



ASIA Edition 2022

hauraton

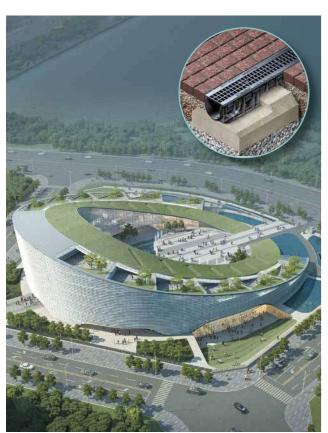
Surface drainage systems

■ hauraton

HAURATON projects...



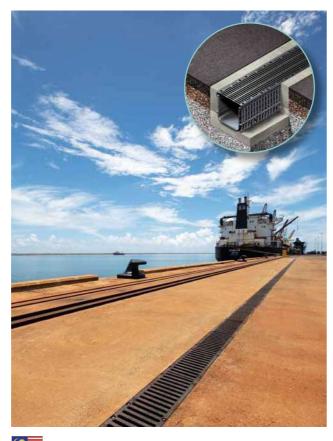








Data Ran Merdeka in Kuala Lumpur, Malaysia









About **HAURATON**



Problems with In-Situ Channel vs. Benefits with HAURATON drainage solutions



Evolution of surface drainage systems



Characteristics of a drainage system & **HAURATON** product range



Your benefits with **RECYFIX** Channels



Load Classes



Project applications for drainage systems



RECYFIX PRO Corrosion-free linear drainage for private and public areas.

18

34



RECYFIX STANDARD Linear drainage channels for public and commercial areas.



10

SLOTTED CHANNELS



Slotted channels for 28 design-sensitive applications.



RECYFIX NC Highly stable and lightweight linear drainage made of PP

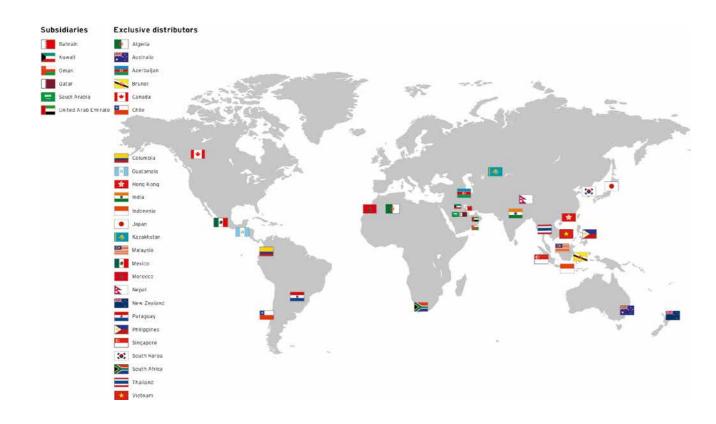


Additional products

■ hauraton

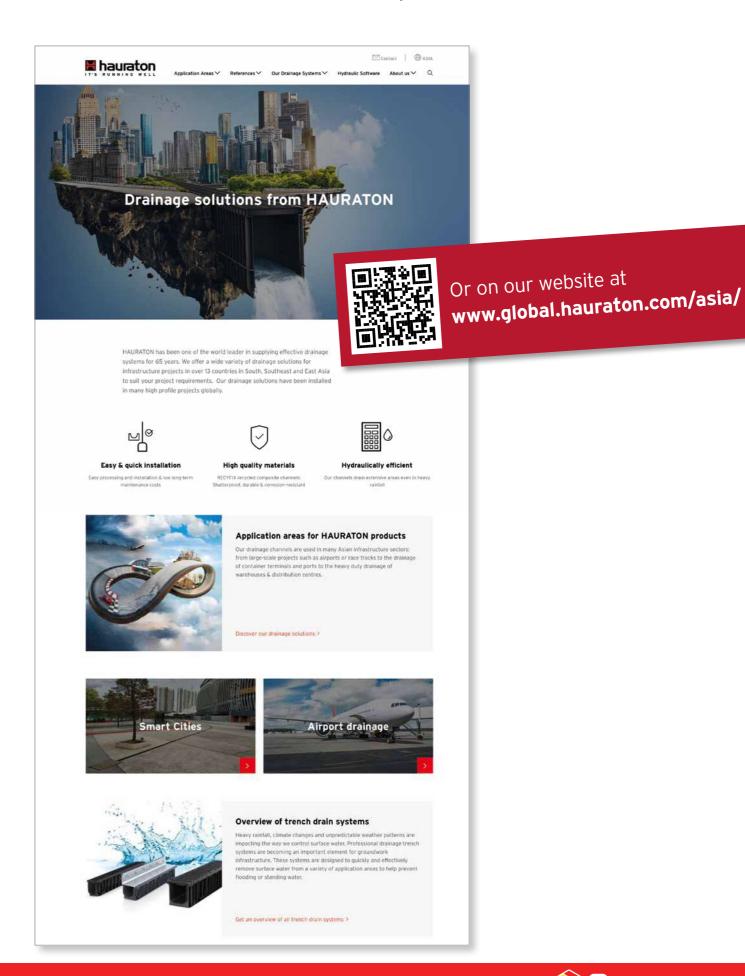
Welcome to one of the worldwide leaders in drainage

Locations and partners all over the world





HAURATON Global Page



Problems with In-Situ Channels

Benefits with HAURATON drainage solutions

General problems of in-situ channels:

- poor quality and durability → on site produced concrete often do not fulfil highest quality standards compared to factory made products and so often fail after a short time (e. g. cracks in concrete occur or breakdown of system happens)
- no traffic-secure solution → neither channel nor grating / cover could be proofed for requested loading capacity



Solution for in-situ channels:

- pre-fabricated products are produced with high performance material and fulfill highest quality
- → additionally these systems fulfill EN 1433 and have a standard product guarantuee



Low security:

- unsecured gratings / covers → gratings / covers do not have any fixing with lower part.
- risk of injury → bigger slots are dangerous for pedestrians





Solution for high security:

- + gratings are locked securely with locking handle or bolts or are built in a monolithic way
- + slot openings are in a size that are safe for all kind of traffic users



Unpleasant optical appearance:

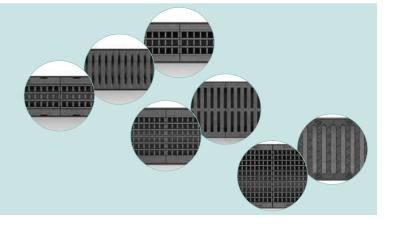
- cracks in concrete → cracks start to destroy the channel / cover step by step and do not look good
- rusted gratings → cheap ductile iron gratings tend to rust immediately





Solution for a nice visual appearance:

- technology all products are durable and look nice over a long time
- + gratings are availbale in different materials and designs for an attractive appearence



Higher effort and costs for installation:

time-consuming and costly installation → higher cost on formwork, leveling and finishing is required



Solution for low effort and costs to install:

➡ installation of prefab systems can be done much guicker and with less concrete surrounding







Evolution of surface drainage systems



Basic Channel

The world's first known urban waste water system appeared in Asia (LOTHAL) around 2600 BC.





In-Situ Channel

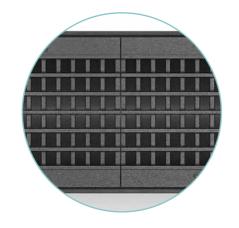
In-Situ Channel are simple systems cast from concrete on site, with a basic grating installed across the opening.





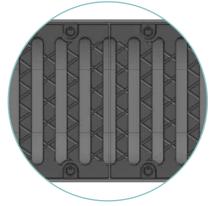
Modern System

RECYFIX - THE ALL-IN-ONE SOLUTION: A complete, modular linear drainge system to collect surface rainwater and stormwater with a prefabricated product: A channel (trench/U-drain) and grating fixed with a locking system.



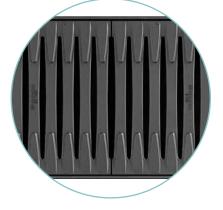
GUGI ductile iron gratings

Mesh width: 15 x 25 mm



Ductile iron slotted gratings

Slot width: 18 mm



FIBRETEC Slotted gratings, composite material

Bar distance: 9 mm



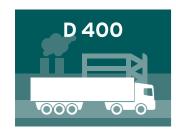
Characteristics of a drainage system. How to choose the right product?

1. Project application in Classes













2. Hydraulic software

Drainage area depths in dependence on the line length of RECYFIX® channels



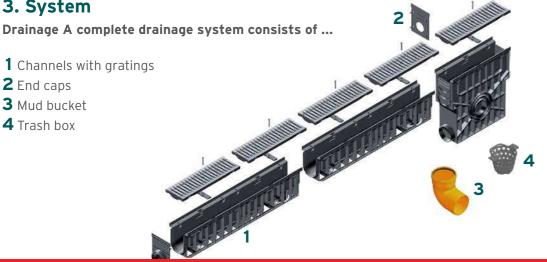
With a few information on area to be drained such as length, width and surface layer plus the rain intensity, with the HAURATON Hydraulic-App the best system from hydraulic purpose can be calculated.

A professional hydraulic calculation by our technical support team is available on request.

3. System



- **2** End caps
- 3 Mud bucket
- **4** Trash box



HAURATON product range

			Nomina	nl width		
Applications	100	150	200	300	400	650
A 15 B 125	RECYFIX PRO		RECYFIX PRO	RECYFIX STANDARD		
C 250	RECYFIX STANDARD / RECYFIX PRO / Slotted Channel	SLOTTED CHANNEL	RECYFIX STANDARD	RECYFIX STANDARD		
D 400	RECYFIX MONOTEC		RECYFIX MONOTEC		RECYFIX NC	
E 600	RECYFIX NC		RECYFIX NC	RECYFIX NC		
F 900	RECYFIX HICAP F	RECYFIX HICAP F	RECYFIX HICAP F	RECYFIX HICAP F		RECYFIX HICAP F





YOUR BENEFITS WITH

RECYFIX CHANNELS

compared to local in-situ solutions

ANGLE HOUSING

- PP frame 20 x 20 mm acc. to DIN 1433 for additional flexibility and protection
- nibs to stop lateral movements
- inlaying gratings
- = PERFORMANCE ASSURED

EASY HANDLING ON SITE • much lighter than channels made of polymer/resin concrete

LOW WEIGHT ENSURES

- easy transport and installation
- = TIME & COST SAVINGS

HIGH-GRADE MATERIAL

- **RECYFIX** stable and almost unbreakable
- elastic and especially robust material
- withstands high loads and temperature differences in daily use
- 100 % recycled composite body
- (and also 100 % recyclable) → 100 % environmentally friendly
- 0 % water absorption
- smooth inner surface for superior flow characteristics
- non-conductive
- PP channel body can be cut, drilled and worked easily on site
- **= QUALITY & PERFORMANCE ASSURED**



HIGH RESISTANCE

- high resistance against UV-rays
- withstands high temperature differences
- for climate ranges from - 50 °C to + 80 °C and more
- = QUALITY ASSURED / LONGEVITY



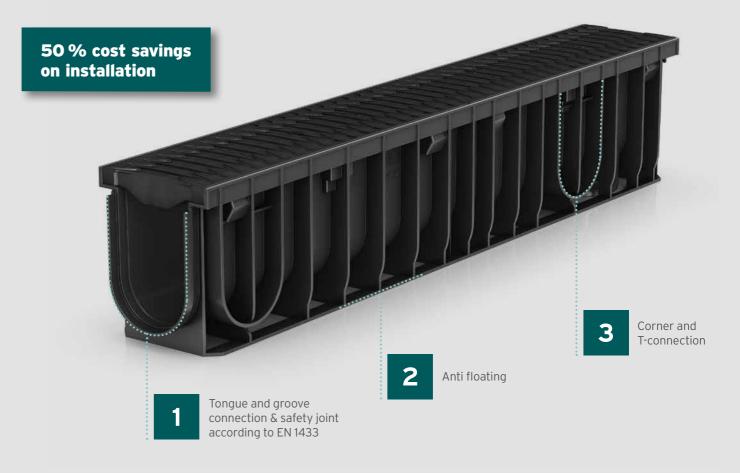
PRE-ASSEMBLED READY FOR INSTALLATION

- channel and grating = one part
- no spare parts
- easy handling in stock and on construction site
- cost-efficient transport
- **= MORE PROFIT**



All-in-one Solution:

Trench/Channel and Grating Drainage system



100 % corrosion-free





Load Classes



A 15

Traffic areas without car access

Possible applications

- Footpaths
- Cycle paths

Road users

- Pedestrians
- Bicycles
- Scooters
- Wheelchairs and walkers



B 125

Traffic areas on private premises

Possible applications

- Driveways
- Courtyards
- Terraces
- Gardens

Road users

- Small and medium passenger cars
- SUVs



C 250

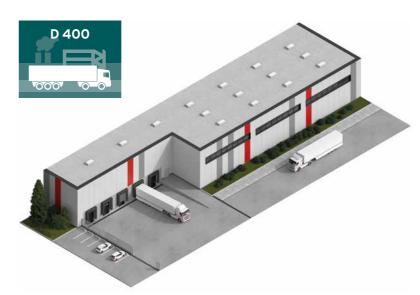
Public areas with light traffic and moderate frequency

Possible applications

- Public areas
- Car parks (e.g. supermarket, DIY store)
- Residential building
- Parks

Road users

- Small and medium-sized cars (optionally with trailer)
- SUVs (optionally with trailer)
- Lorries and vans
- Light trucks and motorhomes up to 7.5 t



D 400

Roadways and streets (not for installation in the carriageway in motorways)

Possible applications

- Logistics centres
- Commercial areas
- Bus stations and bus terminals
- Petrol stations
- Lorry parking spaces

Road users

- Lorries
- Vans



E 600

Industrial areas with loading and increased dynamics

Possible applications

- Industrial yards
- Loading areas

Road users

- Lorries
- Forklifts



F 900

Surfaces with extremely high wheel loads and dynamics

Possible applications

- Airports
- Ports
- Container terminals
- Race and test tracks

Road users

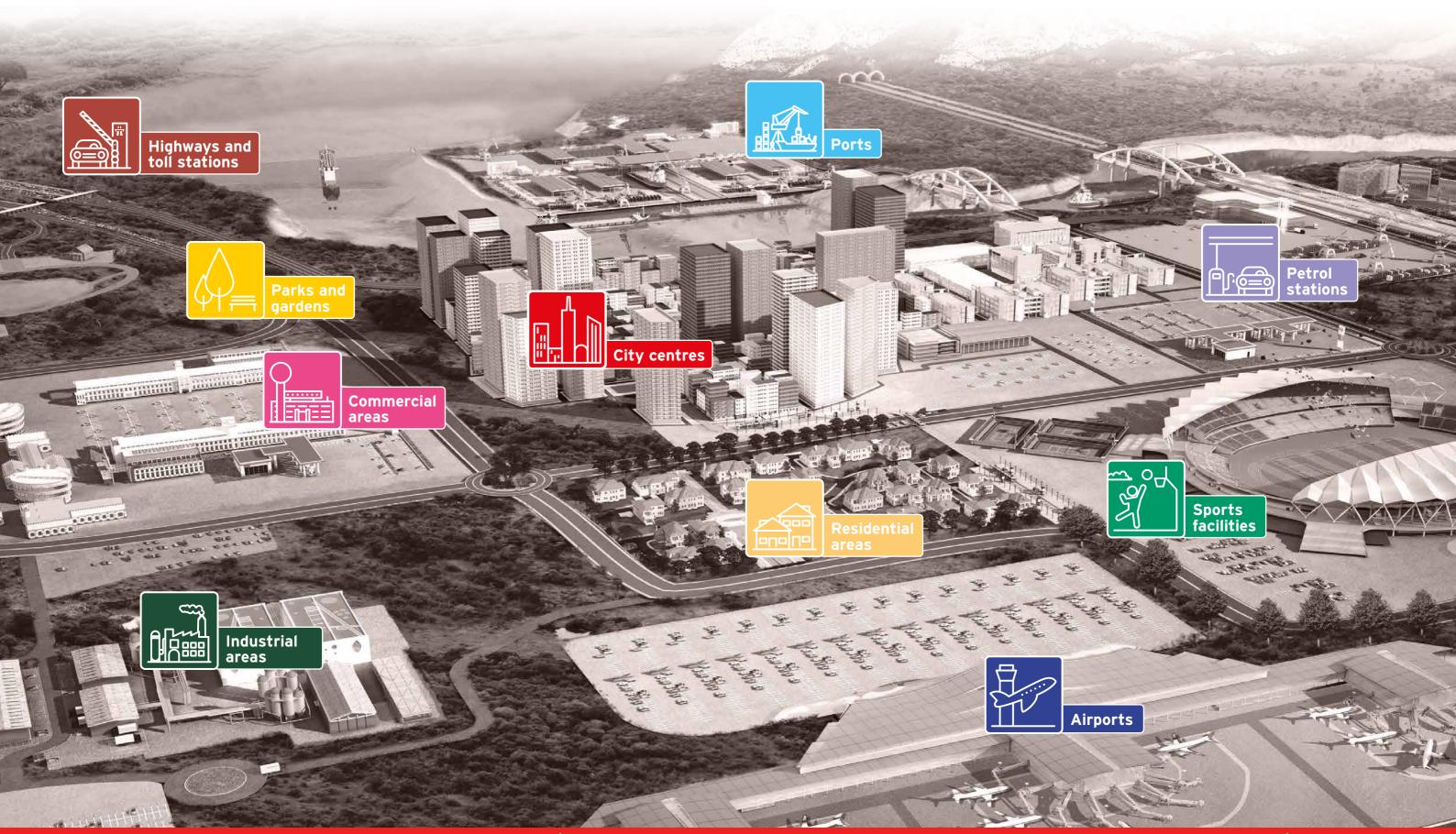
- Aeroplanes
- Reachstackers
- Racing cars

Dynamic forces and increased traffic frequency change the stress on drainage systems! If in doubt, choose a higher load class. If you have any questions, our experts will be happy to advise you on the selection of the right system!



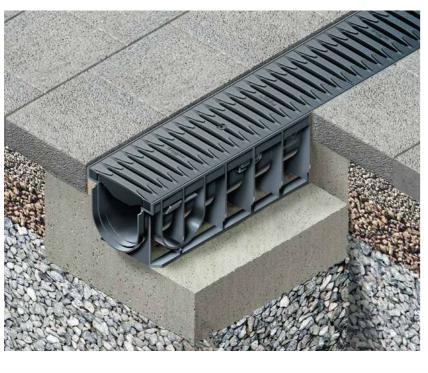


Project applications for drainage systems



RECYFIX PRO

Corrosion-free drainage system for private and public areas.

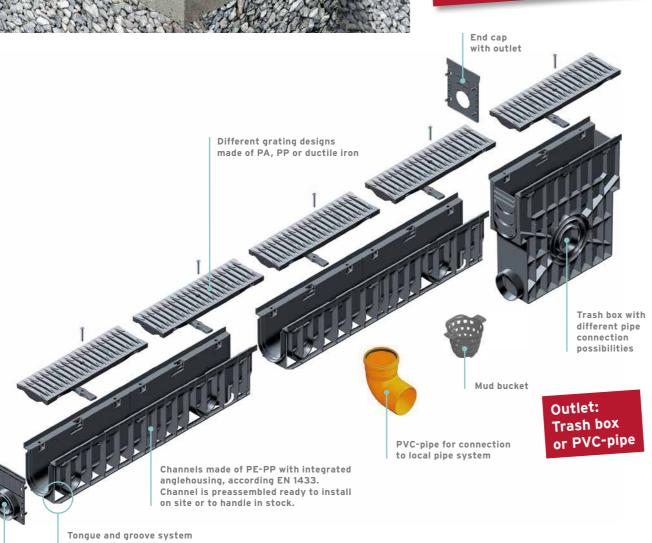








- Market squares
- Public areas
- Private areas











for exact installation

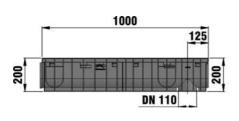
RECYFIX®PRO 100

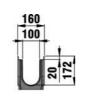
RECYFIX®PRO 200

Combi article

RECYFIX®PRO 100, class B 125



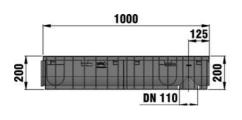




	Length mm	Width mm	Height mm	Drainage cross-sect. cm²	Intake cross-sect. cm²/m	Weight kg	Item No.
Type 01 with GUGI-Grating made of PA-GF, MW 15/25, black, locked	1000	160	150	92	444	4,3	47035
Type 010 with GUGI-Grating made of PA-GF, MW 15/25, black, locked	1000	160	200	142	444	4,7	47040
Type 020 with GUGI-Grating made of PA-GF, MW 15/25, black, locked	1000	160	250	192	444	5,5	48623
Type 75 with GUGI-Grating made of PA-GF, MW 15/25, black, locked	1000	160	75	35	444	2,9	47032
Type 95 with GUGI-Grating made of PA-GF, MW 15/25, black, locked	1000	160	95	55	444	3,6	47033

RECYFIX®PRO 100, class C 250



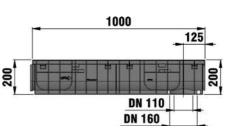




	Length mm	Width mm	Height mm	Drainage cross-sect. cm²	Intake cross-sect. cm²/m	Weight kg	Item-No. galvanised
Type 01 with FIBRETEC slotted grating, SW 9 mm, black	1000	160	150	92	372	4,6	47055
Type 010 with FIBRETEC slotted grating, SW 9 mm, black	1000	160	200	142	372	4,9	47060
Type 020 with FIBRETEC slotted grating, SW 9 mm, black, locked	1000	160	250	192	372	5,8	48625
Type 75 with FIBRETEC slotted grating, SW 9 mm, black	1000	160	75	35	372	3,4	47062
Type 95 with FIBRETEC slotted grating,	1000	160	95	55	372	3,7	47063

RECYFIX®PRO 200, class B 125





125	200
500	13.20
DN 110 DN 160	

262

	Length mm	Width mm	Height mm	Drainage cross-sect. cm²	Intake cross-sect. cm²/m	Weight kg	No.
Type 010 with FIBRETEC slotted grating, SW 9 mm, black, locked	1000	262	200	294	656	8,3	47246
Type 115 with FIBRETEC slotted grating, SW 9 mm, black, locked	1000	262	115	150	656	7,0	47233







RECYFIX STANDARD

Linear drainage channels for public and commercial area.

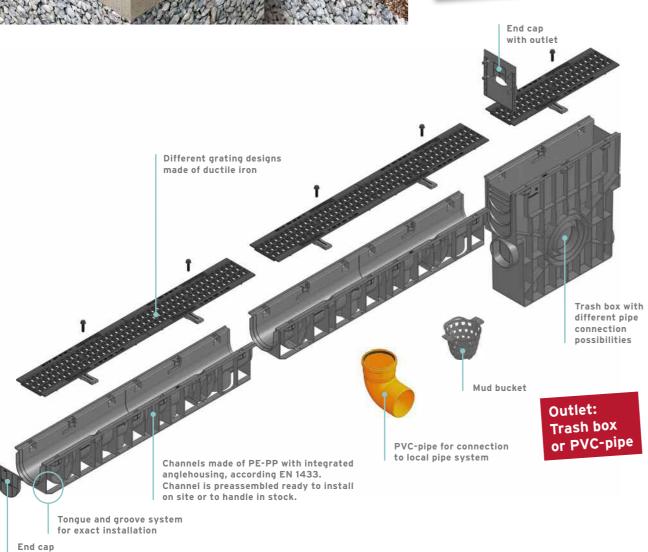








- Market squares
- Public areas
- Private areas





German Embassy, Hanoi, Vietnam





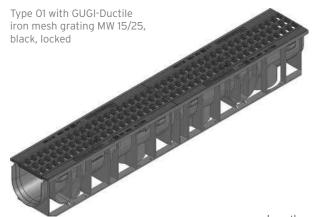


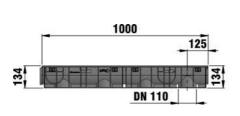
with outlet

RECYFIX®STANDARD 100

Combi article

RECYFIX®STANDARD 100, class C 250







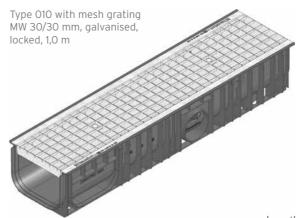
	Length mm	Width mm	Height mm	Drainage cross-sect. cm²	Intake cross-sect. cm²/m	Weight kg	Item No.
Type 01 with GUGI-Ductile iron mesh grating MW 15/25, black, locked	1000	150	134	92	444	7,1	40234
Type 010 with GUGI-Ductile iron mesh grating MW 15/25, black, locked	1000	150	185	142	444	8,6	40299
Type 60 with GUGI-Ductile iron mesh grating MW 15/25, black, locked*	1000	150	60	35	444	5,4	40239
Type 80 with GUGI-Ductile iron mesh grating MW 15/25, black, locked*	1000	150	80	55	444	5,5	40253

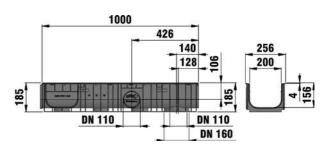
^{*} For frequently used areas we recommend FASERFIX KS Channels shallow (see CIVILS). Type 60/type 80 with preformed outlet DN 70.

RECYFIX®STANDARD 200

Combi article

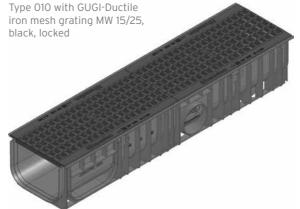
RECYFIX®STANDARD 200, class B 125

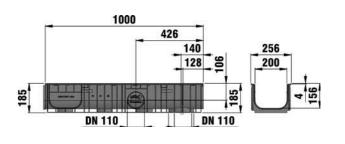




	Length mm	Width	Height mm	Drainage cross-sect. cm²	Intake cross-sect. cm²/m	Weight kg	No.
Type 010 with mesh grating MW 30/30 mm, galvanised, locked, 1,0 m	1000	256	185	290	825	15,4	40672

RECYFIX®STANDARD 200, class C 250





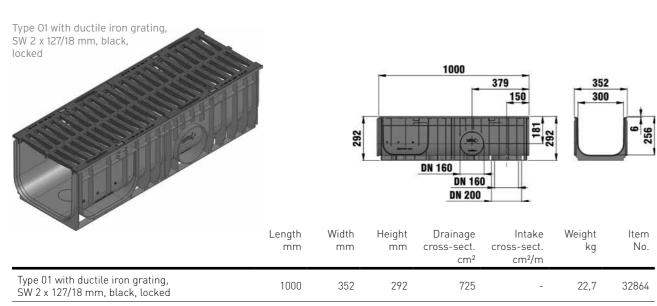
	Length mm	Width mm	Height mm	Drainage cross-sect. cm²	Intake cross-sect. cm²/m	Weight kg	Item No.
Type 010 with GUGI-Ductile iron mesh grating MW 15/25, black, locked	1000	256	185	290	825	15,4	40665
Type 020 with GUGI-Ductile iron mesh grating MW 15/25, black, locked	1000	256	235	366	825	15,8	40666
Type 100 with GUGI-Ductile iron mesh grating MW 15/25, black, locked	1000	256	100	150	825	14,1	40641



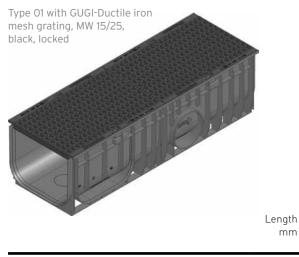
RECYFIX®STANDARD

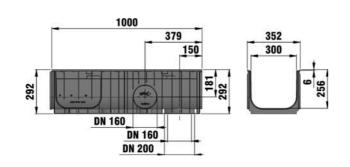
Combi article

RECYFIX®STANDARD 300, class B 125



RECYFIX®STANDARD 300, class C 250





Intake

Drainage

	mm	mm	mm	cross-sect.	cross-sect. cm²/m	kg	No.
Type 01 with GUGI-Ductile iron mesh grating, MW 15/25, black, locked	1000	350	292	725	1385	29,1	40870
Type 010 with GUGI-Ductile iron mesh grating, MW 15/25, black, locked	1000	420	381	857	1385	33,20	40875





Teega Residence - Iskandar, Puteri, Johor, Malaysia









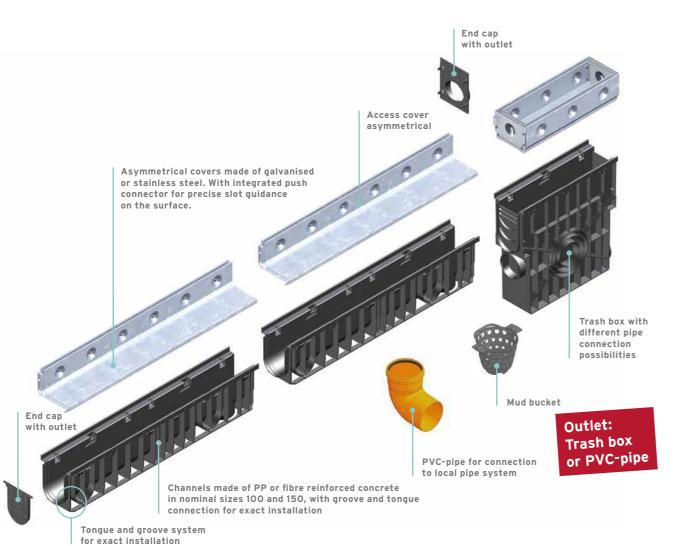
SLOTTED CHANNELS

SLOTTED CHANNELS for design-sensitive applications.



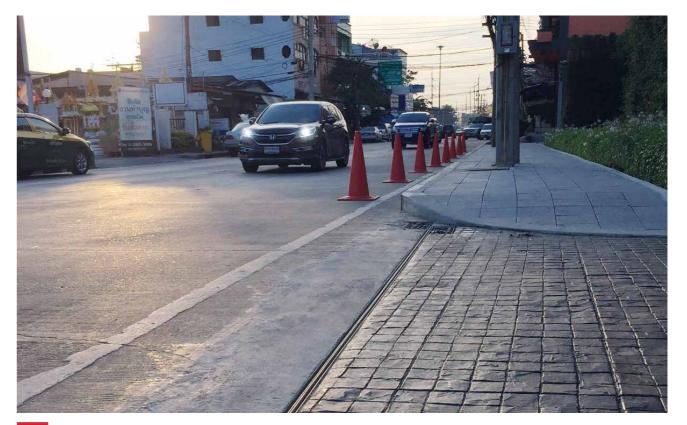


- Market squaresPublic areas
- Private areas





JTBC Television Network HG Company Premises, South Korea







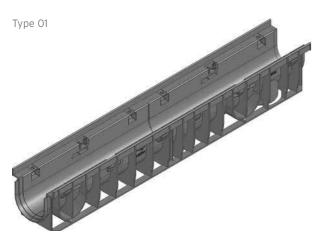


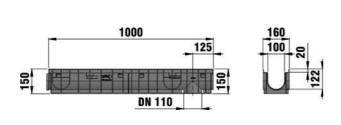
SLOTTED CHANNEL 100

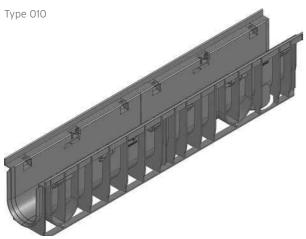
SLOTTED CHANNEL 100

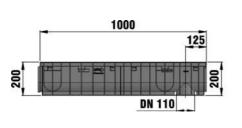
Channels

RECYFIX®PRO 100









	Length mm	Width mm	Height mm	Drainage cross-sect. cm²	Weight kg	Item No.
Type 01	1000	160	150	92	2,2	48600
Type 010	1000	160	200	142	2,7	48642
Type 020	1000	160	250	192	3,6	48620

Gratings

Slotted Covers 100, neck height 160, class C 250







Asymmetrical SW 12 mm, 1,0 m

Asymmetrical SW 12 mm, 0,5 m

Access cover asymmetrica SW 12 mm, 0,5 m

	Length mm	Width mm	Height mm	Intake cross-sect. cm²/m	Weight kg	Item-No. galvanised	Item-No. stainless steel
Asymmetrical SW 12 mm, 1,0 m	1000	156	126	120	6,02	32247	32248
Asymmetrical SW 12 mm, 0,5 m	500	156	126	120	3,19	32277	32278
Access cover asymmetrical, SW 12 mm, 0,5 m	500	163	126	-	5,22	32303	32304
Asymmetrical, duo slot, SW 2 x 6 mm, 1,0 m	1000	156	126	120	8,31	32253	32254
Asymmetrical, duo slot, SW 2 x 6 mm, 0,5 m	500	156	126	120	4,20	32283	32284
Access cover asymmetrical, duo slot, SW 2 x 6 mm, 0,5 m	500	163	125	-	6,71	32746	32747

Bigger nominal sizes and individual neck heights as tailor-made production possible for more than 30 m. The quality of stainless steel material corresponds to CNS 1.4301.

Slotted Covers 100, neck height 160, class C 250



SW 12 mm





Asymmetrical, SW 12 mm

Acess cover asymmetrical, SW 12 mm

	Length mm	Width mm	Height mm	Intake cross-sect. cm²/m	Weight kg	Item-No. galvanised	Item-No. stainless steel
Asymmetrical, SW 12 mm	1000	156	181	-	7,2	32249	32250
Asymmetrical, SW 12 mm	500	156	181	-	3,8	32279	32280
Acess cover asymmetrical, SW 12 mm	500	163	181	-	6,9	32305	32306

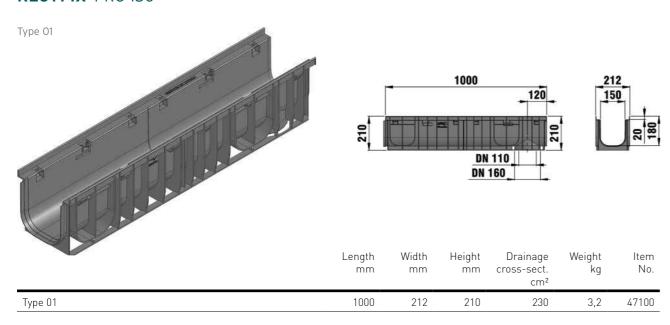
Bigger nominal sizes and individual neck heights as tailor-made production possible for more than 30 m. The quality of stainless steel material corresponds to CNS 1.4301.

SLOTTED CHANNEL 150

SLOTTED CHANNEL

Channels

RECYFIX®PRO 150



Gratings

Slotted Covers 150, neck height 160, class C 250









Asymmetrical, SW 12 mm

Asymmetrical, SW 12 mm

Acess cover asymmetrical, SW 12 mm

	Length mm	Width mm	Height mm	Intake cross-sect. cm²/m	Weight kg	Item-No. galvanised	Item-No. stainless steel
Asymmetrical, SW 12 mm	1000	206	181	-	2,2	32400	32401
Asymmetrical, SW 12 mm	500	206	181	-	3,8	32404	32405
Acess cover asymmetrical, SW 12 mm	500	-	=	=	8,0	32731	32732

Bigger nominal sizes and individual neck heights as tailor-made production possible for more than 30 m. The quality of stainless steel material corresponds to CNS 1.4301.



Jui Residences Condo Residential Complex, Singapore





Samil Office Building - Seoul, South Korea

32



RECYFIX NC

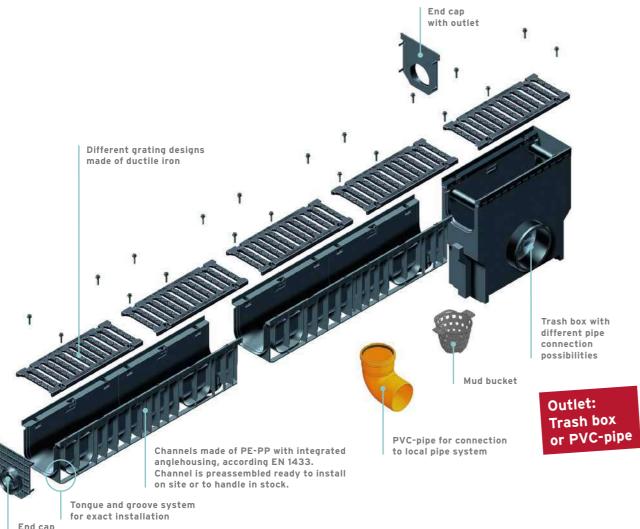
Linear drainage channels for public and commercial area.







- Industrial yardsStreets (alongside)
- Commercial areas















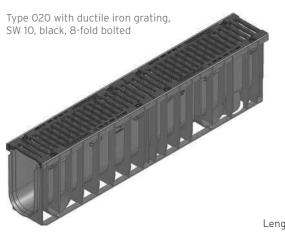


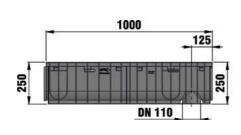
RECYFIX®NC

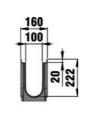
RECYFIX®NC

Combi article

RECYFIX®NC 100, class E 600

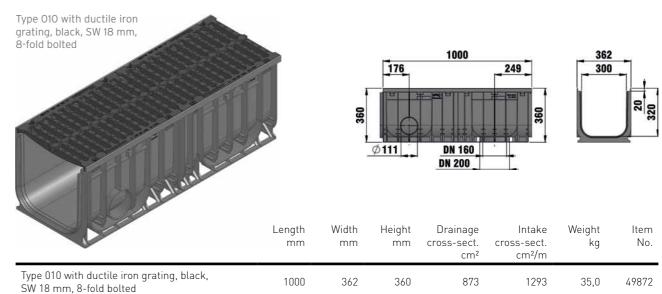




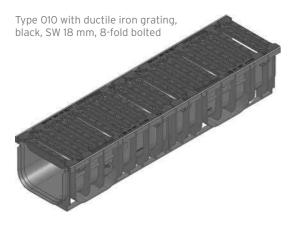


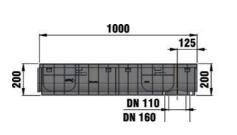
	Length mm	Width mm	Height mm	Drainage cross-sect. cm²	Intake cross-sect. cm²/m	Weight kg	Item No.
Type 01 with ductile iron grating, black, SW 10 mm, 8-fold bolted	1000	160	150	92	427	10,7	48770
Type 010 with ductile iron grating, black, SW 10 mm, 8-fold bolted	1000	160	200	142	427	11,6	48772
Type 020 with ductile iron grating, SW 10 mm, black, 8-fold bolted	1000	160	250	192	427	12,5	48776
Type 75 with ductile iron grating, black, SW 10 mm, 8-fold bolted	1000	160	75	35	427	10,2	48774

RECYFIX®NC 300, class E 600



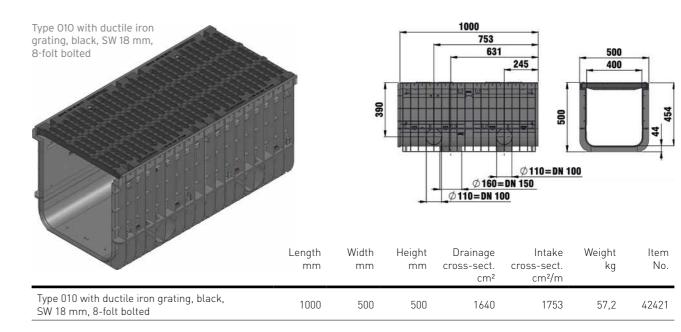
RECYFIX®NC 200, class E 600





	Length mm	Width mm	Height mm	Drainage cross-sect. cm²	Intake cross-sect. cm²/m	Weight kg	Item No.
Type 010 with ductile iron grating, black,	1000	262	200	294	936	20,8	49572

RECYFIX®NC 400, class D 400



RECYFIX POINT

Linear drainage channels for public and commercial area.









- Market squares Public areas
- Private areas











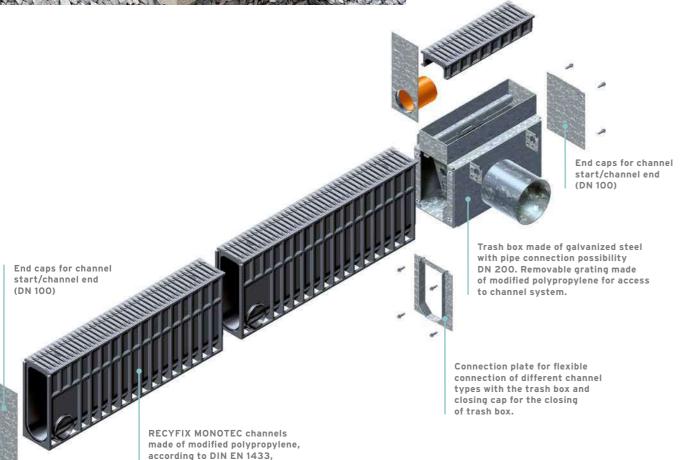
RECYFIX MONOTEC

Highly stable and lightweight - linear drainage made of PP for Civils engineering.



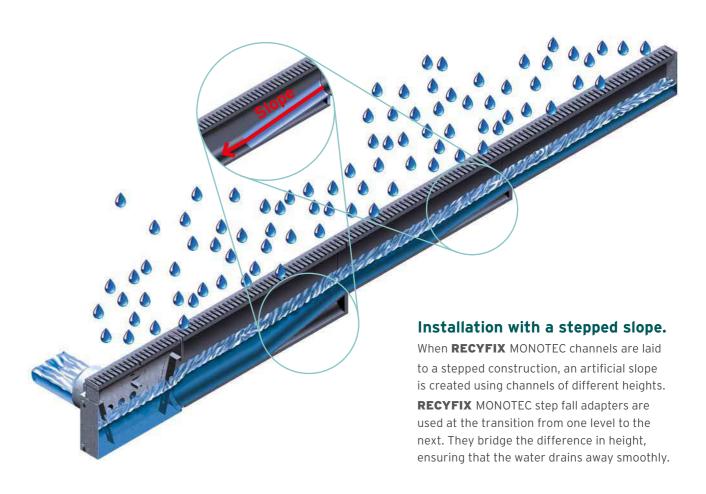


- Parking areas
- Residential areas
- Commercial areas



Tersedia di :

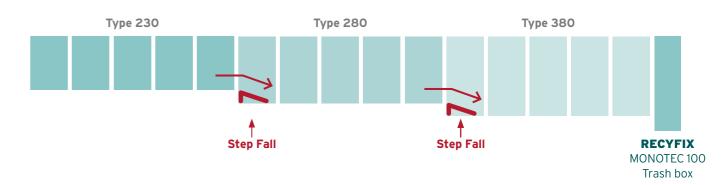
Step Fall adaptors (with the example of **RECYFIX** MONOTEC)



RECYFIX MONOTEC Step Fall Adapter, black, for channel runs with step fall



RECYFIX MONOTEC Channel 100:





RECYFIX MONOTEC

Highly stable and lightweight - linear drainage made of PP for Civils engineering.

Maximum hydraulic capacity

The fiber-reinforced polypropylene material enables a slim channel design. As a result, a maximum hydraulic capacity is achieved.



NW 100, Type 230



NW 100, Type 280



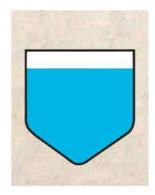
NW 100, Type 380



NW 200, Type 450



NW 200, Type 450



Lower drainage capacity, up to 45 %, with monolithic channels made from other materials



Motorway service Porto Go, Ayuthaya, Thailand









RECYFIX HICAP F

Drainage- and retention system for larger areas and highest loading capacities up to airports.









- high capacity drainage channel
- suitable for heavy load areas
- no expensive crane or machine hours for installation required

(C) CHOMEMART



Requirements

Drainage system for extreme conditions with

- high hydraulic requirements
- high loads
- large areas
- ailing sewer systems

Application areas

- parking areas
- supermarkets/shopping centres
- pedestrian areas
- airports
- industrial estates
- container terminals
- ports
- circuits and test tracks

Solutions

Special features of RECYFIX HICAP:

- drainage and retention in one component
- large selection of nominal widths
- for all loading classes and all common road surface finishes
- less manholes and outlets
- provides a uniform visual appearance also in lage projects
- no separate gratings
- no expensive pipe installations required
- high hydraulic capacity
- easy to maintain





International Airport, Bangkok, Thailand



SPORTFIX

The comprehensive range for all Sports Facilities.



- I high quality systems for track and field drainage
- water jump, longjump, sand traps and soft kerb compliment the product
- all products met the IAAF Standards

DRAINFIX CLEAN

Effective and ecological rain water treatment through filter substratum channel.



- ✓ Drainage and treatment of runoff water in one system
- excellent treatment effects
- extremely low maintenance
- ✓ high retention capacity

DRAINFIX TWIN

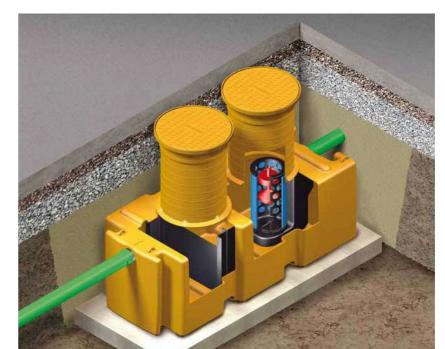
Infiltration of rainwater on smallest space under car-trafficked areas.



- ✓ very large storage volume
- flexible installation alignment due to variable combinations
- combination of seepage and retention possible

AQUAFIX Separators

Series "10 PE" made of polyethylene. Light solutions for strong requirements.



- 10 mm wall thickness for highest
- optimised construction after FE-analysis
- pure, high quality raw material is used in the optimised production
- set for local production avaible

More information at www.hauraton.com/asia





Tersedia di:



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