



**Assessment of the HepBox® boundary box
manufactured by Hepworth Composites -
schedule**

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1. Scope

To assess performance and properties of the HepBox® range of boundary boxes, designed and manufactured by Hepworth Composites, a division of Hepworth Building Products, for the metering and control of domestic and small industrial water services. An identical unit is also marketed in Ireland as 'The Wavin Water Meter Box®'. The range includes telescopic (sealed or unsealed) and fixed guard tubes and a compact telescopic box for shallow water mains. The fixed unit is available with either a moulded GRP composite head assembly load bearing category Grade C2, or cast iron head assembly, load bearing category Grade B2. The telescopic units have a moulded GRP composite head assembly, load bearing category Grade C2, one version of which is lockable.

The HepBox® incorporates a concentric meter manifold assembly with integral shut-off and non-return valves.

The range of boxes accommodates service pipes installed between 270 – 880mm cover depth. The maximum working pressure of the HepBox® is 12.5bar.

2. Assessment schedule

2.1 Technical audit of production facilities, including review of type and quality control testing and test results.

2.2 Review of test data and witnessing testing where necessary.

2.3 Audit of written procedures for installation of the HepBox®.

3. Review of properties

This Assessment Schedule has taken into account the requirements of the following national specifications:

WIS 4-37-01 for boundary boxes;
WIS 4-23-04 for underground stop valves.

3.1 Markings:

The markings comply with WIS 4-37-01. There is an embossed label attached to the base assembly with the following information:

- manufacturer's identification;
- serial number that offers complete traceability and batch identification.

The word "WATER" (or national equivalent e.g. UISCE – Ireland) is moulded onto the topside of the cover.

The direction of flow and manufacturer's name are moulded onto the base.

3.2 Material properties:

The manifold assembly, including the shut-off and non-return valves, is manufactured from acetal copolymer in accordance with Hepworth Composites' internal specification.

The guard tube and composite cover are made in accordance with Hepworth Composites' internal specification.

Water quality requirements – The HepBox® is WRAS approved, listing number 0504055.



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3.3 Properties of assembled unit:

The head assembly on the telescopic box has 60mm vertical adjustment and can be angled up to 8° to allow for the slope of the ground.

The fixed box allows an angular adjustment of up to 8deg. The tube can be cut to length to suit required depth. The head assemblies are manufactured to the design requirement as referenced on the relevant Hepworth Composites' drawings. They meet the requirements of BS5834: Part 2 Appendix A Table 2.

Dimensions:

Standard inlet and outlet 25mm (optional universal fitting for direct connection of pipe sizes 15mm to 22mm).
Guard tube internal diameter 172mm.

A stainless steel detection plate that includes a property identification matrix is moulded into the composite head.

The HepBox® is assessed against the requirements of WIS 4-37-01. In particular the following properties are tested.

| Test | WIS 4-37-01 Method |
|--|-----------------------------|
| Top loading | Appendix A, 5kN design load |
| Freezing | Appendix B |
| Hydraulic performance | Appendix C |
| Pressure release mechanism (sealed telescopic box) | Appendix D |

| | |
|---|------------|
| Hydraulic pressure | Appendix E |
| Water tightness (sealed telescopic box) | Appendix F |
| Insulation material durability | Appendix G |

In addition, the HepBox® is tested as follows:

| Test | Method | Pass limit |
|---------------------------------|-------------------------------|--------------------------------|
| Burst resistance | Hepworth Composites TM HB 003 | 25bar for 30 seconds |
| Skid resistance composite cover | T.R.L. Road Note 27 | Temperature corrected SRV > 40 |

4. Review of procedures

In addition to the performance of the boundary box, the following items are checked.

Quality control, as it applies to:

- incoming materials;
- control of production.

Installation procedures and available guidance to users.

6. Reference documents

- 1) WIS 4-23-04: Issue 1: Specification for underground stop valves, including spherical valves, for potable water services for nominal sizes up to and including 63 and nominal pressures of 10bar minimum and made principally of metal or thermoplastics. WRc, March 1991.



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- 2) WIS 4-37-01: Issue 1:
Specification for boundary
boxes for metering and control
of domestic and small
industrial water services. WRC,
November 1990, incorporating
October 1993 Amendment.

- 3) BS5834: Part 2:1983 Surface
boxes, guards and
underground chambers for gas
and waterworks purposes.
Specification for small surface
boxes