A Special Rubber Flexible Coupling Made For PVC DWV Plumbing Stacks

NEW

EXPANSION THAT MAKES SENSE

NEUTRAL INSTALLATION

PVC EXPANSION

PVC CONTRACTION

Most engineers use P.E. Thermal Expansion Charts to determine the overall movement of PVC pipe in a multi-story building. If the chart shows 3″ movement within a 100 feet of vertical PVC pipe, most engineers would normally select one expansion joint that moves 3″ and locate it near the top of the PVC pipe.

The above method does makes sense unless the PVC pipe is a DWV plumbing stack that has branches coming off at every floor. Then the expansion should then be compensated at every floor or every other floor. Its here where branch pipe breakage could occur without using the right type of expansion fitting. This inexpensive ProVent Expansion Coupling can compensate up to 3/4″ when needed. All four story or more apartment/hotel type buildings need this protection for both concrete and more importantly wood structures with a lot of shrinkage.

Plumbing People ProVent SYSTEMS

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www.proventsystems.com

ICC ES PMG 1238 | IAPMO IGC 359 | ASSE

IAPMO Standard

IAPMO IGC 359-2019a
Flexible Expansion Couplings for DWV Stack Applications
Published: June 2019
Previous Editions: April 2019

Published by
International Association of Plumbing and Mechanical Officials (IAPMO)
4755 East Philadelphia Street, Ontario, California, 91761, USA
1-800-854-2766 • 1-909-472-4100

Visit the IAPMO Online Store at: www.IAPMOstore.org
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Printed in the United States of America

TEST REPORT

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Report Number: 2777-19001

Report Issued: April 17th, 2019 **Project No.:** 32000

Client: ProVent Systems
1355 Capital Circle
Lawrenceville, GA 30043 **Contact:** Ken Cornwall

Source of Samples: The samples were manufactured by the client and witnessed tested by Dale E. Holloway of IAPMO R&T Lab in Lawrenceville, GA The samples were received in good condition.

Test Date: April 16th, 2019

Sample Description: 3" and 4" Flexible Expansion Couplings.
Models: 3" – P35470-D
4" – P45470-D

Scope of Testing: The purpose of the testing was to determine whether the samples tested of the Flexible Expansion Couplings met the applicable requirements of IAPMO IGC 359-2019, entitled "Flexible Expansion Couplings for DWV Stack Applications".

Conclusion: The sample tested of the above flexible expansion couplings from ProVent Systems COMPLIED with the applicable requirements of IAPMO IGC 359-2019

By our signature below we certify that all the testing and sample preparation for this report was performed under continuous, direct supervision of IAPMO R&T Lab, unless otherwise stated.

Witness Tested By:

Dale. E. Holloway
Regional Technical Manager
IAPMO R&T Lab

Primary Standards: IGC 359-2019 Sections tested / evaluated:

4. General Requirement
5. Testing Requirements
6. Markings and Accompanying Literature.

Test Results All tests and evaluations were conducted per the written procedures in the specified standards.

IGC 359-2019 (Public Review Draft)

4. General Requirements

4.1.1 Flexible Coupling Material: COMPLIED
Couplings covered by this Standard shall be made of thermoplastic vulcanizate elastomer material with the minimum requirements shown in Table 1.

Material Property	Actual Value	Minimum Requirement	Standard based on
Density	0.93	0.93 g/cm^3	ASTM D792
Tensile stress at 73°F	305 psi	305 psi	ASTM D412
Tensile Strength at Break at 73°F	667 psi	667 psi	ASTM D412
Elongation at Break at 73°F	480%	480%	ASTM D412
Compression Set 158°F, 22 h, Type 1 257°F, 70 h, Type 1	 19% 49%	 19% 49%	ASTM D395B
Change in Tensile Strength in air at 302°F, 168 h	-11%	-11%	ASTM D573
Change in Ultimate Elongation in air at 302°F, 168 h	-10%	-10%	ASTM D573
Change in Durometer Hardness in air at 302°F, 168 h	1.0	1.0	ASTM D573

4.1.2 Rigid Components: COMPLIED
Flexible expansion couplings complying with this Standard that contain rigid Components are part of the flexible expansion installed around its insert built into the rubber coupling, and shall be made of:
(a) _X_ PVC that complies with the minimum requirements of ASTM D2665.
(b) ___ ABS that complies with the minimum requirements of ASTM D2661.

4.1.3 Clamps: COMPLIED
Clamps for connecting the pipe to the flexible expansion coupling may be conventional snap ring type, a worm driven stainless steel band, or other conventional type of equally corrosion resistant materials.
Findings - worm driven stainless steel band

4.2 Connections: COMPLIED
Flexible expansion couplings shall be capable of connecting to pipe and fittings that comply with the minimum requirements of ASTM D2661, ASTM D2665, CSA B181.1, or CSA B181.2 as applicable, sized to fit.

4.3 Workmanship: COMPLIED

4.3.1 Flexible expansion couplings shall not:
(a) Restrict the flow capacity of the drainage line.
(b) Offer abnormal obstruction to the flow.
(c) Produce excessive turbulence or
(d) Have excessive body ledges or shoulders.

4.3.2 Inside and outside surfaces of the flex expansion couplings shall be free of crack, holes, blisters, voids, foreign inclusions or any other defects that are not visible to the naked eye and that might affect its functionality.

5 Testing Requirements

5.1 Test Specimen: FOLLOWED
The test specimen shall consist of a 3" and 4" flex expansion coupling.

5.2 Life Cycle Test: FOLLOWED

5.2.1 Test Apparatus: FOLLOWED
The test apparatus was expanded and contracted to ½" for 3" specimens and ¾" for 4" specimens by using a drill press in a down position.

5.2.2 The testing was conducted testing in a down position for expansion or contraction (1/2" for 3" or ¾" for 4" specimens) as per Section 5.2.1. Testing was conducted as per Section 5.2.2 for 100 cycles in contraction and expansion modes at 100°F, then repeated for 100 cycles at 30°F. Units were then removed and examined.

5.2.3 Performance Requirements: COMPLIED
The specimen shall not fail or show any signs of deformation at either 100°F or at 30°F:
Findings: No deformation at either 100°F or 30°F

5.3 Hydrostatic Water Pressure Test: FOLLOWED

5.3.2 The hydrostatic water pressure test was installed per manufacturer's instructions, fitted with a 10 ft. length of pipe extending above the Coupling and the pressure held for 10 minutes, or fill a 3 ft. length of pipe with water at a pressure of 5 psi for 10 minutes. After the 10 minutes the coupling was examined for leaks.

5.3.3 Performance Requirements: COMPLIED
There shall be no leakage from the coupling.
Findings: Setup option: The coupling was attached with a pressure gauge and pressurized to 10 ft. of head pressure.
Results: No leakage

6 Markings and Accompanying Literature

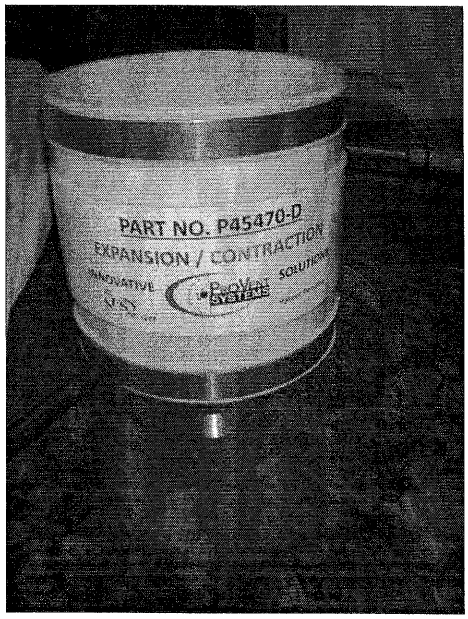
6.1 Markings: COMPLIED
Flexible expansion couplings complying with this Standard shall be marked with:
(a) X manufacturer's name or trademark
(b) X model number
(c) X IAPMO standard designation: IGC-359
(d) X intended service, where applicable

6.2 Visibility: COMPLIED
Markings shall be permanent, legible, and visible after installation.

6.3 Installation Instructions: COMPLIED
The Flexible Coupling shall be accompanied by general instructions for their installation, care and maintenance, and repair and shall include the following:
(a) X requirements for where and how to install the flex expansion coupling.
(b) X locations where anchors should be installed to allow the flex expansion coupling to work properly.
(c) X a statement showing that shrinkage in multi-story wood structures should be considered prior to installation of the flexible coupling.

PICTURES

3"



4"