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Agrément Certificate
89/2175
Product Sheet 2

RIDGIDUCT DUCTING SYSTEM

COMTITE DUCTING PLUG

This Agrément Certificate Product Sheet⁽¹⁾ relates to the Comtite Ducting Plug comprising EPDM rubber, for use in conjunction with Ridgiduct duct for underground ducting for electricity, gas and water supply services, and for street lighting cables and fibre optic cabling for telecommunications.

(1) Hereinafter referred to as 'Certificate'.

CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information 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

Strength — the product has adequate strength to resist the loads likely to be encountered during service (see section 6).

Performance of joints — the product is suitable for applications as a sealed system (see section 7).

Resistance to elevated temperatures — cables with a surface temperature of up to 60°C will not affect the integrity of the product (see section 8).

Resistance to chemicals — the product has adequate resistance to attack from chemicals likely to occur in soils and groundwater (see section 9).

Durability — when used in the context of this Certificate, the product will have adequate durability (see section 11).

The BBA has awarded this Certificate to the company named above for the product described herein. This product has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Brian Chamberlain
Head of Technical Excellence

Claire Curtis-Thomas
Chief Executive

Date of First issue: 9 June 2016

Originally certificated on 14 March 2003

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.

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Regulations

In the opinion of the BBA, the use of Comtite Ducting Plug is not subject to the national Building Regulations.

Construction (Design and Management) Regulations 2015

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

In the opinion of the BBA, this Certificate does not include any content which relates to the obligations of the client, Principal Designer/CDM co-ordinator, designer and contractors under these Regulations.

Technical Specification

1 Description

1.1 The Comtite Ducting Plug is for use with the Ridgiduct Twin-Walled High Density Polyethylene Ducting (see Product Sheet 1 of this Certificate), and provides a suitable method for securing internal cables and pipes within the ducting system. One plug is used at each end of a run of ducting.

1.2 The plug (see Figure 1) comprises a two-part interlocking EPDM body held together with a centre bolt. This bolt incorporates a valve to release any pressure which may build up in the ducting during installation. The valve is also used for carrying out the air pressure test with the core valve part removed. Eight compression plates, four on each face, connected by bolts, provide additional support and, when tightened, seal the EPDM body against the walls of the duct.

1.3 The plug is constructed with four holes in which a selection of grommets (supplied) can be inserted. The range of grommets is given in Table 1.

1.4 The plug is available in two sizes to suit 94 mm and 100 mm diameter Ridgiduct.

Figure 1 Comtite Ducting Plug

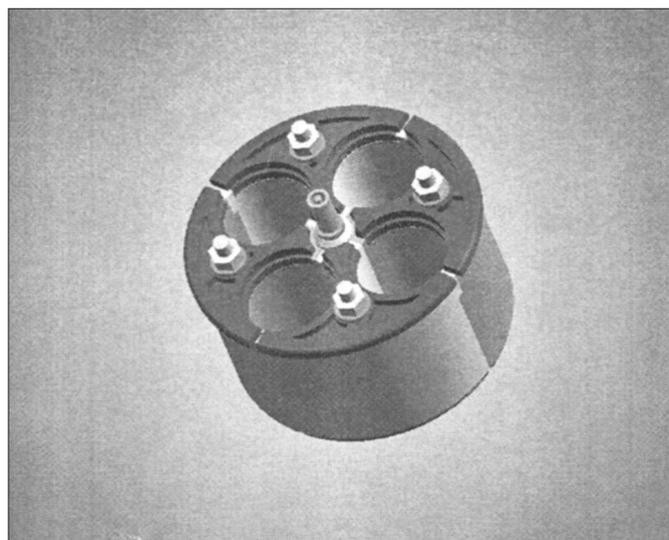


Table 1 Range of plugs and grommets

Product code	Description
DP 100	100 mm ducting plug
DPG 0	blanking grommet
DPG 9	9 mm grommet
DPG 12	12 mm grommet
DPG 14	14 mm grommet
DPG 16	16 mm grommet
DPG 18	18 mm grommet
DPG 21	21 mm grommet
DPG 24	24 mm grommet
DPG 27	27 mm grommet
DPG 4 x 9	4 x 9 mm grommet
DPG 7 x 9	7 x 9 mm grommet

2 Manufacture

2.1 The EPDM components are manufactured using conventional injection-moulding techniques. The compression plates are manufactured from acetal using conventional injection-moulding techniques.

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 nonconformities
- 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 has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008 by BSI (Certificate Q06225).

3 Delivery and site handling

3.1 The Comtite Ducting Plug is individually bagged; the grommets are bagged in packs of five, for each type of grommet.

3.2 The Comtite Ducting Plug has good resistance to UV degradation. When long-term storage is envisaged, duct plugs must be stored away from direct sunlight.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on the Comtite Ducting Plug.

Design Considerations

4 General

4.1 The Comtite Ducting Plug, when installed in accordance with this Certificate, is satisfactory for use in underground pipe ducting for electricity services, and for street lighting cables and fibre optic cabling for cable television and telecommunications.

4.2 Beginning and ending the Ridgiduct pipe ducting system with the Comtite Ducting Plug, and incorporating optional sealed couplings, produces a system with protection against penetration by solid foreign objects of 1 mm diameter or greater and against ingress of water at 1 m depth, with an IP rating of IP47 to BS EN 60529 : 1992.

5 Practicability of installation

The product is designed to be installed by utility contractors experienced with this type of product.

6 Strength

6.1 The product has adequate strength to resist the loads likely to be encountered during service when used and installed in accordance with the recommendations given in this Certificate.

6.2 The product has adequate resistance to the impact loads normally encountered during handling and installation.

7 Performance of joints

When using the Comtite Ducting Plug, Ridgiduct RB 94 and RB 100 are suitable for applications as a sealed system to BS EN 61386-24 : 2010.

8 Resistance to elevated temperatures

8.1 The maximum temperature which the duct plug will be subject to in service as part of an electrical cable ducting system is dependent on the ground thermal conductivity, depth of burial, ground temperature and the heat load imposed by the electrical cable.

8.2 In general, cables with a surface temperature of up to 60°C will not affect the integrity of the duct plug. For example, in a typical installation with a 300 mm² copper cable carrying a current of 600 amps imposing a heat load of 25 W·m⁻¹, the cable would have a surface temperature of 60°C.

9 Resistance to chemicals

The materials used to manufacture the product have adequate resistance to attack from chemicals likely to occur in soils and groundwater. Details of chemical resistance of the materials are given in D64/14117 DC.

10 Maintenance

As the product is buried and has suitable durability (see section 11), maintenance is not required.

11 Durability

When used in the context of this Certificate, the product will have adequate durability.

Installation

12 General

12.1 The Comtite Ducting Plug must be installed in accordance with the Certificate holder's instructions, and any additional site requirements (see section 4).

12.2 The general requirements for a ducting system must be in accordance with the *Installation* part of Product Sheet 1.

12.3 The grommets have a high friction surface which would impede the installation or withdrawal of cables. To overcome this, the grommets are split along their length to allow them to be clipped over the cable once it has been pulled through.

Technical Investigations

13 Tests

Tests were carried out to determine:

- dimensional accuracy
- airtightness
- watertightness of joints
- degree of protection against foreign objects.

14 Investigations

14.1 An examination was made of data relating to:

- chemical resistance
- heat dissipation
- effect of temperature
- practicability of installation
- material properties
- durability.

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

Bibliography

BS EN 60529 : 1992 + A2 : 2013 *Degrees of protection by enclosures (IP code)*

BS EN 61386-24 : 2010 *Conduit systems for cable management — Particular requirements — Conduit systems buried underground*

BS EN ISO 9001 : 2008 *Quality management systems — Requirements*

D64/14117 DC : *Pipework systems, Pipes, Pipe fittings, Thermoplastic polymers, Plastics, Polymers, Installation, Bending, Underground, Soils, Soil compaction tests, Chemical-resistance tests, Polyvinyl chloride, Unplasticized polyvinyl chloride, Polyethylene, Particle size distribution, Acrylonitrile butadiene styrene, Polyamides, Polypropylene, Pipe laying*

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.