PT/501/0722 - AS (July 2022)

Assessment Schedule for the CONDOR Rohr-System as manufactured by CONDOR Rohr-System-Technik GmbH

Independent certification of your products & services

1. SCOPE

This schedule specifies requirements for the CONDOR Rohr-System as manufactured by CONDOR Rohr-System-Technik GmbH. It is applicable to on-line replacement of gravity drains and sewers between manholes and excavations by either sliplining or pipe bursting for drainage and sewerage applications.

The system uses short cylindrical polyethylene (HDPE) or polypropylene (PP) pipes lengths [short modules] with a range of joints and module lengths which are selected depending upon the specific application.

Sliplining options:

Snaplock joints are available for Type S HDPE or PP short modules with a range of diameters between 110mm and 1,000mm.

Threaded joints are available for Type T PP short modules with a range of diameters between 110mm and 400mm.

Fused joints are available for CONDORfuse® HDPE short modules with a range of diameters between 110mm and 1,000mm.

Pipe bursting options:

Snaplock joints are available for Type S PP short modules with a range of diameters between 110mm and 1,000mm.

Threaded joints are available for Type T PP short modules with a range of diameters between 110mm and 400mm.

Fused joints are available for CONDORfuse® HDPE short modules with a range of diameters between 110mm and 1,000mm.

This approval is not applicable to:

- Leak-tightness of end seals;
- Reconnection of laterals.

2. PRODUCT DESCRIPTION

2.1 Introduction

When sliplining the CONDOR short modules are individually joined within the manhole and inserted into and along the existing pipeline to the next access point.

When pipe bursting a cable is inserted from the start manhole and pushed through to the next access point. Here the cutting blade, expander then initial CONDOR short module are attached to the cable which is pulled back in steps. Additional CONDOR short modules are attached as required.

Type S short modules up to 630mm diameter have one elastomeric seal to ensure leak-tightness and larger diameters have two elastomeric seals. The threaded joint of the Type T short modules have one elastomeric seal to ensure leak-tightness.

CONDORfuse® HDPE short modules are equipped with a copper wire and are welded with a heating coil in the longitudinal axis to ensure leak-tightness.

2.2 Relevant Standards

At present there is no British or European standard for short length thermoplastic pipes for on-line replacement by either sliplining or pipe bursting.

Materials used shall comply with:

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- HDPE short modules according to DIN 8074[1], DIN 8075[2] and DIN EN 12666-1[3].
- PP short modules according to DIN 8077[4] and DIN 8078[5].
- Elastomeric seals to DIN EN 681-1[6].

2.3 Approval History

This is the first approval of the CONDOR Rohr-System.

3. REQUIREMENTS AND TYPE TESTING

3.1 Requirements

The CONDOR Rohr-System shall comply with the following requirements:

Appearance: The internal and external surface of the pipeline shall be smooth, clean and free from scoring, cavities and other surface defects that would prevent the CONDOR Rohr-System from meeting the general fitness for purpose requirement.

3.2 Type Testing

The CONDOR Rohr-System shall comply with the following performance requirements.

Requirement	Specification	Pass limit
Short-term ring stiffness	BS EN ISO 9969[7]	≥ 16kN/m^2
Long-term ring stiffness (creep ratio)	BS EN ISO 9967[8]	≤ 4
Longitudinal bending	WIS 4-35-01[9] Appendix C	≤5% deflection
Resistance to water jetting	WIS 4-35-01 Appendix B	180 bar
Resistance to internal puncture	WIS 4-35-01 Appendix A	1.0m drop height 1025g mass

Leak-tightness:

The CONDOR Rohr-System shall comply with the following performance requirements:

The S module snaplock and T module threaded joint shall meet the requirements of DIN 4060:2016[10].

The T module threaded, the S module snaplock and the CONDORfuse® modules electro-welded shall meet the requirements of DIN EN 1277:2004[11].

3.3 Product Design

The CONDOR short pipe system consists of self-supporting PE and PP pipes that are manufactured in accordance with DIN 8074/75 and DIN 8077/78 respectively and are selected on the basis of static calculations of the respective installation conditions.

3.4 Manufacture

To ensure the quality and performance of the CONDOR Rohr-System modules, the manufacturing process shall include appropriate systems for:

- Verification that component materials received are to specification;
- Handling and storage of all component materials and finished modules;
- Detailed drawings for modules;
- Fabrication of modules and quality of workmanship.

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The production of CONDOR Rohr-System modules and related Quality Control procedures shall comply with requirements to ensure the stated performance of the product is reliably achieved.

3.5 Installation

When installed in accordance with the installation documentation[12,13,14], the installation shall be practicable and suitable for conditions that could reasonably be expected on site.

4. APPROVAL

The CONDOR Rohr-System has been audited and has successfully met all the requirements stated within this assessment schedule.

Signed:

Valid until 22 July 2022

5. REFERENCES

1. DIN 8074: 2011 Polyethylene (PE) - Pipes PE 80, PE 100 – Dimensions.
2. DIN 8075: 2018 Polyethylene (PE) pipes - PE 80, PE 100 - General quality requirements, testing.
3. DIN EN 12666-1:2011 Plastics piping systems for non-pressure underground drainage and sewerage - Polyethylene (PE) - Part 1: Specifications for pipes, fittings and the system (includes Amendment A1:2011).
4. DIN 8077:2008 Polypropylene (PP) pipes - PP-H, PP-B, PP-R, PP-RCT – Dimensions.
5. DIN 8078:2008 Polypropylene (PP) pipes - PP-H, PP-B, PP-R, PP-RCT - General quality requirements and testing.
6. DIN EN 681-1:2006 Elastomeric seals - Material requirements for pipe joint seals used in water and drainage applications - Part 1: Vulcanized rubber.
7. BS EN ISO 9969:2016 Thermoplastics pipes. Determination of ring stiffness.
8. BS EN ISO 9967:2016 Thermoplastics pipes. Determination of creep ratio.
9. WIS 4-35-01 Specification for thermoplastics structured wall pipes – Supplementary test requirements, Issue 2, October 2008.
10. DIN 4060:2016 Joints of sewer and drain pipes with elastomeric seals – Requirements and testing on joints with elastomeric seals.
11. DIN EN 1277:2004 Plastics piping systems - Thermoplastics piping systems for buried non-pressure applications – Test methods for leaktightness of elastomeric sealing ring type joints.
12. Assembly Instruction CONDOR Short Pipe Module Type S OD 110 mm - 1000 mm with snap-lock joint, reference assembly instruction type S_2021-01.
13. Installation Instruction CONDOR Short Module Type T OD 110 mm – 400 mm with threaded joint, reference installation instruction_T_02_2019.
14. Assembly Instructions HDPE Short Module Type CONDORfuse OD 110 mm - 1000 mm with electrofusion joint, assembly instruction _CONDORfuse_2021.

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