

Air Barrier Assemblies

as of January 5, 2012

An air barrier assembly is a collection of air barrier materials and air barrier components assembled together in a specific manner. A wall air barrier assembly would include the main air barrier material and then use air barrier components to join the air barrier materials together, to connect to a window or door assembly, to connect to a roof assembly, to connect to a foundation assembly and to connect to penetrations. The performance of an air barrier assembly is far greater important that the air permeance of the material.

The testing of an air barrier assembly for air leakage is done in accordance with ASTM E 2357. The results will include the air permeance of the material (the amount of air that passes through the material) the air permeance of the components (the amount of air that passes through the material) and the air leakage that results from joining all the pieces together. The air leakage of the air barrier assembly is not to exceed **0.2L/(s•m²) @ 75Pa. (0.04 cfm/ft² @ 1.57 psf).**

For a manufacturer to declare that they provide an air barrier assembly, the manufacturer must determine what materials will be used, what components will be used to join the materials together and how penetrations will be dealt with. This is a major benefit to the design professional issues such as compatibility is dealt with by the manufacturer rather than the design professional using a trial and error method.

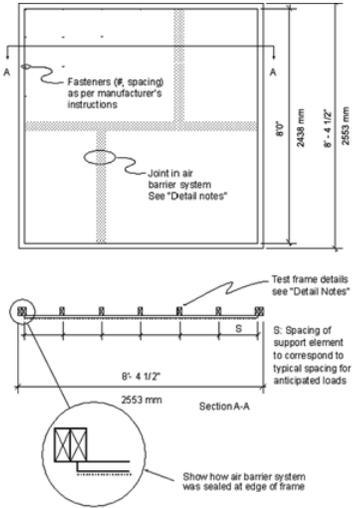
The issue of installation is also dealt with in that the manufacturer must declare the level of skill required to assembly the various materials. When the assembly is put together for testing, the installers will have the skill level required and declared by the manufacturer. If there are no requirements – “anyone can do this”, then that is the type of person used to assemble the specimen for testing purposes. If the manufacturer sends his most qualified engineers to assemble the test specimen, then they are declaring that they must use people of this caliber to install their material in the field. Most manufacturers declare that their installers have to be trained in their installation instructions and prove that they have the knowledge to install the materials properly by being certified.

ABAA Evaluated Air Barrier Assemblies

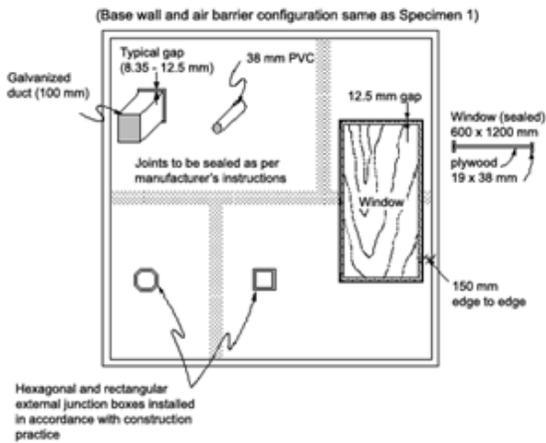
Self Adhered Sheets Materials	
Manufacturer / Product	Air Leakage of Building Assembly (iaw ASTM E2357)
Grace Construction Products Perm-A-Barrier Wall Membrane	< 0.004 L/(s • m ²) @ 75 PA [< 0.0008 cfm /ft ² @ 1.57 psf]
Henry Company Blueskin® SA	0.006 L/(s • m ²) @ 75 PA [0.0012 cfm /ft ² @ 1.56 psf]
WR Meadows Air Shield	0.0013 L/(s • m ²) @ 75 PA [0.00026 cfm /ft ² @ 1.56 psf]
Fluid Applied Membranes	
Manufacturer / Product	Air Leakage of Building Assembly (iaw ASTM E2357)
BASF Senershield-R, Finestop-RA, SonoWall FT-R, Acrostop-R and Enershield-HP	0.0066 L/(s • m ²) @ 75 PA [0.00132 cfm /ft ² @ 1.56 psf] @ 10 mils wet
Grace Construction Products Perm-A-Barrier VP	< 0.004 L/(s • m ²) @ 75 PA [< 0.000787 cfm /ft ² @ 1.57 psf] @ 90 mils wet
Grace Construction Products Perm-A-Barrier Liquid	< 0.004 L/(s • m ²) @ 75 PA [< 0.000787 cfm /ft ² @ 1.57 psf] @ 40 mils wet
Henry Company Air Bloc 31	0.004 L/(s • m ²) @ 75 PA [0.0008 cfm /ft ² @ 1.56 psf] @ 90 mils wet
Henry Company Air Bloc 32	0.0029 L/(s • m ²) @ 75 PA v[0.00058 cfm /ft ² @ 1.56 psf] @ 75 - 115 mils wet
Momentive Performance Materials SilShield AWB	0.0064 L/(s • m ²) @ 75 PA [0.0013 cfm /ft ² @ 1.56 psf] @ 18 mils wet [12 mils dry]
Parex USA Weatherseal	0.0548 L/(s • m ²) @ 75 PA [0.0108 cfm /ft ² @ 1.56 psf] @ 10 mils
STS Coatings Wall Guardian® FW-100 Asphaltic-component	< 0.0022 L/(s • m ²) @ 75 PA [< 0.00043 cfm /ft ² @ 1.57 psf] @ 60 mils wet [35 mils dry]
STS Coatings FW-100-A Acrylic Based	0.0006 L/(s • m ²) @ 75 PA [0.00012 cfm /ft ² @ 1.57 psf] @ 20 mils dry
TK Products TK-AirMax 2102 NP (Non-Permeable)	0.005 L/(s • m ²) @ 75 PA [0.0009 cfm /ft ² @ 1.56 psf] @ 32 mils wet
WR Meadows Air Shield LMP	0.0026 L/(s • m ²) @ 75 PA [0.00052 cfm /ft ² @ 1.56 psf]
WR Meadows Air Shield LM	0.0035 L/(s • m ²) @ 75 PA [0.0007 cfm /ft ² @ 1.56 psf] @ 60 mils wet
Sprayed Polyurethane Foam (Medium Density Closed Cell)	
Manufacturer / Product	Air Leakage of Building Assembly (iaw ASTM E2357)
BASF Walltite	0.0076 L/(s • m ²) @ 75 PA [0.0015 cfm /ft ² @ 1.57 psf] @ 25mm [1.0"]
Bayer MaterialScience ECOBAY CC, ECOBAY CC POLAR	0.0213 L/(s • m ²) @ 75 PA [0.0043 cfm /ft ² @ 1.56 psf] @ 39mm [1.5"]
CertainTeed Insulation Groupb CertaSpray CC	0.008 L/(s • m ²) @ 75 PA [0.0016 cfm /ft ² @ 1.56 psf] @ 25mm [1.0"]
Henry Permax 2.0	< 0.0025 L/(s • m ²) @ 75 PA [< 0.00049 cfm /ft ² @ 1.57 psf] @ 50mm [2.0"]
Icynene Inc. MD-C-200	0.0803 L/(s • m ²) @ 75 PA [0.0161 cfm /ft ² @ 1.56 psf] @ 50mm [2.0"]
Johns Manville Corbond III	0.0182 L/(s • m ²) @ 75 PA [0.00364 cfm /ft ² @ 1.56 psf] @ 50mm [2.0"]
NCFI Polyurethanes InsulStar® and ThermalStop®	0.0032 L/(s • m ²) @ 75 PA [0.00064 cfm /ft ² @ 1.56 psf] @ 37mm [1.5"]
Mechanically Attached Flexible Sheet	
Manufacturer / Product	Air Leakage of Building Assembly (iaw ASTM E2357)
DuPont Building Innovations Tyvek® CommercialWrap®	0.05 L/(s • m ²) @ 75 PA [0.01 cfm /ft ² @ 1.56 psf]
DuPont Building Innovations Tyvek® CommercialWrap® D	0.0803 L/(s • m ²) @ 75 PA [0.0158 cfm /ft ² @ 1.56 psf]
Boardstock Air Barrier – Rigid Foam Core	
Manufacturer / Product	Air Leakage of Building Assembly (iaw ASTM E2357)
Dow Chemical Company Thermax Wall System	0.05 L/(s • m ²) @ 75 PA [0.01 cfm /ft ² @ 1.56 psf] @ 5/8" [16mm] thick foam sheathing

The test specimen is configured as follows;

Specimen 1 - Opaque Wall



Specimen 2 - Continuity at Penetrations



Foundation Interface and Opaque Wall (with Modifications)

