply low modulus silicone-based sealant for concrete joints in designated points of channels on the side "male".

5. During movement of channels, follow the instructions listed below:

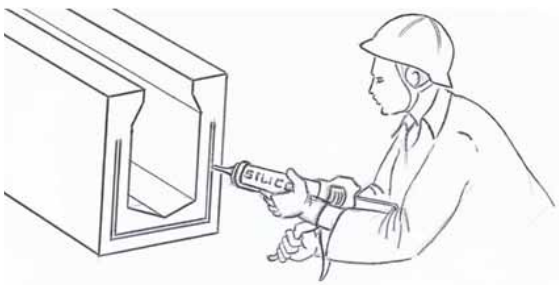
a. On receipt of goods at the construction site, ensure that it has arrived perfectly intact.

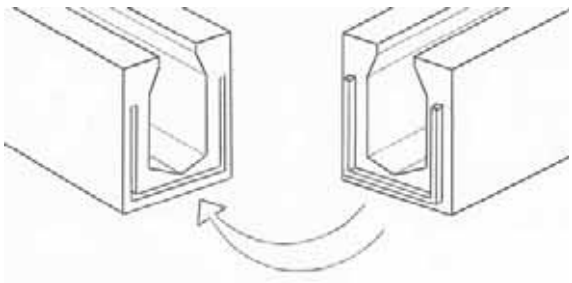
b. When unloading materials, it is necessary to use lifters with suitable load capacity or slinging the channel carefully.
IT IS EXPRESSLY FORBIDDEN TO LIFT CHANNELS FROM GRATINGS OR OTHER POINTS OTHER THAN THOSE EXPRESSLY DESIGNATED BY THE MANUFACTURER.



c. Carefully lay the manufactured article on a bed of lean concrete of sub-foundation made in advance for setting a perfect and clean floor where to position the channel in order that all loads are spread evenly. Such installation surface should have the necessary gradient requested.The foundation soil should have the appropriate carrying capacity and shall be compacted in accordance with the designer's directives. In the event where the ground does not have the requested bearing capacity, it will be necessary to realize a foundation layer in reinforced concrete according to specific designer's project. Greenpipe is not responsible for this planning phase.
Good rule would be to build the line following the direction "from male to female", so water should flow in the direction of the "female".

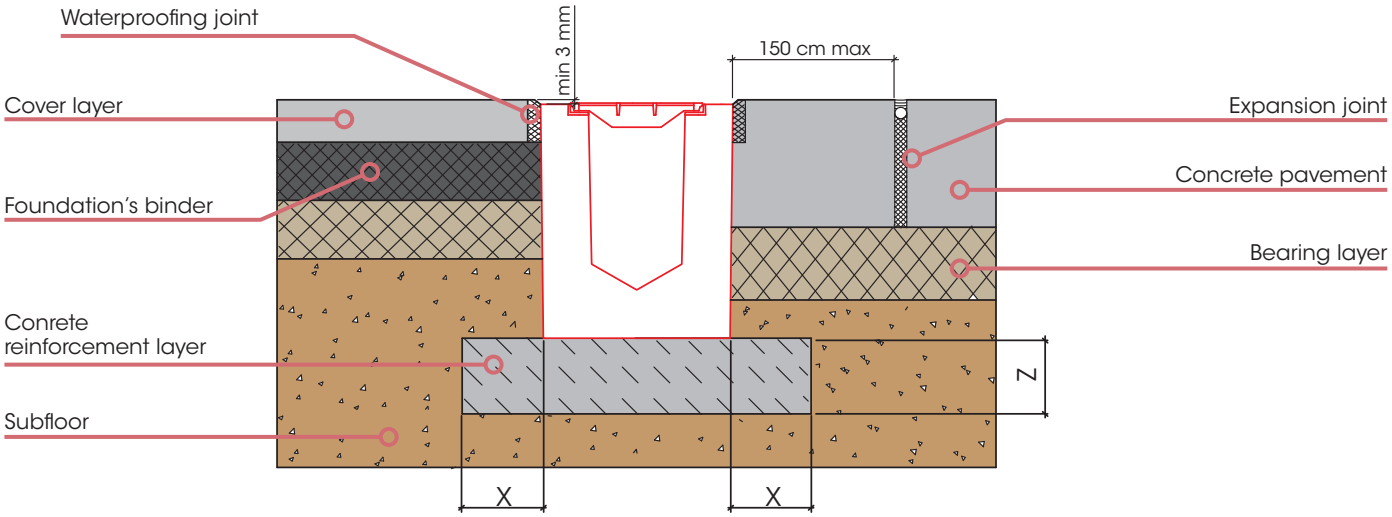
d. Before positioning the next element, apply low modular monocomponent silicone for expansions joints in order to ensure sealing and perfect water-tightness in the drainage line. Spread abundantly the product on entire perimeter of the inlet channel just laid ("female joint"), but also on the perimeter of the next channel, which in the meantime, will have been slung and will be ready for installation (male side). When inserting the next channel pay particular attention not to damage the edges just combined.





e. When verified the correct position of the channel in relation to the finished pavement, proceed to the support concrete flanking on both sides according to the stratigraphy of the road or the airport runway or any other structure that is being realized as reported in the specific designer's project.
As example is shown a standard laying scheme designed in the event of basic substrate without the adequate bearing capacity.

Ashpalt-Concrete screed



Load class	**F900**
Concrete compression strength class	C 30/37
X (width) cm	≥ 15
Z (thickness) cm	≥ 25
Reinforcing frame	a designer care
Expansion joints	transversal: 20-25 per linear metre longitudinal: as in the installation drawings

The designer is responsible for verifying the bearing capacity of the ground and, accordingly, to dertermine the size of X – Y – Z, the most specific concrete and reinforcing frame for the project. The choice of load class is designer's responsibility: when in doubt it is recommended to select an higher load class. In cases of concrete exposed to freeze-thaw cycles, use an exposure class XF4.

Airport Cameri (Piemonte, Italy)

National Road S.S. Sassari - Olbia
(Sardinia, Italy)

National Road S.S. Sassari - Olbia
Drainage channels (Sardinia, Italy)

Airport Rome Fiumicino (Lazio, Italy)

National Road S.S. Sassari - Olbia
Drainage channels (Sardinia, Italy)

In addition...

- Airport Malpensa, Milan (Lombardy, Italy)
- Airport Linate, Milan (Lombardy, Italy)
- Militar Airport of Bari (Puglia, Italy)
- Airport Peretola, Florence (Tuscany, Italy)
- Logistical terminal of Padua (Veneto, Italy)
- Port of Gioia Tauro (Calabria, Italy)
- Port of Cagliari (Sardinia, Italy)

TOP SLOT DRAINAGE SYSTEM

Thanks to its specificities, unobtrusive drainage and integration with the surrounding environment, "TOP SLOT" system finds its best use in **historical town centres**, gardens, town squares, public parks and **prestigious buildings**

Ideal for applications where it is necessary to combine **aesthetic effect** with functionality, "TOP SLOT" drainage system consists of slotted covers that complete the wide range of Greenpipe's products of drainage.

Choosing to use "TOP SLOT" drainage system is the perfect choice whenever it is required **inconspicuous intervention** integrate with the surrounding environment and without affecting any **architectural context of prestige**.

"TOP SLOT" drainage covers, made of **galvanized steel** (on demand in stainless steel) and complying to load class C250 (on demand D400), are available for Basic+ drainage channels with clear opening of 100, 150 and 200 mm.

Interlocking joint
between slotted covers in order to facilitate linear channels installation

Joint M/F

Sealing

certification and product conformity

load **classes**

C250 D400*

*on demand

channels

Nominal width **100** – height 160
Nominal width **150** – height 185
Nominal width **200** – height 250

gratings

- Galvanized steel asymmetrical slotted cover C250 (on demand in stainless steel and D400)
- Galvanized steel symmetrical slotted cover C250 (on demand in stainless steel and D400)

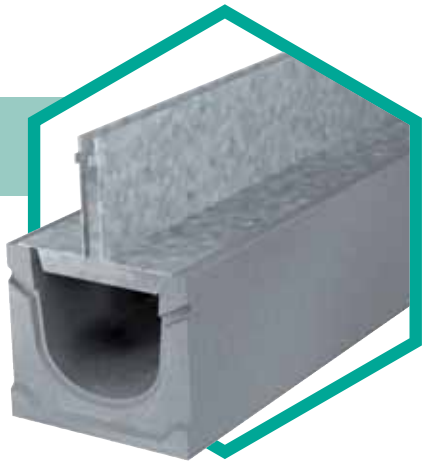
*AISI 314 or 316

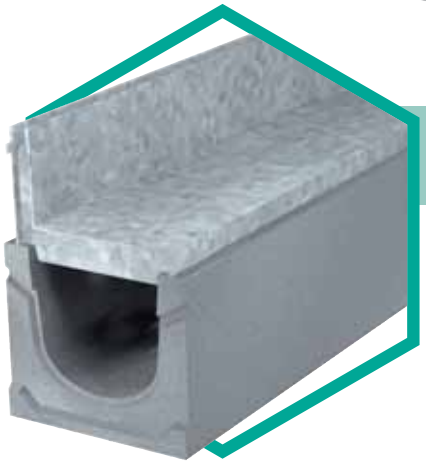
Slotted covers "TOP SLOT"

Body channel
Rck min 45 N/mm²
(average >50 N/mm²)

symmetric
Top Slot

C250 D400





asymmetric
Top Slot

C250 D400

Application fields

PRIVATE HOUSING
private entrances, private gardens, cortilive pavements

URBAN DESIGN
cycling and pedestrian zones, sidewalks, public parks, squares, historical centers

INDUSTRIAL SITES
industrial areas, loading bays

CE

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GREENPIPE
THE LEADING EDGE OF SURFACE WATER COLLECTING SYSTEMS

TOP SLOT 100

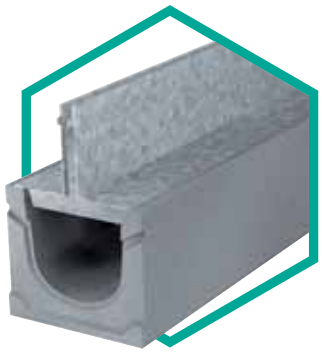
"TOP SLOT" drainage covers, made of galvanized steel (on demand in stainless steel) and complying to load class C250 (on demand D400), are available for Basic+ drainage channels with clear opening of 100, 150 and 200 mm, with symmetrical or asymmetrical slot

load **classes**

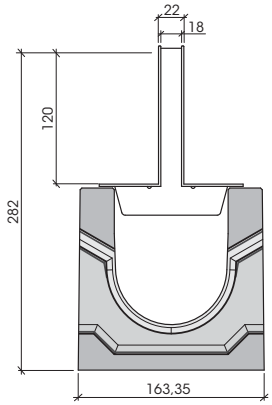
C250

D400

CE
EN1433

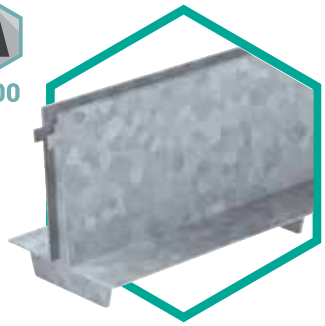


BASIC+ 100 H**160**



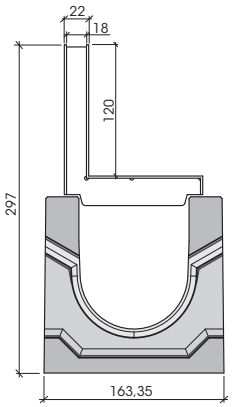
channel L = 1 m **+ symmetrical slotted drainage cover in galvanized steel C250**	BASIC+ 100 H**160**	price € **103,00**

C250 D400



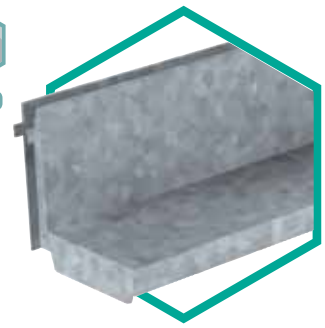
description		code	weight Kg	piece/pallet	
CHANNEL BASIC+ 100	H160	5151026	35,4	35	29,10
SYMMETRIC TOP SLOT L=1m		1870130	5,8		73,90

BASIC+ 100 H**160**



channel L = 1 m **+ asymmetrical slotted drainage cover in galvanized steel C250**	BASIC+ 100 H**160**	price € **103,00**

C250 D400



description		code	weight Kg	piece/pallet	
CHANNEL BASIC+ 100	H160	5151026	35,4	30	29,10
ASYMMETRIC TOP SLOT L=1m		1870170	6,0		73,90

For more information on D400 or stainless steel models please contact Greenpipe's technical department (infotec@greenpipe.it)

TOP SLOT 150

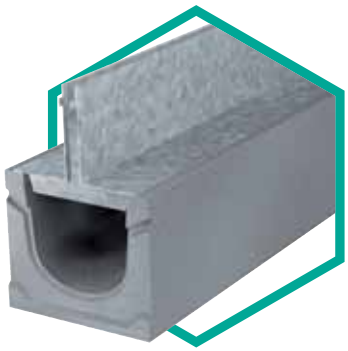
"TOP SLOT" drainage covers, made of galvanized steel (on demand in stainless steel) and complying to load class C250 (on demand D400), are available for Basic+ drainage channels with clear opening of 100, 150 and 200 mm, with symmetrical or asymmetrical slot

load **classes**

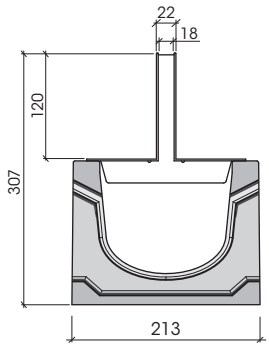
C250

D400

CE
EN1433



BASIC+ 150 H**185**

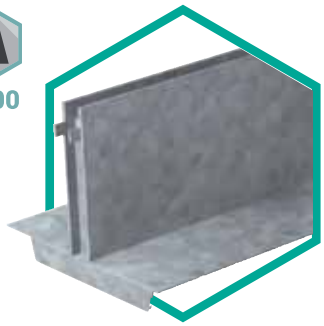


channel L = 1 m
+ symmetrical slotted drainage cover in galvanized steel C250

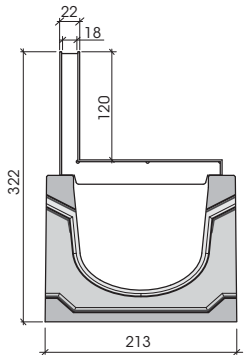
BASIC+ 150 H**185** — prix € **118,00**

C250 D400

description		code	weight Kg	piece/pallet	
CHANNEL BASIC+ 150	H185	5151520	48,2	20	37,40
SYMMETRIC TOP SLOT L=1m		1870220	6,8		80,60



BASIC+ 150 H**185**

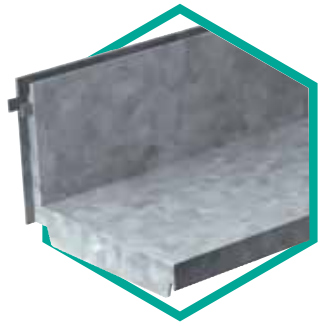


channel L = 1 m
+ asymmetrical slotted drainage cover in galvanized steel C250

BASIC+ 150 H**185** — prix € **118,00**

C250 D400

description		code	weight Kg	piece/pallet	
CHANNEL BASIC+ 150	H185	5151520	48,2	20	37,40
ASYMMETRIC TOP SLOT L=1m		1870230	7,3		80,60



For more information on D400 or stainless steel models please contact Greenpipe's technical department (infotec@greenpipe.it)

TOP SLOT 200

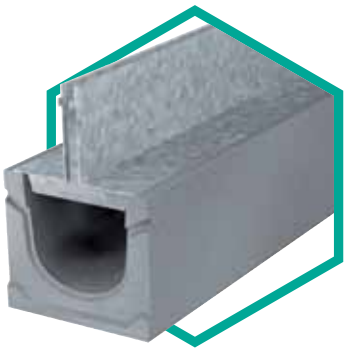
"TOP SLOT" drainage covers, made of galvanized steel (on demand in stainless steel) and complying to load class C250 (on demand D400), are available for Basic+ drainage channels with clear opening of 100, 150 and 200 mm, with symmetrical or asymmetrical slot

load **classes**

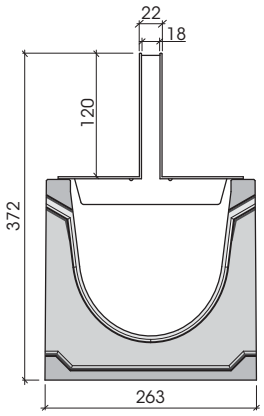
C250

D400

CE
EN1433



BASIC+ 200 H250



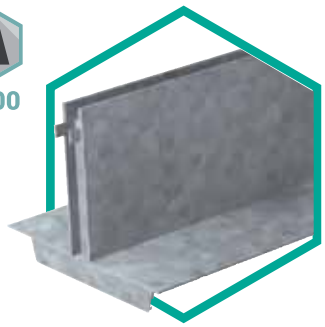
channel L = 1 m
+ symmetrical slotted drainage cover in galvanized steel C250

BASIC+ 200 H**250**

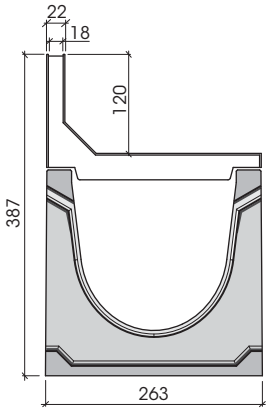
price €
147,00

C250 D400

description		code	weight Kg	piece/pallet	
CHANNEL BASIC+ 200	H250	5152020	79,5	12	54,90
SYMMETRIC TOP SLOT L=1m		1870290	8,3		92,10



BASIC+ 200 H250



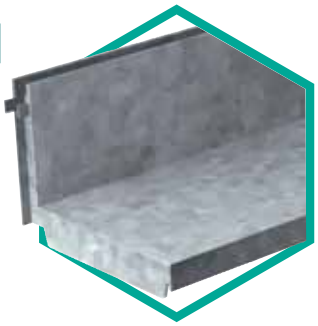
channel L = 1 m
+ asymmetrical slotted drainage cover in galvanized steel C250

BASIC+ 200 H**250**

price €
147,00

C250 D400

description		code	weight Kg	piece/pallet	
CHANNEL BASIC+ 200	H250	5152020	79,5	12	54,90
ASYMMETRIC TOP SLOT L=1m		1870300	8,6		92,10



For more information on D400 or stainless steel models please contact Greenpipe's technical department (infotec@greenpipe.it)

TOP SLOT DRAINAGE SYSTEM
access units for inspecting and cleaning channels

load **classes**

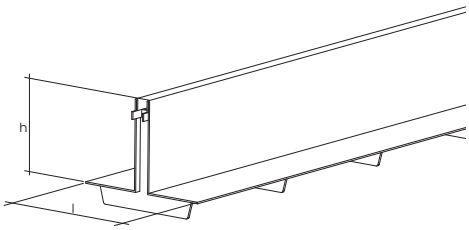
C250

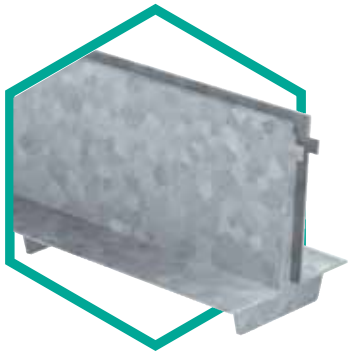
D400

Top slot access unit

description	code	weight Kg	price €
SYMMETRIC ACCESS UNIT 100 (2 pieces)	1870280	8,5	118,00
ASYMMETRIC ACCESS UNIT 100 (2 pieces)	1870260	8,4	118,00
SYMMETRIC ACCESS UNIT 150 (2 pieces)	1870330	10	123,00
ASYMMETRIC ACCESS UNIT 150 (2 pieces)	1870210	9,5	123,00
SYMMETRIC ACCESS UNIT 200 (2 pieces)	1870440	11,5	129,00
ASYMMETRIC ACCESS UNIT 200 (2 pieces)	1870450	11	129,00

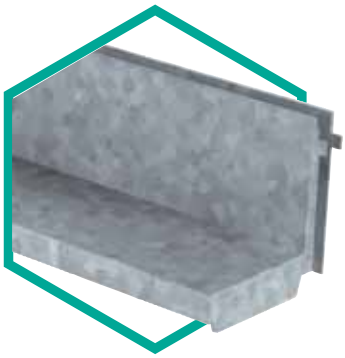
TOP SLOT DRAINAGE SYSTEM
slotted drainage covers





Symmetric Top Slot in galvanized steel

description	l (mm)	h (mm)	class
BASIC+ 100	125	120	C250
BASIC+ 150	180	120	C250
BASIC+ 200	260	120	C250



Asymmetric Top Slot in galvanized steel

description	l (mm)	h (mm)	class
BASIC+ 100	125	120	C250
BASIC+ 150	180	120	C250
BASIC+ 200	260	120	C250

TOP SLOT DRAINAGE SYSTEM installation

load **classes**
C250
D400

"TOP SLOT" drainage covers, made of galvanized steel (on demand in stainless steel) and complying to load class C250 (on demand D400), are available for Basic+ drainage channels with clear opening of 100, 150 and 200 mm, with symmetrical or asymmetrical slot

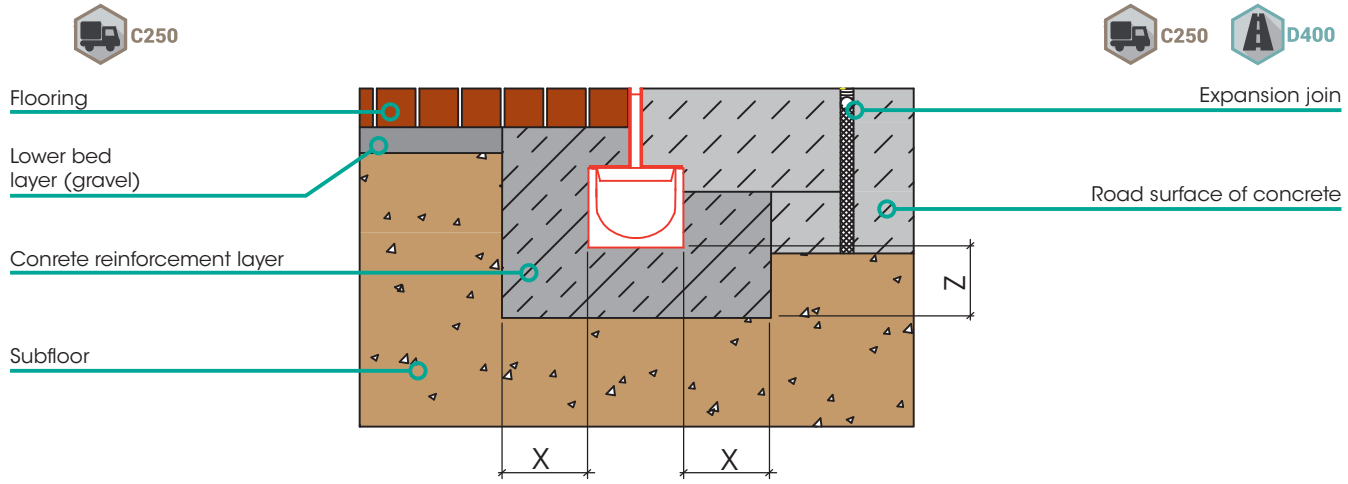
NOTE

1. Installation instructions are provided for reference purposes; the customer (or designer) must ensure them are compatible with the nature of the soil.

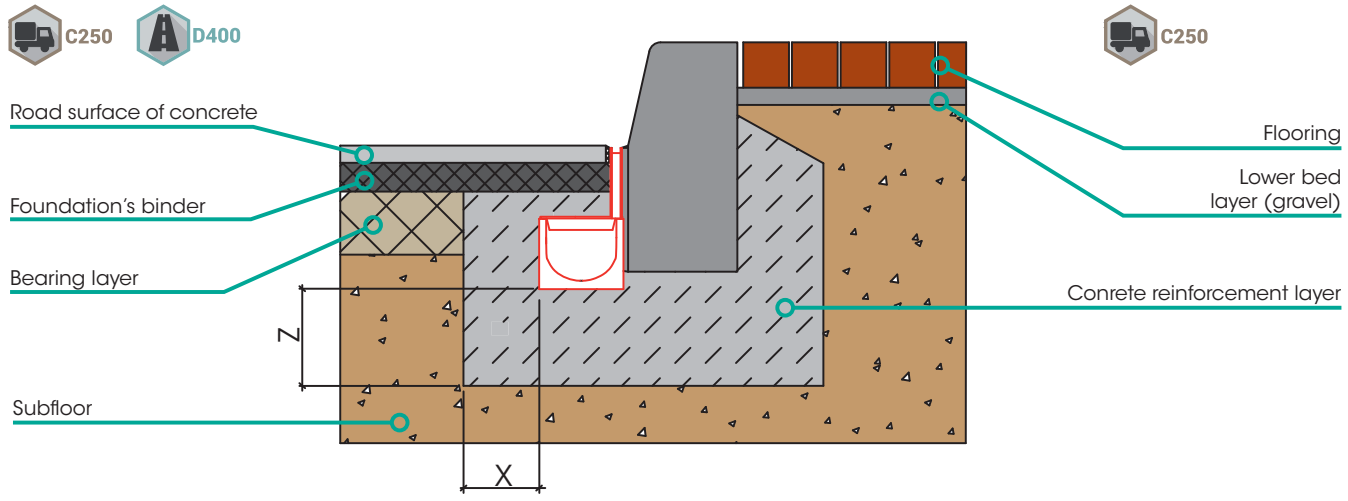
2. The channel, in order to perform its drainage function and not to overload the slot of huge efforts, it must be installed at least 3-5 mm below the level the surrounding paving (view Installation drawings).

3. In order to guarantee waterproofness between each component of the drainage line, it is possible to apply low modulus silicone-based sealant for concrete joints in designated points of channels on the side "male".

Flooring-Concrete Screed



Asphalt-Floring/Kerb



	C250	D400
Load class	**C250**	**D400**
Concrete compression strength class	C 20/25	C 25/30
X (width) cm	≥ 15	≥ 15
Y (height) cm	channel height - 5 mm	channel height - 5 mm
Z (thickness) cm	≥ 15	≥ 20
Reinforcing frame	not necessary	*net Ø8 mesh 20x20

*Recommended in case of a road crossing

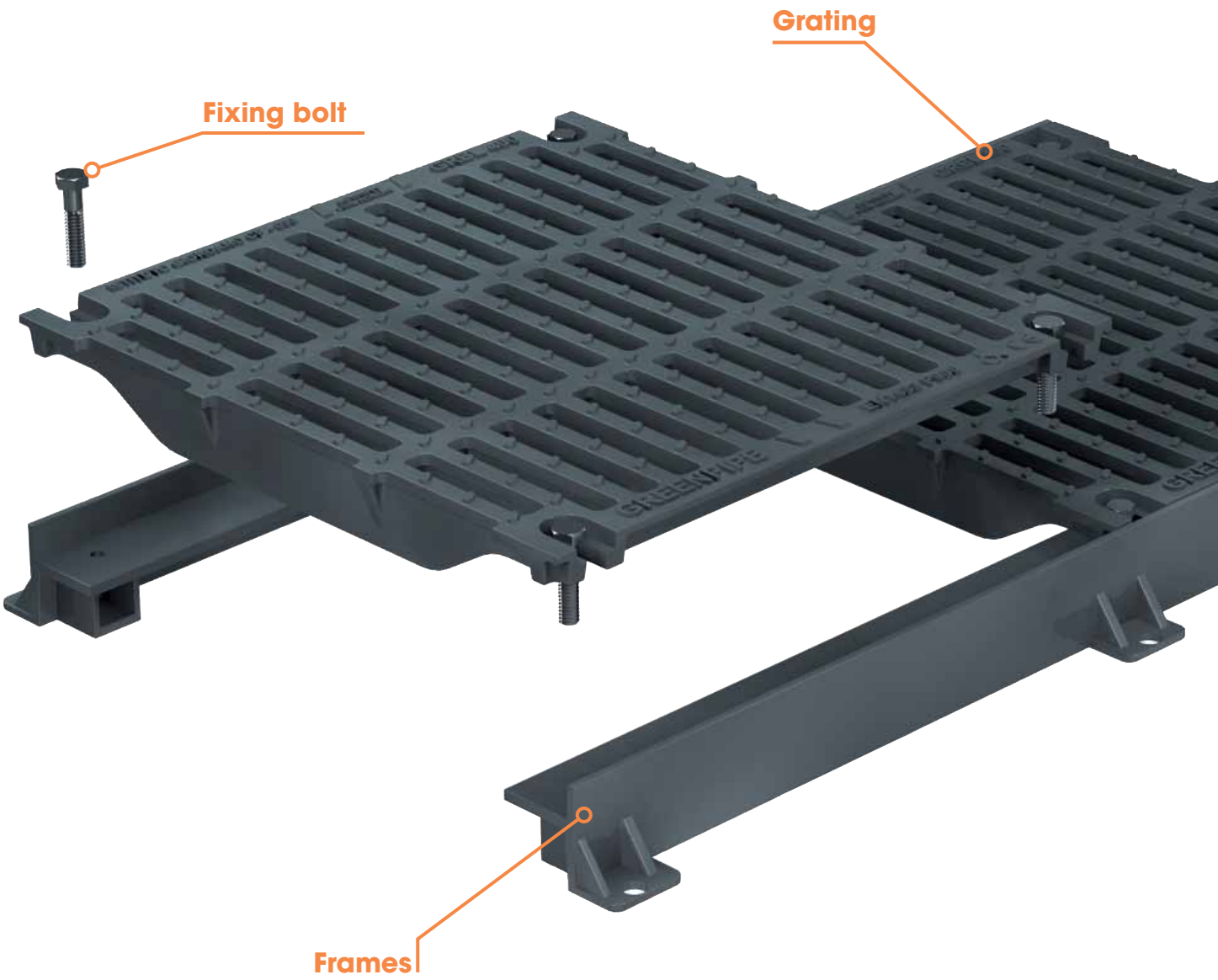
The designer is responsible for verifying the bearing capacity of the ground and, accordingly, to determine the size of X – Y – Z, the most specific concrete and reinforcing frame for the project. The choice of load class is designer's responsibility: when in doubt it is recommended to select an higher load class. In cases of concrete exposed to freeze-thaw cycles, use an exposure class XF4


LE
CITTÀ
IN
FESTA

GRATINGS and FRAMES

Drainage system composed of profiles/frames in galvanized steel/ductile iron and gratings in ductile iron, load class from D400 to F900. The drainage system is designed for the **realization of canalisations directly on construction sites, without the use of prefabricated channels**.

The range includes appropriate gratings for making channels with CO of 200, 300 or 400 mm (on demand also 500 and 600 mm)



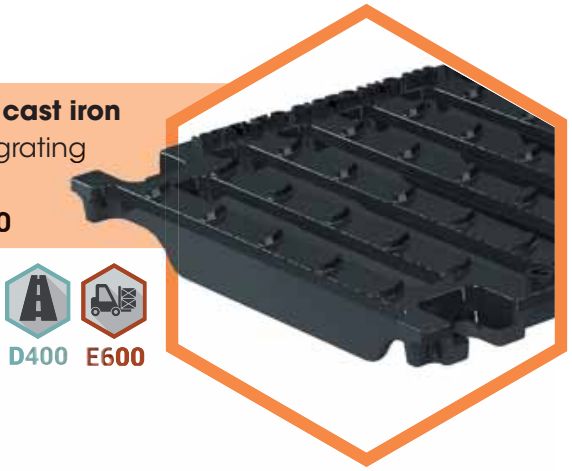
CE

load **classes**

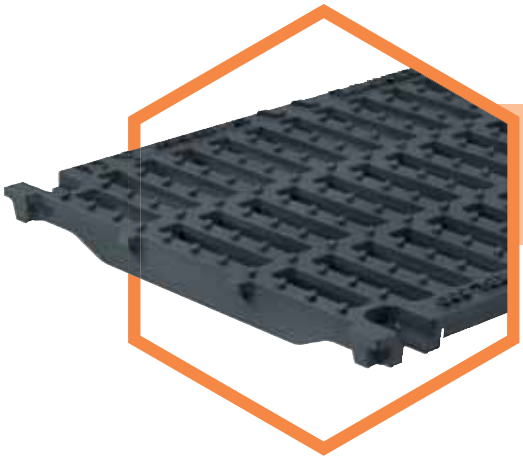
gratings

- Ductile iron
  load class D400, E600 and F900

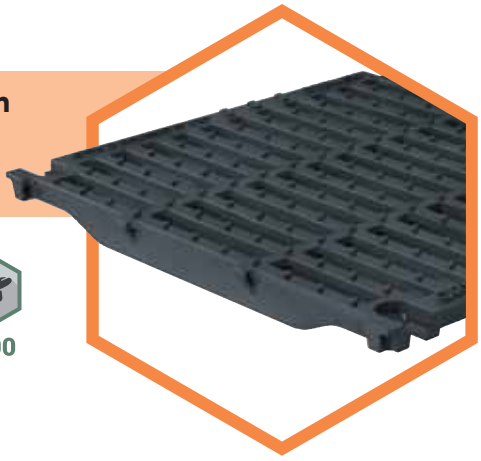
ductile cast iron
slotted grating
SMART
PRO 200



ductile cast iron
slotted grating
STRONG 300



ductile cast iron
slotted grating
STRONG 400



Application fields

INDUSTRIAL SITES
car parks (multilevel, public and shopping areas), industrial areas, loading bays

ROAD NETWORKS
roads and highways, underpasses, intermodalterminals, harbor quays

MAJOR INFRASTRUCTURES
airports, major projects

GREENPIPE
THE LEADING EDGE OF SURFACE WATER COLLECTING SYSTEMS

GRATINGS and FRAMES

load **classes**

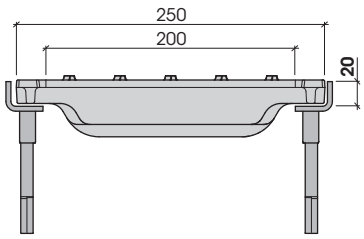
D400

E600

CE
EN1433

Frame of length 1 meter, made of galvanised steel, provided with four anchoring clamps and four M10 threaded rivets to set gratings with M10 self-locking screws.
Ductile iron slotted grating of length 0.5 meter, load class of D400 or E600 with four fixing points each one

Galvanised steel frame H20



description		code	clear opening	width	price €
GALVANISED STEEL FRAME H20 L=1m		2402810			12,90
GRATING L=0,5m	D400	2401145	200	250	51,65
GRATING L=0,5m	E600	2401125	200	250	56.55
FASTENING SCREW		1900090			0,54

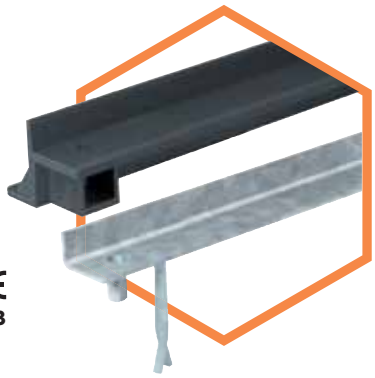
D400 E600

GRATINGS and FRAMES

load **classes**

D400

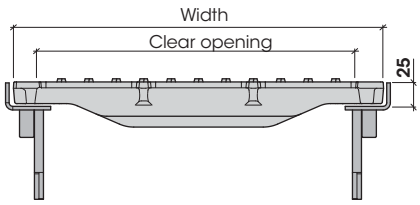
F900



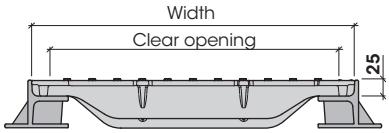
CE
EN1433

Frame of length 1 meter, made of galvanised steel, provided with four anchoring clamps and four M12 threaded rivets to set gratings with M12 self-locking screws.
Frame of length 1 meter, made of ductile iron, provided with four M12 threaded holes to fix gratings with M12 self-locking screws.
The frame's shape allows the flanking support concrete to grip on the frame in order to create a monolithic structure with the underlying channel cast in situ. To ensure the highest stability, each frame can be fixed to the concrete base using the proper holes situated at the base

Galvanised steel frame H25

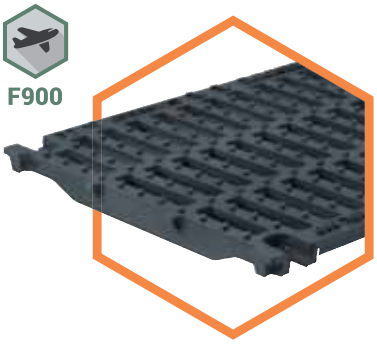


Ductile cast iron frame H25



description		code	clear opening	width	price €
GALVANISED STEEL FRAME H25 L=1m		2401040			15,00
DUCTILE CAST IRON FRAME H25 L=1m		2402980			36,00
GRATING L=0,5m	D400	2401445	300	410	95,50
GRATING L=0,5m	D400	2402125	400	510	136,20
GRATING L=0,5m	F900	2780015	300	410	125,60
GRATING L=0,5m	F900	2402145	400	510	195,40
FASTENING SCREW		1900200			0,70

D400 F900



on demand are available ductile cast iron gratings BIG 500 and BIG 600 with load class D400

GRATINGS and FRAMES installation

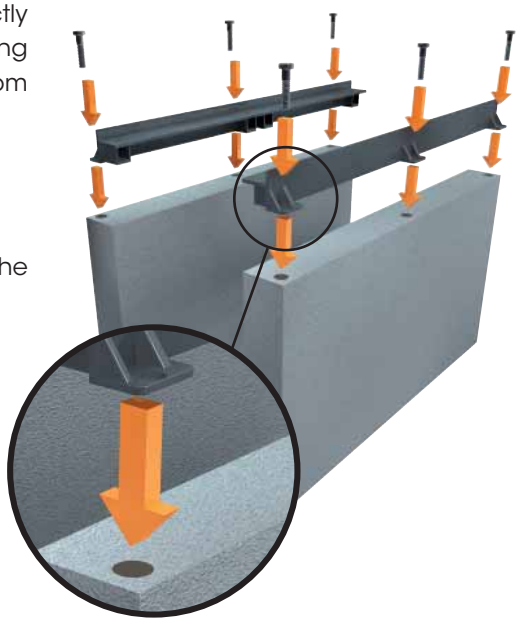
load **classes**

D400

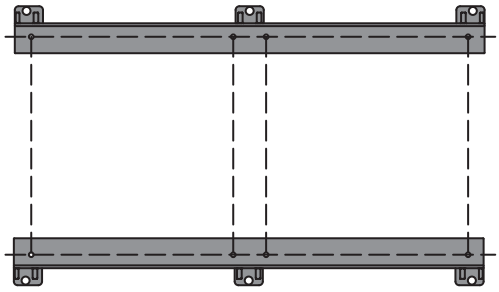
F900

Installation of ductile iron frames

1. Make a supporting surface for ductile iron frames, ensuring that it is perfectly levelled and with no presence of debris; secure the frames to the underlying structure using the proper holes at the frame's base to prevent them from moving during the flank support concrete casting phase



ATTENTION: the frames will need to be parallel to each other and have the same pitch so that fixing threads will be aligned properly.



2/1. Place the gratings to the frames fixing them with M12 screws (four for each grating.

2/2. As an alternative to point 2a, it is possible to install the gratings after the casting phase of flank support's concrete, in order to prevent them from getting dirty. It is advisable to screw threads of the frame in order to prevent them from being obstructed by casting concrete.

NOTE

a) The designer is responsible for checking the suitability of products for the purpose them will be used, to verify the bearing capacity of the ground and to establish necessary installation instructions.

b) It is advisable to make flank concrete's supports for the system frames + gratings. The thickness of flank concrete's support should be at least of 20 cm on both sides with load class gratings D400, and increased to 25 cm with load class gratings F900.

c) It is recommended to reinforce concrete in situations with heavy and intense road traffic if installing load class D400 gratings. It is necessary to reinforce concrete if installing load class F900 gratings.

d) It is recommended to reach finished floor level with flanks concrete's supports (3-5 mm over the floor level would be recommended.

e) It is recommended to use a concrete class C28/35 (load class gratings D400) and class C30/37 (load class F900).

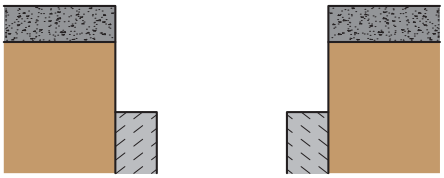
load **classes**

D400

E600

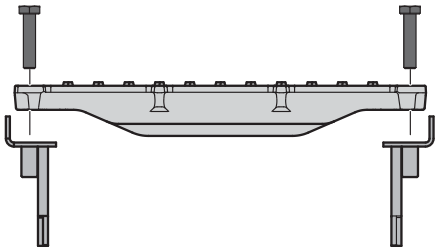
F900

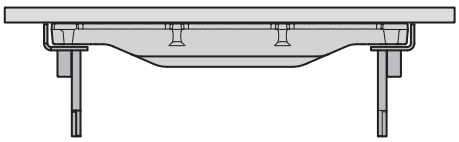
Installation of galvanised steel edge frames



1. Make a compartment for galvanized frames of at least twice the size of the external dimension of the frame.The compartment's depth should be enough to completely accommodate the height of the frame, including also the anchoring brackets.

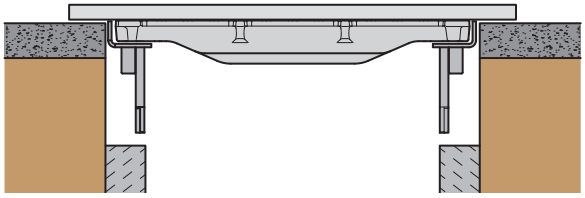
2. Fix gratings on the two frames (one on each side) with supplied bolts.
This procedure is required to maintain the perfect center distance of the support and make it easier to find the laying surface.





3. Fix two iron crossbars above the surface of the gratings to a distance of 50 cm from each other.

4. At the compartment made, place the two frames with the relative gratings fixed to the crossbars.



NOTE

a) The designer is responsible for checking the suitability of products for the purpose them will be used, to verify the bearing capacity of the ground and to establish necessary installation instructions.

b) It is advisable to make flank concrete's supports for the system frames + gratings. The thickness of flank concrete's support should be at least of 20 cm on both sides with load class gratings D400, and increased to 25 cm with load class gratings F900.

c) It is recommended to reinforce concrete in situations with heavy and intense road traffic if installing load class D400 gratings. It is necessary to reinforce concrete if installing load class F900 gratings.

d) It is recommended to reach finished floor level with flanks concrete's supports (3-5 mm over the floor level would be recommended.

e) It is recommended to use a concrete class C28/35 (load class gratings D400/E600) and class C30/37 (load class F900).

GREENPIPE
THE LEADING EDGE OF SURFACE WATER COLLECTING SYSTEMS

specifications

Specification features for BASIC+ channels

Supply and installation of Basic+ …. drainage channel in precast concrete for rainwater runoff, product in compliance with European standard EN 1433 and wear mandatory CE marking, type M, length of 1 meter, made in high-grade concrete vibrocompressed ensuring resistance to compression Rck > 50 N/mm², smooth internal walls with average water absorption ratio < 6,5 %, male – female coupling system to the channel structure, respective dimensions:

External width … mm external height … mm hydraulic section … x … mm

The channel will be assembled with:

- slotted grating in galvanised steel, load class A15 or B125, length 1.000 mm, width …
- square mesh grating in galvanised steel fixed with 4 M8 self-locking screws, load class A15, length 1.000 mm, width …
- anti-heel mesh grating in galvanised steel fixed with 4 M8 self-locking screws, load class B125, length 1.000 mm, width …
- ductile cast iron GJS 500/7 mesh gratings fixed with 2 M8 self-locking screws each, load class C250, length 498 mm width … with 2 galvanised steel frames at protection of edges.

Installation shall be made according to the prescriptions of the supplying company.

Specification features for SMART PRO channels

Supply and installation of Smart Pro …. drainage channel in precast concrete for rainwater runoff, product in compliance with European standard EN 1433 and wear mandatory CE marking, type M, length of 1 meter, made in high-grade concrete vibrocompressed ensuring resistance to compression Rck > 50 N/mm², smooth internal walls with average water absorption ratio < 6,5 %, male – female coupling system to the channel structure, galvanised steel frames incorporated in the channel with 4 anchoring brackets, respective dimensions:

External width … mm external height … mm hydraulic section … x … mm

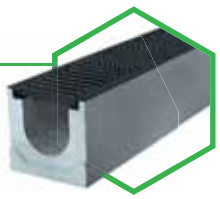
Wall thickness 30 mm

The channel will be assembled with galvanised steel frames and:

- anti-heel mesh grating in galvanised steel fixed with 4 M10 self-locking screws, load class B125, length 1.000 mm, width …
- ductile cast iron GJS 500/7 slotted gratings fixed with 4 M10 self-locking screws each, load classes C250, D400 and E600, length 498 mm, width …
- ductile cast iron GJS 500/7 mesh gratings fixed with 4 M10 self-locking screws each, load classes C250 and D400, length 498 mm, width …

Installation shall be made according to the prescriptions of the supplying company.

Specification features for BIG47 channels



Supply and installation of BIG47 …. drainage channel in precast concrete for rainwater runoff, product in compliance with European standard EN 1433 and wear mandatory CE marking, type M, length of 1 meter, made in high-grade concrete vibrocompressed ensuring resistance to compression Rck > 50 N/mm², smooth internal walls with average water absorption ratio < 6,5 %, male – female coupling system to the channel structure, ductile cast iron frames incorporated in the channel with anchoring brackets, respective dimensions:

External width … mm external height … mm hydraulic section … x … mm

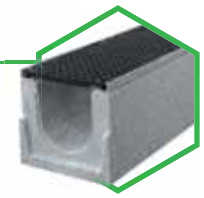
Wall thickness 47 mm

The channel will be assembled with ductile cast iron frames and:

- ductile cast iron GJS 500/7 slotted gratings fixed with 4 M10 self-locking screws each, load classes D400 and F900, length 498 mm, width …
- ductile cast iron GJS 500/7 mesh gratings fixed with 4 M10 self-locking screws each, load class E600, length 498 mm, width …

Installation shall be made according to the prescriptions of the supplying company.

Specification features for **BIG I** channels



Supply and installation of BIG I …. Self-supporting drainage channel in precast reinforced concrete for rainwater runoff, product in compliance with European standard EN 1433 and wear mandatory CE marking, type I, mark W+R for resistence to frost and de-icing salts and atmospheric agents, length of 1, 2 or 3 meters, made in high-grade pre cast concrete ensuring resistance to compression Rck > 45 N/mm^2, smooth internal walls with average water absorption ratio < 6,5 %, male – female coupling system to the channel structure, galvanised iron frames incorporated in the channel with anchoring brackets, respective dimensions:

External width … mm external height … mm

Internal width … mm Internal height … mm

Hydraulic section … x … mm

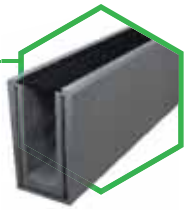
Wall thickness 60 mm

The channel will be assembled with galvanised iron frames and:

- ductile cast iron GJS 500/7 gratings fixed with 4 M12 self-locking stainless steel screws each, load class D400, length 498 mm, width …

Installation shall be made according to the prescriptions of the supplying company.

Specification features for **STRONG** channels



Supply and installation of STRONG …. Self-supporting drainage channel in precast reinforced concrete for rainwater runoff, product in compliance with European standard EN 1433 and wear mandatory CE marking, type I, mark W+R for resistence to frost and de-icing salts and atmospheric agents, length of 5 meters with self-cleaning shaped V bottom, made in high-grade pre cast concrete ensuring resistance to compression Rck > 45 N/mm^2 , concrete exposition class XD3/XF4, smooth internal walls with average water absorption ratio < 6,5 %, male – female coupling system to the channel structure, galvanised iron/ductile cast iron frames incorporated in the channel with anchoring brackets, respective dimensions:

External width … mm external height … mm

Internal width … mm Internal height … mm

Hydraulic section … x … mm

Wall thickness … mm

The channel will be assembled with galvanised iron/ductile cast iron frames and:

- ductile cast iron GJS 500/7 gratings fixed with 4 M12 self - locking stainless steel screws each, load classes D400, E600 and F900, length 498 mm, width …

Installation shall be made according to the prescriptions of the supplying company.

GREENPIPE

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GREENPIPE

THE **LEADING EDGE** OF SURFACE **WATER** COLLECTING SYSTEMS

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