

Installation Guidelines

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1. Excavation

- a. Sufficient material should be excavated to accommodate channel units, concrete bedding and haunching.
- b. Any 'soft spots' or poorly compacted formation should be made good.

2. Setting Out

- a. Setting out pins should be accurately located to the correct line and level with a string line level with the top rear corners of the channel units.
- b. It may be advantageous to locate setting out pins to the rear of the units to avoid having to lift the units over the string line.

3. Outfalls

- a. Birco Outfalls should be installed first.
- b. Sufficient material should be excavated to accommodate the trapped Birco Gulley.
- c. 150mm of ST4 mix (BS 8500-1&2) concrete of the appropriate mix is placed in the bottom of the excavation.
- d. The bottom section of the two part Birco Gulley is lowered into position, with the appropriate pipe adaptor placed the aperture for connection to the underground pipework.
- e. A suitable section of the wall of the outfall unit shall be cut out to allow adjacent drainage channels to abut without restricting the flow of water. Cutting shall be achieved by using a concrete saw or disc cutter.
- f. Sufficient M-Flex sealant is gunned onto the top horizontal surface of the bottom section of the two part Birco Gulley so as to provide a seal between the top and bottom sections.
- g. The top section of the two part Birco Gulley is lowered into position
- h. The bedding concrete should be laid and brought up to the appropriate level dependant on surface finish as shown in the Birco Standard Detail Sheet.



Guidelines continued overleaf...

4. Channel Installation

- a. Bedding concrete (ST1 to BS 8500-1&2) of the appropriate thickness and depth shall be laid as specified in the Birco Standard Detail Sheets.
- b. The top of the Birco Channel shall be 5mm below the final pavement surface.
- c. Channel Units shall be laid onto the freshly mixed bedding concrete, starting at the outfall, i.e. working uphill
- d. Alternatively, the Channel Units may be bedded on to a layer of 10 to 40mm cement mortar (M12 mortar to BS EN 998-2) on a previously prepared concrete foundation.
- e. The concrete haunching shall be of a concrete grade appropriate to the Drainage Channel Loading Class as specified in the Birco Standard Detail Sheets.
- f. Haunching shall be carried out as one operation to a complete line of Channel Units, to the dimensions indicated in the Birco Standard Detail
- g. Where channels are laid on or adjacent to existing or proposed concrete slabs, transverse joints shall be formed within the Units and haunching adjacent to the slab joints.
- h. Longitudinal movement joints shall also be formed between the haunching and the slabs as described in the Birco Drain Standard Detail Sheets.
- i. Where cutting the Birco Channel Units is required, they shall be cut with a concrete saw or disc cutter, so that no single Unit is less than 350mm long. Birco gratings shall not be cut unless directed by the engineer. Any cut galvanised steel shall be renovated using Defcon Z, or similar approved.

5. Channel Joint Sealant

- a. Jointing of adjacent channels shall be carried prior to fixing the gratings. Marshall's M-Flex sealant should be gunned into the sealant groove formed when adjacent channels abut.
- b. Surplus sealant shall be removed from the inner surface of the units as work proceeds.



Guidelines continued overleaf...

6. Grating Installation

- a. Adjacent Carriageway and/or footway construction shall not be commenced within 3 days of any jointing or haunching/surrounding concrete being placed.
- b. Birco gratings shall be securely bolted to Birco Channel Units, before adjacent pavement construction is commenced.
- c. All gratings shall be evenly spaced with bolts tightened down securely to the appropriate torque (Lite: 25Nm, 100, 150 and 200: 75 Nm, 300:100Nm).
- d. On completion of the works, the drainage channel units shall be cleaned out and left free from obstruction. This shall be carried out either by removal of gratings or by high pressure water jetting (100-150 bar at 200 litres/min minimum). Unless otherwise agreed with the specifier, the slot openings shall be covered by timber boards or other method during jetting operations.
- e. Outfall units shall be emptied.
- f. The cleaning process should be repeated where necessary on completion of any remedial works.



7. Birco End Caps/End Cap Outlets

- a. Where the Birco Channel run does not terminate at an outfall, the base unit shall be sealed using the Beany Block End Cap or End Cap Outlet.
- b. These are to be held in position by installing 150mm of concrete haunching.
- c. Marshall's M-Flex sealant should be gunned into the sealant groove.

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the installtion video**



In accordance with the Health and Safety at Work etc Act 1974, the Manual Handling Operation Regulations 1992 (as amended 2004) and the Construction (Design and Management) Regulations 2007, risk assessments should be carried out to protect workers from risks associated with musculoskeletal disorders and work related upper limb disorders.

This may require the use of lifting aids to assist installation.