

Assessment Schedule for the Ridgiform XL Pipe System as manufactured by Polypipe Civils Ltd.



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1. SCOPE

This schedule specifies the requirements for the Ridgiform XL Pipe System as manufactured by Polypipe Civils Ltd. for gravity applications such as sewers or where storage, diversion, treatment or processes of stormwater is required.

2. PRODUCT DESCRIPTION

2.1 Introduction

The Ridgiform XL Pipe System is a large diameter structured wall pipe manufactured from virgin polyethylene.

The Ridgiform XL Pipe System is available in a range of diameters between 750mm and 3000mm and lengths up to 12m. Pipes can be manufactured with pipe stiffnesses between 2 kN/m² and 8kN/m² and is available in four profiled variations as detailed in Table 1.

Table 1 Ridgiform pipe wall profiles

Profile	Description
VW	Solid wall
PR	Spiral tube, smooth intrados, profiled extrados
SQ	Regular layers of tubes, smooth intrados, smooth extrados
OP	Staggered layers of tubes, smooth intrados, profiled extrados

There are two jointing options of either an integral electrofusion joint or push-fit elastomeric sealing rings.

Fittings (i.e. bends, reductions, manifolds, branches and special sections) are also within the scope of the assessment but only when fabricated from Ridgiform XL pipes.

The following are excluded from the scope of this assessment schedule:

- Pressurised pipes and storage applications.
- Using jointing mechanisms not specified in this assessment schedule.

2.2 Applicable standards

The following standard is applicable to this product:

- BS EN 13476-1: 2018⁽¹⁾.

Ridgiform XL Pipe System pipe profiles shall comply with the standards laid out in Table 2 below.

Table 2 Standards applicable to Ridgiform pipe wall profiles

Standard	Profile
BS EN 13476-2:2018+A1:2020 ⁽²⁾	TYPE A (VW & SQ)
BS EN 13476-3:2018+A1:2020 ⁽³⁾	TYPE B (PR & OP)

2.3 Approval History

The Ridgiform XL Pipe System was first awarded WRc Approved™ certification in June 2009, this is the third re-approval of the Ridgiform XL Pipe System:

- PT/284/0609.
- PT/348/0614.
- PT/442/0619.

2.4 Design

The design of the Ridgiform XL Pipe System is in accordance with the German standard ATV A 127E ⁽⁴⁾.

3. REQUIREMENTS AND TESTING

3.1 General

The Ridgiform XL Pipe System shall comply with the requirements of BS EN 13476-1: 2018.

3.2 Materials and Components

- PE pipes and fittings shall meet the material requirements described in BS EN 13476-2:2018+A1:2020 Clause 4.4 or BS EN 13476-3:2018+A1:2020 Clause 4.4 as appropriate. The following tests are required to be performed:
 - o Resistance to internal pressure.
 - o Melt mass-flow rate (MFR).
 - o Thermal stability, OIT.
 - o Reference density.
- Elastomeric seals shall meet the requirements of BS EN 681-1 (1996) ⁽⁵⁾.

3.3 Type Testing

Appearance and colour: The pipes and fittings shall comply with the requirements of BS EN 13476-1: 2018 Clause 6.

Dimensions: The dimensions of the pipes and fittings shall comply with the requirements of BS EN 13476-2:2018+A1:2020 Clause 7 or BS EN

13476-3:2018+A1:2020 Clause 7 as appropriate.

Physical characteristics: The physical characteristics of the pipes and fittings shall comply with the requirements of BS EN 13476-2:2018+A1:2020 Clause 8.3 or BS EN 13476-3:2018+A1:2020 Clause 8.3 as appropriate. The following test is required to be performed:

- Longitudinal reversion.

Mechanical Characteristics: The mechanical characteristics of the pipes and fittings shall comply with the requirements or BS EN 13476-2:2018+A1:2020 Clause 9 or BS EN 13476-3:2018+A1:2020 Clause 9 as appropriate. The following tests are required to be performed:

- Ring stiffness.
- Impact strength at 0°C.
- Ring flexibility.
- Creep ratio.
- Tensile strength of seam.

Performance Requirements: The performance of the pipes and fittings shall comply with requirements of BS EN 13476-2:2018+A1:2020 Clause 10 or 13476-3:2018+A1:2020 Clause 10 as appropriate. The following tests are required to be carried out:

- Tightness of elastomeric ring seal joint.
- Water tightness.
- Tensile test of fused joints.

Additionally, the following tests listed in WIS 4-35-01 ⁽⁶⁾ shall be carried out:

PT/537/0624 (June 2024)

**Assessment Schedule for the Ridgiform
XL Pipe System as manufactured by
Polypipe Civils Ltd.**



independent certification of your products & services

- Appendix A Resistance to Internal Puncture.
- Appendix C Longitudinal bending.

3.4 Marking

The marking of the pipe and fittings shall comply with the requirements of BS EN 13476-1: 2018 Clause 10.

3.5 Manufacture

To ensure the quality and performance of the Ridgiform XL Pipe System the manufacturing process shall include appropriate procedures and systems for the:

- Specification of component materials.
- Verification component materials received are to specification.
- Detailed drawings for the pipe and fitting products.
- Handling and storage of all component materials.
- Production of pipe lengths.
- Fabrication of sections and quality of workmanship.
- Training records.

The production of the Ridgiform XL Pipe System and related quality control procedures shall comply with requirements to ensure the stated performance of the product is reliably achieved.

3.6 Installation

When installed in accordance with the installation documentation ⁽⁷⁾, the Ridgiform XL Pipe System shall be

practicable and suitable for conditions that could reasonably be expected on site.

4. APPROVAL

The Ridgiform XL Pipe System has been audited and successfully met all the requirements stated within this assessment schedule.

Signed:

Valid until 31st May 2029

5. REFERENCES

1. BS EN 13476-1 2018: Plastics piping systems for non-pressure underground drainage and sewerage - Structured-wall piping systems of Unplasticised poly (vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE) - Part 1: General requirements and performance characteristics. Includes a National Annex with additional guidance for UK users.
2. BS EN 13476-2 2018+A1:2020: Specifications for pipes and fittings with smooth internal and external surface and the system, Type A.
3. BS EN 13476-3 2018+A1:2020: Specifications for pipes, fittings and the system, Type B.
4. German standard ATV-DVWK-A 127E Static Calculation of Drains and Sewers. August 2000. ATV-DVWK.

PT/537/0624 (June 2024)

**Assessment Schedule for the Ridgistorm
XL Pipe System as manufactured by
Polypipe Civils Ltd.**



independent certification of your products & services

5. BS EN 681-1: Elastomeric seals. Material requirements for pipe joint seals used in water and drainage applications. Vulcanized rubber, 1996.
6. WIS 4-35-01: Water Industry Specification for thermoplastics structured wall pipes – supplementary test requirements, October 2008, Issue 2.
7. Ridgistorm-XL Installation Guide.