PT/404/0417 - AS (April 2017)

Assessment Schedule for the Typhoon vortex flow control valve system as supplied by Wavin Limited

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1. SCOPE

This schedule specifies requirements for the Typhoon vortex flow control valve system as supplied by Wavin Limited. It is applicable to surface water applications with design flows from 0.67 l/s to 60 l/s, with a hydrostatic head of up to 2.0 m.

It is not applicable to the PVC up-stand pipe which is not supplied with the Typhoon device.

2. PRODUCT DESCRIPTION

2.1 Introduction

The system is designed to control the rate of discharge of surface water from attenuation tanks or other storage. It does this by creating a vortex in the outlet once a defined head of water is reached.

The system is manufactured entirely from stainless steel. Each unit comprises:

- A vortex valve head with outer diameter of 80-900 mm;
- A mounting plate to fasten the chamber to the internal wall of a manhole;
- Or an outlet spigot to insert into the pipe and fixing lugs;
- An upstand pipe (not supplied) provides an overflow and draindown capability.

2.2 Relevant Standards

Performance: There are no standards applicable to this type of device.

Materials: Materials used shall comply with:

- BS EN 10088-1:2014[(1)]
- BS EN 10088-2:2014[(2)]
- BS EN 10088-3:2014[(3)]
- BS EN ISO 3506:2009[(4)]

2.3 Approval History

This is the first approval of the system.

3. TESTING AND REQUIREMENTS

3.1 Type Testing

Mechanical resistance –The centre of the upstream-facing side and the centre of the curved volute of the Typhoon device shall withstand the impact of a 6 kg test piece dropped directly onto its centre from a height of 2 m without causing permanent indentation greater than 10 mm.

Flow characteristics – the design procedure for the Typhoon device shall be verified by testing with flows from 0.67 l/s to 60 l/s with a hydrostatic head of up to 2 m to achieve the specified discharge (±5%) at the specified head.

3.2 Design Requirements

Flow characteristics – the Typhoon device shall be designed using the manufacturer's design procedure.

3.3 Materials Requirements

Stainless steel sheet shall be grade 1.4404 in accordance with BS EN 10088-1:2014 and shall comply with the requirements of BS EN 10088-2:2014.

Stainless steel nuts and bolts shall be grade A4 and comply with the requirements of BS EN ISO 3506:2009.

Rubber sealing material shall comply with the manufacturers specified requirements.

3.4 Manufacture

To ensure the quality and performance of the Typhoon device, the manufacturing process shall include appropriate systems for:

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- Verification that component materials received are to specification.
- Handling and storage of all component materials and finished units.
- Quality of workmanship.
- Quality control procedures and recording for proposals, orders, design and fabrication.

Dimensional requirements – The vortex chamber of the Typhoon device shall be manufactured to dimensional tolerances of ±2%.

Appearance – The internal and external surfaces of the vortex chamber and the mounting plate/spigot shall be smooth, clean, and free from scoring, cavities and other surface defects.

3.5 Product documentation

The product and installation documentation[5] supplied by Wavin shall be complete and practicable.

3.6 Installation

When the Typhoon device is installed in accordance with the installation documentation, the installation shall be practicable and suitable for conditions that could reasonably be expected on site.

4. APPROVAL

The Typhoon vortex valve flow control system has been audited and has successfully met all of the requirements stated within this assessment schedule.
Signed:

5. REFERENCES

1. BS EN 10088-1:2014 Stainless steels. List of stainless steels.
2. BS EN 10088-2:2014 Stainless steels. Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes.
3. BS EN 10088-3:2014 Stainless steels. Technical delivery conditions for semi-finished products, bars, rods, wire, sections and bright products of corrosion resisting steels for general purposes.
4. BS EN ISO 3506:2009 Mechanical properties of corrosion-resistant stainless steel fasteners. Bolts, screws and studs.
5. Wavin + Mosbaek Vortex Flow Control Valves Product Overview.

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