

1 SCOPE

This schedule specifies characteristics for the Ratblock Bag™ manufactured by Steve Vick International (SVI) to permanently block a redundant sewer lateral or drain. It is applicable to clay, concrete, PE and metal and plastic pipes for sizes of for 100mm (4") and 150mm (6") pipes. Other dimensions can be made to special order.

2. PRODUCT DESCRIPTION

2.1 Introduction

The Ratblock Bag™ uses expanding polyurethane resin foam with a delayed gel formula, which is mixed in a sealed sachet. The sachet is mixed and then placed in a zippered bag that has two articulated steel plate membranes. The bag is pushed into the drain to the required position using drain rods. Once cured, the foam provides water, odour and gas tight seal within the pipe while the steel membrane prevents the passage of vermin.

The Ratblock Bag™ has been designed for pipes of nominal diameter; 100mm (4") and 150mm (6") It has been designed to function in the all drainage pipe materials, clay (including salt glazed), concrete, PE and plastics. The product can be deployed from the access point to a range of 20 metres.

The product can be installed into the host pipe either with or without man-entry into the sewer system and with both wet and dry internal surfaces.

The product is applicable for sealing redundant pipes by creating a 'leak tight' blockage in the host pipe, prevent 'odours' passing from the drain or sewer to the surface and to block underground conduits from vermin.

2.2 Relevant Standards

There are no product standards for long-term pipe blocking devices. However, there are several standards that are generally relevant to sewers and specifically relevant to sewer sealing and repairs which have been taken into account.

The following performance requirements have been identified to determine "fitness for purpose" of the product:

- Leak tightness: The Civil Engineering Specification for the Water Industry – CESWI 7th edition ⁽¹⁾ and Drain Repair Book -4th edition ⁽²⁾
- Resistance to movement of the installed foam bag in the host pipe.
- Odour: CESWI Test for Non-Pressure Pipelines' which is consistent with the provisions of BS 8005 Part 1⁽³⁾.
- Ability of the Ratblock Bag™ to not deteriorate in performance when in contact with typical drainage and sewer effluent.
- Installation: Ability to pass through typical drainage and sewer pipe configurations and defects and not damage the host pipe.

2.3 Approval History

The Ratblock Bag™ first received WRC Approved certification in September 2007 reference certification PT/267/0907.

It was reapproved in September 2012 reference certification PT/334/0912.

The Ratblock Bag™ is being re-approved reference certification PT/419/0217

3 TESTING AND REQUIREMENTS

3.1 Type Testing

All testing that was undertaken on Drain Block Bag™ applicable to Ratblock Bag™.

Leak tightness: The Drain Block Bag™ was tested in accordance with the Drain Repair Book⁽²⁾ External long-term pressure test.

Resistance to movement: The External long-term pressure test was used to determine any movement of the Drain Block Bag™ over the 6 month test period. A pull test on the samples was also undertaken as proof of resistance to movement.

Odour: The 'Air Test for Non-Pressure Pipelines' detailed in CESWI was undertaken. This is consistent with the provisions of BS 8005 Part 1⁽³⁾. The device shall be accepted if the air pressure remains above 75mm head after a period of 5 minutes.

Deterioration: Test pieces shall be immersed in sewage for 6 months and examined for visible degradation.

3.2 Manufacture

To ensure the Quality and Performance of the Ratblock Bag™ the manufacturing process shall include appropriate systems for:

- Verification that materials received are to specification.
- Handling and storage of all component materials and finished items.
- Records of the Ratblock Bag™ manufacture.
- Inspection and maintenance of the Ratblock Bag™.

- Fabrication and quality of workmanship.

The manufacture of the Ratblock Bag™ and related Quality Control procedures shall comply with requirements to ensure the stated performance of the product is reliably achieved.

3.3 Installation Audit

When installed in accordance with the installation instructions⁽⁴⁾ the Ratblock Bag™ the installation shall be practicable and suitable for conditions that could reasonably be expected on site.

3.4 Client Feedback

WRC has reviewed client feedback from installers, asset owners, agents to validate that the product has delivered the performance claimed.

4 APPROVAL

The Ratblock Bag™ has been audited and successfully met all the requirements stated within this assessment schedule.

Signed:



5 REFERENCES

1. The Civil Engineering Specification for the Water Industry, 7th edition, 2011.
2. Drain Repair Book, 4th edition, 2017.
3. BS 8005 Part 1 1987
4. Ratblock Bag™ installation instructions.