

PT/568/0824-AS (August 2024)

Assessment Schedule for Singlestore Galvanised Corrugated Steel Pipe for Gravity Surface Water Attenuation Tanks as manufactured by ViaCon UK Ltd.



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1. SCOPE

This schedule specifies characteristics for the ViaCon UK Ltd. Singlestore galvanised corrugated steel pipe. The system can be used for a variety of gravity drainage applications where storage of surface water is required.

The following are excluded from the scope of the assessment schedule:

- Pressurised storage applications.
- Using any jointing mechanism not specified, supplied and declared by ViaCon UK Ltd.

2. PRODUCT DESCRIPTION

2.1 Introduction

Pipe lengths are factory manufactured from galvanised corrugated steel coil strips that are spirally wound to the required diameter with a product diameter range of 300mm to 3600mm and lengths up to 14m. Longer lengths can be produced but are dependent on site conditions and transportation limitations.

A secondary polymer coating `Trenchcoat` may be added to the galvanised corrugated steel coils prior to being spirally wound for pipes used in aggressive ground conditions.

The pipes are manufactured in two versions relating to the dimensions of the corrugation.

The Singlestore 68 corrugation has a diameter range of 300mm to 1200mm, with a corrugated dimension of 68mm wide by 13mm deep.

The thickness of the steel can range between 1.25mm to 3.5mm dependent upon site loadings.

The Singlestore 125 corrugation has a diameter range of 1100mm to 3600mm, with a corrugated dimension of 125mm wide by 25mm deep.

The thickness of the steel can range between 1.5mm to 4.0mm dependent upon site loadings.

Pipe lengths are jointed by a ViaCon UK Ltd. supplied external band coupler that engages with the corrugated outer wall of the pipe. The coupler is tightened using bolts. Engaging of the corrugation of the pipe and coupler minimises any misalignment or deflection of the joint. For larger diameters the external band coupler may consist of two, three or four sections. Special sections such as bends and manifolds can be fabricated on an individual design basis.

Structural design is carried out by reference to the following standards:

- CD 375 Design of Corrugated Steel Buried Structures⁽¹⁾.
- Manual of Contract documents for Highway Works volumes 1 and 2⁽²⁾.

There are two elements to the design:

- Structural design to resist internal and external loading that could be applied to the structure.
- The configuration of the structure shall meet the functional requirement.

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ViaCon UK Ltd. provide the optimum design based upon the clients brief with consideration to:

- Required storage capacity.
- Inlet, discharge levels.
- Site footprint with consideration to installation.
- Live, static and hydrostatic loading of the structure.

2.2 Applicable standards

There are no current British or European product standard for galvanised corrugated steel pipe.

2.3 Approval History

This is the second re-approval of the ViaCon UK Ltd. Singlestore galvanised corrugated steel pipe. The previous approvals are as follows:

- PT/350/0814 (August 2014).
- PT/451/0819 (August 2019).

3. REQUIREMENTS AND TESTING

3.1 Requirements

Product requirements are specified in the following documents:

- CESWI 8th Edition⁽³⁾.
- Sewer for Adoption 8 [for Wales]⁽⁴⁾.
- Sewers for Scotland⁽⁵⁾.
- Sewers for Adoption, Northern Ireland⁽⁶⁾.

- Design and Construction Guidance for foul and surface water sewers offered for adoption under the Code for adoption agreements for water and sewerage companies operating wholly or mainly in England ("the Code")⁽⁷⁾.

3.2 Type Testing

Requirement for leak-tightness of the structure and pipe connectivity.

Pressure testing shall be undertaken in accordance with the requirements of Design and Construction Guidance for foul and surface water sewers offered for adoption under the Code for adoption agreements for water and sewerage companies operating wholly or mainly in England ("the Code") clause E7.5. Testing should be undertaken on pipes, external band couplers, lateral connections and welded chamber ends (blanking plates and access chambers).

3.3 Materials

Galvanised steel coil pipe material shall meet the requirements of BS EN 10143:2006⁽⁸⁾. EPDM joint sealing material shall meet the requirements of BS EN 681-1:1996⁽⁹⁾.

3.4 Environmental Impact

The potential for environmental impact from the materials shall be assessed by a 6 day soak leaching test in accordance with the Directive 2000/60/EC⁽¹⁰⁾.

3.5 Manufacture

To ensure the quality and performance of the ViaCon UK Ltd. Singlestore galvanised corrugated steel pipe the manufacturing process shall include appropriate systems for the:

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- Specification of component materials.
- Verification component materials received are to specification.
- Handling and storage of all component materials and finished units.
- Detailed drawings / schedule for manufacture.
- Manufacture / assembly of the ViaCon UK Ltd. Singlestore galvanised corrugated steel pipe and coupler, and;
- Fabrication and quality control of workmanship.

The production of the ViaCon UK Ltd. Singlestore galvanised corrugated steel pipe and related quality control procedures⁽¹¹⁾ shall comply with requirements to ensure the stated performance of the product is reliably achieved.

3.6 Installation

When installed in accordance with the installation documentation⁽¹²⁾, the ViaCon UK Ltd. Singlestore galvanised corrugated steel pipe shall be reasonably expected to perform as described.

4. APPROVAL

The ViaCon UK Ltd. Singlestore galvanised corrugated steel pipe has been audited and successfully met all the requirements stated within this assessment schedule.

Signed:

A handwritten signature in black ink, appearing to be 'G.L.' followed by a horizontal line.

Valid until 7th August 2029

5. REFERENCES

1. CD 375 Design of Corrugated Steel Buried Structures, Revision 01, March 2020.
2. Manual of Contract documents for highway works, Volumes 1 and 2, Oct 2022 updates, <http://www.standardsforhighways.co.uk/ha/standards/mchw/index.html>
3. Civil Engineering Specification for the Water Industry, 8th Edition, (CESWI), Nov 2023.
4. Sewers for Adoption 8th Edition [for Wales].
5. Sewers for Scotland, Version 4.0, October 2018.
6. Sewers for Adoption Northern Ireland, 1st Edition. 2010.
7. Design and Construction Guidance for foul and surface water sewers offered for adoption under the Code for adoption agreements for water and sewerage companies operating wholly

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or mainly in England ("the Code"), May 2021.

8. BS EN 10143:2006 Continuously hot-dip coated steel sheet and strip - Tolerances on dimensions and shape.
9. BS EN 681-1:1996, Elastomeric seals. Material requirements for pipe joint seals used in water and drainage applications - Vulcanized rubber.
10. The Water Framework Directive (WFD) 2000/60/EC/Environmental standards – Environmental Quality Standard for Zinc.
11. ViaCon UK Ltd. Production instructions and QC documentation.
12. ViaCon UK Ltd. Assembly and Installation Instructions: Singlestore Tank from Helically Corrugated Steel Pipes HelCor®, Edition 03/2023.