PT/485/0421 - AS (April 2021)

Assessment Schedule for the Pipe Doctor Rapid Local Repair as manufactured by S1E Ltd.

Independent certification of your products & services

1. SCOPE

This schedule specifies characteristics for the Pipe Doctor cured-in-place local repair system as supplied by S1E Limited for the renovation of straight sections of gravity drains and sewers with nominal diameters of 75mm 100mm, 150mm or 225mm up to 5m deep.

It is applicable to repairs of lengths of 500mm and 1000 in kit form and up to 1200mm in bulk form.

2. PRODUCT DESCRIPTION

2.1 Introduction

The Pipe Doctor Rapid local repair system is an ambient-cure cured-in-place localised repair system which comprises a glass fibre mat and a two-part silicate thermosetting resin containing an accelerator with a typical cure time of less than 1 hour dependent on ambient conditions.

The repair kit for a specified pipe diameter comprises a pre-cut mat length, with factory measured volumes of the resin components for the size of mat, in a twin compartment bag and ancillary disposable items for installation.

The resin components are mixed and then combined with the mat on site by the installer in accordance with the installation instructions. The wetted mat is placed around an inflatable packer. The packer is positioned inside the pipe at the defect, the packer is then inflated compressing the mat against the host pipe. The local repair is then allowed to cure. On completion of curing process, the packer is deflated and removed, the local repair is then inspected.

In bulk form the mat is supplied on a roll to be cut size to suit the diameter and length of each repair. The installer is responsible for calculating the required volumes of each of the resin components accelerator for the size of mat.

2.2 Relevant Standards

Performance: the following relevant standards were identified for:

- Drain Repair Book 4th edition.

Materials: Materials used shall comply with:

- Drain Repair Book 4th edition.

2.3 Approval History

The Pipe Doctor Rapid local repair system has held WRc Approved™ certification since February 2017. This is the first re-approval.

- PT/397/0217

3. TESTING AND REQUIREMENTS

3.1 Type Testing

The Pipe Doctor local repair system shall comply with the following requirements.

Materials: Resin components shall be in accordance with the manufacturer's specification.

The mat shall be in accordance with the manufacturer's specification.

Appearance: The internal surface of the repair shall be smooth, clean and free from scoring, cavities, wrinkling and other surface defects that would prevent the Pipe Doctor repair from meeting the general fitness for purpose requirement.

External long term pressure resistance: When tested in accordance with Appendix D of The Drain Repair Book(1) the local repair

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shall meet the infiltration requirements of CESWI 7th edition clause 7.8.2(2).

Note: This test is based on the test in WIS 4-34-06 (2010)(3) which has been adapted for repair of smaller diameter pipes

Serviceability:

Resistance to High Pressure Water Jetting. When a section the local repair is tested in accordance with Appendix B of WIS-4-35-01:2008(4), the repair shall meet the requirements of clause 3.3 of that specification.

The interface between the local repair and the host pipe at one end of the cured repair is tested in accordance with Appendix B of WIS 4-35-01:2008(4) at a pressure of 180 bar, there shall be no visible de-bonding of the local repair from the host pipe.

The repair and the adjacent unrepaired pipe sections shall be continuous in accordance with BS EN 476:2011 Clause 6.4(5)

Mechanical Characteristics: When tested in accordance BS EN ISO 11296-4 2018(6) the local repair shall achieve the manufacturer's short term declared values for the characteristics listed in Table 1.

Table 1 Pipe Doctor local repair System mechanical characteristics

Characteristics	Requirement
Short-term flexural modulus	Declared: 3279 MPa
Short-term stress at first break	Declared 46.16 MPa
Strain at first break (%)	Declared: 1.15%

Wall thickness: The local repair shall meet the dimensional requirements of The Drain Repair Book Part 2 clause 3.5.

3.2 Manufacture

To ensure the quality and performance of the Pipe Doctor Rapid local repair system shall have quality control systems for:

- Specification of component materials;
- Verification that component materials received are to specification;
- Assembly of kit;
- Handling and storage of all component materials and finished kits.

The specification of components and assembly of the Pipe Doctor Rapid local repair system Quality Control procedures shall ensure the stated performance of the product is reliably achieved.

- Fabrication of bespoke sections and quality of workmanship

The production of Pipe Doctor Rapid local repair and related Quality Control procedures shall comply with requirements to ensure the stated performance of the product is reliably achieved.

3.3 Installation

When installed in accordance with the installation documentation, the installation shall be practicable and suitable for conditions that could reasonably be expected on site.

The Installation documentation shall meet the requirements of The Drain Repair Book(1).

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4. APPROVAL

S1E Ltd. has been audited and has successfully met all the requirements stated within this assessment schedule.

Signed:

KA Adams

Valid until 1st April 2026

5. REFERENCES

1. Drain Repair Book 4th edition.
2. CESWI 7th edition.
3. WIS 4-34-06:2010 Specification for localised sewer repairs using cured-in place systems with or without rerounding.
4. WIS 4-35-01:2008 2: Specification for thermoplastics structured wall pipe - supplementary test requirement: Appendix C Resistance to water jetting.
5. BS EN 476:2011: General requirements for components used in drains and sewers.
6. BS EN ISO 11296-4:2018: Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks. Lining with cured-in-place pipes.

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