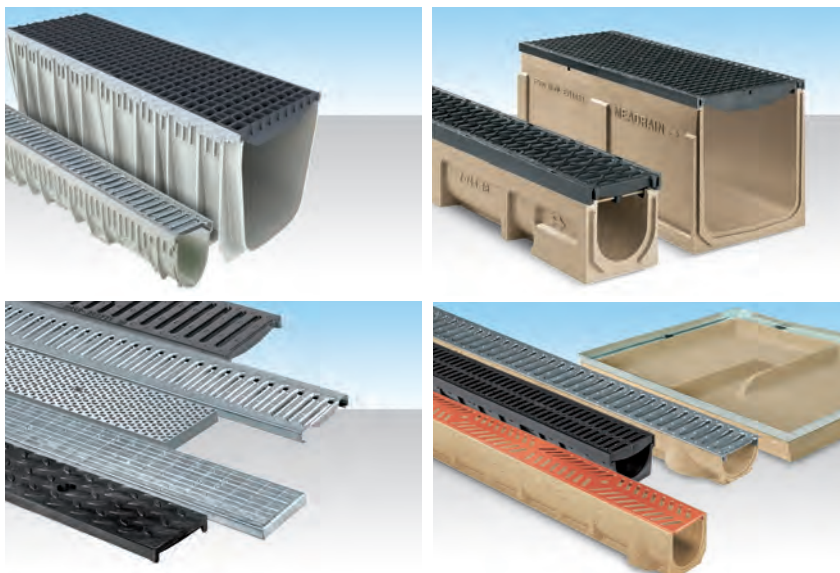


# Operation and maintenance instructions

## Stormwater channels



### Content

- (I) Maintenance and operation
- (II) How to remove gratings
- (III) Load classes
- (IV) Chemical resistance

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# Operation and maintenance instructions

## I. Maintenance and operation

Correctly installed channels according to the product-specific installation instructions\* do not need particular operation requirements. The drainage channels will work as specified, if all items are used as directed. Proper fixation of the gratings is required to ensure safe operation. The specific loading class must not be exceeded. The product itself will not cause any harm or danger during operation.

The channels have to be inspected and monitored once a year (or more often if necessary, based on the local conditions) during the product lifetime to ensure the free flow of liquids.

**CAUTION: Please wear protective clothing appropriate to the situation and make sure to protect all vulnerable parts of the body during the whole operation, inspection and maintenance process.**

- First remove the gratings correctly, as described below: *"II. How to remove gratings"*
- Next remove all mud and gravel (e.g. with a small shovel –  
**CAUTION: do not damage the channel body!**  
Clean the gratings, also.
- Then check the channels and gratings for damage and cracks.  
**CAUTION: Damaged channels or gratings have to be replaced!**
- If concrete haunch is used inspect it also for potential damages, especially where it is exposed.
- Subsequently reinstall the gratings according to the specific installation instructions\*.



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**For installation instructions please refer to-**

**[http://hydrocp.com.au/wp-content/  
uploads/2014/08/MEA\\_installation\\_instructions.pdf](http://hydrocp.com.au/wp-content/uploads/2014/08/MEA_installation_instructions.pdf)**

# Operation and maintenance instructions

## II. How to remove gratings

In general you have to wear the necessary protection clothes.

### CLIPFIX / STARFIX



To remove the gratings which are fixed with CLIPFIX / STARFIX, you have to grab the grating with the grating hook through the meshes and then lift it.

### Standard (4-fold bolted system)



To remove the gratings which are fixed with our standard fixing system, you have to turn the screws with a screwdriver counterclockwise, until the locking bar lays parallel to the channel line. Then you can lift the grating.

### PROFIX



To remove the gratings which are fixed with PROFIX, you have to grasp with a screwdriver under the little notch at the edge of the grating and lever the grating.

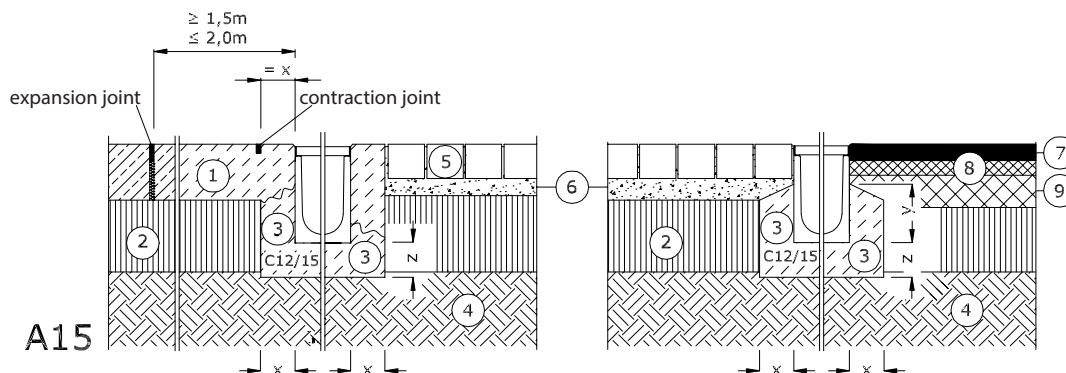
# Operation and maintenance instructions

## III. Load classes

Below are EN standards. For AU standards information please refer to-


[http://hydrocp.com.au/wp-content/uploads/2014/08/HCP\\_Load-Class-Conversion-Table\\_EN\\_to\\_AU\\_LowRes.pdf](http://hydrocp.com.au/wp-content/uploads/2014/08/HCP_Load-Class-Conversion-Table_EN_to_AU_LowRes.pdf)

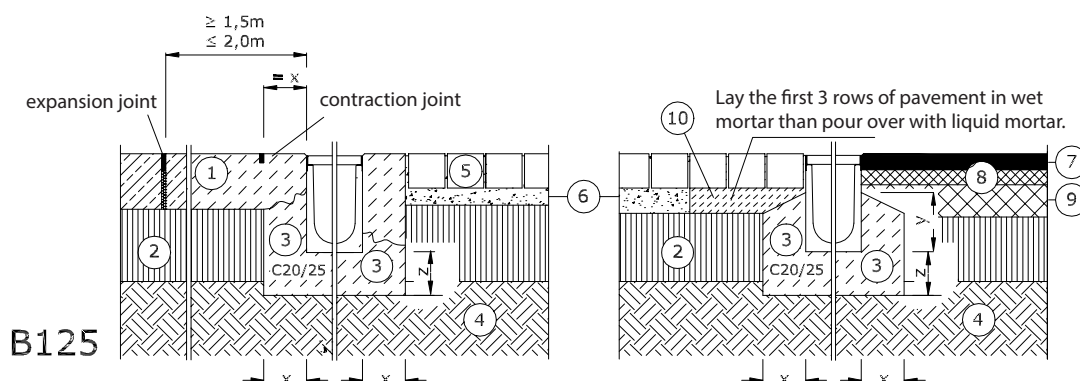
	<b>A15</b> <ul style="list-style-type: none"> <li>• Pedestrians</li> <li>• Cyclists</li> <li>• Lawned areas</li> </ul>	Traffic areas that can only be used by pedestrians and pedal cyclists and comparable areas, i.e. lawned areas. <b>(Test load 15 kN)</b>
--	---	---



Y min. = channel height - 80 mm

Free of settling and frost free-resisting base layers are to be accomplished in accordance with the German RStO road pavement design manual for different traffic loading classes.

	<b>B125</b> <ul style="list-style-type: none"> <li>• Car parking spaces and decks</li> <li>• Delivery vans</li> </ul>	Footways, pedestrian zones <sup>1)</sup> and comparable areas, car parking spaces and decks. <b>(Test load 125 kN)</b>
--	--	--



Y min. = channel height - 80 mm

Free of settling and frost free-resisting base layers are to be accomplished in accordance with the German RStO road pavement design manual for different traffic loading classes.

- |                   |                |                          |
|-------------------|----------------|--------------------------|
| ① Concrete        | ⑤ Block paving | ⑨ Bituminous base course |
| ② Sub-base        | ⑥ Sand layer   | ⑩ Mortar                 |
| ③ Concrete haunch | ⑦ Asphalt      |                          |
| ④ Earth           | ⑧ Base course  |                          |

The adjacent pavement must be installed in such a way that no horizontal forces act on channel elements. Gratings must be secured into the channel body immediately after the final cleaning process has taken place. This action will prevent the installed system from being adversely affected by horizontal forces.

1) Zone reserved for pedestrian traffic, with vehicles crossing only occasionally for supply or cleaning purposes, or in emergencies.




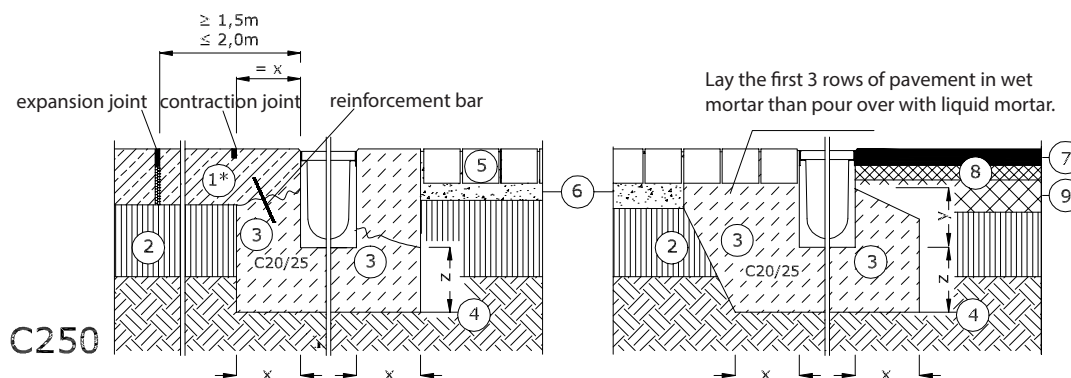
## Operation and maintenance instructions

### III. Load classes

Below are EN standards. For AU standards information please refer to-

[http://hydrocp.com.au/wp-content/uploads/2014/08/HCP\\_Load-Class-Conversion-Table\\_EN\\_to\\_AU\\_LowRes.pdf](http://hydrocp.com.au/wp-content/uploads/2014/08/HCP_Load-Class-Conversion-Table_EN_to_AU_LowRes.pdf)


	<b>C250</b> <ul style="list-style-type: none"> <li>• Heavy goods vehicles</li> <li>• Roadsides</li> <li>• Verges</li> </ul>	Kerbsides of roads and pedestrian roads <sup>2)</sup> , verges and marginal strips, parking areas. <b>(Test load 250 kN)</b>
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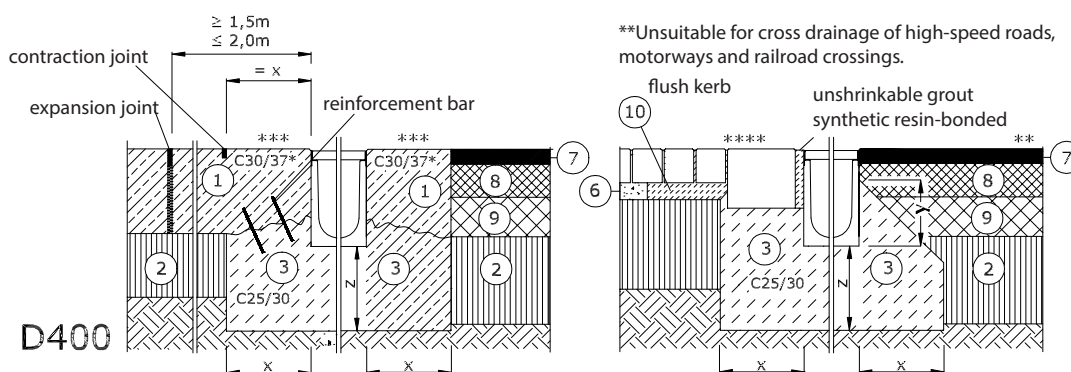


Free of settling and frost free-resisting base layers are to be accomplished according to the German RStO road pavement design manual for different traffic loading classes.

Y min. = channel height - 50 mm

\* Reinforcement and exposure classes under specification of the responsible designer.

	<b>D400</b> <ul style="list-style-type: none"> <li>• Carriageways</li> </ul>	Carriageways of roads, also pedestrian roads <sup>2)</sup> , parking areas and comparable paved surfaces. <b>(Test load 400 kN)</b>
--	---	--



Free of settling and frost free-resisting base layers are to be accomplished according to the German RStO road pavement design manual for different traffic loading classes.

Y min. = channel height - 50 mm

\* Reinforcement and exposure classes under specification of the responsible designer.

- |                   |                |                          |
|-------------------|----------------|--------------------------|
| ① Concrete        | ⑤ Block paving | ⑨ Bituminous base course |
| ② Sub-base        | ⑥ Sand layer   | ⑩ Mortar                 |
| ③ Concrete haunch | ⑦ Asphalt      | ⑪ Expansion joint        |
| ④ Earth           | ⑧ Base course  | ⑫ Construction joint     |

\*\*\* Cross drainage of high-speed roads, motorways and railroad crossings, is only possible by installation of our D 1000, D 2000 and DM 2000 drainage systems and after advice of our technical engineers.

\*\*\*\* Cross drainage of pedestrian walkways<sup>2)</sup>, entrances to parking lots and similar paved areas.

The adjacent pavement must be installed in such a way that no horizontal forces act on channel elements. Gratings must be secured into the channel body immediately after the final cleaning process has taken place. This action will prevent the installed system from being adversely affected by horizontal force.

2) Zone in which vehicular traffic is prohibited between certain times (i.e. a pedestrian zone during shop opening hours, otherwise normal vehicular traffic).

## Operation and maintenance instructions

### III. Load classes

Below are EN standards. For AU standards information please refer to-

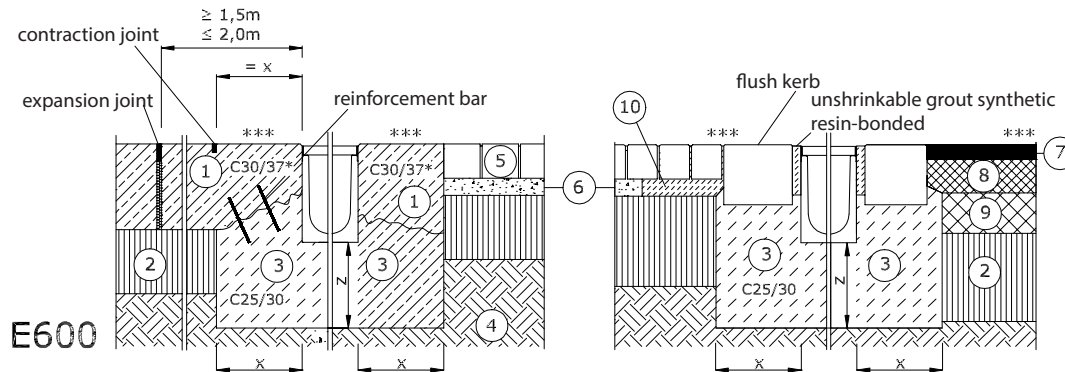
[http://hydrocp.com.au/wp-content/uploads/2014/08/HCP\\_Load-Class-Conversion-Table\\_EN\\_to\\_AU\\_LowRes.pdf](http://hydrocp.com.au/wp-content/uploads/2014/08/HCP_Load-Class-Conversion-Table_EN_to_AU_LowRes.pdf)



**E600**

- Industrial zones

Non-public traffic areas that are subjected to particularly high wheel loads, e.g. traffic routes in industrial complexes. **(Test load 600 kN)**




Free of settling and frost free-resisting base layers are to be accomplished according to the German RStO road pavement design manual for different traffic loading classes.

Y min. = channel height

\* Reinforcement and exposure classes under specification of the responsible designer.

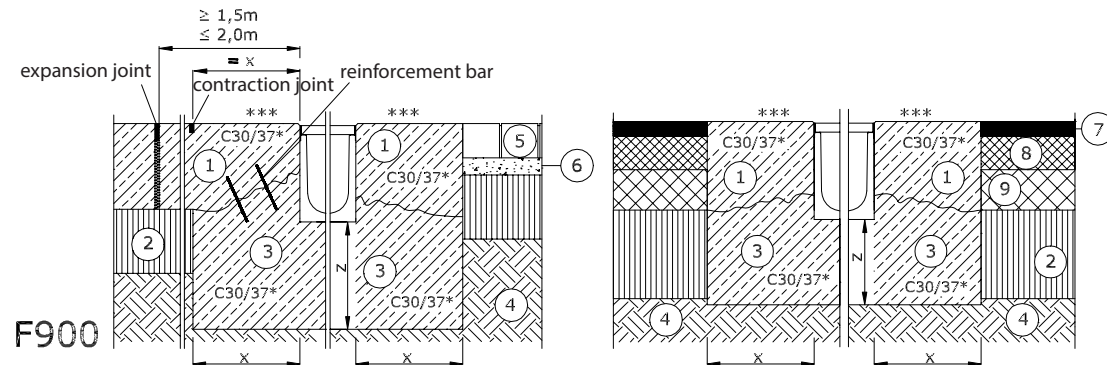
\*\*\* For cross drainage of areas with high traffic and dynamic loads , please contact our MEA engineering department. Cross drainage of dynamically loaded areas, cross over ridden, is only possible by installing our D 1000, D 2000, opA , DM 2000 and EN/ENS 1000-4000 channel systems and after consulting of MEA engineering department.



**F900**

- Special areas like aprons, taxiways

Special areas, such as certain aircraft operational surfaces of commercial airports. **(Test load 900 kN)**



Free of settling and frost free-resisting base layers are to be accomplished according to the German RStO road pavement design manual for different traffic loading classes.

Y min. = channel height

\* Reinforcement and exposure classes under specification of the responsible designer.

\*\*\* Cross drainage of dynamically loaded areas, cross over ridden, is only possible by installing our D 1000, D 2000, opA , DM 2000 and EN/ENS 1000-4000 channel systems and after consulting of MEA engineering department.

- |                   |                |                          |
|-------------------|----------------|--------------------------|
| ① Concrete        | ⑤ Block paving | ⑨ Bituminous base course |
| ② Sub-base        | ⑥ Sand layer   | ⑩ Mortar                 |
| ③ Concrete haunch | ⑦ Asphalt      | ⑪ Expansion joint        |
| ④ Earth           | ⑧ Base course  | ⑫ Construction joint     |

\*\*\* Cross drainage of high-speed roads, motorways and railroad crossings, is only possible by installation of our D 1000, D 2000 and DM 2000 drainage systems and after advice of our technical engineers.

\*\*\*\* Cross drainage of pedestrian walkways<sup>2)</sup>, entrances to parking lots and similar paved areas.

The adjacent pavement must be installed in such a way that no horizontal forces act on channel elements. Gratings must be secured into the channel body immediately after the final cleaning process has taken place. This action will prevent the installed system from being adversely affected by horizontal force.

2) Zone in which vehicular traffic is prohibited between certain times (i.e. a pedestrian zone during shop opening hours, otherwise normal vehicular traffic).

## Operation and maintenance instructions

### IV. Chemical resistance

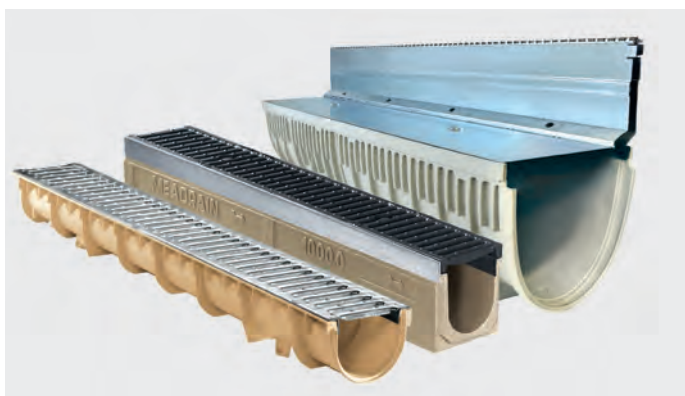
Medium	temperature	MEADRAIN/ MEAGARD polymer concrete	MEADRAIN concrete	MEARIN/ MEAEASY GRP*
Acetic acid 10%	RT	+	-	-
Acetic acid 10%	60	-	-	-
Ammonia 25%, aqueous solution	RT	-	+	-
Ammonia 5%, aqueous solution	RT	-	+	-
Ammonium salts, aqueous solution	RT	+	-	+
Apple juice, aqueous solution	RT	+	+	+
Barium salts, aqueous solution	RT	+	+	+
Beer	RT	+	-	+
Benzene	RT	+	-	+
Blood	RT	+	-	+
Boric acid	RT	+	+	+
Brake fluid	RT	+	-	+
Butanol	RT	+	-	+
Butyl acetate	40	-	-	-
Butyric acid	RT	+	-	+
Butyric acid	40	-	-	-
Calcium chloride, aqueous solution	RT	-	-	-
Calcium hydroxide (lime solution)	RT	-	-	-
Calcium salts, aqueous solution	RT	+	-	+
Carbon dioxide, aqueous solution	RT	+	+	+
Carbon tetrachloride	RT	-	+	-
Chlorine water	RT	-	+	-
Chlorine, gaseous, wet	RT	-	+	-
Chromic acid 10%	RT	+	-	+
Citric acid aqueous	RT	+	-	+
Citric acid aqueous	60	-	-	-
Copper salts, aqueous solution	RT	+	-	+
Crude oil	RT	+	+	+
Crude petroleum	RT	+	+	+
Crude petroleum	RT	+	-	+
Electrolyte (dilute sulphuric acid)	RT	+	+	+
Epoxide resin	RT	+	-	+
Ethanol	RT	-	-	-
Ethyl benzene	RT	+	-	+
Fatty acids (greater than C 12)	40	+	-	+
Fish oil	RT	+	-	+
Fixer	RT	+	-	+
Formaldehyde, aqueous solution	RT	+	+	+
Formaldehyde, aqueous solution	RT	+	-	+
Fruit juices	RT	+	+	+
Fruit juices	RT	+	-	+
Glycerine	RT	+	-	+
Glycol (Ethylene glycol)	RT	+	-	+
Heating oil	RT	+	-	+
Humic acid	RT	+	+	+
Hydrochloric acid 20%	40	-	-	-
Hydrofluosilicic acid	20	-	-	-
Hydrogen bromide	RT	-	-	-
Iron salts, aqueous solution	RT	+	+	+
Isopyl alcohol (2-panol)	RT	+	+	+
Jet fuel	RT	+	-	+
Lactic acid, aqueous solution	RT	+	-	+
Linseed oil	RT	+	-	+
Lubricants	RT	+	+	+

Medium	temperature	MEADRAIN/ MEAGARD polymer concrete	MEADRAIN concrete	MEARIN/ MEAEASY GRP*
Machine oil	RT	+	+	+
Magnesium salts, aqueous solution	RT	+	+	+
Maleic acid, aqueous solution	RT	+	-	+
Malic acid	30	+	-	+
Manganese salts, aqueous solution	RT	+	-	+
Margarine	Rt	+	+	+
Milk	RT	+	-	+
Mineral oils	RT	+	-	+
Mineral water	RT	+	-	+
Nitric acid 10%	40	-	-	-
Octane	RT	+	-	+
Octane	60	-	-	-
Oleic acid	RT	+	+	+
Oxalic acid, aqueous solution	RT	+	+	+
Oxalic acid, aqueous solution	60	-	-	-
Paraffin	RT	+	+	+
Perchloric acid	RT	-	-	-
Petroleum	RT	+	+	+
Petroleum ether	RT	+	+	+
Phosphoric acid 50%	40	-	-	-
Petroleum	RT	+	+	+
Petroleum ether	RT	+	+	+
Phosphoric acid 50%	40	+	+	+
Phosphoric acid 10%	RT	+	-	+
Phosphoric acid 10%	60	-	-	-
Potash solution 2,5%	RT	-	+	-
Potassium permanganate 6%	60	-	+	-
Potassium salts, aqueous solution	RT	+	+	+
Ricinoleic acid	RT	+	+	+
Salicylic acid, aqueous solution	RT	+	-	+
Sea water	RT	+	-	+
Sea water	60	-	-	-
Silicone oil	RT	+	+	+
Sodium hydroxide 40%	40	-	+	-
Sodium salts, aqueous solution	RT	+	+	+
Soil, acidic and alkaline	RT	+	+	+
Solvents and cleaning solutions	RT	+	-	+
Succinic acid, aqueous solution	RT	+	+	+
Sugar	RT	+	+	+
Sulphuric acid 30%	RT	+	-	-
Tetrachlorethylene	RT	+	+	+
Thioglycolic	RT	-	-	-
Tin salts, aqueous solution	RT	+	+	+
Trichloroethylene	RT	-	+	-
Urea aqueous solution	RT	+	-	+
Washing agents, commercial, 5%	RT	+	+	+
Wine	RT	+	-	+
Zinc salts, aqueous solution	RT	+	+	+

+ = resistant    - = not resistant    RT = room temperature (C 25°)

\* GRP = Glass-fibre reinforced plastic  
MEA polymer concrete with polyester resin as a binding agent and GRP are resistant when subjected over short periods to inorganic acids and subsequently rinsed with water.  
Polymer concrete = MEA polymer concrete with polyester resin as a binding agent.

For any deviations with respect to temperature, concentrations and purity of the listed media, technical advice is to be sought from your MEA Office. The summaries provided in this table of resistance provide a general guideline. No rights may be derived from this table of resistance. For questions or personal advice you can always contact the Technical Department of MEA Drainage Systems.



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