PT/555/0925-AS (September 2025)

Assessment Schedule for ZY-86 Cured-In-Place Pipe (CIPP) liner as supplied by Wuhan Easy-Sight Geospatial Technology Co. Ltd.

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1. SCOPE

This schedule specifies the requirements for the ZY-86 Cured-In-Place Pipe (CIPP) liner as supplied by Wuhan Easy-Sight Geospatial Technology Co. Ltd. for the trenchless rehabilitation of gravity pipelines of various shapes, including circular, elliptical, egg-shaped, and rectangular.

The ZY-86 Cured-In-Place Pipe (CIPP) liner is available in the dimensions as specified in Table 1.

Table 1: Dimensions of the ZY-86 Cured-In-Place Pipe (CIPP) liner

Dimension	Range
Diameter	150mm – 2,200mm
Wall Thickness	3mm – 18mm

The approval is not applicable to:

- The installation or reconnection of laterals
- Performance of the liner end seals

2. PRODUCT DESCRIPTION

2.1 Introduction

The ZY-86 Cured-In-Place Pipe (CIPP) liner comprises of an EC-R glass fibre or carbon fibre woven sleeve which is factory impregnated with UV or LED [395 nm wavelength] cured ZY-301 polyester resin.

The factory impregnated lining is delivered to site and winched into the host pipe, typically with a pre-liner or glide foil. The lining is inflated with compressed air and cured by pulling a UV or LED light-train through the lining at a speed determined by the lining diameter/thickness and UV or LED light power output.

When installed and cured this forms a full length cured-in-place structural liner within the host pipe.

2.2 Applicable standards

The following relevant standard was identified for cured-in-place pipe liners:

- BS EN ISO 11296-4:2018+A1:2021[1]

2.3 Approval History

This is the first WRc Approved certification for the ZY-86 Cured-In-Place Pipe (CIPP) liner.

3. REQUIREMENTS AND TESTING

3.1 Structural Design

The ZY-86 Cured-In-Place Pipe (CIPP) liner can be designed using any of the recognised international design codes dependent upon the country of installation. The Wuhan Easy-Sight Geospatial Technology Co. Ltd. default designs for the ZY-86 Cured-In-Place Pipe (CIPP) liner are DWA-A143-2[2] and ASTM F1216-24[3].

3.2 General

Appearance: The internal surface of the liner shall be smooth, clean and free from scoring, cavities, wrinkling and other surface defects that would prevent the ZY-86 Cured-In-Place Pipe (CIPP) liner from meeting the general fitness for purpose requirement.

Contact: WRc Ltd, Frankland Rd, Blagrove, Swindon SN5 8YF
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3.3 Type Testing

The ZY-86 Cured-In-Place Pipe (CIPP) liner shall comply with the declared values for the following mechanical characteristic testing requirements listed in Table 2.

Table 2: Mechanical characteristics for the ZY-86 Cured-In-Place Pipe (CIPP) liner

Characteristic	Declared Value
Short-term flexural modulus	13,550 MPa
Long-term flexural modulus	10,927 MPa
Short-term flexural strength	280 MPa
Long-term flexural strength	220 MPa
Long-term strain corrosion or flexural strength (acid)	Ongoing to December 2025
Short-term strain at first break	1.5 %
Short-term ultimate longitudinal tensile strength	143 MPa
Short-term ultimate longitudinal tensile elongation	1.9%
Poisson's ratio	0.2
Reduction factor after 10,000 hrs (dry)	1.24

3.4 Manufacture

To ensure the quality and performance of the ZY-86 Cured-In-Place Pipe (CIPP) lining, the manufacturing process shall include appropriate systems for the:

- Specification of component materials;
- Verification component materials received are to specification;
- Handling and storage of all component materials and finished units;
- Detailed drawing / schedule for manufacture;
- Manufacture / assembly of ZY-86 Cured-In-Place Pipe (CIPP) lining, and;
- Fabrication and quality control of workmanship.

The production of the ZY-86 Cured-In-Place Pipe (CIPP) lining and related quality control procedures shall comply with requirements to ensure the stated performance of the product is reliably achieved.

Quality control tests

Samples are taken each day or from each batch of impregnated lining and cured. The cured samples are tested in accordance with BS EN ISO 11296-4 as detailed in Table 3.

Table 3: Quality control tests

Characteristic	Requirement
Wall thickness	Clause 8.4.3 Table 4
Short-term flexural modulus	Clause 8.5.2 Table 5
Short-term Tensile strength	Clause 8.5.2 Table 5

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3.5 Installation

When installed in accordance with the installation documentation(4), the ZY-86 Cured-In-Place Pipe (CIPP) liner shall be reasonably expected to perform as described.

4. APPROVAL

The ZY-86 Cured-In-Place Pipe (CIPP) liner has been audited and successfully met all the requirements stated within this assessment schedule.

Signed:

Valid until 8th September 2030.

5. REFERENCES

1. BS EN ISO 11296-4:2018+A1:2021 Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks. Part 4: Lining with cured-in-place-pipes.

2. DWA-A143-2 The rehabilitation of drainage systems outside buildings part 2 static.

3. ASTM F1216-24 Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube.

4. ZY-86 UV Liner Installation Manual Version 2023.V1.

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