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Agrément Certificate
25/7371
Product Sheet 1 Issue 1

NAYLOR DRAINAGE SYSTEM

METRODRAIN PIPE AND COUPLER

This Agrément Certificate Product Sheet(1) relates to the Metrodrain Pipe and Coupler, 100 mm in diameter, for use in non-pressure underground drainage systems as carrier drains, for the collection and disposal of surface and sub-surface water.

(1) Hereinafter referred to as 'Certificate'.

The assessment includes

Product factors:

- compliance with Building Regulations
- compliance with additional regulatory or non-regulatory information where applicable
- evaluation against technical specifications
- assessment criteria and technical investigations
- uses and design considerations

Process factors:

- compliance with Scheme requirements
- installation, delivery, handling and storage
- production and quality controls
- maintenance and repair

Ongoing contractual Scheme elements†:

- regular assessment of production
- formal 3-yearly review

KEY FACTORS ASSESSED

Section 1. Mechanical resistance and stability
Section 2. Safety in case of fire
Section 3. Hygiene, health and the environment
Section 4. Safety and accessibility in use
Section 5. Protection against noise
Section 6. Energy economy and heat retention
Section 7. Sustainable use of natural resources
Section 8. Durability

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

Date of issue: 8 April 2025

Hardy Giesler
Chief Executive Officer

This BBA Agrément Certificate is issued under the BBA's Inspection Body accreditation to ISO/IEC 17020. Sections marked with † are not issued under accreditation.

The BBA is a UKAS accredited Inspection Body (No. 4345), Certification Body (No. 0113) and Testing Laboratory (No. 0357).

Readers MUST check that this is the latest issue of this Agrément Certificate by either referring to the BBA website or contacting the BBA directly.

The Certificate should be read in full as it may be misleading to read clauses in isolation.

Any photographs are for illustrative purposes only, do not constitute advice and should not be relied upon.

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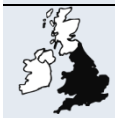
SUMMARY OF ASSESSMENT AND COMPLIANCE

This section provides a summary of the assessment conclusions; readers should refer to the later sections of this Certificate for information about the assessments carried out.

Compliance with Regulations

Having assessed the key factors, the opinion of the BBA is that the Metrodrain Pipe and Coupler, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations:



The Building Regulations 2010 (England and Wales) (as amended)

Requirement:	**H3(3)**	**Rainwater drainage**
Comment:		The product can contribute to satisfying this Requirement. See section 1 of this Certificate.
Regulation:	**7(1)**	**Materials and workmanship**
Comment:		The product is acceptable. See sections 8 and 9 of this Certificate.

The Building (Scotland) Regulations 2004 (as amended)

Regulation:	**8(1)(2)**	**Fitness and durability of materials and workmanship**
Comment:		The product is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	**9**	**Building standards – construction**
Standard:	3.6	Surface water drainage
Comment:		The product can contribute to satisfying this Standard, with reference to clauses 3.6.1(1)(2) and 3.6.2(1)(2). See section 1 of this Certificate.
Standard:	**7.1(a)**	**Statement of sustainability**
Comment:		The product can contribute to satisfying the relevant requirements of Regulation 9, Standards 1 to 6, and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard.

(1) Technical Handbook (Domestic).
(2) Technical Handbook (Non-Domestic).

The Building Regulations (Northern Ireland) 2012 (as amended)

Regulation:	**23(1)(a)(i)**	**Fitness of materials and workmanship**
Comment:	**(iii)(b)(i)**	The product is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	**82**	**Rainwater drainage**
Comment:		The product can contribute to satisfying this Regulation. See section 1 of this Certificate.

Additional Information

NHBC Standards 2025

In the opinion of the BBA, the Metrodrain Pipe and Coupler, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapter 5.3 *Drainage below ground*.

Fulfilment of Requirements

The BBA has judged the Metrodrain Pipe and Coupler to be satisfactory for use as described in this Certificate. The product has been assessed for use in non-pressure underground drainage systems, as carrier drains, for the collection and disposal of surface water.

ASSESSMENT

Product description and intended use

The Certificate holder provided the following description for the product under assessment. The Metrodrain Pipe and Coupler consists of a DN/ID 100 carrier plain-ended pipe, polypropylene (PP) coupler and seal (see Table 1).

The pipe has a structured-wall construction and a black corrugated outer and smooth green inner wall and is manufactured from recycled high-density polyethylene (HDPE). It is supplied in 6-metre lengths.

Sealing of joints requires a rubber sealing ring supplied by the Certificate holder. The seal is manufactured from ethylene propylene diene monomer (EPDM) to EN 681-1 : 1996, Type WC.

Product codes of the components are given in Table 1.

Table 1 Product codes

Product	Product code
Pipe	71301
Perforated pipe	71301P
Half perforated pipe	71301HP
Coupler	71340
Seal	71341

The pipes and couplers are manufactured to the material specifications given in Table 2.

Table 2 Material characteristics

Characteristic	**Pipe**	**Couplers**
Material	HDPE	Injection-moulded PP
Test method	**Specification**	
Tensile properties to ISO 527-2 : 2012 (Sample 1B at 50 mm·min^{-1})	≥ 18 MPa	
Melt mass-flow rate to ISO 1133-1 : 2011	≤ 1.0 g (10 min)$^{-1}$ 2.16 kg at 190°C(1)	≤ 13 g (10 min)$^{-1}$ 2.16 kg at 190°C
Reference density to ISO 1183-1 : 2012	≥ 935 kg·m^{-3}(2)	> 890 kg·m^{-3}

Product assessment – key factors

The product was assessed for the following key factors, and the outcome of the assessment is shown below. Conclusions relating to the Building Regulations apply to the whole of the UK unless otherwise stated.

1 Mechanical resistance and stability

Data were assessed for the following characteristics.

1.1 Mechanical properties

1.1.1 Results of impact resistance and longitudinal bending tests are given in Table 3.

Table 3 Characteristics for mechanical properties

Product assessed	Assessment method	Requirement	Result
Pipe	Impact resistance at 23°C to BS EN ISO 3127 : 2017	No failure	Pass

1.1.2 On the basis of data assessed, the product is deemed to be sufficiently robust to withstand handling, transport, storage and installation.

1.2 Performance of joints

1.2.1 Results of tightness of joints and dimensions tests are given in Table 4.

Table 4 Characteristics for performance of joints

Product assessed	Assessment method	Requirement	Result
Pipe	Dimensions	As per drawings	Pass
Pipe, coupler, and seal	Tightness of joints to BS EN ISO 13259 : 2018	No leakage	Pass

1.2.2 On the basis of data assessed, the product is deemed fit for purpose for ability to hold fluid inside and outside the system.

1.2.3 Pipeline joints will remain watertight under conditions of pipeline movement in excess of those expected to occur in normal good drainage practice.

1.3 Strength and stability

1.3.1 Results of ring stiffness tests are given in Table 5.

Table 5 Characteristics for strength and stability

Product assessed	Assessment method	Requirement	Result
Pipe (unperforated)	Ring stiffness to BS EN ISO 9969 : 2016	≥ 6 $kN \cdot m^{-2}$	Value achieved
Pipes (perforated)	Ring stiffness to BS EN ISO 9969 : 2016	Strength reduction < 5% compared to unperforated pipes	Pass

1.3.2 On the basis of data assessed, the product is deemed to be fit for purpose for resistance to soil load including traffic load, both during and after installation.

1.4 Flow characteristics

1.4.1 The product was evaluated against BS EN 752 : 2017 and BS EN 16933-2 : 2017, for low resistance to flow.

1.4.2 On the basis of data assessed, the product is deemed to be fit for purpose for conveying normal turbulent flow associated with plastic pipework.

2 Safety in case of fire

Not applicable.

3 Hygiene, health and the environment

3.1 Water infiltration

3.1.1 Result of calculation of infiltration cross section area is given in Table 5.

Table 5 Characteristics for water infiltration

Product assessed	Assessment method	Requirement	Outcome
Perforated pipes	Infiltration cross section area to the MCHW, Vol 1, sub-Clause 518.3	Permeable area minimum 1000 $mm^2 \cdot m^{-1}$	Pass

3.1.2 On the basis of data assessed, the products are deemed to be fit for purpose for conveying water into the system at the required rate.

4 Safety and accessibility in use

Not applicable.

5 Protection against noise

Not applicable.

6 Energy economy and heat retention

Not applicable.

7 Sustainable use of natural resources

The product is manufactured from polyethylene and polypropylene, which can be recycled.

8 Durability

8.1 The potential mechanisms for degradation and the known performance characteristics of the materials in the products were assessed.

8.2 Specific test data were assessed as given in Table 6.

Table 6 Characteristics for durability

Product assessed	Assessment method	Requirement	Result
Pipe	Creep ratio to BS EN ISO 9967 : 2016	≤ 4	Value achieved
	Resistance to heating to ISO 12091 : 1995	No delamination, cracks or bubbles	Pass
Coupler	Resistance to heating to BS EN ISO 580 : 2005	Depth of cracks, delamination or blisters less than 20% of the wall thickness around the injection point. No part of the weld line to open to a depth of more than 20% of the wall thickness	Pass
Pipe and coupler material	Thermal stability (OIT) to EN 728 : 1997	≥ 4 min	Value achieved

8.2.1 On the basis of data assessed, the product is deemed to be suitably resistant to soil load and traffic load, both during and after installation, as well as to the chemicals with which it is likely to come into contact in service.

8.2.2 The product complies with the requirements for chemical resistance, subject to the water discharged being rainwater, surface water or ground water, excluding chemically contaminated wastewaters, such as industrial discharges. In situations where the piping system is to be exposed to the excluded influents, specific chemical and temperature resistance must be taken into account by a suitably experienced and competent individual.

8.2.3 The materials used in the manufacture of the product is expected to have an adequate resistance to the types and levels of chemicals likely to occur in soils and groundwater in civil engineering applications. Details of the chemical resistance of the materials are given in PD ISO/TR 10358 : 2021 and PD ISO/TR 7620 : 2005.

8.3 Cleaning and maintenance

8.3.1 On the basis of data assessed, the product is suitably resistant to high-volume, low-pressure water jetting cleaning and maintenance activities, when performed as described in this Certificate.

8.3.2 Drains incorporating the product can be maintained using jetting equipment or rodded using conventional flexible drain rods. Toothed root cutters and rods with metal ferrules, as used with some mechanical cleaning systems, could damage the product and must not be used.

8.4 Service life

Under normal service conditions, the product will have a life in excess of 60 years, provided it is designed, installed and maintained in accordance with this Certificate and the Certificate holder's instructions.

PROCESS ASSESSMENT

Information provided by the Certificate holder was assessed for the following factors:

9 Design, installation, workmanship and maintenance

9.1 Design

9.1.1 Structural design

9.1.1.1 In general, structural design of the product, by employing analytical or numerical methods, is not needed provided the parameters of the project are within the value range given in PD CEN/TS 15223 : 2017, Table 1.

9.1.1.2 Specific combinations (when prescribing loads that each component must be able to withstand or any special safety factors to be used etc) must be supported by calculations carried out by a suitably experienced and competent individual in accordance with BS 9295 : 2020, BS EN 1295-1 : 2019 and PD CEN/TR 1295-2 : 2005.

9.1.1.3 Calculated prediction of the actual pipe's behaviour depends on the framework conditions used for it. Applied values must be monitored through exhaustive soil survey assessments and by supervising the installation.

9.1.2 Hydraulic design of the system

The internal surface of the product is hydraulically smooth, and the design of joints and fittings ensure good hydraulic performances. An appropriate value of roughness coefficient must be selected when designing the drainage system. For new pipes, a value of 0.006 mm is applicable, but for designs, a value of 0.6 mm is generally used.

9.2 Installation

9.2.1 Installation instructions provided by the Certificate holder were assessed and judged to be appropriate and adequate.

9.2.2 Installation must be carried out in accordance with this Certificate and the Certificate holder's instructions. A summary of instructions and guidance is provided in Annex A of this Certificate.

9.2.3 To achieve the performance described in this Certificate, the product must be installed and tested in accordance with BS 8000-0 : 2014, BS 8000-14 : 1989, BS EN 752 : 2017 and BS EN 1610 : 2015.

9.3 Workmanship

Practicability of installation was assessed by the BBA, on the basis of the Certificate holder's information. To achieve the performance described in this Certificate, installation of the product must be carried out by a competent general builder, or a contractor, experienced with this type of product.

9.4 Maintenance and repair

9.4.1 Ongoing satisfactory performance of the product in use requires that it is suitably maintained. The guidance provided by the Certificate holder was assessed by the BBA and found to be appropriate and adequate.

9.4.2 The following requirements apply in order to satisfy the performance assessed in this Certificate.

9.4.2.1 Access to the system for cleaning must be provided by conventional means.

9.4.2.2 The system must be maintained in accordance with BS EN 752 : 2017 and BS EN 13476-1 : 2018.

10 Manufacture

10.1 The production processes for the product have been assessed, and provide assurance that the quality controls are satisfactory according to the following factors:

10.1.1 The manufacturer has provided documented information on the materials, processes, testing and control factors.

10.1.2 The quality control operated over batches of incoming materials has been assessed and deemed appropriate and adequate.

10.1.3 The quality control procedures and product testing to be undertaken have been assessed and deemed appropriate and adequate.

10.1.4 The process for management of non-conformities has been assessed and deemed appropriate and adequate.

10.1.5 An audit of each production location was undertaken, and it was confirmed that the production process was in accordance with the documented process, and that equipment has been properly tested and calibrated.

†10.2 The BBA has undertaken to review 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.

11 Delivery and site handling

11.1 The Certificate holder stated that the product is delivered to site as follows:

- each pack of pipes bears a label including the nominal pipe diameter, Certificate holder's name and address, product code, size, material, ring stiffness, perforation type, length, quantity in pack and operator initials
- pipes are packed in wooden support frames and secured by straps
- couplers may be attached to the end of the pipes for despatch or packed in polyethylene / hessian bags or pallet wrapped
- seals are despatched pre-packed in polyethylene bags or boxes.

11.2 Delivery and site handing must be performed in accordance with the Certificate holder's instructions and this Certificate, including:

11.2.1 Requirements for transportation on site, storage, and lifting of components are given in BS EN 1610 : 2015.

11.2.2 Care must be taken not to drop components on their ends, particularly during cold weather conditions. Pipes must be stored on a flat surface. Loose length pipes must not be stacked more than 4 m high.

†ANNEX A – SUPPLEMENTARY INFORMATION

Supporting information in this Annex is relevant to the product but has not formed part of the material assessed for the Certificate.

Construction (Design and Management) Regulations 2015
Construction (Design and Management) Regulations (Northern Ireland) 2016

Information in this Certificate may assist the client, designer (including Principal Designer) and contractor (including Principal Contractor) to address their obligations under these Regulations.

Management Systems Certification for production

The management system of the manufacturer has been assessed and registered as meeting the requirements of ISO 9001 : 2015 by BSI (Certificate FM01420).

Additional information on installation

A.1 The pipes are cut using conventional hand tools and should be cut square between the corrugations.

A.2 For a watertight joint, the pipe end and socket/coupler/fitting should be cleaned, and a rubber seal fitted externally in the third dwell, between the third and fourth corrugation in the pipe. The seal and inside of the socket/coupler should be lubricated and the pipe pushed fully home to the central register, either by hand or by using a lever if necessary.

A.3 Care should be taken during backfilling to maintain the line and level of the pipelines. If necessary, the pipe should be restrained to prevent uplift.

A.4 All pipework must be laid with the correct bedding and surrounding material.

Additional information on delivery and handling

A.5 The product must be protected from direct sunlight when long-term storage is envisaged. If protection cannot be provided, consideration must be given to the effects of daily exposure to direct sunlight:

- up to 3 months — negligible UV degradation but possible extreme surface temperatures of up to 80°C – may cause some localised distortion
- 3 to 12 months — may have significant effect on the impact resistance and physical properties
- over 12 months — damage will occur unless protection provided.

Bibliography

BS 8000-0 : 2014 *Workmanship on construction sites — Introduction and general principles*

BS 8000-14 : 1989 *Workmanship on building sites — Code of practice for below ground drainage*

BS 9295 : 2020 *Guide to the structural design of buried pipes*

BS EN 752 : 2017 *Drain and sewer systems outside buildings — sewer system management*

BS EN 1610 : 2015 *Construction and testing of drains and sewers*

BS EN 1295-1 : 2019 *Structural design of buried pipelines under various conditions of loading — General requirements*

BS EN 13476-1 : 2018 *Plastics piping systems for non-pressure underground drainage and sewerage — Structured-wall piping systems of unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE) — General requirements and performance characteristics*

BS EN 16933-2 : 2017 *Drain and sewer systems outside buildings – Design - Part 2: Hydraulic design*

BS EN ISO 580 : 2005 *Plastics piping and ducting systems — Injection-moulded thermoplastics fittings — Methods for visually assessing the effects of heating*

BS EN ISO 3127 : 2017 *Thermoplastics pipes — Determination of resistance to external blows — Round-the-clock method*

BS EN ISO 9967 : 2016 *Thermoplastics pipes — Determination of creep ratio*

BS EN ISO 9969 : 2016 *Thermoplastics pipes — Determination of ring stiffness*

BS EN ISO 13259 : 2018 *Thermoplastics piping systems for underground non-pressure applications — Test method for leaktightness of elastomeric sealing ring type joints*

EN 681-1 : 1996 *Elastomeric seals — Material requirements for pipe joint seals used in water and drainage applications — Vulcanized rubber*

EN 728 : 1997 *Plastics piping and ducting systems — Polyolefin pipes and fittings — Determination of oxidation induction time*

ISO 527-2 : 2012 *Plastics — Determination of tensile properties — Test conditions for moulding and extrusion plastics*

ISO 1133-1 : 2011 *Plastics — Determination of the melt mass-flow rate (MFR) and the melt volume-flow rate (MVR) of thermoplastics*

ISO 1183-1 : 2012 *Plastics — Methods for determining the density of non-cellular plastics — Immersion method, liquid pyknometer method and titration method*

ISO 9001 : 2015 *Quality management systems — Requirements*

ISO 12091 : 1995 *Structural wall thermoplastics pipes — Oven test*

PD CEN/TR 1295-2 : 2005 *Structural design of buried pipelines under loading — Part 2: Summary of nationally established methods of design*

PD CEN/TS 15223 : 2017 *Plastics piping systems — Validated design parameters of buried thermoplastics piping systems*

PD ISO/TR 7620 : 2005 *Rubber materials — Chemical resistance*

PD ISO/TR 10358 : 2021 *Plastics pipes and fittings for industrial applications — Collection of data on combined chemical-resistance*

Conditions

1 This Certificate:

- relates only to the product 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
- 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
- and any matter arising out of or in connection with it or its subject matter (including non-contractual disputes or claims) is governed by and construed in accordance with the law of England and Wales
- the courts of England and Wales shall have exclusive jurisdiction to settle any matter arising out of or in connection with this Certificate or its subject matter (including non-contractual disputes or claims).

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.

3 This Certificate will be displayed on the BBA website, and the Certificate Holder is entitled to use the Certificate and Certificate logo, provided that the product 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.

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

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

6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product which is contained or referred to in this Certificate is the minimum required to be met when the product 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.

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