



Farabaugh Engineering and Testing Inc.

Project No. T310-22

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No. Pages: 4 (inclusive)

AIR LEAKAGE TEST

12" GREENSEAM PLUS HVAC PIPE

FOR

GREENSEAM INDUSTRIES
210 5TH STREET
CHARLEROI, PA 15022

Prepared by:

Handwritten signature of Paul G. Farabaugh in black ink.

Paul G. Farabaugh

Approved by:

Handwritten signature of Daniel G. Farabaugh in black ink.

Daniel G. Farabaugh



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AIR LEAKAGE TESTING

Purpose

The purpose of this test is to establish air leakage rates on 12" GreenSeam Plus HVAC Pipe.

Test Date

10/11/2022

Test Specimen

Manufacturer: Greenseam Industries
210 5th Street
Charleroi, PA 15022

Test Specimens: 12" Diameter Greenseam Plus Circular Ducts 26 ga (with factory applied gasket and grease sealant). The ducts had factory applied foam-in-place gasket and red grease sealant located on the inside perimeter of the female joint. A factory applied foam-in-place gasket was also on the full length of the interlocking longitudinal joint. All ducts were 5' long (nominal) sections.

Test Apparatus

Extech Differential Pressure Manometer Model: HD 700 Range: 0-2 psi

Extech Digital 4-Channel Thermometer Model: SDL200 Range: -58.0 – 999.9 F

Meriam Laminar Air Flow Meter Model:50MC2-2 Range: 0-20 psig

Installation

The circular duct sections were assembled with male / female end laps that pushed together. Each specimen consisted of six sections with each section being 5’ long duct sections with five tested end-lap joints. There were (3) #10 - 16 x 3/4"long tek screws at each end lap joint, one screw on each side and one screw opposite the longitudinal seam. The first pipe was sealed with tape and the additional five other pipes were attached in series to the first pipe. The outer most end of the duct mock-up was capped and sealed. There was a 3/4" opening on the end cap to help with flow thru the piping. A positive blower was connected to one end and a pressure tap was added in the middle of each specimen. *Note - Only five longitudinal seam and five end lap joints of the six 5' sections of pipe were used to determine the flow thru the system. ALL other joints or seams were sealed.*

Procedure

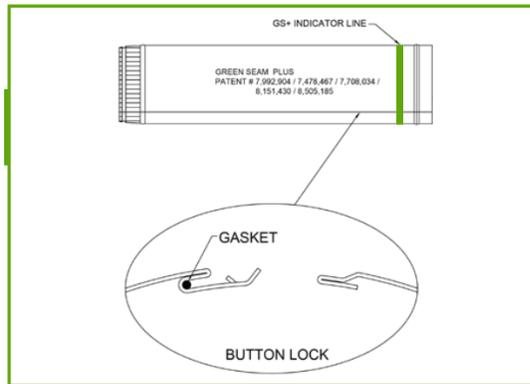
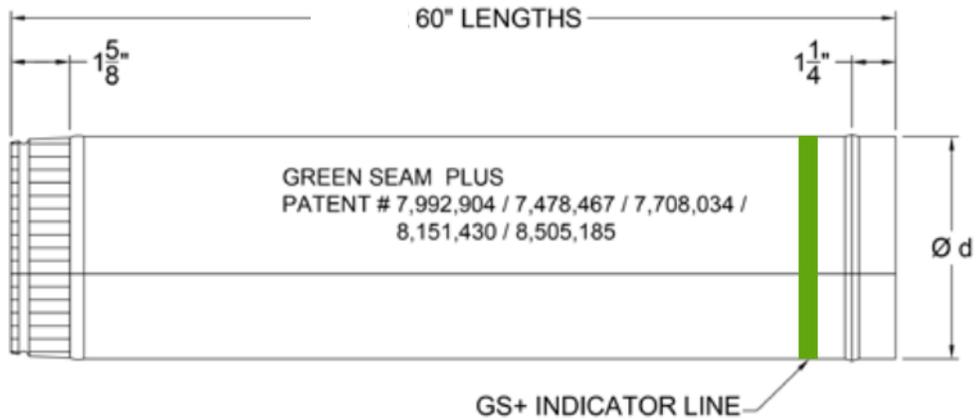
The tests were conducted using a blower to induce a positive pressure inside the duct mock-up. A laminar flow element was used to measure the air flow at various pressures. The duct joints were taped off to determine the air leakage in the set-up apparatus. Additional air leakage readings were taken at the various pressures with the tape removed to determine the air leakage through the duct mock-up. The air leakage values reported here-in are the net air leakage values (Total Air Leakage minus Set-up Apparatus Leakage).

TEST RESULTS

Test Data

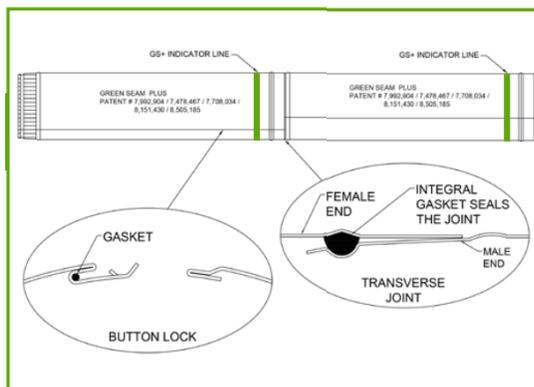
Specimen: GreenSeam Plus Pipe, 12” dia. X 26 ga Circular Duct

Test Pressure (Inches of H2O)	TEST #1 (CFM)	TEST #2 (CFM)	TEST #3 (CFM)	TEST #4 (CFM)	AVG (CFM)	CLASS
0.5	1.124	0.168	0.773	0.759	0.706	2.82
1	1.668	0.555	1.077	1.018	1.080	2.75
2	1.992	0.571	1.592	1.165	1.330	2.16
4	2.440	0.935	1.311	1.797	1.621	1.68
6	2.825	1.188	1.439	2.385	1.959	1.56
8	3.989	1.428	1.580	2.741	2.435	1.61
10	3.596	1.544	1.606	2.767	2.378	1.36



Longitudinal Gasket Composition

This material is made of butyl and E.P.D.M. rubbers, and proprietary co-polymer. It contains some process aids, antioxidants, tackifying resins, and is fungi resistant.



Transverse Gasket Composition

This material is a two-component polyurethane foamed gasket. The gasket is liquid applied directly onto the pipe by using FIPFG (formed-in-place foam gasket) technology. This produces a flexible tack-free foam gasket.