



WAVIN QUICKSTREAM SYSTEM SPECIFICATION

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WAVIN QUICKSTREAM SIPHONIC RAINWATER SYSTEM

1. General

The Wavin Quickstream system is an advanced siphonic roof drainage system that offers a highly efficient and extremely cost effective way to discharge rainwater from a large roof surface. It combines a reduction in materials, weight and installation time with more efficiency, increased safety and space optimization.

2. Wavin Quickstream Specification Clause

The siphonic roof drainage system will be Wavin Quickstream. The pipework will be HDPE SDR 26 (unless otherwise designed) manufactured to EN 1519. Wavin roof outlets are manufactured from stainless steel and aluminium with an EPDM gasket and are independently tested and conform to EN 1253 Part 3. The bespoke bracketing system is made from galvanised steel and can withstand a 30°C change in temperature. The system is to be specifically designed by AutoCAD compatible software which automatically makes compulsory checks on system balancing, cavitation, velocity and priming of the downpipes and ensures the design meets the correct criteria. Wavin Quickstream is manufactured in accordance with quality management system ISO 9001 and environmental management system ISO 14001. All products must be installed in accordance with instructions issued by Wavin Limited.

3. Wavin Quickstream System Applications

Wavin Quickstream system is ideally suited for large roof surfaces of Commercial and public buildings. Quickstream has already been installed in numerous sports stadiums, car factories, court houses, warehouses, hospitals and airports.

4. Materials

Pipes & Fittings:	Material:	HDPE
	Colour:	Black
Roof Outlet Types:		QS-M75-260 Bitumen QS-M75-260 Membrane QS-M75-260 Bitumen gravel QS-M75-260 Membrane gravel QS-M75-260 Gutter QS-M75-400 Membrane QS-M75-400 Bitumen
	Material:	Stainless Steel plate, flange, screws Gaskets EPDM Aluminum Top (Black)
	Colour:	Black / Silver
Bracketing System	Material:	Galvanised steel



4.1 Wavin Quickstream Pipe Sizes

The Wavin Quickstream Pipes are available in the following sizes:

Dia (mm)	40	50	56	63	75	90	110	125	160	200	250	315
SDR	13	17	17	21	26	26	26	26	26	26 & 33	26 & 33	26 & 33

It is not allowed to use pipes with less than specified SDR rating to avoid buckling of pipes and fittings at under pressures.

5. Performance Objectives

The rainwater at roof level will be collected and discharged to the below ground drainage system by the Wavin QuickStream siphonic roof drainage system.

The installer will install all rainwater pipework including all rainwater outlets and connections to the below ground drainage system. The installer should note that the specification should be strictly adhered to particular to technical requirements such as location of the roof outlets, pipe diameters and pipe lengths, siphon breaks, bracketing, etc.

6. Design Parameters

The design calculation software should be dedicated to the pipe, fittings and roof outlets of manufacturer.

Calculations made by the manufacturer must be provided by the installer and should contain the following information and within the specified limits:

- Rainfall intensity
The manufacturer should mention which design rainfall intensity has been taken as basis for the calculation.
- Emergency overflow system
The installer shall calculate and install an emergency overflow system on all roof areas. The minimum height of the emergency overflow system should be the height of the water level next to the roof outlets at the design rainfall calculation to be supplied by the manufacturer of the siphonic rainwater system. The maximum height should be specified by the engineer responsible for the roof calculation. For the emergency overflow system also a siphonic system is allowed.
- System imbalance
The manufacturer should calculate the maximum system imbalance whereas the maximum system imbalance should not exceed 1000 mm.
- Minimum velocity
The manufacturer should prove that the minimum velocity in all horizontal pipes should be at least 0.5 m/s during a design rain fall to secure self-cleaning. Furthermore the minimum velocities in vertical pipes should be at least 2.0 m/s to secure a proper priming of the system. In vertical tail pipes below the roof outlet the minimum velocities should be at least 1.5 m/s.

- Negative Pressure
The manufacturer should calculate the maximum negative pressure in the siphonic rainwater system and show that the maximum negative pressure does not exceed the pressure at which cavitation can occur.
- Priming calculation of the downpipe
The manufacturer should provide a calculation that the amount of water arriving at the top of the downpipe is able to prime (fully fill) the downpipe with water and consequently guarantee full bore flow of the system and the capacity of the system.
- Connection to the below ground drainage system
The siphonic break should be made in a plastic Wavin Safety Inspection Chamber to be positioned outside the building whereas the outflow diameter should be at least two DN sizes larger than the inflow diameter, the top of the outflow pipe should be located lower than the top of the inflow pipe and the plastic inspection chamber should have an open grating.

7. Installation

Installation should be made according to the installation drawings supplied by the manufacturer. Alterations at site can only be made after consultation of the manufacturer who can decide whether the changed routing will result in a new calculation to be made.

7.1 Connections in the pipework

All PE pipe and fitting joints will be welded either by use of electrofusion couplers and/or butt welds.

7.2 Bends

All bends, unless otherwise specified to be 45° bends.

7.3 Bracketing

The horizontal pipe work needs to be installed without expansion sockets and needs to be suspended by using a carrying rail or a steel support gutter. Vertical pipe work needs to be installed using expansion sockets and fixed using sliding brackets (M10) and fixed point brackets (1/2" and 1") according to the installation instructions of the manufacturer.

When a fixed point bracketing system will be used for the horizontal pipes, the manufacturer should prove that the bracketing system is capable of withstand thermal induced forces resulting of at least 30°C temperature variations. The carrying rail should be minimum 30 mm of height for diameters of maximum 160 mm, 45 mm for diameters of maximum 250 mm and 62 mm for diameters of maximum 315 mm.

7.4 Insulation

All rainwater pipework installed above an office area or areas which need protection from condensation etc. will be insulated using thermal insulation foam. All joints to be taped and vapour sealed.

7.5 Connection to the below ground drainage system

The connection to the below ground drainage system needs to be made via a Wavin Safety Inspection Chamber with an open grating and an outflow diameter of at least two DN sizes larger than the inflow (siphonic) pipe diameter.

7.6 Emergency overflow system

The installer shall provide and install an emergency overflow system for each roof area.

7.7 Keeping the pipe work clean

Throughout the installation of the siphonic rainwater system the installer will be responsible for preventing the entry of debris into the outlets and pipework. Roof areas will be kept free from debris and outlet gratings will be fitted as soon as possible.

7.8 Fire protection

Where pipes pass through fire compartment walls, floors and ceilings the installer shall provide and install fire collars having an appropriate Agreement Certificate or third party test report. The fire collars will be fitted in full compliance with the manufacturer's requirements.

7.9 Health and safety

When the horizontal high level pipework is being installed at high level, the installer will be responsible for providing a suitable working platform for the installation of the rainwater pipework.

8. Standards

Wavin QuickStream Siphonic Roof Outlets:

Wavin Metal Roof Outlets are tested and certified to EN1253 part 3, also tested by LGA.

Wavin Quickstream PE Pipe work & Fittings:

Wavin PE fulfils the EN 1519 standards, guaranteeing a strict and continuous control on raw materials, production, dimension and identification.

9. Testing & Commissioning

All completed rainwater systems to be air tested to a minimum of 100mm water gauge over 3 minutes. There will be no drop in pressure during this period in time.

Wavin Quickstream roof drainage system operates at both positive and negative pressures, it is necessary to carry out a leak tightness test:

- Close the discharge of Wavin Quickstream system and fill up the system with water to roof level, and check for leakages.
- If the building is over 40m high, the pipe system needs to be split up into sections no higher than 40m.



10. Documents to be provided to client

After completion of the system, the installer will issue at least three copies of:

- The maintenance instructions as mentioned in the installation manual of the manufacturer to the principal,
- Of the routing of the rainwater pipework to the principal,
- Of the calculation demonstrating that the system at least comprises to the calculation requirements mentioned in paragraph 2000.

11. Storage

PE pipes must be protected against damage during transport and particularly during loading and unloading. Before unloading, the pipes must be inspected for damage in transit. Where lifting equipment is used wide straps are recommended. Nonpalletised pipes should be supported over their entire length where possible, and must be secured against rolling apart. The cargo area and storage location must be free of sharp objects. Do not store loose pipes over 1m in height.

Please note: Single-sided exposure to temperature, e.g. solar radiation, can cause short-term deformation of the pipes. For this reason, the pipes must be protected against direct sunlight.

Keep fittings clean by storing inside buildings or containers and unpack just before use. Always store rubber fittings in a cool place, free from direct sunlight

12. Contact Details

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