Rainwater Harvesting with HP Pipe Cisterns

HP (High Performance) pipe cistern systems are a cost-effective solution for the demand of usable water and storm water control. Rainwater's reuse is valuable in areas where water resources are at a premium. Rainwater harvesting takes runoff from lawns, roofs and pavement to collect and store rainwater in underground cisterns.

In combination with Inserta Tee®, fittings and other tap connections, HP pipe creates a reclamation solution for any location and layout. In some situations, water reuse is being driven by regulatory requirements and the demand is increasing, especially in arid regions of the country. The economic and environmental benefits go hand-in-hand, making the ADS rainwater harvesting system an advantageous addition to any development.

Applications

- Storm water storage and reuse
- Residential & Commercial run-off control
- Lawn, landscape, turf and garden irrigation

Features

- Durable polypropylene
- Structurally sound to withstand H-20 traffic loading
- Lightweight, easy to install
- Layouts are customizable and expandable for every location
- Unlimited capacity—can be constructed to hold any volume required

Benefits

- Chemically resistant, long service life
- Provides water resource management
- Easy installation provides cost-efficiency
- Underground installation supports multiple land uses

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HP Rainwater Harvesting Cistern Specification

Scope
This specification describes 36”-60” (900-1500mm) HP Rainwater Harvesting Cistern for use in gravity-flow (non-pressure) rain water harvesting applications.

Material Properties
Polypropylene compound for pipe and fitting production shall be an impact modified copolymer meeting the material requirements of ASTM F2764.

Cistern Requirements
36”-60” (900-1500 mm) HP Rainwater Harvesting Cistern shall be fabricated from pipe meeting the meeting the requirements of ASTM F2764. The inlet and by-pass outlet shall be 4”-12” (100–300mm) diameter Inserta Tee tap connections as specified and located in the field. Inserta Tee tap connections may only be used at or near the top of the bulkhead to function as an inlet or overflow. For water equalization between multiple cisterns, or for installing tap connections below the water storage level, the installer may use a commercially available threaded bulk head tank fitting at the bottom invert of the cistern. The cistern shall have at least one 24” (600 mm) diameter riser for maintenance purposes. Cisterns are available in configurations of 40’ and 60’ (12 & 18 m) lengths as well as custom configurations featuring multiple parallel runs of various lengths as specified..

Joint Performance
Pipe shall be joined with a gasketed integral bell & spigot joint meeting the requirements of ASTM F2764.

36”-60” (900-1500 mm) joints shall be watertight according to the requirements of ASTM D3212. Spigot shall have two gaskets meeting the requirements of ASTM F477. Gaskets shall be installed by the pipe manufacturer and covered with a removable, protective wrap to ensure the gaskets are free from debris. A joint lubricant available from the manufacturer shall be used on the gasket and bell during assembly.

36”-60” (900-1500 mm) diameters shall have a reinforced bell with a polymer composite band installed by the manufacturer.

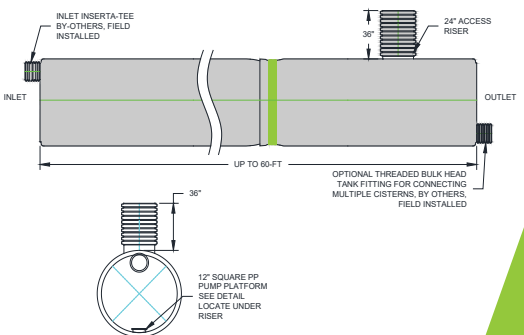
Quality
Cisterns shall be pressure or vacuum tested by the manufacturer prior to shipment to ensure weld quality. Testing report may be available by request prior to order.

Performance Testing
In lieu of an engineer’s written specification, the joint integrity of the HP Rainwater Harvesting Cistern may be tested in accordance with ASTM F2487, with the exception that the cistern may not be filled past the invert of the by-pass outlet pipe. A maximum allowable leakage allowance of 0.12 gallons/ft-dia/ft-pipe/24-hour may be applied to the HP cistern in lieu of written specification. Performance not meeting the requirements of this or the engineer’s written specifications shall be remedied by the installer or other party. Appropriate safety precautions must be used when field testing any pipe material.

Installation
Installation shall be in accordance with ASTM D2321 and ADS recommended installation guidelines, utilizing a class 1 or 2 (ASTM D2321) structural backfill materials. Minimum cover in traffic areas shall be 2 ft (0.6m) as measured from top of pipe to top of rigid pavement or to bottom of flexible pavement, and utilize a class 1 (ASTM D2321) backfill material. Maximum fill heights shall not exceed 8 feet. Inserta Tee bulk head tap connection as well as threaded bulk head tank fittings shall be installed by the installer as specified on the plans. For single or multiple parallel cisterns; connection pipes, valve boxes, pumps and accessories shall be as specified on the plans and supplied by others.

HP Rainwater Harvesting Cistern Dimensions and Specifications
Capacity assumes 12” (300 mm) of free board

	Length	Cistern Capacity		
		gal	ft³	L
36” (900 mm)	40’ (12 m)	1,477	197	5,591
	60’ (18 m)	2,215	296	8,385
42” (1050 mm)	40’ (12 m)	2,169	290	8,199
	60’ (18 m)	3,254	435	12,318
48” (1200 mm)	40’ (12 m)	2,982	399	11,288
	60’ (18 m)	4,474	598	16,936
60” (1500 mm)	40’ (12 m)	4,966	664	18,798
	60’ (18 m)	7,449	996	28,198



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