UL Solutions Evaluation Report

ULC ER41037-04

Issued: 2025-01-31

Visit the UL Solutions Product iQ® database for current status of report.

UL Solutions category code: ULEY7 – Weather Barriers for Canada

CSI MasterFormat®

Division:	07 25 00	Weather Barriers
Sub Level :	07 27 19	Air Barriers
Sub Level:	07 27 36	Spray Foam Air Barrier

Company:

BASF Canada Inc.
10 Constellation Court
Toronto, Ontario
Canada M9W 1K1
www.basf.com

1. Subject:

BASF HP+™ E Series, X Series, XR Series, XR-S Series and **R Series – Air Barrier Systems**

2. Scope of evaluation

To demonstrate compliance with the following codes:

2015 National Building Code of Canada, NBCC (June 30, 2017)
2020 National Building Code of Canada, NBCC (July 15, 2019)

Clause 1.2.1.1.(1)(a) Compliance with this Code (Acceptable Solution from Division B)
Part 5 – Environmental Separation
Article 5.4.1.2 Air Barrier Assemblies

Part 9 – Housing and Small Buildings
Subsection 9.25.3 Air Barrier Systems
Sentence 9.36.2.9.1.(b) Air Tightness
Article 9.36.2.10.1 Construction of Air Barrier Materials

The product underwent evaluation for the following properties:

- Air barrier material
- Air barrier system
- SPUF substrate adhesion

3. Referenced documents

ASTM D1623	Standard Test Method for Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics
CAN/ULC-S741	Standard for Air Barrier Materials - Specification
CAN/ULC-S742	Standard for Air Barrier Assemblies – Specification

4. Uses

The **BASF HP+™ E Series, X Series, XR Series, XR-S Series** and **R Series – Air Barrier Systems** are intended for use as air barrier systems in building envelope assemblies in both site-built construction and building prefabrication process.

This Report does not cover the BASF HP+™ E Series, X Series, XR Series, XR-S Series and R Series – Air Barrier Systems for structural / seismic applications, fire rated wall assemblies, areas of high humidity levels (pools, saunas, museums etc.), or below grade applications. Additional evaluations and testing other than noted in this Report are typically required to meet these and other applications.

5. Product description

BASF HP+™ **E Series** – Air Barrier Systems consist of WALLTITE v.5 spray polyurethane foam (SPUF) applied to interior cavities of conventional wood frame construction with Neopor® Graphite Polystyrene (GPS) sheathing. See typical construction details available from the BASF website; BASF HP+ Wall System E Series - 3D Details.

The BASF HP+™ **X Series** - Air Barrier System consist of WALLTITE v.5 SPUF applied to interior cavities of conventional wood frame construction with wood sheathing (plywood or OSB) and Neopor® Graphite Polystyrene (GPS). See typical construction details available from the BASF website; BASF HP+ Wall Systems X Series - 3D Details.

The BASF HP+™ **XR Series** - Air Barrier Systems product consist of WALLTITE® v.5 SPUF sprayed applied in cavities of conventional wood framing (studs @ 406 or 609 mm o.c.) and over horizontal metal or wood girts supporting exterior Neopor Graphte Polystyrene (GPS) boards (CAN/ULC-S701). See typical construction details available from the BASF website; BASF HP+ Wall Systems XR Series - 3D Details.

The BASF HP+™ **XR-S Series** - Air Barrier Systems consist of the WALLTITE® v.5 SPUF sprayed between conventional wood framing with an exterior 12.5 mm plywood or OSB sheathing with horizontal metal or wood girts supporting Neopor Graphte Polystyrene (GPS) boards (CAN/ULC-S701). See typical construction details available from the BASF website; BASF HP+ Wall Systems XR-S Series - 3D Details.

The BASF HP+™ **R Series** - Air Barrier Systems consist of WALLTITE v.5 SPUF applied to the exterior surface of wall sheathing on conventional wood frame construction. Exterior cladding system cover the SPUF. See typical construction details available from the BASF website; BASF HP+ Wall System R Series - 3D Details (Cladding) and BASF HP+ Wall System R Series - 3D Details (Masonry).

The WALLTITE® v.5 spray-applied polyurethane foam serves as the primary resistance to airflow when installed at a minimum thickness of 25 mm, with a secondary role of thermal insulation. The WALLTITE® v.5 SPUF foam system consists of two components, isocyanate and resin. The two components are mixed on site by qualified installers with a fixed-ratio positive displacement equipment. The WALLTITE® v.5 material is applied at a minimum density of 32.5 kg/m^3 (2.03 pcf). The SPUF is installed by CAN/ULC-S705.2 accredited installers. The BASF WALLTITE v.5 installed colour is purple.

The BASF HP+™ E Series, X Series, XR Series, XR-S Series and R Series – Air Barrier Systems were evaluated for the performance characteristics in accordance with CAN/ULC S742 Standard for Air Barrier Assemblies – Specification. Wall sections with and without penetrations (window, pipe and electrical penetrations, various substrates, accessories, etc.) were subjected to sustained, cyclic, and gust wind loading (design hourly wind pressure $Q_{1/50} \leq 1000$ Pa for building height maximum of 12 m) with post conditioning assembly air leakage evaluation at both +20°C and -20°C.

Table 1 – Air leakage rate of wall assemblies

Wall type	Air leakage requirement classification (CAN/ULC-S742)	Air leakage rate after wind loading at 75Pa	Air leakage rate after wind loading at -20°C @ 75Pa
HP+™ E – Series	A1 ≤ 0.05 L/(s·m^2)	0.022 L/(s·m^2)	0.025 L/(s·m^2)
HP+™ X – Series		0.036 L/(s·m^2)	0.042 L/(s·m^2)
HP+™ XR – Series with metal girts		0.020 L/(s·m^2)	0.030 L/(s·m^2)
HP+™ XR – Series with wood girts		0.044 L/(s·m^2)	0.047 L/(s·m^2)
HP+™ XR-S – Series with metal or wood girt		Compliant [1]	Compliant [1]
HP+™ R – Series		0.016 L/(s·m^2)	0.020 L/(s·m^2)

Note 1: The HP+™ XR-S Series assembly, consisting of the HP+™ XR Series with a 12.5-mm-thick (½ in.) wood sheathing (OSB or plywood) was not physically tested. However, given the sheathing air leakage characteristics, it is deemed to meet the air leakage requirement as sheathing joints are sealed by the WALLTITE® v.5.

The BASF WALLTITE® v.5 material was evaluated for the performance characteristics in accordance with CAN/ULC-S741 Standard for Air Barrier Materials – Specification. Test specimens maintained an air leakage performance of less than 0.02 L/(s·m^2) @ 75 Pa after both UV and heat exposure for non-accessible air barrier materials.

The BASF WALLTITE® v.5 material was evaluated for the performance characteristics in accordance with CAN/ULC-S705.1 Standard for Thermal Insulation, Spray Applied Rigid Polyurethane Foam, Medium Density – Material Specification. See ULC Evaluation Report ULC-R41037 avaiable on UL Product iQ for technical details.

5.1 Adhesion performance

Ancillary transition membranes are utilized to maintain the continuity of the air barrier plane at penetrations, change of substrate, expansion joints, etc. The adhesion performance of the BASF Walltite v.5 Air Barrier system CMU or Steel Studs potential auxiliary substrates were evaluated in accordance with ASTM D1623.

Table 2 – Membrane adhesion performance

Substrate	BASF WALLTITE® v.5 applied over	CAN.ULC-S705.2 requirement (≥ 2.6 kPa)
Plywood	Acrylic-based membrane*1	Compliant
	Modified Bitumen Membrane*1	Compliant

Note *1: Contact BASF for specific materials evaluated and adhesion performance

6. Installation

Installation of the insulation must comply with this report and the manufacturer's published installation instructions. The manufacturer's published installation instructions are to be always available at the jobsite during installation.

- Exterior wall construction to be completed by experienced trades personnel in accordance with regional code requirements
- WALLTITE® v.5 installation must be by a licensed installer in accordance with the manufacturer's directions and follow CAN/ULC-S705.2.
- The time to re-occupancy during retrofit construction is a minimum 25 hours.
- See construction details for each series, available on the BASF website.
- See BASF WALLTITE® v.5 Application Guidelines, avaiable at https://walltite.basf.ca/home/downloads
- Manufactures installation instructions not to contravene the NBCC or provincial codes.

7. Condition of use

The BASF Canada Inc. materials described in this Report has been evaluated in accordance with code sections listed in Section 2.0, subject to the following conditions:

- Materials and methods of installation must comply with this report and the manufacturer's published installation instructions. In the event of a conflict between the manufacturer's published installation instructions and this report, this report governs.
- This product is manufactured in Blackie AB, and Toronto, ON., both manufacturing facilities are under UL Solution audit of quality elements.
- The WALLTITE® v.5 elements remain under a UL quality audit program where UL/ULC Field Engineering staff audit material manufacturing facilities.
- This product is combustible as defined by Code. Based on the flame spread characteristics this product may require additional protection from fire, consult the Authority Having Jurisdiction.

8. Supporting evidence

BASF has submitted technical documentation for UL Solutions review. Testing was conducted at ISO/IEC 17025 accredited laboratories. The test data submitted for this product is summarized below:

- Sample Selection of test materials at the BASF Toronto manufacturing facility by an ISO/IEC 17025 accredited testing laboratory.
- Data in accordance with CAN/ULC-S742 (ASTM E2357)
- Data in accordance with CAN/ULC-S741 test report

- Data in accordance with ASTM D1623 test report

9. Identification

The **BASF WALLTITE® v.5** thermal insulation described in this evaluation report is identified by a marking bearing the report holder's name (BASF Canada Inc.), the plant identification and the evaluation report number **ULC ER41037-04**. The validity of the evaluation report is contingent upon this identification appearing on the product drums.

10. Client location/contact

BASF Canada Inc.
10 Constellation Court
Toronto, Ontario
M9W 1K1

BASF Canada Inc.
500 Railway Ave.
Blackie, Alberta
T0L 0J0

833-256-7811
www.basf.com

11. Use of UL Solutions Evaluation Report

11.1 The approval of building products, materials or systems is under the responsibility of the applicable authorities having jurisdiction.

11.2 ULC Evaluation Reports shall not be used in any manner that implies an endorsement of the product, material or system by ULC.

11.3 The current status of this report, as well as a complete directory of ULC Evaluation Reports may be found at UL.com via our Product iQ® database.

UL Solutions Evaluation Reports

Underwriters Laboratories of Canada Inc.
7 Underwriters Road
Toronto, ON M1R 3A9 Canada
T: 800.463.6852
W: UL.com/Solutions