Uniclass L2123 + L7315	EPIC J3413
CI/SfB (52.5)	

ACO Water Management:
Civils + Infrastructure

ACO MultiDrain™ PPD

ACO MultiDrain™ PPD channel drainage system

Installation manual

The ACO MultiDrain™ PPD Installation manual

This manual is designed to provide contractors and installers with recommended installation details, preparation instructions and a guide to installing the system.

What is ACO MultiDrain™ PPD?

The new ACO MultiDrain™ PPD channel and grating system provides versatile and efficient linear drainage for infrastructure and hard landscaping projects.

To support a wide variety of applications, the system is available in three channel widths, 100mm, 150mm and 200mm and has shallow and constant depth channels to suit the drainage design.

An extensive choice of grating options is available fitted with the ACO Drainlock™ fastening system, which provides simple and quick installation yet prevents traffic displacement of the gratings.

If there is a risk of unwanted grating removal or theft then security locking systems are available.

Where slot drainage is preferred ACO Brickslot tops are available for the 100mm and 150mm wide channels.

The offset drainage can be used in either block paving or natural stone surfaces. It can also be used against building façades or for threshold drainage.

Why choose the ACO MultiDrain™ PPD system?

The system meets the highest standards for performance and quality, being fully compliant and independently certified to BS EN 1433:2002 for applications ranging from A 15 up to and including D 400*, ideal for pedestrians, cars, service vehicles or HGV traffic.

The constant depth 1m recycled polypropylene channels with protective galvanised steel edge rails are extremely robust and durable yet all weigh under 5kg thanks to ACO's unique HexTechnology™ channel structure. ACO MultiDrain™ PPD has the performance to withstand the rigours of installation and provide long service life.

Installation and maintenance costs are kept to a minimum with each channel incorporating labour saving features, such as clip together end details for rapid channel connection and alignment, knockout panels for outlet pipe work, and the 'V' shaped channel bore that promotes self cleansing.

Specification manual
If you require guidance on the detailed design and specification of this system please refer to the ACO MultiDrain™ PPD Specification manual. For a copy of this brochure please visit www.aco.co.uk or contact marketing@aco.co.uk.

*Not suitable for carriageways of public roads or motorways.

Installation notes

This section provides general installation notes that should be followed before installation. These notes should be read together with the recommended installation detail shown in the drawings on the following pages. A chart providing approximate volumes of concrete and excavated soil is also given.

Ground conditions

The long term performance of a channel installation to sustain vertical and lateral wheel loads depends upon a) ground conditions b) stability of the adjacent pavement and c) a durable concrete bed and surround. Specific ground conditions or contaminated ground may call for a concrete bed or haunch deeper or wider than the minimum recommendations. The dimensions shown are the minimum requirements for good ground conditions, and are the dimensions of the laboratory test block used for the Load Class tests to BS EN 1433:2002. It may be necessary to seek engineering advice and interpretation of site investigations.

Temporary installation

A channel installation is not complete until the final surfacing is laid. During site work after the channel is laid, it may be vulnerable to damage until the site level is brought up to the recommended 3mm above the channel top. Even then, it must be remembered that ACO MultiDrain™ PPD channels are not designed to take the loading from heavy site plant.

It is preferable that site traffic is routed away from the channel. If temporary crossings are required, in asphalt pavements for example, the base course of minimum width 750mm must be installed either side of the channel crossing point to protect it. Loose boards or plates are inadequate. Gratings or boards in lieu of gratings must be fitted.

Movement joints and thermal movement

Longitudinal expansion joints are required to isolate the channel and the concrete haunch from thermal movement of concrete pavements. If joints are doweled, then it is imperative that the dowels are aligned correctly in relation to the joint in both vertical and horizontal planes; and that they are effectively debonded (with a proprietary sleeve and capping). Cutting of the joint material (to allow dowel fixing for example) must be made good to prevent the passage of concrete through a joint. A joint is often positioned against the outside face of the concrete bed and surround, but may be positioned up to 1.0m/1.5m from the channel (UK external installations).

In internal applications where temperatures are controlled, possibly within a low range of extremes, joints may not be required. Engineering advice should be sought for designing such joints.

If transverse joints, for example in a concrete pavement, cross the channel bed and haunch, such joints may be positioned to coincide with the channel-to-channel joint, or the channel may be cut to suit and re-sealed with a suitable flexible sealant.

Concrete haunches at the surface may require additional contraction or shrinkage joints, and engineering advice should be sought. Suggested dowel joint details and movement joint details can be provided by ACO if required.

Volumes for excavation and concrete surround for typical C 250 and D 400 applications

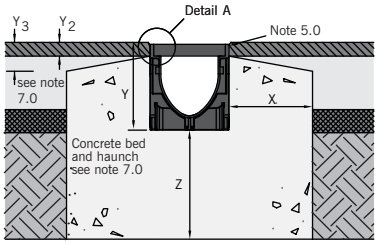
(These are given for guidance, but may vary depending on site conditions)

Load Class			C 250		D 400		C 250	C 250	D 400	D 400
Description	Unit		Trench		Trench		Excavation	Concrete	Excavation	Concrete
	Width mm	Depth mm	Width mm	Depth mm	Width mm	Depth mm	m^3 per m	m^3 per m	m^3 per m	m^3 per m
M100PPD 075	142	75	442	225	542	275	0.099	0.089	0.149	0.138
M100PPD 0100	142	100	442	250	542	300	0.111	0.096	0.163	0.148
M100PPD 0.0J*	142	150	442	300	542	350	0.133	0.111	0.190	0.168
M150PPD 0.0J*	192	210	492	360	592	410	0.176	0.136	0.241	0.202
M200PPD 0.0J*	242	220	542	370	642	420	0.199	0.147	0.268	0.216

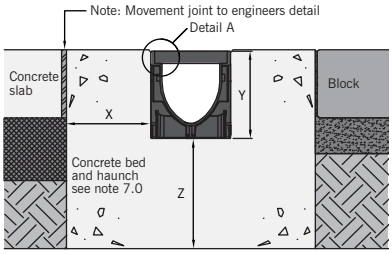
Installation detail

CHANNELS WITH TRADITIONAL GRATINGS

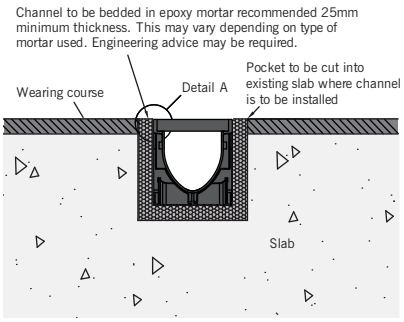
Asphalt pavement



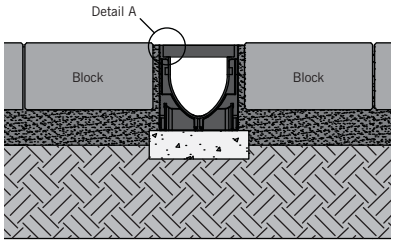
Concrete pavement or block paving

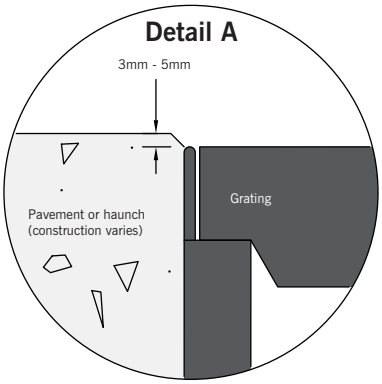


Installation within existing slab



Load Class A 15





1.0 Ground conditions:

The customer should ensure that the minimum dimensions shown are suitable for the existing ground conditions. Engineering advice may be required.

2.0 Block pavements:

The channels must be supported laterally and therefore blocks must be restrained from movement by bedding securely. e.g. by using an Epoxy or Polymer Modified Mortar for bed and perpendicular joints (for example RONAFIX Mortar Mix C or similar). Engineering advice may be required.

3.0 Surface cracks:

Alternate crack control and movement joints transversely within bed and haunch may reduce unsightly surface cracking. Engineering advice may be required.

4.0 Joint sealant:

Where ACO channel joints and fittings are to be sealed (where used in foul water applications or where impermeability is required, for example) contact a sealant specialist for guidance on the most appropriate sealing compound to use.

5.0 Surface protection:

In asphalt pavements avoid contact between compaction equipment and channel/grating. This may be achieved by ensuring that the finished surface level lies above the grating level (by at least 3mm). Stones should be removed from grating prior to laying/rolling wearing course.

6.0 General installation notes:

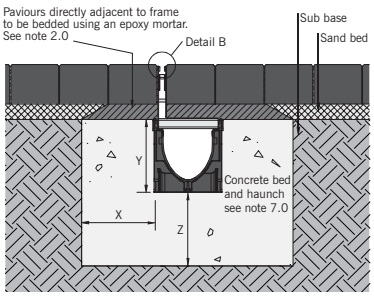
See ACO drawing E1-E01-003 for further notes on installation. This information is available on request or is available for download from www.aco.co.uk. Gratings must be fitted before concreting.

Best practice and workmanship

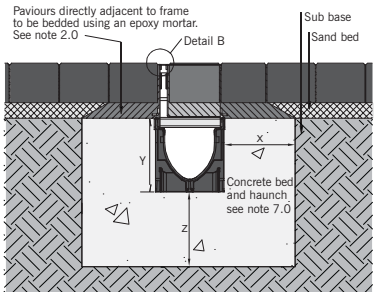
ACO can give guidance with respect to the most suitable methods of installation for each of the products in the ACO MultiDrain™ PPD range. ACO MultiDrain™ PPD range should be installed using acceptable levels of workmanship and according to the National Code of Practice (UK: BS8000: Part 14: 1989) in keeping with EN 1433:2002 (Drainage channels for vehicular and pedestrian areas).

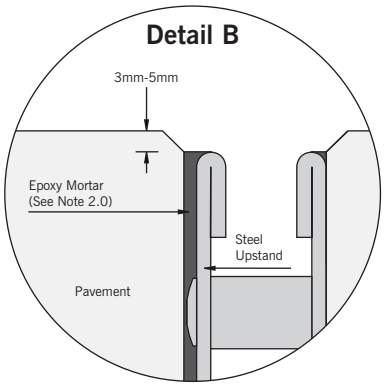
Detailed installation statements and methodologies will vary for all sites as each will have different aspects deserving particular consideration, consequently the relevant approvals should be sought from the consulting engineer and/or the installer.

Standard Brickslot top

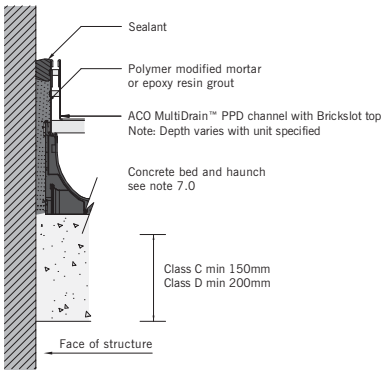


Access / sump top

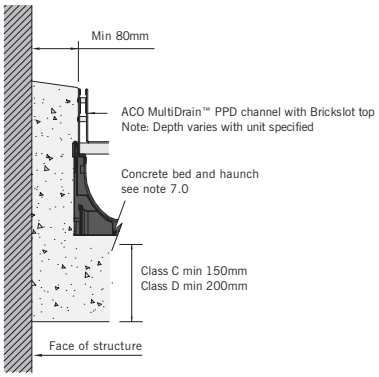




Adjacent to a structure - option 1



Adjacent to a structure - option 2



An electronic version of the ACO MultiDrain™ PPD installation detail is available to download from the ACO website. Visit www.aco.co.uk.

7.0 Minimum dimensions of concrete surround:

For Load Class A 15, the channel is to be bedded on a suitable base according to the ground conditions. For Load Classes B 125 to D 400*, a concrete bed and surround is required. Unless otherwise stated, all units in mm.

	Load Class			
Dimension	**A 15**	**B 125**	**C 250**	**D 400***
x	-	Min 150	Min 150	Min 200
y	-	Full depth of channel (Less Y_2 if necessary)		
Y_2 (Asphalt pavement only)	-	Max 80	Max 25	Max 25
Y_3 (Asphalt pavement only)	-	Max 105	Max 60	Max 60
z	-	Min 150	Min 150	Min 200
Minimum concrete compressive strength		25 N/mm²	25 N/mm²	30 N/mm²

***e.g. parking areas for all types of road vehicle. Not suitable for carriageway of roads or motorways.**

8.0 Security locking:

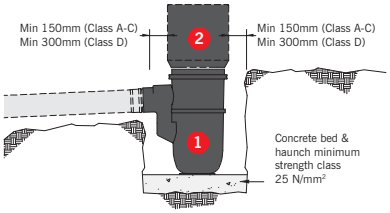
All the gratings are held in the channel units by the ACO Drainlock™ fastening system. In addition, certain gratings can be locked into place with the use of an optional security locking system. Please see grating charts for this option.

See installation drawing E1-E01-040-3 for further notes on the installation of this system. This information is available on request or is available for download from www.aco.co.uk.

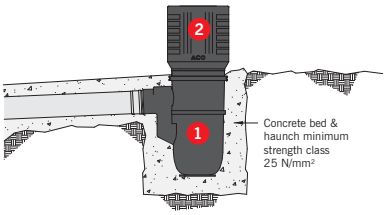
ACO UNIVERSAL GULLY

Installation notes:

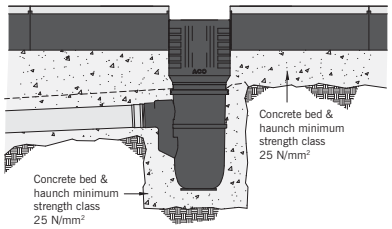
A. Excavate a 150mm bed and surround, blind where necessary. Form concrete* bed for base unit 1 and set on a mortar (or similar) levelling bed. Make pipe connections (PVCu or SuperSleve) as appropriate.



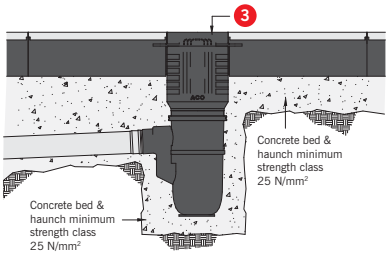
B. Concrete* surround base unit 1 and pipes if required. Position gully intermediate unit 2 to level.



C. Concrete* bed for channels allowing levelling mortar bed if required. Extend concrete bed around 2 (see fig. 1). Install channels (see separate channel installation recommendations) with taped external joints at junction of unit 2 and end of channels.



D. Complete concrete* surround to unit 2 allowing for frame levelling bed. Cut out knock outs on gully frame 3 and cut profile of the channel from inside of unit 2. Install gully and haunch concrete* to the sides of channels as recommended in separate channel installation recommendations.



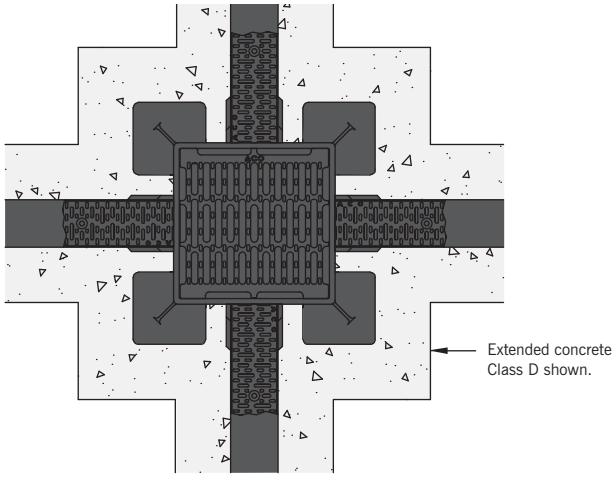


Fig 1:
Shutter around gully top 200mm (Class D) or 150mm (Class A-C). Concrete* the supporting surround for the gully frame.

An electronic version of the ACO Universal Gully installation detail is available to download from the ACO website. Visit www.aco.co.uk.

General notes:

1.0 Ground conditions:

The customer should ensure that the minimum dimensions shown are suitable for the existing ground conditions. Engineering advice may be necessary.

2.0 Block pavements:

The channel must be supported laterally and therefore blocks must be restrained from movement by bedding securely, e.g. by using an Epoxy or Polymer Modified Mortar for bed and perpendicular joints (for example RONAFIX Mortar Mix C or similar from Ronacrete, tel 01279 638700). Engineering advice may be required.

3.0 Surface cracks:

Alternate crack control and movement joints traversally within bed and haunch may reduce unsightly surface cracking. Engineering advice may be required.

4.0 Joint sealant:

Where ACO channel joints and fittings are to be sealed (where used in foul water applications or where impermeability is required, for example) contact a sealant specialist for guidance on the most appropriate sealing compound to use.

5.0 Surface protection:

In asphalt pavements avoid contact between compaction equipment and channel/grating. This may be achieved by ensuring that the finished surface level lies above the grating level (by at least 3mm). Stones should be removed from grating prior to laying/rolling wearing course.

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Detailed installation statements and methodologies will vary for all sites as each will have different aspects deserving particular consideration, consequently the relevant approvals should be sought from the consulting engineer and/or the installer.

* Refer to note 7.0 on page 5

Preparing the channel system for installation

This section provides guidance on the preparation steps that may be required for the installation of ACO MultiDrain™ PPD. Specific features of the channel system are shown along with instructions for use.

Channel base knockout details

ACO MultiDrain™ PPD channels are supplied with a pre-formed knockout in the base of the channels. This detail at the male end of the channel allows vertical connection to Ø110mm, Ø160mm and Ø200mm U-PVC pipes and sump via outlet connectors. The knockout on the base of the channel is indicated by a "hammer" symbol. The method of removal and pipe connection is described below.

Knockout detail.

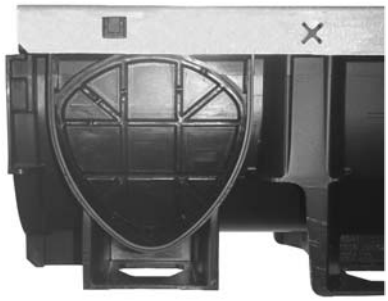
METHOD:

Step 1: Support channel around knockout detail by placing the channel on sand or soft earth for example. Tap the knockout panel from the side indicated by the hammer symbol to remove panel.

Step 2: Push fit outlet connector with integral EPDM seal into recess. Connect ongoing pipework onto connector as required.

90° channel connection detail

An additional feature provided on the channels* is removable side wall panels. This feature allows channel runs to be connected together to form "T" or "L" junctions for continuous water flow through the system. Where channel connections are to be made to the side wall of these units a joint profile is provided to aid alignment and fast installation.

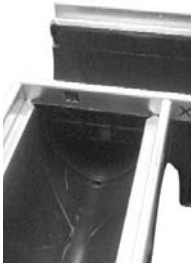


Removable side wall panel.

METHOD:

Step 1: Insert the grating to support channel. Tap segments of the knockout panel as indicated to remove.

Step 2: Tidy up any remaining material. Channel connection can now be made.



***This feature does not apply to shallow depth channels.**

Creating 0.5m channels

The ACO MultiDrain™ PPD 1m channels can be cut down to form 0.5m units. A cutting guide is provided on the channel body.

Once cut, connection profiles are provided to enable simple and fast installation. The method of cutting the channels is described below.

Cutting guide for 0.5m channel units

METHOD:

Step 1: Place saw into the cutting guide as shown. Cut channel ensuring the saw blade follows the guide provided.

Step 2: Once the channel is cut tidy up edges as required. Channels can now be used as 0.5m units.

These preparation steps should be read in conjunction with the Best practice and workmanship note on page 4.

Watertight sealing

Channels are generally installed without a water seal. Once butt jointed and with a concrete surround a fairly watertight installation can be achieved.

If however, a more definite seal is required, this channel has a groove allowing a flexible sealant to be applied either during or following installation. For rainwater applications we recommend a single component, polyurethane based elastomeric joint sealant such as Masterflex 472 or Sikaflex 11FC or similar.

Application of sealant to be in accordance with the sealant manufacturer's recommendations, but for guidance a typical method of application is as follows.

Sealant groove

METHOD:

Step 1: Jointing faces of the channels to be sound and cleaned to remove all loose material, dust, oil and grease.

Step 2: Butt joint the channels & install as per ACO installation instructions. Ensure joints are still clean (surfaces can be damp but no water droplets should be evident).

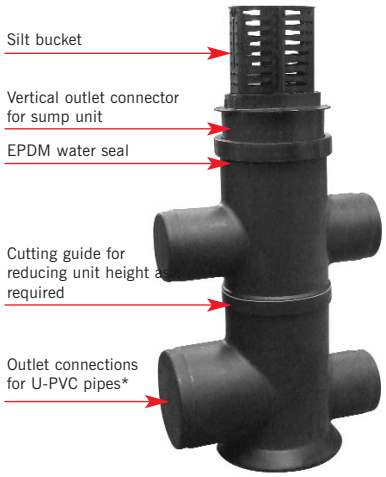
Apply sealant with a cartridge gun approximately 5mm thick to the end face of the channel & completely fill the sealant groove. Note this type of channel can be sealed either at or following installation.

Step 3: Wipe excess sealant from the inside faces of the channel & inspect sealant groove to ensure it has been fully filled with sealant.

Leave sealant to cure before use as per the sealant manufacturer's recommendations.

Sump unit

A LLDPE chamber unit which provides the capacity to hold water and silt, and also provides an outlet for the channel system.



ACO MultiDrain™ PPD sump unit

METHOD:

Step 1: Remove pre-formed knockout in channel as described on page 7 and fit outlet connector provided with sump to channel.

Step 2: Place channel with outlet connector over sump unit and push fit to required height. Lubricate seals if necessary. Insert silt bucket into the sump body as shown.

***Please see Specification manual for outlet dimensions**

Sump cutting guide

The LLDPE chamber unit can be reduced in height to 280mm if a compact sump is required. A cutting guide is provided and the method is described below.

Cutting guide for reducing sump height

METHOD:

Step 1: Cut sump body and silt bucket in positions shown (Only M100PPD silt bucket can be cut down).

Step 2: Remove EPDM seal from upper part of sump body and lifting handle from sump bucket. Re-fit in positions shown.

Step 3: Compact sump unit is now ready for fitting to channel as previously described.

These preparation steps should be read in conjunction with the Best practice and workmanship note on page 4.

Sump outlet connections

The LLDPE chamber unit is provided with outlet connections*. Outlet connections are supplied closed, and need to be opened prior to connection to ongoing pipework or foul air traps. The method is described below.

Sump outlet connections

METHOD:

Step 1: To remove closed section of outlet, simply cut in position shown. For connection to foul air traps remove upper and lower closed sections of outlets provided. For pipework connection, remove closed section of outlet as required.

Step 2: Lubricate seals of pipework or foul air trap as required and push fit onto unit (image shows fitting of Ø110mm foul air trap).

Roddable foul air traps

A drain connector available in Ø110mm and Ø160mm for connection to foul or combined drainage. Foul air traps come complete with removable bung for rodding and are manufactured from highly durable recyclable LLDPE.

Ø110mm foul air trap

Ø160mm foul air trap

ACO MultiDrain™ PPD foul air traps

METHOD:

Step 1: Remove upper and lower closed sections of the outlets provided (Ø110 or Ø160). Lubricate foul air trap as required and push fit onto unit (image shows fitting of Ø110mm foul air trap).

Step 2: Insert bung into sump body in position shown. Bung can be removed for rodding.

ACO Universal Gully

The ACO Universal Gully provides fast and simple connection between any channel sizes up to 200mm width in the ACO channel drainage range. It also provides an outlet to connect to traditional underground drainage. The ACO Universal Gully is a recycled plastic modular system with a ductile iron frame and grating.

ACO Universal Gully

METHOD:

Cutting gully intermediate unit
Once installed ACO Universal Gully can be cut to match channel depth.

Cutting gully frame

Step 1: Using a disc cutter, make two vertical cuts in the frame following the relevant channel bore guide provided. Panels only need to be removed when channels have an overall depth of 150mm or less.

Step 2: Make a cut parallel to the top edge of the frame following the cutting guide provided until it converges with the two previous cuts made in Step 1.

Note: Cuts should not be made outside of the area demarked by the cutting guides.

For further instructions on the installation of ACO Universal Gully please refer to page 6.

These preparation steps should be read in conjunction with the Best practice and workmanship note on page 4.

ACO Drainlock™ gratings

Fitted as standard to ACO MultiDrain™ PPD gratings, ACO Drainlock™ is a fastening system which removes the need for bolts and bars and improves the channel's hydraulic capacity. The ACO Drainlock™ mechanism simply clips into the channel for rapid installation. Some gratings are also fitted with an anti-shunt mechanism that restricts unwanted grating movement when installed.

The load class application of the channel system once installed, is determined by the load class of the gratings fitted e.g. Load Class C 250 gratings fitted to a ACO MultiDrain™ PPD channel equals C 250 channel system.

ACO Drainlock™ locking device

METHOD:

Fitting the grating

Step 1: Place the grating onto the channel making sure that the anti shunt detail is aligned within the recess.

Step 2: Push or stand on the grating until the ACO Drainlock™ locking device clips into the channel.

Removal of the grating

Insert tool as shown and pull upwards to unlock grating. Drainlock™ lifting tool available, part no 1367.

ACO Drainlock™ security locking system

In areas such as schools and prisons, where unwanted grating removal needs to be restricted, the ACO Drainlock™ security locking system can be used in conjunction with a number of gratings*.

The system is fitted to the gratings by two M6 security screws, and clamps the grating in place preventing removal. Security locking key for installation and removal supplied separately.

Security locking system

METHOD:

Step 1: Fix the M6 security screws and clamp to the grating as shown in the image above.

Step 2: Place grating into the channel and tighten the screws using the security locking key.

***Please see Specification manual for gratings with this feature.**

Brickslot access tops

ACO Brickslot access tops are available for the 100mm and 150mm wide channel systems to enable access for cleaning and maintenance. Removal and fitting of these tops can be achieved using two ACO Drainlock™ grating lifting tools (product code 1367). The method of removal and fitting is shown below.

Brickslot access top

METHOD:

Step 1: To remove the ACO Brickslot access top, insert the lifting tools as shown.

Step 2: Lift the tray vertically from the frame. Details on the lifting tools can be found in the ACO MultiDrain™ PPD Specification manual.

These preparation steps should be read in conjunction with the Best practice and workmanship note on page 4.

Guide to installing the channel system

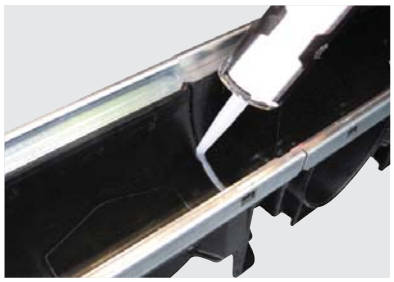
General advice

The channels are installed in continuous trenches, bedded on a concrete foundation with concrete haunching designed to prevent lateral forces from acting on the sidewalls. All foundations must be designed to withstand service loads without differential settlement.

Step 1: Excavation

An excavation must be provided that will ensure the minimum required concrete dimension on all sides of the drainage system. This may need to be increased to cater for the specific loading and ground conditions. See drawings and table on page 4. Remove all loose Material. Blind the trench if necessary if bedding concrete is not placed immediately.

Step 2: Joint sealing



If it is required that the complete installation be watertight, e.g. where channels are being installed in suspended slabs, all channel to channel and channel to fitting joints should be sealed.
The interface between the channel and the surrounding structure should also be filled with a suitable sealant.
For more information on watertight sealing see page 8.

Step 3: Outlet installation

Fig.1 Sump unit connected to the outlet pipe

Determine the outlet unit(s) required (e.g. ACO Universal Gully, ACO MultiDrain™ PPD sump, ACO MultiDrain™ PPD outlet connector) and position the outlet with the outfall drainage connection. Fig.1 shows the installation of the ACO MultiDrain™ PPD sump unit.

Install the sump and the first length of channel over the outlet. Place the concrete surround to the outlet. If using an ACO Universal Gully please refer to the separate installation instructions provided on page 6. Fix the gratings in place, together with some shims or washers (see note opposite). Place the concrete haunch both sides of the channel.

Fig.2 Washers are used to aid grating removal

NOTE: Locating gratings

It is important that the sides of the channel are adequately braced during installation of the side haunch, by fixing the gratings or 20mm plywood in place to prevent the channel wall and joints being distorted by the weight of concrete. This is important for all channels, but particularly important with plastic channels. The gratings should be suitably wrapped to protect from concrete contamination. Shims (or washers) placed along each side allow easy removal of the grating. Fig. 2 shows the use of washers during channel installation.

Step 4: Channel installation

Starting from the outlet, install channels with the moulded arrow on each unit pointing towards the outlet (flow direction).

The tongue of each channel engages by lowering it vertically into the groove of the previous channel. Care should be taken that concrete is not trapped between the channels.

Channels should be weighted temporarily (sand, reinforcement bar or other ballast) to prevent movement during concreting.

Channels must be located and supported at the correct heights until concreting to the specified depth for the appropriate load class is completed. The run should be completed by using the appropriate closing endcap.

Step 5: Finishing the installation

The finished surface of the adjacent pavement or haunch should be 3-5mm above the grating surface, with a slight down slope to the channels.

The grating should be removed, and the channel flushed out. Then all protective covering should be taken off the grating, concrete splashes cleaned off and the grating replaced. Ensure the grating is properly located and locked into place. Install sump or gully buckets.

ACO Water Management Design Services Team

Full installation detail for this channel system is provided on pages 4-6. If you have any further technical queries please contact the ACO Water Management Design Services Team on 01462 816666.

Inspection and maintenance recommendations

Frequency of inspection / maintenance

Inspections should be carried out at frequent and regular intervals. The frequency will depend upon the location and the environment and should be based on local knowledge, but inspections should be carried out at least once a year.

Recommended inspection plan

Visual inspections should pay particular attention to the following: -

- Gratings or covers

Grating slots and exposed edges of channels should be examined for signs of any damage, which may have been caused by high stress concentrations, resulting from stones lodged in the channel or from local impact loads. Broken channels and / or gratings should be replaced.

- ACO Drainlock™ locking system

The ACO Drainlock™ locking system should be inspected and checked for tightness.

- Sumps and sump bucket
Particularly following storms, the efficiency of the sumps or gullies should be checked by inspection. The bucket should be removed periodically and checked for blockages. These inspections should be carried out in conjunction with an inspection of the underground drainage connection out of the channel system. Occasionally, water should be poured into the sump (or gully) to check that it disperses freely.

- Concrete surround to channel (where exposed)
Where exposed, the concrete haunch should be inspected for signs of damage. Both the haunch and channel should be checked for level and compared with installation drawings. Undulations of the haunch, or channel, which may impair the efficiency of the system, could possibly be attributed to ground conditions and engineering advice may be necessary.

- Paving in vicinity of channel
Levels of paved areas should be checked and compared with the installation drawings. Block paving should be regularly checked for signs of lateral movement (opening or closing of joints) possibly induced by vehicle braking or manoeuvring. The side of the channel must not be laterally loaded – refer to ACO installation recommendations.

Cleaning

Access to the channel is provided via gratings or inspection covers at periodic intervals along the channel.

The channels should be cleaned out carefully ensuring the surface finish is not damaged. A shaped shovel (e.g. a trowel) may be used within channels with removable gratings. On longer lengths of channel, and for channels without removable gratings, pressure water jetting is the usual method of cleaning, with a vacuum tanker collecting the water and debris at a convenient point, usually the outfall.

Note that a sheet material (plastic, hardboard or similar) may be dragged along the ground over the moving jetting head to minimise the spray of water through the grating or slot.

On completion of cleaning operations, the channel bore should be flushed through with water and any damaged surfaces repaired. Where provided, joint sealant should be repaired in accordance with the relevant manufacturer's instructions.

The buckets of sumps (or gullies) should be removed, emptied, cleaned and their drain holes cleared. Silt etc. should be removed from the bottom of the sump. Ensure that the bucket is replaced within the sump (or gully) with an easy fit.

BOILING WATER OR CLEANING AGENTS SHOULD NOT BE USED (or consult the cleaning agent manufacturer for information on compatibility with polypropylene).

For further advice please contact the ACO Water Management Design Services Team on 01462 816666.

Ductile iron gratings – coating performance

It should be noted that, depending on the environment, all unprotected ductile iron products might oxidise. The oxidation will not affect the structural integrity of the material but may be considered by customers to be unsightly.

This oxidation should not be compared with the corrosion process of mild steel, which is eventually total. With ductile iron the oxidation rate will decrease, following initial oxidation, as a protective layer is built up.

Ductile iron manhole and gully gratings will similarly show oxidation but with trafficking this is worn to a polished finish, and traffic on ACO gratings will produce the same dark polished effect.

ACO supplies ductile iron gratings with a light water based coating. This coating is not permanent and it is intended only as a temporary protection between manufacture and installation.

Accordingly, should this discolouration continue to be unacceptable, we recommend that the gratings be painted with a proprietary rust inhibitor.

How to maintain the ACO MultiDrain™ PPD system when using non-removable gratings

ACO MultiDrain™ PPD Brickslot tops can not be removed once installed.

Channel access can be made via the ACO Brickslot access tops. The method of removal is shown on page 10.

Maintenance requirements are similar to those for grated systems, with cleaning carried out by pressure water jetting. Slots should be kept clear of any blockage, with debris hooked out of the slot as much as possible, rather than pushed into the channel.

Channel replacement

Should it ever be necessary to replace a channel, ensure that the installation is all in accordance with the original recommendations. To remove a channel, disc cut the unit to separate it from adjacent units. To replace a unit, first remove the channel locating clips and cut back the end of the channel detail that extends beyond the end of the edge rail. The new unit will then fit between the retained existing units.

Grating identification

All ACO gratings and covers comply with the requirements of BS EN 1433:2002, and are permanently marked with the relevant Load Class (for example ‘C250’) together with the word ACO in one or two corners of the grating or cover.

Recycling

All the components of ACO MultiDrain™ PPD are recyclable. Separate the units into the plastic and metal parts and recycle in accordance with local regulations.

Frequently asked questions

Q1 HOW DO YOU ACHIEVE A CHANNEL BASE OUTLET CONNECTION?

Answer:

All ACO MultiDrain™ PPD channels are supplied with a pre-formed knockout in the base of the junctions. Full instructions are provided on page 7.

Q2 HOW DO I TURN A 90° CORNER?

Answer:

All the ACO MultiDrain™ PPD 0.0J* channels have side wall connections to allow T and L junctions to be formed. A closing end cap will be required to finalise the corner. Alternatively the ACO Universal Gully can be used. Full instructions are provided on page 7.

Q3 DO I NEED A SUMP UNIT / UNIVERSAL GULLY?

Answer:

This is dependent on the requirements for a sediment bucket or foul air trap. If either of these are required then a sump or gully is necessary. If not you can use any of the other outlet options available. The ACO Universal Gully (33601) has a roddable foul air trap built into the side of the unit. Note that the hydraulic capacity of end outlets and bottom outlets will be much less than the capacity of a sump or gully.

Q4 HOW DO I MAKE THE ACO MULTIDRAIN™ PPD SYSTEM WATERTIGHT?

Answer:

A sealant will be required in the joints between channel units. Detailed instructions can be found on page 8.

Q5 HOW DO I MATCH THE GRATING THAT I ALREADY HAVE INSTALLED?

Answer:

Firstly, identify exactly which grating you have. In order for the ACO Water Management Design Services Team to do this, you should provide as much information as you can. If possible please supply answers to the following questions; What is the overall grating width? Is “ACO” marked on the grating? Are there any further markings on the grating? What type of fixing and how many fixings are provided per half metre? Providing a photo would also assist this type of enquiry. Please send images along with answers to the above questions to draintechnical@aco.co.uk. File size should not exceed 5Mb.

Q6 WHERE CAN I FIND PRODUCT CODES FOR THE ACO MULTIDRAIN PPD COMPONENTS?

Full technical details including product codes can be found in the ACO MultiDrain™ PPD Specification manual. For a copy of this brochure please visit www.aco.co.uk or contact marketing@aco.co.uk.

Conformity

The ACO MultiDrain™ PPD system is CE marked and fully certified to BS EN 1433:2002.

Test certificates and a declaration of conformity are available on request. Please contact the ACO Water Management Design Services Team on 01462 816666 for further information.

CE **BS EN 1433:2002**

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