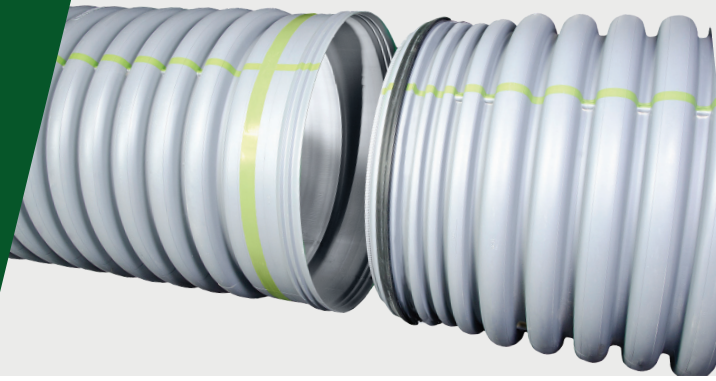


# HP Storm Joint Resiliency



Joints are an essential component of all stormwater conveyance systems as they securely connect the pipe sections. As the most vulnerable part of the system, joints must be carefully designed and constructed to ensure proper pipe alignment, hydraulic performance and structural integrity. Watertight and resilient joints provide a critical solution to address the challenges of stormwater management.

## Joint resiliency

Resilient joints are vital for preserving the functionality of drainage systems, thereby reducing the impact of severe weather events on public infrastructure.

Resilient pipe joints offer the following long-term advantages:



### Performance

- Maintain structural integrity and hydraulic capacity
- Extend service life
- Reduce O&M costs



### Safety

- Reduces risk of erosion and settlement hazards
- Improved installation time, less trench time



### Environmental protection

- Resilient against common stressors like groundwater, freeze/thaw cycles, soil shifting and traffic loads

## HP Storm resilient joint features



10.8 psi (74 kPa) watertight joints



40% longer pipe bells ensure robust joint engagement



Dual-gasket design provides redundancy (regional availability)



2.5 times fewer joints than an 8' (2.4 m) RCP pipe

## Unrivalled performance, resilience when it counts



### Exceeds pressure standard by over 35%

HP Storm holds 15 psi (103 kPa) in testing, exceeding the ASTM D3212 standard of 10.8 psi (74 kPa).



### Reliable air test performance

HP Storm consistently performs in the post-installation low-pressure air test required by the Washington State Department of Transportation (WSDOT) Standard Specification 7-04.3(1)F.



### Distinguished wall zone performance

HP Storm's robust elongated bell delivers a 10.8 psi (74 kPa) watertight seal at a 2" (50 mm) joint separation, making it the only corrugated plastic pipe - and one of just three approved materials - to comply with the Florida Department of Transportation (FDOT) Wall Zone Specification 430-4.1



### Success in extreme environments

HP Storm selected in critical applications like Hugh Leatherman Terminal in Charleston, S.C.



Project required 24,000' (7,315 m) of 12"-60" (300-1500 mm) HP Storm.



Chosen for joint resilience under 1' (0.3 m) settlement and extreme cargo loads.

## Design for resiliency: leverage joint performance standards

Pipe Type	Specification	Material/ Performance	Pressure psi (kPA)	Duration (minutes)	Misalignment	Load
Polypropylene (PP)	AASHTO M330	Material only	-	-	-	-
<b>HDPE/PP</b>	<b>ASTM D3212</b>	<b>Joint performance</b>	<b>10.8 (74)</b>	<b>10 (x3)</b>	<b>5%</b>	<b>5%</b>
RCP	ASTM C76	Material only	-	-	-	-
<b>RCP</b>	<b>ASTM C1628</b>	<b>Joint performance</b>	<b>13 (90), 10 (69)</b>	<b>10 (x2)</b>	<b>½" (13 mm)</b>	<b>Shear</b>

