

POLYETHYLENE ROAD GULLIES

RIDGIGULLY POLYETHYLENE ROAD GULLIES

This HAPAS Certificate Product Sheet⁽¹⁾ is issued by the British Board of Agrément (BBA), supported by Highways England (HE) (acting on behalf of the Overseeing Organisations of the Department for Transport; Transport Scotland; the Welsh Assembly Government and the Department for Regional Development, Northern Ireland), the Association of Directors of Environment, Economy, Planning and Transport (ADEPT), the Local Government Technical Advisers Group and industry bodies. HAPAS Certificates are normally each subject to a review every three years.
(1) Hereinafter referred to as 'Certificate'.

This Certificate supersedes 90/R054, and relates to Ridgigully Polyethylene Road Gullies, for use as untrapped road gullies for direct connection to plastic pipe systems or, with suitable adaptors, to PVC-U and clay drainage systems.

CERTIFICATION INCLUDES:

- factors relating to compliance with HAPAS requirements
- factors relating to compliance with Regulations where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.



KEY FACTORS ASSESSED

Flow characteristics — the products have sufficient flow characteristics (see section 6).

Strength and stability — the products have adequate strength to resist loads and impacts likely to be encountered during transport, installation and use (see section 7).

Watertightness — the connections between the gullies and the pipes are watertight (see section 8).

The BBA has awarded this Certificate to the company named above for the products described herein. These products have been assessed by the BBA as being fit for their intended use provided they are installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément



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Head of Technical Excellence



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Chief Executive

The BBA is a UKAS accredited certification body — Number 113. The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk

Readers are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.

Requirements

In the opinion of the BBA, Ridgigully Polyethylene Road Gullies, when used in accordance with the provisions of this Certificate, will meet or contribute to meeting the following requirements of the *Manual of Contract Documents for Highways Works (MCHW)*⁽¹⁾, *Specification for Highways Works (SHW)*, Volume 1.

(1) The MCHW is operated by the Overseeing Organisations: Highways England (HE), Transport Scotland, the Welsh Assembly Government and the Department for Regional Development (Northern Ireland).

Regulations

Construction (Design and Management) Regulations 2015

Construction (Design and Management) Regulations (Northern Ireland) 2007

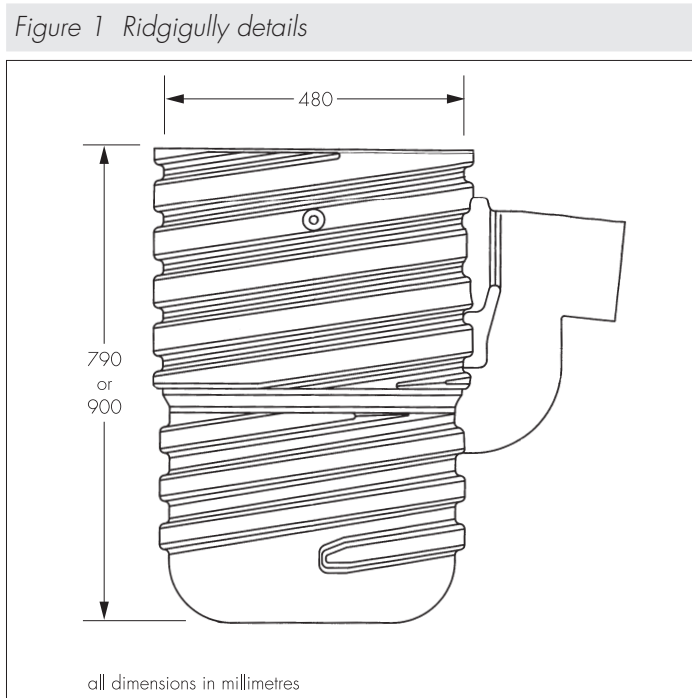
Information in this Certificate may assist the client, Principal Designer/CDM co-ordinator, designer and contractors to address their obligations under these Regulations.

See section: 3 *Delivery and site handling* (3.2) of this Certificate.

Technical Specification

1 Description

1.1 Ridgigully Polyethylene Road Gullies are blow-moulded, corrugated, high-density polyethylene (HDPE) gullies with a nominal internal diameter of 450 mm and available in depths of 790 mm and 900 mm (see Figure 1).



1.2 The outlet is suitable for use with a 160 mm spigot outlet (UG 602) as standard, which can be adapted using an ARG Multi Adaptor (ARGMULTI) to Ridgidrain, Polysewer and other pipe systems. Ridgiflex (RF150X25) is for use in flexible gully connections. 150 mm single wall corrugated Ridgiflex has the same external profile as Ridgidrain (see section 8).

2 Manufacture

2.1 The products are manufactured using a conventional blow-moulding process.

2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of non-conformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

2.3 The management system of Polypipe Civils Ltd has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008 by BSI (Certificate Q 06225).

3 Delivery and site handling

3.1 The products are delivered to site unprotected, and are identified by the Certificate holder's product code and label bearing the BBA logo incorporating the number of this Certificate.

3.2 The products weigh between 5 kg and 6 kg and are handled easily.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Ridgigully Polyethylene Road Gullies.

Design Considerations

4 General

Ridgigully Polyethylene Road Gullies are satisfactory for use when surrounded by a minimum thickness of 150 mm of concrete to the specification required by Highways England (HE).

5 Practicability of installation

The products are designed to be installed by a competent general builder, or a contractor, experienced with these types of products.

6 Flow characteristics

6.1 The products have flow characteristics equivalent to those of precast concrete units to BS 5911-4 : 2002 and BS EN 1917 : 2002.

6.2 The products have a holding capacity of 80 litres or 104 litres.

7 Strength and stability

7.1 The products have adequate strength to withstand the loads associated with placing the concrete.

7.2 The products have adequate resistance to impacts likely to be encountered during installation and emptying.

8 Watertightness

8.1 The Ridgigully outlet joints to Ridgidrain pipe, when installed as shown in Drawing No F13 of MCHW, Volume 3: *Highway Construction Details*, without a concrete surround, are partly watertight in accordance with MCHW, Volume 1: *Specification for Highway Works*, Clause 509.7. The joints will remain partly watertight under conditions of deflection in excess of those normally found on site.

8.2 The connections between the gullies and the pipes specified in this Certificate, when installed as shown in Drawing No F13 of MCHW, Volume 3: *Highway Construction Details*, and, when surrounded by concrete to HE's specification, are fully watertight in accordance with the MCHW, Volume 1, Clause 504.3. Without a concrete surround, the joints are partly watertight.

8.3 Joints to PVC-U to BS 4660 : 1989 and BS EN 1401-1 : 2009 and clay to BS EN 295-1 : 1991 can be made using adaptors designed to connect conventional thick-walled clay pipe (outside diameter of 183 mm to 185 mm) to other drainage systems.

9 Maintenance

9.1 The drain from the gully may be rodded, using conventional flexible drain rods, by removing the access plug. In common with other standard plastic drainage systems, toothed root-cutters and rods with metal ferrules used in some mechanical cleaning systems could damage the gully and should not be used. To maintain the effectiveness of the trap, the plug must be replaced after rodding.

9.2 The products have adequate resistance to being emptied using conventional suction tankers.

10 Durability

When surrounded by concrete, the products will have a life equivalent to that of precast concrete and clay gullies.

11 Reuse and recyclability

The products are manufactured from high-density polyethylene (HDPE), which is readily recyclable.

Installation

12 Procedure

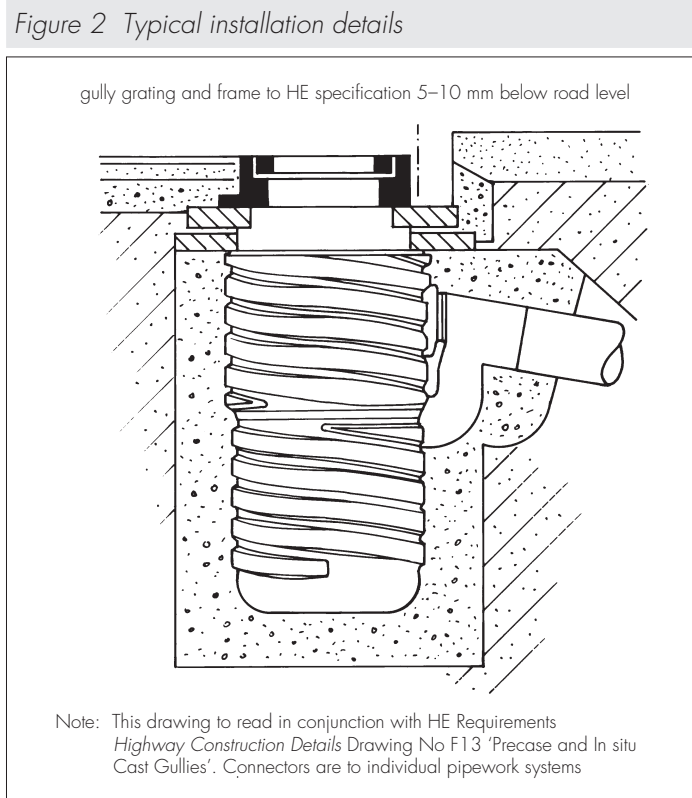
12.1 Each gully should be installed in a suitably-sized pit, allowing for a minimum surround and base of 150 mm of concrete to HE's specification and any trench shoring required

12.2 A concrete base 150 mm thick is laid. The gully is placed in position, ensuring that it is level and in line with the branch drain.

12.3 The gully is connected to the branch drain using an appropriate adaptor.

12.4 The gully is surrounded, up to the lip, with a minimum of 150 mm of concrete (see Figure 2). To prevent distortion of the gully the concrete must be evenly distributed and must fully surround the outlet spigot and connection joint. The use of a vibrating poker will assist compaction of the concrete surround and reduce void formation. The gully may need weighting to hold it in the required position during installation.

12.5 The installation is completed by the construction of a suitable support for the cast-iron grating and frame as shown in Drawing No F13 of MCHW, Volume 3: *Highway Construction Details*.



Technical Investigations

13 Tests

Tests were carried out and the results assessed to determine:

- watertightness of joints
- resistance to external pressure equivalent to that of wet concrete
- capacity dimensional accuracy
- impact resistance
- environmental stress cracking resistance
- tensile strength
- ease of rodding
- Vicat softening
- melt flow rate
- density.

14 Investigations

14.1 The manufacturing process was evaluated, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

14.2 An assessment of the durability of Ridgully road gullies was made based on existing data relating to:

- resistance to chemicals
- flow capacity
- durability.

14.3 Visits were made to sites in progress to assess the practicability and ease of handling and installation.

14.4 An assessment was made of the data leading to the issue of previous BBA Roads and Bridges Certificate 90/R054 resulting in the issue of this BBA HAPAS Certificate.

Bibliography

- BS 4660 : 1989 *Specification for unplasticized polyvinyl chloride (PVC-U) pipes and plastics fittings of nominal sizes 110 and 160 for below ground gravity drainage and sewerage*
- BS 5911-4 : 2002 *Concrete pipes and ancillary concrete products — Specification for unreinforced and reinforced concrete inspection chambers*
- BS EN 1917 : 2002 *Concrete manholes and inspection chambers, unreinforced, steel fibre and reinforced*
- BS EN 295-1 : 1991 *Vitrified clay pipes and fittings and pipe joints for drains and sewers — Requirements*
- BS EN 1401-1 : 2009 *Plastics piping systems for non-pressure underground drainage and sewerage — Unplasticized poly(vinylchloride) (PVC-U) — Specifications for pipes, fittings and the system*
- BS EN ISO 9001 : 2008 *Quality management systems — Requirements*
- Manual of Contract Documents for Highways Works, Volume 1: *Specification for Highways Works*
- Manual of Contract Documents for Highways Works, Volume 3: *Highway Construction Details*

Conditions of Certification

15 Conditions

15.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page — no other company, firm, organisation or person may hold or claim that this Certificate has been issued to them
- is valid only within the UK
- has to be read, considered and used as a whole document — it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English Law.

15.2 Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

15.3 This Certificate will remain valid for an unlimited period provided that the product/system and its manufacture and/or fabrication, including all related and relevant parts and processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

15.4 The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.

15.5 In issuing this Certificate, the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- actual installations of the product/system, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product/system is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product/system, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to CE marking.

15.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.