

PVC Pipe Testing After UV Exposure

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The following is a summary of testing conducted on 15 year old PVC Pressure Pipe that has been continually exposed to sunlight. The pipe was returned to its plant of origin at IPEX Inc. in Edmonton, AB for testing and evaluation.

Pipe Specifics:

- 350 mm PVC DR18 PR235 psi
- Pipe certified to CSA B137.3
- Trade name - “Scepter”
- Date of manufacture - May 23, 1986
- Pipe severely faded to a maximum depth of .002 inches for approximately 180 degrees of the exterior surface

Storage Location:

- Outdoors at City of Saskatoon Public Works Yard,
330 Ontario Avenue, Saskatoon, SK

Climate:

- Average of 2380 hours sunshine per year

Test Results – October 12, 2001

Test	Standard Requirement	Actual Result
<u>Quick Burst</u>	755 psi (CSA)	980 psi (pipe burst)
<u>Impact Resistance</u>	175 Ft.-Lbs. @ 0 deg.C	5/5 passed at 175 Ft.-Lbs 5/5 passed at 330 Ft.-Lbs
<u>Flattening</u>	2” sample to 95% of OD (CSA) 6” sample to 60% of OD (AWWA)	3 of 3 passed 3 of 3 passed
<u>Dimensions</u>	Wall Thickness (CSA) (21.6 mm- 24.2 mm spec.)	Pass (range 22.31-22.96 mm)
	Average OD (CSA) (388.25 mm – 389.00 mm spec.)	Pass (388.59 mm)
<u>Extrusion Quality</u>	Acetone immersion (CSA)	Pass (20 min., no attack)

Conclusion

Even though the PVC pipe was exposed to severe conditions of Ultra-Violet from 15 years of daytime sunlight, the pipe exhibited no loss of physical strength and thus should be considered very suitable for ordinary usage.



Photos of faded 350 mm DR18 AWWA C905 before testing.