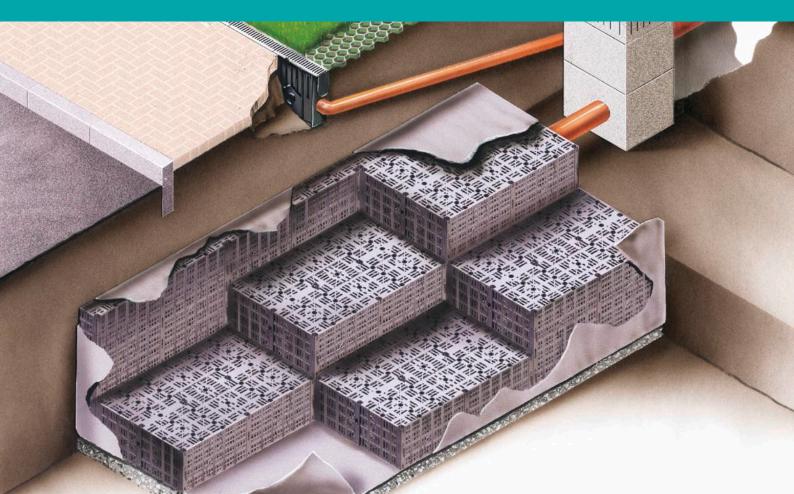
| CIVILS LANDSCAPING AQUA SPORT |
|-------------------------------|
|-------------------------------|

AQUA

THE RANGE FOR INFILTRATION SOLUTION





THE RANGE FOR INFILTRATION SOLUTION

EFFECTIVE INFILTRATION SYSTEMS SUPPORT THE NATURAL WATER CYCLE AND PROVIDE SUSTAINABLE SUPPORT FOR VITAL RESOURCES.

Water is one of the most valuable resources on earth. Water means life. However, in densely ,populated countries the natural water cycle is significantly affected by ground surfaces being sealed off. Natural infiltration of rainwater is reduced more and more, resulting in the groundwater level sinking and ground drying out.

In order to counteract these developments we require systems that store rainwater at the place of precipitation and then release it gradually back into the natural cycle. With our infiltration products we offer an intelligent way of achieving this. The HAURATON storage elements are suitable for installation underneath traffic areas in trading and housing estates as well as under drives with passenger car usage in private residential areas. The areas above the system remain usable.

HAURATON supports the design team by providing calculations for the sizing of the infiltration system and construction details, ensuring long-term functionality of the installation. With the help of our expert knowledge and advice for installation and servicing, contractors find it easy to deliver perfect results.

HAURATON works in accordance with the regulations for infiltration systems and offers customers a service based on the latest state of technology.



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|--------|-----|
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| | |

| THE HAURATON DESIGNER PACKAGE | 4 |
|---|----|
| DRAINFIX [®] BLOC STABLE, SAFE AND EXTREMELY STRONG | 10 |
| DRAINFIX [®] TWIN HIGH VOLUME IN THE SMALLEST SPACE | 24 |

THE HAURATON DESIGNER PACKAGE

HAURATON IS NOT ONLY INVOLVED IN THE DEVELOPMENT OF INNOVATIVE PRODUCTS, THE COMPANY WILL ALSO SUPPORT YOU IN THE DESIGN AND IMPLEMEN-TATION OF YOUR PROJECTS.

INDIVIDUAL SUPPORT FOR THE SYSTEM DESIGNER

Designing solutions for the many and diverse requirements in the field of infiltration requires detailed knowledge, great expertise and extensive experience. Our experts, both in field sales as well as in the office, are fully trained to answer technical and product-specific questions to be able to provide you with competent and individual advice. We will support your individual building project from project→-related tender documents through to installation – even where the brief calls for unusual duties and design. Give us a call or send us an email! We are always available for you and look forward to solving your individual questions regarding infiltration solutions.

SYSTEM DESIGN

The functionality of an infiltration system depends largely on various conditions, such as the local precipitation data, the absorptive properties of the soil and the computation of catchment areas. In order to make it easier for you to make an informed decision about the type, size and installation of the infiltration systems, we produce calculations for your specific site. Our calculations are free of charge and are based on DWA-A 138. All we need from you for the staff in our specialist department is some detailed information which you can enter in the calculation sheet for our DRAINFIX products. These parameters will be entered into the calculations. If you wish to make use of our service, please do not hesitate to contact our experts in-house and in field sales.





Cross Section DRAINFIX BLOC (1200x800)

M 1: 20

Geotextile GRK 3

83

330

330

20

600

83

660

Ventilation though inlet shaft

OUR ADVANTAGES FOR DESIGNERS

Highly reliable design solutions based on products and processes with in-house and external quality monitoring

Individual support for your designs

Service free of charge: calculations for determining the size of the infiltration structure, project-specific specification texts and installation advice

HAURATON IS A MEMBER OF THE RAL QUALITY ASSOCIATION FOR WATER SYSTEMS E.V.

508

800

RAL (German Institute for Quality Assurance and Certification e.V.) is an organisation in charge of securing high quality levels of products and services. Only RAL, the head organisation of currently 131 quality organisations, is authorised to award quality marks in Germany. HAURATON is a member of this quality association and can therefore offer the highest level of product certification.

DRAINFIX CALCULATION SHEET

Each HAURATON designer folder contains a DRAINFIX calculation sheet to be used by the system designer to enter all required data for calculating the volume and size of infiltration facility. On the basis of these data, HAURATON will provide free-of-charge calculations base on DWA-A 138.



DESIGN PRINCIPLES FOR INFILTRATION STRUCTURES

THE DIMENSIONS OF AN INFILTRATION STRUCTURE DEPEND ON A NUMBER OF ESSENTIAL PARAMETERS.

WHY INFILTRATION?

The continuing sealing off of surfaces through the construction of residential and commercial buildings and roads seriously affects the natural water cycle. In urban areas with average densities only about one quarter of the stormwater volume can infiltrate the ground. The largest part has to be drained away via the drainage systems. Defunct and inadequately sized drainage networks are no longer capable of handling these quantities of water. Natural soils and layers of vegetation provide storage for the stormwater and then release it again to the ground water with a time delay after it has been filtered. As surfaces are sealed on construction sites, this process can no longer take place on an adequate scale. The result is the reduction of groundwater level and soils drying out. Another negative effect is the increasing risk of flooding catastrophes as well as the continuing need to construct costly drainage networks and retention basins. In order to counteract these developments we require systems that store stormwater at the place of precipitation and then release it gradually back into the natural cycle.



Figure 1: Original condition of site. Rainwater can soak away into the open soil Utilisation of drains max. 80 %.



Figure 2: Buildings are erected on the site, the surface is sealed off. Precipitation water can no longer infiltrate the soil and is fully drained into the drainage system. This leads to an overload on the drainage system and hence to high costs for repair and upgrading.



Figure 3: Decentralised infiltration via soak-away structure with infiltration blocks: precipitation water runs into the infiltration structure via channels or pipe drainage or directly from surfaces with infiltration capacity, such as turf. Advantages: less surface area required, less load on the drainage network, the surfaces above the infiltration structure remain usable.

COMMERCIAL REASONS

Constant upgrading work as well as the operation and maintenance of drainage networks and retention basins drives up the costs for local authorities. The effect this has on sewage charges is something we can all feel in our pockets. Many municipalities recommend and support with grants the construction of decentralised infiltration systems on building sites when areas are opened up for new developments. This ecological commitment can also bring financial benefits from grants or reduced levies and charges.

ADVANTAGES COMPARED TO CONVENTIONAL GRAVEL INFILTRATION STRUCTURES

□ lightweight

- compact dimensions
- □ very high storage volume

Today many infiltration systems are built in the form of swales. However, these need a lot of space and are not very popular with nearby residents so that this solution is not very suitable for residential and commercial areas. A more compact version are infiltration structures underground, consisting of beds of gravel surrounded with geotextiles. The main disadvantage of these systems is the relatively small storage volume because only 30% of the overall volume is available for the storage of water. It follows therefore that in order to achieve the same capacity as an infiltration structure based on the DRAINFIX BLOC system, one has to excavate 3 times the amount of soil.

COMPLETE SYSTEM PROVIDER

Each infiltration structure has to meet a specific set of parameters and has to be adapted to the conditions on site. A range of different infiltration systems is available, which can be extended by additional components (e.g. sedimentation systems or manholes), depending on requirements. At HAURATON your will get everything you need from one port of call. Our service covers expert advice through to help with sizing and finally helpful tips for installing and operating the system. Likewise, you will get all the parts you need for the system from one supplier. Our product range includes several sedimentation systems, infiltration structures and manholes as well as the complete range of accessories. Design and build your infiltration system with HAURATON.



ADVANTAGE 1: LESS SOIL TO EXCAVATE





Excavated soil **DRAINFIX** BLOC or **DRAINFIX** TWIN

Excavated soil for conventional gravel

ADVANTAGE 2: LARGER WATER STORAGE VOLUME



Volume of water stored with **DRAINFIX** BLOC or **DRAINFIX** TWIN



Volume of water stored in conventional gravel

DESIGN PRINCIPLES FOR INFILTRATION STRUCTURES

THE DIMENSIONS OF AN INFILTRATION STRUCTURE DEPEND ON A NUMBER OF ESSENTIAL PARAMETERS.

SIZING IN ACCORDANCE WITH DWA-A 138

The regulations issued by the Deutsche Vereinigung für Wasserwirtschaft, Abwasser und Abfall e.V., (German association for water and wastewater management and refuse), abbreviated DWA, in Germany are considered the generally accepted basis for the design, construction and operation of water, wastewater and waste management systems as well as the protection of the soil. Infiltration structures are covered in worksheet DWA-A 138. According to that, the following parameters need to be taken into consideration for sizing an infiltration structure:

- \Box catchment area and run-off factor
- □ soil conditions and permeability, k_f-value
- □ rain yield and occurrence of rain
- □ groundwater



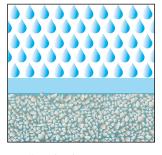
CATCHMENT AREAS

This includes all areas from which precipitation water runs into the infiltration system. The important parameters are the degree of water permeability (run-off value) and planned usage. For example, the water coming off an area of turf is different in quantity and quality to that coming off a road.

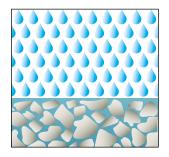
| TYPE OF SURFACE | SUGGESTED MEAN RUN-OFF VALUES $\Psi_{_{\rm m}}$ FOR TYPE OF SURFACE FINISH | | | | |
|-------------------------------------|--|--|--|--|--|
| Sloping roof | metal, glass, slate, fibre cement: 0.9–1.0 | | | | |
| | tiles, roofing felt: 0.8 – 1.0 | | | | |
| Flat roof | metal, glass, fibre cement: 0.9–1.,0 | | | | |
| (slope up to 3° or approx. 5%) | roofing felt: 0.9 | | | | |
| | gravel: 0.7 | | | | |
| Green roof | with \leftarrow 10 cm humus layer: 0.5 | | | | |
| (slope up to 15° or approx. 25%) | with $ ightarrow$ 10 cm humus layer: 0.3 | | | | |
| Roads, | asphalt, concrete without joints: 0.9 | | | | |
| pathways and squares (level) | paving with closed joints: 0.75 | | | | |
| Squares (level) | firm gravel topping: 0.6 | | | | |
| | paving with open joints: 0.5 | | | | |
| | loose gravel topping, turf on broken stone: 0.3 | | | | |
| | interlocking pavers with joints, draining pavers: 0.25 | | | | |
| | turf pavers: 0.15 | | | | |
| Banks, hard | clayey soil: 0.5 | | | | |
| shoulders and ditches | loamy sand soil: 0.4 | | | | |
| | gravel and sand soil: 0.3 | | | | |
| Gardens, mea- | level terrain: 0.0–0.1 | | | | |
| dows and agri- cultural land | sloping terrain: 0.1–0.3 | | | | |

SOIL PROPERTIES, k,-VALUE

The properties of the soils are of critical importance for the infiltration characteristics. Sandy soils or those with a gravel content have a lower infiltration factor kf and hence allow significantly more infiltration than those with a high clay content. This k_r -value is determined by the grain size, composition and volume of the material in the soil and indicates how fast water can infiltrate (soak away). Soils with good infiltration characteristics have k_r -values between 10⁻³ m/s and 10⁻⁶ m/s and range from sandy gravel to sandy silt.



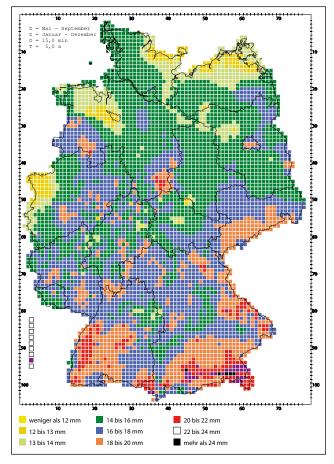
small grain size low permeability



big grain size high permeability

RAIN YIELD AND OCCURRENCE IN ACC. W. DWA-M 153 AND DWA-A 138

We will determine the rain yield for the location of your infiltration structure on the basis of the KOSTRA data, a long-term collection of data by the German Weather Service. These data list the quantity, duration and intervals of rain for every location in Germany. The calculation is based on the most unfavourable precipitation values, thus ensuring an adequate safety factor.



Map of Germany showing precipitation quantities (in litres per second and hectare)

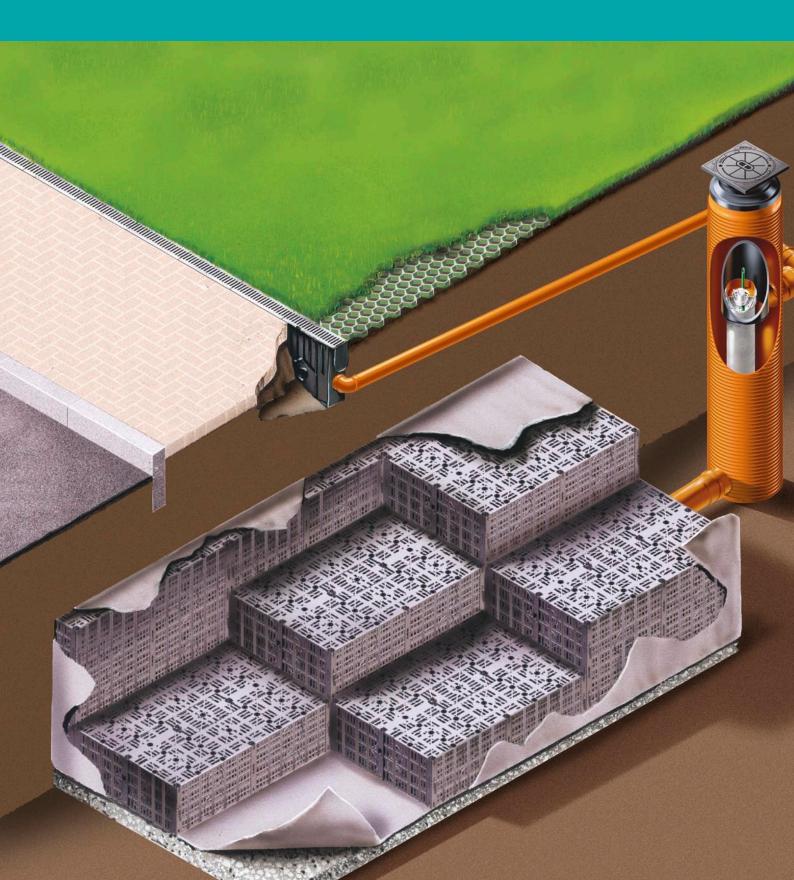
Depending on where it comes from, water can have more or less dirt particles and may carry fine dirt particles. Engineers can evaluate the properties of the precipitation water in accordance with worksheet DWA-M 153 and use these data for the calculations. Depending on the content of pollutants, worksheet DWA-A 138 distinguishes between harmless, tolerable and not tolerable water qualities. All these factors have to be taken into account when selecting and designing an infiltration system.

GROUNDWATER

One of the most important ecological reasons for the installation of infiltration systems is the protection of groundwater. With the help of these systems, precipitation water is returned to the natural cycle. An adequate distance (at least 1 m) has to be guaranteed permanently between the floor of the infiltration structure and the highest expected groundwater level. In addition, there must be no polluted layers of soil in the catchment area of the system. Otherwise, pollutants dissolved in water may get into the groundwater.

DRAINFIX®BLOC

STABLE, SAFE AND EXTREMELY STRONG. INFILTRATION MODULES FOR INDUSTRIAL AND COMMERCIAL AREAS.





AT A GLANCE

- Infiltration block with very high storage capacity
- Light-weight and variable infiltration modules
- Requires only a minimum of excavation

Gt

(4)

- ✓ Ideal where space is restricted
- Load-bearing capacity up to SLW 60, suitable for installation under areas with vehicular traffic

DRAINFIX®BLOC

STABLE, SAFE AND EXTREMELY STRONG. INFILTRATION MODULES FOR INDUSTRIAL AND COMMERCIAL AREAS.

THE PRODUCT

DRAINFIX BLOC is a polypropylene (PP) infiltration block with a very high storage capacity. The void ratio is more than 90%. The system can be installed in areas with different load requirements - even in HGV-trafficked areas up to SLW 60. The modules have been tested structurally for different load conditions.

Stormwater enters the infiltration structure through infiltration in accordance with work sheet DWA-A 138. Filtered water will reach the system via an inlet and distribution SHAFT. This SHAFT has an additional small particle filter which is capable of retaining non-soluble residual dirt. The individual elements have compact dimensions and are connected to each other without accessories. In that way the infiltration structure is constructed up to the required calculated size. The SHAFT has an overflow facility connected to the drainage system. In addition, the SHAFT can be used to control the infiltration performance and/or the level of water in the infiltration trench and can be used to function as a control SHAFT.

APPLICATION AREAS

Decentralised infiltration solutions in commercial areas, industrial precincts and on private property, in particular underneath traffic areas, e.g. parking areas to class VI of RStO 01 and other areas with vehicular access, depending on local building regulations.

FURTHER ADVANTAGES

□ Unique connection technology without accessories

In order to achieve the required storage volume simply add several DRAINFIX BLOC elements together using the push-fit function. The individual modules will form a stable structure horizontally and vertically, without additional accessories. This connection method saves time and money. It has been developed by HAURATON and is unique in the market.

□ High load-bearing capacity

Any infiltration structures in commercial areas are exposed to heavy goods vehicle (HGV) traffic. For these applications and depending on the installation method we offer a DRAINFIX BLOC model for up to SLW 60. These products are therefore particularly suitable for installation underneath trafficked areas with HGV usage, e.g. fire engine access lanes.

SUITABLE FOR HGV, SUITABLE FOR **UP TO SLW 60 PASSENGER CARS** 1 2 2 З З 4 4 5 5 6 7 8

More layers are possible depending on the object.



□ Very strong hence small space requirement

Depending on the type of soil, the modules can be installed in several layers. Under SLW 60 conditions it is possible to form 5 or more layers (depending on the type of soil and details of the cover); under less heavy loads it is possible to increase the number of layers as calculated for the respective loads, for example 8 layers for passenger car traffic. This minimises the size of the building site and the space requirement.

\Box Change of use

Where there is a subsequent change of use, DRAINFIX BLOC offers another assurance. Any areas that were originally designed for pedestrian traffic only can also be reclassified for vehicular traffic given certain installation details.

$\hfill\square$ Geotextile dressing to maintain function

The function of an infiltration structure will be restricted where dirt and soil particles silt up inside the structure. The build up of silt will reduce the amount of infiltration. To avoid this effect, the whole structure is wrapped up in a geotextile membrane made from PP-fleece GRK 3 (weight: 200g/m²). Stormwater will always be filtered when using infiltration structures and SHAFTs, which helps to prevent silting up.





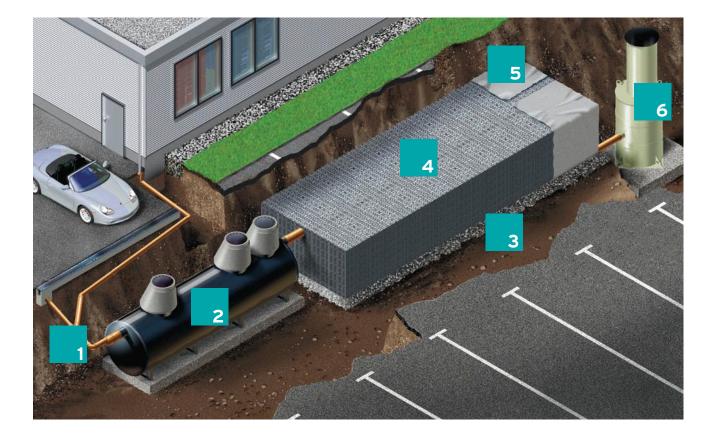




Taylor made solution according planners request

DRAINFIX®BLOC

STABLE, SAFE AND EXTREMELY STRONG. INFILTRATION MODULES FOR INDUSTRIAL AND COMMERCIAL AREAS.





Water inlet pipe Stormwater collection pipe channels water into the SHAFT



Rainwater treatment plant Individuel dimensioned plant to filter dirt particles



Road level Granular subbase on ground with infiltration capability



Infiltration element

DRAINFIX BLOC elements with high storage volume and even infiltration performance



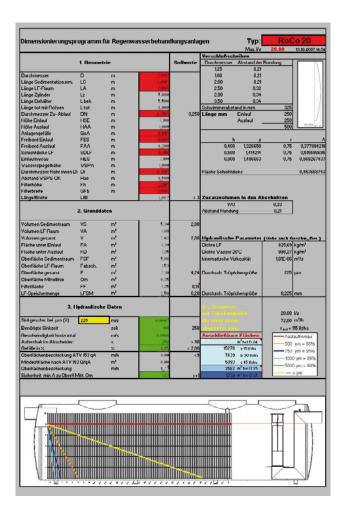
Geotextile

Can be used to protect the infiltration trench from silting up (optional)



To control, clean and maintain the infiltration trench

Precipitation water collected from e.g. roads or industrial areas can vary widely in the dirt content it carries. If this dirty water gets into the infiltration structure, the fine particles will settle to the floor and will have an adverse effect on the infiltration performance. In extreme cases the whole system may cease to function properly or the groundwater may get polluted.



DRAINFIX sedimentation and filter systems counteract this effect. They work by allowing larger dirt particles to settle in an individually dimensioned sedimentation zone, based on gravity. In a second step, an inbuilt filter ensures that even the finest particles suspended in the water are filtered out. The size and design of these systems is calculated individually for each building project, taking into account all relevant parameters (e.g. precipitation water quantity and content of dirt particles). The experts at HAURATON will take care of this task for you. Cleaning is carried out at a central place by flushing or suction.

DRAINFIX sedimentation systems for commercial areas have to withstand heavy traffic loads. For this reason we manufacture them from steel.

PERMEABILITY VALUES ACCORDING TO DWA-M 153

| DRAINFIX areas that can be connected in m ² | | | | | | | | | |
|--|--------------|--------------|----------------|---------------|---------------|--|--|--|--|
| sedimenta- tion system | D21 | D25 | | D24 | | | | | |
| type | | | 15 l/s ha | 30 l/s ha | 45 l/s ha | | | | |
| | | | | | | | | | |
| 20 | 1739 | 3587 | 15278 | 7639 | 5093 | | | | |
| 20 50 | 1739 4348 | 3587 9239 | 15278 39352 | 7639 19676 | 5093 13117 | | | | |

DRAINFIX®BLOC SHAFTS

LARGE VOLUMES FOR PROVABLE SAFETY. THE INFILTRATION STORAGE FOR MAXIMUM LOADS IN COMMERCIAL AREAS.

COMPLETE SYSTEM WITH INLET AND OUTLET CHAMBERS

Water will flow into the infiltration structure via an inlet, filter and distribution chamber which can be used for several inlet pipes. The chamber features a serviceable filter pipe that cleans the water from any silt components before it enters the system. The multi-function outlet chamber fulfils several duties:

□ Outlet, emergency overflow

Where the quantities of water are very large, the infiltration structure may get completely filled up. To provide for that case, it is possible to connect an overflow which will allow excess water to run into another infiltration structure or into the drainage system.

□ Control mechanism

In the case of poor infiltration properties of the soil, as well as to provide additional security, it is possible to fit a commercially available dynamic or static control mechanism for retention and infiltration.

□ Venting

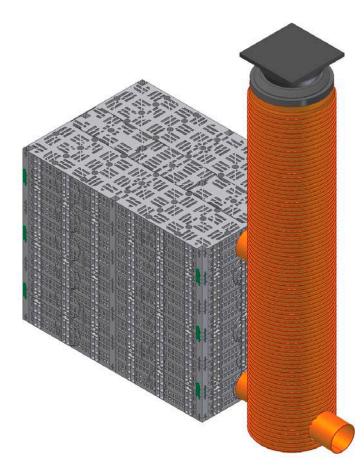
It is also necessary to allow air to escape from the system so that it can cope with a very sudden inflow of water. The chamber can also be used for the purpose of discharging air.

□ Control

Another important function of the chamber is the control of the infiltration performance and level within the infiltration structure. No other chamber is available in the market with such a broad spectrum of functionalities. The chamber is made of plastic and available in classes A 15, B 125 and D 400 to suit different requirements.

MULTI-FUNCTION SHAFT

- 🗆 inlet
- \Box emergency overflow
- venting
- outlet
- □ control mechanism
- □ control/monitoring



□ Pre-formed connections

DRAINFIX BLOC modules as well as all chambers have pipe connections for sizes DN 100/150. This allows for easy and quick connections to standard PVC pipes.



Further shaft dimensions we can offer after the individual dimensioning.





Shaft DN 1000

DRAINFIX®BLOC

MAXIMUM STRENGTH AND LONG-TERM DURABILITY ARE AN ESSENTIAL REQUIREMENT FOR INFILTRATION STRUCTURES BUILT WITH INFILTRATION BLOCKS. DRAINFIX BLOC MODULES HAVE BEEN SUBJECTED TO RIGOROUS TESTING. THE RESULT: DRAINFIX BLOC HAS BEEN PROVEN TO BE ONE OF THE STRONGEST SYSTEMS ON THE MARKET.

PROVEN TO BE ONE OF THE STRONGEST SYSTEMS ON THE MARKET

Proven quality and strength

- quality management system in accordance with DIN ISO 9001:2000
- suitable for load class SLW 60 according to calculations by civil engineer (VBI)
- calculations and product testing in accordance with strict BBA requirements (British Board of Agreement)
- proven long-term functionality (50 years) as tested under British standards
- = maximum reliability for the system designer
- = DRAINFIX BLOC

STRENGTH TESTED TO BBA REQUIREMENTS

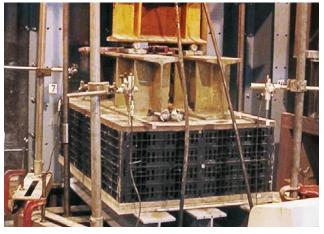
Test methods

The results are based on a number of structural tests:

- vertical and horizontal point loads applied via a 300 mm diameter steel plate
- vertical and horizontal distributed load applied via a steel plate covering the whole test specimen
- serial testing to assess creep characteristics. Test loads representing 80%, 60%, 40% and 20% of the maximum permissible point load were applied for a defined period of time (200 days).



Test with point load from above



Test with vertical distributed load



Test with horizontal load

RESULTS

Since March 2003, a standardised test method for plastic objects has been introduced in compliance with BBA regulations (British Board of Agreement).

tests for maximum horizontal and vertical loading: results:

distributed load

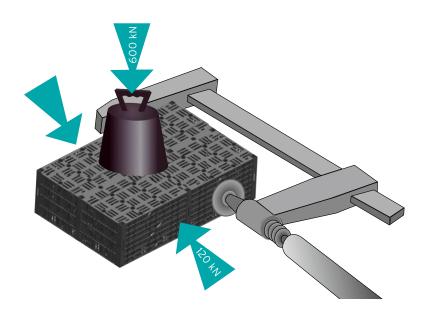
vertical compressive strength = 600 kN/m^2 horizontal compressive strength = 120 kN/m^2 point load

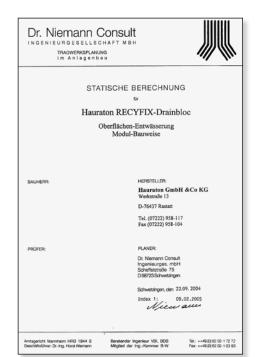
vertical compressive strength = 800 kN/m^2 horizontal compressive strength = 120 kN/m^2

- achievable installation depth up to 7.1 m depending on type of soil and load - without permanent supporting structures such as geolattice, sheet piling or concrete walls
- Iong-term test (up to 200 days) for assessing the creep characteristics - allows conclusions for a life span of up to 50 years
- the DRAINFIX BLOC by HAURATON also has been calculated under the German standard DIN1072 up to load class SLW60

DRAINFIX BLOC: strong system for maximum load-bearing capacity = maximum reliability for the system designer

DRAINFIX BLOC by HAURATON has been tested in accordance with the exacting English test methods.

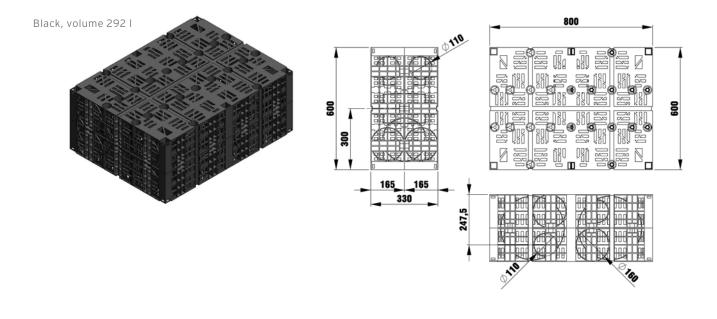






DRAINFIX®BLOC

DRAINFIX[®]BLOC - Seepage element, SLW 60 depending on installation



| | Length mm | Width mm | Height mm | Weight kg | Article No. |
|---|--------------|-------------|--------------|--------------|----------------|
| Size 1, Black, volume 146 l | 600 | 800 | 330 | - | 96025 |
| Size 2, Black, volume 292 l | 1200 | 800 | 330 | 23,0 | 96000 |
| Supplementary for access with camera (for Size 2) | 1200 | 800 | 330 | 2,4 | 96150 |

DRAINFIX[®] - Rainwater treatment plants (ATV)

| Type 20 | Length mm | Width mm | Height mm | Weight kg | external diameter mm | Flow capacity l/s | Article No. |
|----------|--------------|-------------|--------------|--------------|----------------------------|-------------------------|----------------|
| Туре 20 | 6000 | 1500 | 1650 | - | 1500 | 20 | 96400 |
| Туре 50 | 9000 | 2500 | 2650 | - | 2500 | 50 | 96410 |
| Туре 100 | 17000 | 2500 | 2650 | - | 2500 | 100 | 96420 |
| | | | | | | | |

All DRAINFIX - Rainwater treatment plants (ATV) are also applicable for DRAINFIX TWIN.

Hauraton

Discharge shaft DN 1000

with inlet and outlet DN 150

| | Length mm | Width mm | Height mm | Weight kg | Article No. |
|---|--------------|-------------|--------------|--------------|----------------|
| Inlet and distribution shaft SUPER, 3-piece with closed ductile iron cover, black, class E 600 | 510 | 390 | 1250 | 289,0 | 96250 |
| Multifunction discharge shaft SUPER, 3-piece, with closed ductile iron cover, black, class E 600 | 510 | 390 | 1250 | 284,0 | 96350 |
| Filter shaft* 400/1500 with fine filter cartridge, with ductile iron grating, closed, class B 125 | 400 | _ | 1673 | - | 96710 |
| Filter shaft* 400/1500 with fine filter cartridge, with ductile iron grating, closed, class D 400 | 400 | - | 1673 | - | 96720 |
| Filter shaft* 400/2000 with fine filter cartridge, with ductile iron grating, closed, class B 125 | 400 | - | 2173 | - | 96760 |
| Filter shaft* 400/2000 with fine filter cartridge, with ductile iron grating, closed, class D 400 | 400 | - | 2173 | - | 96770 |
| Multifunction shaft* 400/1500 with ductile iron grating, closed, class B 125 | 400 | - | 1673 | - | 96715 |
| Multifunction shaft* 400/1500 with ductile iron grating, closed, class D 400 | 400 | - | 1673 | - | 96725 |
| Multifunction shaft* 400/2000 with ductile iron grating, closed, class B 125 | 400 | - | 2173 | - | 96765 |
| Multifunction shaft* 400/2000 with ductile iron grating, closed, class D 400 | 400 | - | 2173 | - | 96775 |
| Discharge shaft DN 1000 with inlet and outlet DN 150 | 1000 | - | 2345 | - | 96890 |

* Height adjustable via telescope adaptation

DRAINFIX[®]BLOC - Accessories



Connection adaptor for DRAINFIX BLOC Size 1, red



Length Width Height Weight Article No. mm mm mm kg Connection adaptor for DRAINFIX BLOC Size 1, red 74 46 96115 48 Connection adaptor for DRAINFIX BLOC Size 2, green 35 35 100 96110 -Geotextile from PP-fleece GRK3 rollware 2 x 200 m, 200 g/m² 96120 -_ 80,0 Geotextile form PP-fleece GRK3, sold by 2 m² per metre cutting-off of the the roll -_ _ 0,2 96130

DRAINFIX® - Multifunction shafts



Inlet and distribution shaft SUPER, 3-piece with closed ductile iron cover, black, class E 600

Filter shaft* 400/1500 with fine filter cartridge, with ductile iron grating, closed, class B 125



TENDER PROPOSALS

DRAINFIX BLOC INFILTRATION ELEMENTS

1. ____ no.

DRAINFIX BLOC black, storage volume 292 I, made from PP; infiltration block, suitable for infiltration, retention and storage trenches and swales, with over 90% storage capacity, with integrated connector adapters for safe positioning in accordance with DGBM, height 330 mm, length 1200 mm, width 800 mm, art. no. 96000. To be supplied and laid in accordance with the manufacturer's installation instructions. With suitable installation details load class up to SLW 60 - suitable for HGV. Quality in acc. with DIN EN ISO 9001:2000

Manufactured by: Hauraton GmbH & Co. KG $\,$

P. O. Box 16 61 D-76437 Rastatt, Germany Tel.: +49-7222-958-0 Fax: +49-7222-958-102 E-Mail: export@hauraton.com

ACCESSORIES

2. ____NO. DRAINFIX RAINWATER TREATMENT PLANT TYPE 20 ATVR

DN 1500 mm, length 6000 mm for 20 l/s, inlet in front of DRAINFIX ditch including filter elementand sedimentation space; pipe connection possibility DN 300, art. no. 96400

3. ___ no. DRAINFIX RAINWATER TREATMENT PLANT TYPE 20 ATVR

DN 2500 mm, length 9000 mm for 50 l/s, inlet in front of DRAINFIX ditch including filter elementand sedimentation space; pipe connection possibility DN 300, art. no. 96410

4. ____ no. DRAINFIX RAINWATER TREATMENT PLANT TYPE 100 ATV

DN 2500 mm, length 17000 mm for 100 l/s, inlet in front of DRAINFIX ditch including filter elementand sedimentation space; pipe connection possibility DN 300, art. no. 96420

- 5. ____no. INLET AND DISTRIBUTION SHAFT SUPER in 3 parts, made from fibre-reinforced concrete with galvanised steel frame, load class E 600 with SIDE-LOCK boltless quick-locking system, 4-fold locking and closed cast iron cover, consisting of top, middle part with filter element and base, h/w/l 1250 x 390 x 510 mm, art. no. 96250
- 6. ___ no. MULTI-FUNCTION OUTLET SHAFT SUPER in 3 parts, made from fibre-reinforced concrete with galvanised steel frame, load class E 600 with SIDE-LOCK boltless quick-locking system, 4-fold locking and closed cast iron cover, consisting of top, middle part with filter element and base, h/w/l 1250 x 390 x 510 mm, art. no. 96350

FILTER MANHOLE 400/1500 7. ___ no.

made from PP, with closed cast iron cover, load ___, nominal width 400, with telescopic class adapter and integrated sludge trap and fine filter cartridge with inspection facility, including visual maintenance indicator, inlet and outlet spigot DN 150, height of manhole 1,673 mm, can be extended by up to 680 mm via telescopic function, art. no.

FILTER MANHOLE 400/2000 8. ___ no.

made from PP, with closed cast iron cover, load class _____, nominal width 400, with telescopic adapter and integrated sludge trap and fine filter cartridge with inspection facility, including visual maintenance indicator, inlet and outlet spigot DN 150, height of manhole 2,173 mm, can be extended by up to 180 mm via telescopic function: art. no.

9. no. **MULTI-FUNCTION CHAMBER 400/1500** made from PP, with closed cast iron cover, load __, nominal width 400, with telescopic class adapter, inlet and outlet spigot DN 150, height of manhole 1,673 mm, can be extended up to

680 mm via continuous telescopic extension, functions: outlet, emergency overflow, venting, control, art, no.

MULTI-FUNCTION CHAMBER 400/2000 10. ___ no. made from PP, with closed cast iron cover, load class _____, nominal width 400, with telescopic adapter, inlet and outlet spigot DN 150, height of manhole 2,173 mm, can be extended up to 680 mm via continuous telescopic extension, functions: outlet, emergency overflow, venting, control, art. no.

DRAINFIX OUTLET SHAFT DN 1000 11. ____ no. with pipe connection possibility inlet and outlet DN 150, inlet height 794 mm, Shaft height 2345 mm, art. no. 96890

12. ___ no..

CONNECTION ADAPTER

for DRAINFIX BLOC, made from PP, for securing different layers of DRAINFIX BLOC against thrust, height 100 mm, art. no. 96110. When blocks laid in rows use 6 pieces, when laid in several layers use 4 pieces for each 2.40 m x 2.40 m area.

13. ___ no. **GEOTEXTILE, BY THE ROLL**

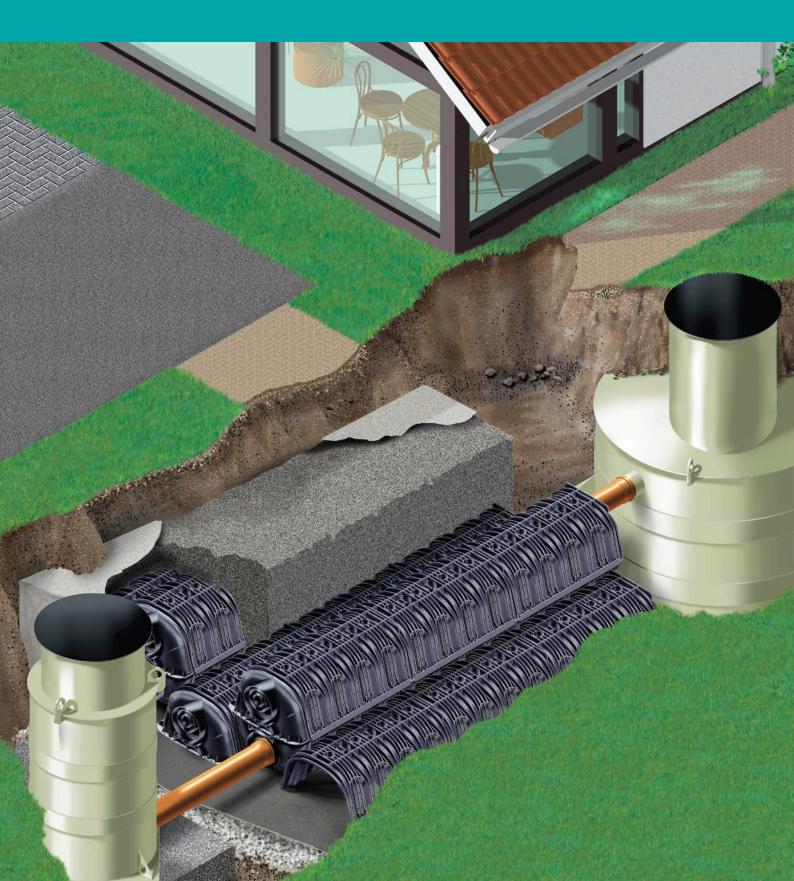
white, for wrapping up DRAINFIX BLOC, made from PP fleece, mechanically reinforced GRK 3, weight 200 g/m², length of roll 100 m, width of roll 4 m, art. no. 96120

GEOTEXTILE, BY THE METRE 14. ____ no.

white, for wrapping up DRAINFIX BLOC, made from PP- fleece, mechanically reinforced GRK 3, weight 200 g/m², width 4 m, art. no. 96130



HIGH VOLUME IN THE SMALLEST SPACE. THE DOUBLE TUNNEL SYSTEM FOR USE UNDER LIGHT TRAFFIC ROADS.

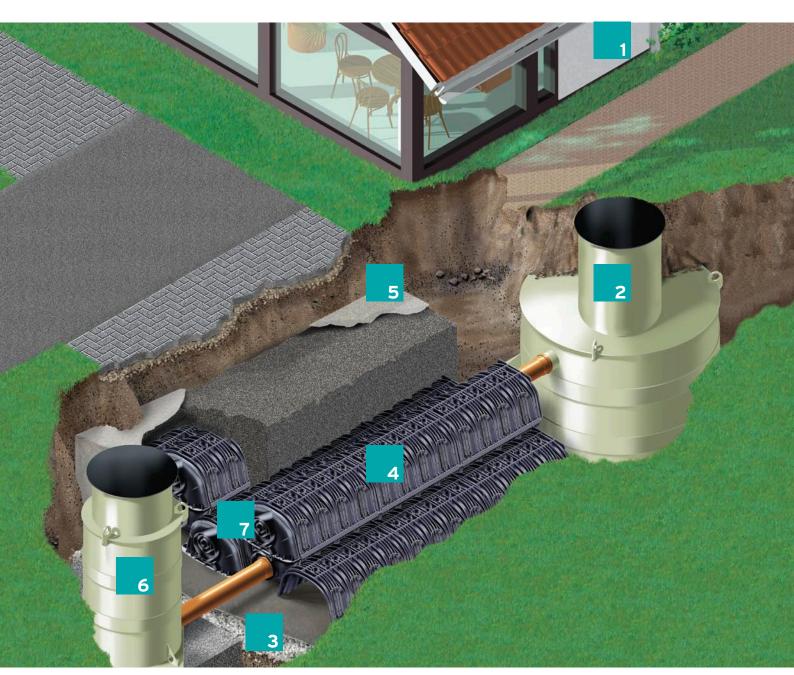


📕 hauraton



HIGH VOLUME IN THE SMALLEST SPACE.

THE DOUBLE TUNNEL SYSTEM FOR USE UNDER LIGHT TRAFFIC ROADS .



Water inlet pipe

Stormwater collection pipe channels water into the SHAFT



Water treatment plant individual dimensioned plant to treat and filter dirt particles

3

Road level Granular subbase on ground with infiltration capability



Infiltration element

DRAINFIX TWIN elements with high storage volume and even infiltration performance

5 Geotextile

Can be used to protect the infiltration trench from silting up (optional)



Flushing and control chamber

Flushing and control chamber for the control, cleaning and maintenance of the infiltration system

7

Combi end cap

End caps for closing the element ends or for connecting to SHAFT or drainage system

REQUIREMENTS

Decentralised infiltration facility in private and public areas with low traffic volumes. The elements used to fill the infiltration structure should be lightweight and easy to handle and offer maximum storage capacity for small space requirement. The material must be durable and strong. The surface area should remain usable.

SOLUTION

DRAINFIX TWIN are combinable infiltration elements with particularly large storage capacity. This large available volume makes it possible to collect large quantities of water. Subsequently, the water will be slowly released to the surrounding soil. Compared to conventional gravel-filled infiltration structures, site requirements and excavation are reduced by 2/3. The surface areas remain fully usable for other purposes.

APPLICATION AREAS

Collecting and storing stormwater for infiltration from sealed ground surfaces in private and public areas with low traffic volumes.

Depending on the installation details, the load class will range from pedestrian to passenger car traffic.

TRANSPORT ADVANTAGE

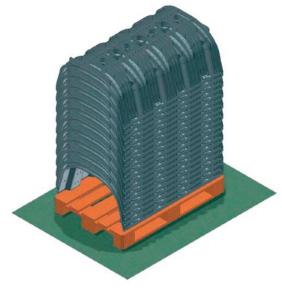
One Euro pallet will carry 32 stacked elements, which corresponds to approx. 8.1 m storage volume. It means favourable transport costs and small space requirements during storage.

DRAINFIX WATER TREATMENT PLANT

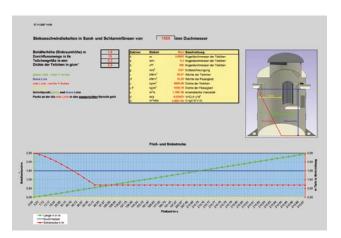
DRAINFIX Water treatment plants prevent dirt particles entering the infiltration system and protect it. With the aid of gravitation bigger dirt particles are sedimented in the individuel dimensioned sedimentation zone. An extra built filter makes sure in the second step that also the smallest dirt particles are filtered. Size and design of these plants were dimensioned for each building project under consideration of all influencing factors (e.g. rainfall quantity and kind of dirt). HAURATON experts can support you for the dimensioning.



Huge back pressure volume



Stack of elements on pallet

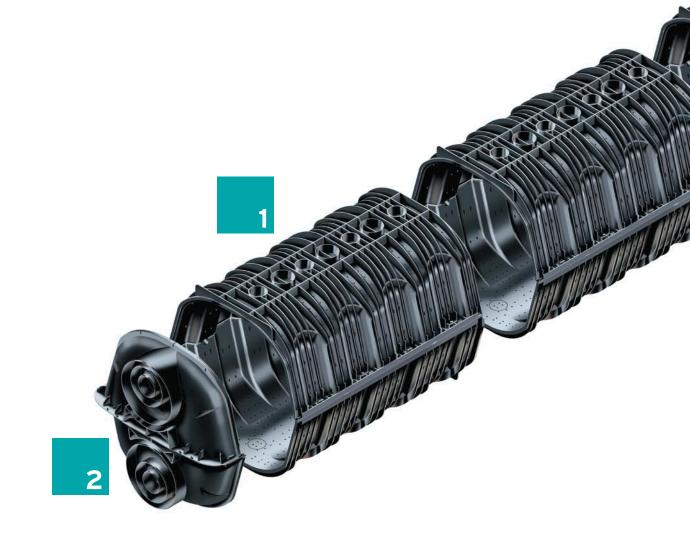


HIGH VOLUME IN THE SMALLEST SPACE.

THE DOUBLE TUNNEL SYSTEM FOR USE UNDER LIGHT TRAFFIC ROADS.

INFILTRATION SYSTEM USING VARIABLE PLASTIC ELEMENTS

DRAINFIX TWIN is a system solution for decentralised infiltration of stormwater in private and public spaces. The very large storage volume offers much reserve space for very sudden stormwater precipitation. The innovative design makes it possible to join the elements together in order to firmly connect individual elements to each other. The system is rounded off with end caps, SHAFTs and closed DRAINFIX TWIN elements for sedimentation and inspection.



DRAINFIX TWIN 1/1 made from plastic, with drainage holes, for retention and infiltration discharge of stormwater

3

- The combination with elements without drainage holes allows numerous installation constellations
- 2 Plastic end cap with variable connection option to pipes DN 200 and DN 300

3

Multi-function plastic SHAFT DN 400 for inspection or filtering

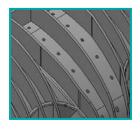
UNIQUE IN THE MARKET

- Elements with and without drainage holes can be combined
- Maximum variety of applications with only 2 elements
- Optimal capacity effect per area

COMBINATION OPTIONS OF DRAINFIX TWIN ELEMENTS

combination options to configure the ideal solution for different situations. Using the two basic elements DRAINFIX TWIN 1 with drainage holes and DRAINFIX TWIN 0 without drainage holes it is possible to configure six different combinations. These six combinations can be used to advantage to match the requirements of different situations on site. The aim is find an optimum combination of elements to suit the ground conditions and the characteristics of the elements. With just a few elements DRAINFIX TWIN offers maximum adaptability to ground conditions and the situation on site.





DRAINFIX TWIN 1

Element with drainage hole. Particularly suited for use in high or medium groundwater level areas.



DRAINFIX TWIN O Element without drainage hole. Particularly suitable for installation underneath sealed surfaces or installations without separate gravel packing.



DRAINFIX TWIN 1/1 Upper and lower element have drainage

holes. This combination is indicated for maximum infiltration discharge.



DRAINFIX TWIN 1/0

Only the upper element has drainage holes. This combination is particularly suitable for sedimentation flushability of the infiltration structure.



DRAINFIX TWIN 1

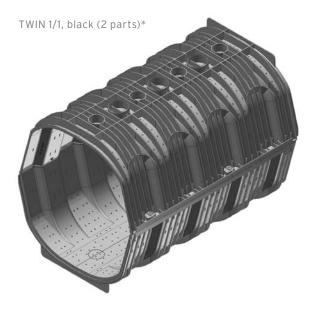
DRAINFIX TWIN 0/1 Only the lower element has drainage holes. This combination is particularly suitable where the dug out spoil is re-used.

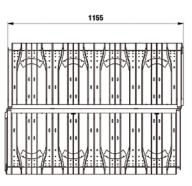
DRAINFIX TWIN 0/0

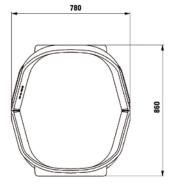
Neither the upper nor the lower element have drainage holes. The combination with closed elements is suitable as a sedimentation zone.



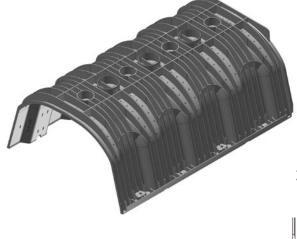
DRAINFIX®TWIN - Seepage element made of PP



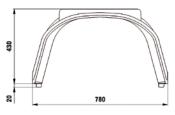




TWIN 1, black (1 part)



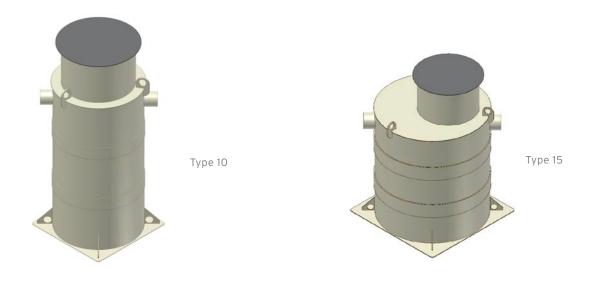
| 1140 | | | | | | | |
|------|--|--|--|--|--|--|--|



| | Length mm | Width mm | Height mm | Weight kg | Article No. |
|---|--------------|-------------|--------------|--------------|----------------|
| TWIN 1/1, black (2 parts)* | 1155 | 780 | 860 | 23,0 | 96550 |
| TWIN 0/0, black (2 parts), closed* | 1155 | 780 | 860 | 23,0 | 96610 |
| TWIN 0/1, black (2 parts), upper part closed* | 1155 | 780 | 860 | 23,0 | 96650 |
| TWIN 1/0, inspection, black (2 parts), lower part closed* | 1155 | 780 | 860 | 23,0 | 96660 |
| TWIN 1, black (1 part) | 1155 | 780 | 430 | 11,5 | 96500 |
| TWIN 0, black (1 part), closed | 1155 | 780 | 430 | 11,5 | 96600 |

 \ast including 4 times DRAINFIX TWIN fixing and 2 DRAINFIX TWIN connection clip.

DRAINFIX® - Rainwater treatment plants



| | Length mm | Width mm | Height mm | Weight kg | external diameter mm | Flow capacity l/s | Article No. |
|---------|--------------|-------------|--------------|--------------|----------------------------|-------------------------|----------------|
| Туре 10 | 1000 | 1000 | 2345 | - | 950 | 6 | 96450 |
| Туре 12 | 1200 | 1200 | 2480 | - | 1190 | 10 | 96460 |
| Туре 15 | 1500 | 1500 | 2704 | - | 1430 | 15 | 96470 |
| Туре 20 | 2000 | 2000 | 2804 | - | 1910 | 20 | 96480 |
| Туре 25 | 2500 | 2500 | 2654 | - | 2380 | 25 | 96490 |

All DRAINFIX - Rainwater treatment plants (ATV) are also applicable for DRAINFIX BLOC.

with inlet and outlet DN 150

Discharge shaft DN 1000

| | Length mm | Width mm | Height mm | Weight kg | Article No. |
|---|--------------|-------------|--------------|--------------|----------------|
| Filter shaft* 400/1500 with fine filter cartridge, with ductile iron grating, closed, class B 125 | 400 | - | 1673 | - | 96710 |
| Filter shaft* 400/1500 with fine filter cartridge, with ductile iron grating, closed, class D 400 | 400 | - | 1673 | - | 96720 |
| Filter shaft* 400/2000 with fine filter cartridge, with ductile iron grating, closed, class B 125 | 400 | - | 2173 | - | 96760 |
| Filter shaft* 400/2000 with fine filter cartridge, with ductile iron grating, closed, class D 400 | 400 | - | 2173 | - | 96770 |
| Multifunction shaft* 400/1500 with ductile iron grating, closed, class B 125 | 400 | - | 1673 | - | 96715 |
| Multifunction shaft* 400/1500 with ductile iron grating, closed, class D 400 | 400 | - | 1673 | - | 96725 |
| Multifunction shaft* 400/2000 with ductile iron grating, closed, class B 125 | 400 | - | 2173 | - | 96765 |
| Multifunction shaft* 400/2000 with ductile iron grating, closed, class D 400 | 400 | - | 2173 | - | 96775 |
| Discharge shaft DN 1000 with inlet and outlet DN 150 | 1000 | - | 2345 | - | 96890 |

* Height adjustable via telescope adaptation

DRAINFIX® - Multifunction shafts

Filter shaft* 400/1500 with

ductile iron grating, closed,

fine filter cartridge, with

class B 125

DRAINFIX®TWIN - Accessories



| | Length mm | Width mm | Height mm | Weight kg | Article No. |
|---|--------------|-------------|--------------|--------------|----------------|
| End cap, black | 192 | 780 | 430 | 2,5 | 96530 |
| Geotextile from PP-fleece GRK3 rollware 4 x 100 m, 200 g/m² | - | - | - | 80,0 | 96120 |
| Geotextile from PP-fleece GRK3, by the metre 4m² / to cat | _ | - | - | 0,2 | 96130 |

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TENDER PROPOSALS

DRAINFIX TWIN INFILTRATION ELEMENTS

1. <u>no.</u>

DRAINFIX TWIN 1/1, black, made from PP, element for infiltration trench, suitable for retaining, storing and releasing stormwater for infiltration, including 4 x DRAINFIX TWIN locking and 2 DRAINFIX TWIN connector brackets, load class for passenger cars, volume 506 I, I/w/h 1155 x780 x860 mm, weight 23.0 kg, art. no. 96550 To be supplied and laid in accordance with the manufacturer's installation instructions. Quality in acc. with DIN EN ISO 9001:2000 Manufactured by: Hauraton GmbH & Co. KG

P. O. Box 16 61 D-76437 Rastatt, Germany Tel.: +49-7222-958-0 Fax: +49-7222-958-102 E-Mail: export@hauraton.com

2. ____no. DRAINFIX TWIN 1/0,

black, made from PP, element for infiltration trench, suitable for sedimentation and retention of stormwater, including 4 x DRAINFIX TWIN locking and 2 DRAINFIX TWIN connector brackets, load class for passenger cars, volume 506 I, I/w/h 1155 x 780 x 860 mm, weight 23.0 kg, art. no. 96650

3. ____no. DRAINFIX TWIN 0/1,

black, made from PP, element for infiltration trench, suitable for retaining, storing and releasing stormwater for infiltration, including 4 x DRAINFIX TWIN locking and 2 DRAINFIX TWIN connector brackets, load class for passenger cars, volume 506 I, I/w/h 1155 x 780 x 860 mm, weight 23.0 kg, art. no. 96660 4. ____no. DRAINFIX TWIN 0/0,

black, made from PP, element for infiltration trench, suitable for sedimentation and retention of stormwater, including 4 x DRAINFIX TWIN locking and 2 DRAINFIX TWIN connector brackets, load class for passenger cars, volume 506 I, I/w/h 1155 x 780 x 860 mm, weight 23.0 kg, art. no.

5. ____no. DRAINFIX TWIN 1

black, made from PP, element for infiltration trench, suitable for retaining, storing and releasing stormwater for infiltration, load class for passenger cars, volume 253 I, I/w/h 1155 x780 x 430 mm, weight 11.5 kg, art. no. 96500

6. ____no. DRAINFIX TWIN 0,

black, made from PP, element for infiltration trench, suitable for sedimentation and retention of stormwater, also suitable for inspecting DRAINFIX TWIN infiltration systems, load class for passenger cars, volume 253 I, I/w/h 1155 x780 x 430 mm, art. no. 96600

ACCESSORIES

| 7. <u>no</u> . | DRAINFIX RAINWATER TREATMENT PLANT TYPE 10 DN 1000 mm for 6 I/s, inlet in front of DRAINFIX ditch including filter element and sedimentation space; pipe connection possibility DN 150; inlet height 794 mm, Shaft height 2345 mm, art. no. 96450 | 14. <u> </u> | MULTI-FUNCTION CHA made from PP, with close class, nominal widtl adapter, inlet and outlet of manhole 1,673 mm, ca 680 mm via continuous functions: outlet, emerge control, art. no |
|--------------------|---|--------------|--|
| 8. <u>no.</u> no. | DRAINFIX RAINWATER TREATMENT PLANT TYPE 12 DN 1200 mm for 10 I/s, inlet in front of DRAINFIX ditch including filter element and sedimentation space; pipe connection possibility DN 150; inlet height 876 mm, Shaft height 2480 mm, art. no. 96460 | 15. <u> </u> | MULTI-FUNCTION CHA made from PP, with close class, nominal widtl adapter, inlet and outlet of manhole 2,173 mm, ca 680 mm via continuous |
| 9. <u>n</u> no. | DRAINFIX RAINWATER TREATMENT PLANT TYPE 15 DN 1500 mm for 15 I/s, inlet in front of DRAINFIX | 16. <u> </u> | functions: outlet, emerge control, art. no DRAINFIX OUTLET SH |
| 10 | ditch including filter element and sedimentation space; pipe connection possibility DN 200; inlet height 896 mm, Shaft height 2704 mm, art. no. 96470 DRAINFIX RAINWATER TREATMENT | 17 no. | with pipe connection pos DN 150, inlet height 794 mm, art. no. 96890 ENDCAP FOR DRAINFI |
| 10. <u>no.</u> no. | PLANT TYPE 20 DN 2000 mm for 20 l/s, inlet in front of DRAINFIX ditch including filter element and sedimentation space; pipe connection possibility DN 200; inlet height 896 mm, Shaft height 2804 mm, art. no. 96480 | 18. <u> </u> | (2 pieces required for TV with combined outlet DN art. no. 96530 GEOTEXTILE, BY THE white, for wrapping up D from PP→ fleece, mechan |
| 11. <u>no</u> . | DRAINFIX RAINWATER TREATMENT PLANT TYPE 25 DN 2500 mm for 25 l/s, inlet in front of DRAINFIX ditch including filter element and sedimentation space; pipe connection possibility DN 200; inlet height 941 mm, Shaft height 2219 mm, art. no. 96490 | 19. <u> </u> | weight 200 g/m ² , length roll 4 m, art. no. 96120 GEOTEXTILE, BY THE white, for wrapping up D from PP- fleece, mechan weight 200 g/m ² , width 4 |
| 12. <u>no.</u> | FILTER MANHOLE 400/1500 | | |
| | made from PP, with closed cast iron cover, load class _, nominal width 400, with telescopic extension and integrated sludge trap and fine filter cartridge with inspection facility, incl. visual maintenance display, inlet and outlet spigot DN 150, manhole height 2,173 mm, can be extended up to 180 mm via continuous telescopic extension, art. no. | | |

FILTER MANHOLE 400/2000 13. <u>no.</u>

> made from PP, with closed cast iron cover, load class _____, nominal width 400, with telescopic extension and integrated sludge trap and fine filter cartridge with inspection facility, incl. visual maintenance display, inlet and outlet spigot DN 150, manhole height 2,173 mm, can be extended up to 180 mm via continuous telescopic extension, art. no. _

AMBER 400/1500

ed cast iron cover. load h 400, with telescopic spigot DN 150, height an be extended up to telescopic extension, ency overflow, venting,

AMBER 400/2000

ed cast iron cover, load h 400, with telescopic spigot DN 150, height an be extended up to telescopic extension, ency overflow, venting,

IAFT DN 1000

ssibility inlet and outlet mm, Shaft height 2345

IX TWIN

WIN installation) 100 / 200 / 300,

ROLL

RAINFIX BLOC, made nically reinforced GRK 3, of roll 100 m, width of

METRE

RAINFIX BLOC, made nically reinforced GRK 3, 4 m, art. no. 96130



DRAINFIX TWIN INSTALLATION OPTIONS

DRAINFIX TWIN elements not only provide a number of combination options but can also be varied in their installation configuration. This feature of the system makes it possible to make the best use out of the available construction space. In that way the infiltration structure can be designed to suit the respective requirements.



DRAINFIX TWIN 1 - (single layer) low height of excavation, high load-bearing capacity



DRAINFIX TWIN 1/1 - (TWIN installation) large infiltration volume, medium load-bearing capacity of the infiltration structure



DRAINFIX TWIN 1/1 in combination with DRAINFIX TWIN 1 - (wave pattern) maximum volume for available area

Installation example DRAINFIX TWIN 0/1 Load = non-trafficked Backfill = Dug out soil Natural ground 120 cm up to 210 cm Twin 0 (without drainage perforation) min. = 30 cm, max = 120 cm Geotextile (Prevents fine particles getting 20 cr washed into gravel) Gravel size 8/16 up to approx. 16/32 (washed) Twin 1 (with drainage perforation) approx. 5 cm Sand (washed) 120 cm Applying to: The installation examples / advise constantly are adapted to the technical conditions. DRAINEIX TWIN 0/1 With new editions older expenditures lose their validity. Before planning or installation please verify the current version at www.hauraton.com Our general installation Surface: 🗄 hauraton Condition:27.02.2007 instruction apply Natural Ground Description: DRF_TWIN_Einbau_1xTWIN-0-1_begehbar_GB C:\pd e\inventor\2007\05\0\000014835.idv

INSTALLATION EXAMPLE

INSTALLING DRAINFIX TWIN

Prepare the pit and lay a level gravel subbase on the base of the pit, which should consist of soil with infiltration capability. Simply join the DRAINFIX TWIN elements together using the tongue and groove joint;



they will then form a homogenous system without cross bridges or braces within the infiltration cavity. Lay the elements and lock them into place using the connection brackets and the DRAINFIX TWIN locking device.



BACKFILLING THE INFILTRATION TRENCH

Once all connections have been made to SHAFTs and the system has been laid completely and closed at the ends with end caps, the infiltration trench is ready for backfilling. Fill material can be gravel or the spoil from digging out the trench. Depending on the combination of DRAINFIX TWIN 1 and 2 elements it may not be necessary to insert a geotextile. Once the trench has been backfilled, the surface can be used for other purposes.





HAURATON PRODUCT SCOUT

AT A GLANCE: FIND THE RIGHT SYSTEM

FOR YOUR APPLICATION REQUIREMENTS.

| | REMENTS FOR APPLICATION | PRODUCTNAME | NOMINAL WIDTH/LOAD | CATALOGUE |
|----|---|-------------------------|-------------------------------------|-------------|
| | PEDESTRIAN/ | FASERFIX POINT STANDARD | - | LANDSCAPING |
| | WHEELCHAIR TRAFFIC | DACHFIX | - | LANDSCAPING |
| | | ECONOMY RINNEN | | LANDSCAPING |
| | | RECYFIX GREEN | 2000 kN/m ² | LANDSCAPING |
| | | LINEFIX | - | LANDSCAPING |
| | | RECYFIX STREIF | - | LANDSCAPING |
| | | SPORTFIX | - | SPORT |
| | PASSENGER CAR TRAFFIC | FASERFIX STANDARD | 100 | LANDSCAPING |
| | | ECONOMY RINNEN | | LANDSCAPING |
| | | RECYFIX POINT | - | LANDSCAPING |
| | | FASERFIX POINT STANDARD | - | LANDSCAPING |
| | | DRAINFIX TWIN | depending on installation SLW 30 | AQUA |
| | HGV TRAFFIC | DRAINFIX BLOC | depending on installation SLW 60 | AQUA |
| •• | CLASS A 15, | FASERFIX SUPER KS | 100 | CIVILS |
| | TEST FORCE 15 KN | RECYFIX PLUS | 100, 150, 200 | LANDSCAPING |
| ΛΛ | Traffic areas that can only be used by | RECYFIX STANDARD | 100, 150, 200, 300 | LANDSCAPING |
| | pedestrians and cyclists. | FASERFIX STANDARD | 100 | LANDSCAPING |
| | | SLOTTED CHANNEL | 100 | LANDSCAPING |
| | | FASERFIX POINT STANDARD | - | LANDSCAPING |
| | CLASS B 125, | FASERFIX SUPER KS | 100 | CIVILS |
| | TEST FORCE 125 KN | RECYFIX PLUS | 100, 150, 200 | LANDSCAPING |
| | Paths, pedestrian zones and similar | RECYFIX STANDARD | 100, 150, 200, 300 | LANDSCAPING |
| | areas, passenger car parking lots and | FASERFIX STANDARD | 100 | LANDSCAPING |
| | | FASERFIX POINT STANDARD | - | LANDSCAPING |
| | CLASS C 250, | FASERFIX SUPER KS | 100, 150, 200 | CIVILS |
| | TEST FORCE 250 KN | FASERFIX SUPER | 300 | CIVILS |
| | Inside kerbs and on verges not subject | RECYFIX PLUS | 100, 150, 200 | LANDSCAPING |
| | to traffic and similar situations, kerb | RECYFIX STANDARD | 100, 150, 200, 300 | LANDSCAPING |
| | | FASERFIX STANDARD | 100 | LANDSCAPING |
| | CLASS D 400, | FASERFIX SUPER KS | 100, 150, 200 | CIVILS |
| | TEST FORCE 400 KN | FASERFIX SUPER | 150, 200, 300, 400 | CIVILS |
| | Carriageways and roads (also pedest- | FASERFIX BIG | 100, 150, 200, 300 | CIVILS |
| | rianised) hard shoulders of roads and | RECYFIX HICAP | 100, 150, 200, 300, 680 | CIVILS |
| | parking areas for all types of road vehicles. | SLOTTED CHANNEL | 150 | LANDSCAPING |
| | CLASS E 600, | FASERFIX SUPER KS | 100, 150, 200 | CIVILS |
| | TEST FORCE 600 KN | FASERFIX SUPER | 150, 200, 300, 400, 500 | CIVILS |
| | Areas subject to traffic with high | FASERFIX POINT SUPER | - | CIVILS |
| | wheel loads, e.g. ports and docks. | FASERFIX BIG | 100, 150, 200, 300 | CIVILS |
| | | FASERFIX TRAFFIC | 200 | CIVILS |
| | | RECYFIX HICAP | 100, 150, 200, 300, 680 | CIVILS |
| | CLASS F 900, | FASERFIX SUPER KS | 100 | CIVILS |
| | TEST FORCE 900 KN | FASERFIX SUPER | 150, 200, 300, 400 | CIVILS |
| * | Areas subject to traffic with very high | FASERFIX POINT SUPER | - | CIVILS |
| | wheel loads, e.g. airport runways and | FASERFIX BIG | 100, 150, 200, 300 | CIVILS |
| | circulation areas. | FASERFIX TRAFFIC | 200 | CIVILS |
| | | RECYFIX HICAP | 100, 150, 200, 300, 680 | CIVILS |

PLEASE ALSO NOTE OUR NUMEROUS NON-STANDARD SOLUTIONS FOR INDIVIDUAL REQUIREMENTS IN THE DIFFERENT CATALOGUES

HAURATON INDEX

C CATALOGUE CIVILS



| | APPLICATION | С | L | A | S |
|---|---|---|---|---|---|
| Α | ACCESS DRIVES | Х | Х | | |
| | AGRICULTURAL PLANTS, DRAINAGE OF STABLES | Х | Х | | |
| | AIRFIELDS, AIRPORTS | Х | Х | | |
| В | BESPOKE PRODUCTION | Х | | | |
| | BESPOKE SOLUTIONS | Х | Х | | |
| | BRIDGES | | Х | | |
| | BUS STATIONS, BUS STOPS | Х | | | |
| С | CABLE DUCTS | Х | | | |
| | CAR PARKING FACILITIES (PARKING LOTS, GARAGES, WASH AREAS) | Х | Х | Х | |
| | CARRIAGEWAYS AND ROADS (ACROSS) | Х | Х | Х | |
| | CARRIAGEWAYS AND ROADS (ALONG) | Х | | | |
| | CHEMICAL INDUSTRY/LABORATORY AREAS | Х | Х | | |
| | CITYSCAPES WITH ARCHITECTURAL VALUE | | Х | | |
| | COMPOSTING FACILITIES | Х | | | |
| | CROSS DRAINAGE OF ROADS | Х | | | |
| | CYCLE PATHS AND FOOTPATHS | Х | Х | | |
| D | DESIGN SOLUTIONS | Х | | | |
| | DOWNPIPE DRAINAGE | | Х | Х | |
| | DRAIN-ASPHALT AREAS | | Х | | |
| Е | EXHIBITION GROUNDS, TRADE FAIRS | Х | Х | Х | |
| F | FAÇADE DRAINAGE | Х | Х | Х | |
| | FILLING STATIONS | Х | | | |
| | FILLING STATIONS, DECANTING STATIONS | Х | | | |
| | FIRE BRIGADE BUILDINGS | | Х | | |
| | FLAT ROOFS, TERRACES AND BALCONIES | Х | | Х | |
| | FLOWER BED EDGINGS, BORDERS | | Х | | |
| | FOOD INDUSTRY FACILITIES | Х | | | |
| G | GARDENING AND LANDSCAPING | | | | |
| | GRANDSTAND DRAINAGE | | Х | | |
| н | HAULAGE COMPANIES, LOADING AREAS | Х | | Х | |
| | HGV PARKING AREAS (PARKING LOTS, GARAGES, WASH FACILITIES) | Х | | Х | |
| | HYGIENE AREAS | Х | | | |

A CATALOGUE AQUA

S CATALOGUE SPORT

| | APPLICATION | С | L | A | |
|---|--|---|---|----------------------------|---|
| 1 | ILLUMINATED CHANNELS | | Х | | |
| | INDUSTRIAL BUILDING FLOORS | Х | Х | Х | |
| | INDUSTRIAL BUILDINGS | Х | | Х | |
| | INDUSTRIAL YARDS | Х | Х | Х | |
| L | LOADING AND CARGO HANDLING YARDS | Х | | | |
| М | MARKET SQUARES, MARKETS | Х | Х | Х | |
| | MILITARY FACILITIES | Х | Х | | |
| | MOTORWAY SERVICE STATIONS | Х | Х | X X X X X X | |
| | MOTORWAY, DRAINAGE ALONG | Х | | | |
| | MULTI-STOREY CAR PARKS | Х | | | |
| N | NON-STANDARD SOLUTIONS | Х | Х | | |
| Ρ | PARKING DECKS AND MULTI-STOREY | Х | | | |
| | CAR PARKS | | | | |
| | PEDESTRIAN ZONES | | Х | Х | |
| | PLAYING FIELD BORDERS | | | | |
| | | | Х | | |
| | PORT FACILITIES, CONTAINER STATIONS | Х | | | _ |
| | PUBLIC AREAS AND SQUARES | Х | Х | Х | |
| R | RADIAL CHANNELS | X | Х | | |
| | RAILWAY CROSSINGS | Х | | | |
| | RAMPS, ACCESS TO UNDERGROUND CAR PARKS | Х | | | |
| | REVOLVING DOORS | Х | | | |
| | ROAD VERGE DRAINAGE | Х | Х | | |
| | ROADS, PATHWAYS, SQUARES | Х | Х | Х | |
| S | SANITARY FACILITIES | Х | | | |
| | SCHOOLYARDS AND PEDESTRIAN ZONES | Х | Х | Х | |
| | SCRAP METAL YARDS | Х | | | |
| | SEEPAGE/PERCOLATION, CENTRAL | Х | Х | | |
| | SEEPAGE/PERCOLATION, DECENTRALISED | | | Х | |
| | SEWAGE PLANTS | Х | | | |
| | SOAKAWAY TRENCHING ELEMENTS | | | Х | |
| | SPORTS GROUNDS | | Х | | |
| | STATION PLATFORMS | Х | Х | | |
| | STEPPING BOARDS | | Х | | |
| | STORAGE, DECANTING, FILLING – HAZARDOUS LIQUIDS | Х | | | |
| т | TRACK DRAINAGE | Х | | | |
| | TRACK DRAINAGE | | | | |
| | TUNNEL DRAINAGE | Х | Х | | |
| | TURF REINFORCEMENT | | Х | | |
| U | UNDER FLOOR CHANNELS, CABLE DUCTS | Х | | | |
| | UNDERGROUND CAR PARKS, MULTI-STOREY CAR PARKS | Х | | | |
| W | WALL COPING | | Х | | |
| | WASH FACILITIES | Х | | Х | |
| | WASTE DISPOSAL SITES | Х | | | |
| | WELL BORDERS | Х | Х | Х | |
| | | | | - | |



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