

Geberit Pluvia System Specification Clauses

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PLUVIA SYPHONIC RAINWATER SYSTEM

1000 PERFORMANCE OBJECTIVES

The rainwater from the flat roof outlets located at roof level will be collected and discharged to the below ground drainage system by the Geberit Ltd. Pluvia Syphonic rainwater systems in full compliance with BBA Certificate No. 92/2729.

The installer will design and install all rainwater pipework including all rainwater outlets and connections to drain. The installer should note that the specification should be strictly adhered to and the installer must ensure that all other designers are aware of particular technical requirements such as syphon breaks etc.

Generally this will comprise of:

1. Syphonic rainwater system complete, including rainwater outlets, pipework, supports and syphon break with connection to drain.
2. The provision of all design information, including drawings to comply with Building Regulations
3. Provision of all design information, including drawings to meet the requirements of the construction team.

2000 DESIGN PARAMETERS

The design calculation software should be dedicated to the pipe and fittings, type of manufacturer used within the system and comply with BBA Certificate No. 92/2796. Calculations must be provided by the installer, containing the following information and within the specified limits:-

Pipe Size 40 to 315mm diameters.

Negative Pressure: Not to exceed -800mm/bar on pipe sizes up to 160mm and not to exceed -450m/bar on pipe sizes 200 and above, unless PN 4 grade pipe is used when -800mm/bar is acceptable.

Water/Air Mixture: Not below 60% water volume.

Velocity: Not below ± 0.7 metre/sec

Roof outlets will operate at their maximum capacity with a retained head of 40mm or less in accordance with CEN.

Outlets in gutters will have a maximum working capacity of:

- 6 litres/second for Series 5 outlets with 56mm diameter spigots
- 10 litres/second for Series 5 outlets with 75mm diameter spigots
- 10 litres/second for Series 7 outlets with 56mm diameter spigots

The minimum working capacity will be 1 litre/second.

Design of syphonic rainwater system = 108mm/hr. rainfall intensity.

Any calculated intensity above this value, which is established using BS EN 12056-3 should be accommodated via a secondary system.

A design check will be carried out to monitor site changes and adjustments made where necessary. The revised calculations will be included in the operating and maintenance manuals.

3000 SYSTEM DESCRIPTION

The syphonic rainwater pipework will comprise:-

Pluvia syphonic rainwater disposal system (108mm/hr. rainfall intensity. Any calculated intensity above this value, which is established using BS EN 12056-3 should be accommodated via a secondary system.).

The complete system will be installed using either roof outlet made from Stainless Steel, or Plastic, Geberit Series 5 or 7 fitted within the flat roof construction and HDPE pipe conveying the surface water to drain. The pipework will collect the rainwater from the flat roofs and be routed at high level to the point where it will drop and connect to drain. The connection to the below ground drainage will be carried out in a manner which will break the syphon at that point.

4000 MATERIALS

All materials will be manufactured under a BS.5750/ISO 9000 approved scheme.

All component parts of the system will be covered by manufacturers warranty.

Pipe fittings and accessories: HDPE carrying a current BBA Certificate.

All pipes and fittings must be capable of withstanding the negative pressure produced by the syphonic actions, maximum -800mm/bar up to 160mm pipe. -450m/bar between 200mm and 315mm pipe unless PN4 grade pipe used when -800mm/bar is also acceptable.

The rainwater outlets will be capable of being fixed to the concrete slab.

The fastening system materials to be galvanised mild steel and must be capable of withstanding all stress produced by thermal expansion and vibration. The carrying rail should be minimum 30mm seamless box section.

5000 INSTALLATIONS

The syphonic rainwater system will be installed only by the designers approved installers.

All pipe and fitting joints including the joint to the outlet will be fusion welded either electro sleeve coupling or butt weld.

All bends, unless otherwise specified to be 45°.

Horizontal pipes in excess of 1m in length must be fastened by means of a purpose made pipe bracket to a square rail immediately above the pipe. Fixed points will be provided at 5m intervals by a means of a welded sleeve on the pipe and a purpose made bracket between the sleeve and the square rail. Intermediate sliding supports to fasten the pipe to the rail will be at the following intervals:

Pipe 40mm to 75mm diameter 0.8m.

Pipe 90mm diameter and above 10 x overall pipe diameter.

The rail to be fixed to the roof structure at maximum intervals of 2.5m.

The installer should allow for some secondary bracketing as a result of the height from fixing rail to roof structure. The installer is advised to visit site to survey the proposed routes.

6000 FIRE COMPARTMENT INTEGRITY

Where pipes pass through fire compartment walls, floors and ceilings provide and install an intumescent firesleeve having an appropriate Agreement Certificate or third party test report. The firesleeves shall have a fire rating compatible with the wall, floor and cavity barrier to which it is fitted. The firesleeves will be fitted in full compliance with the manufacturers requirements.

7000 PROTECTION

Throughout the installation of the syphonic 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.

8000 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.

9000 INSULATION

All horizontal rainwater pipework installed above the office areas etc will be insulated using 40mm thick foil backed mineral wool. All joints to be taped and vapour sealed.

The insulation will be fitted with identification bands at 3000mm centres indicating that the pipework is a "Rainwater Pipe".

10000 WORKING DRAWINGS

The installer will submit working drawings to the engineer showing sizes, routing, invert levels, points of access, connection to drain and outlets prior to commencing installation works. Drawings will be as produced by a draughtsman using a computer aided draughting or equal.

Two copies of the working drawings will be issued to the Site Engineer.

11000 RECORD DRAWINGS

The installer will keep a set of working drawings on site marked-up to show "as installed" routes, sizes, access locations, invert levels etc. On completing the installation the installer

will incorporate the alterations onto their working drawings using computer aided draughting and issue to the Client via the engineer.

It should be noted that the installation would not be deemed complete until the record drawings and where necessary revised calculations have been issued and accepted.

12000 OPERATING AND MAINTENANCE MANUALS

The installer will issue four bound copies of Operating and Maintenance manuals for the rainwater disposal system to include the following as minimum:-

- (a) Indicating names and address of client, project manager, architect, consulting engineers, contractors and installer.
- (b) Description of systems installed.
- (c) Planned maintenance requirements.
- (d) Details of guarantee.
- (e) Calculations.
- (f) Isometrics (which have been produced using CAD).

It should be noted that the installation would not be deemed complete until the Operating and Maintenance Manuals have been issued and accepted.

13000 TESTING

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.