Technical Evaluation Report
TER 1506-02
BASF HP+™ Wall E Series – Limit States

BASF Corporation

Product:
BASF HP+™ Wall E Series utilizing WALLTITE® v.3 and WALLTITE® CM01 SPF in combination with Neopor® FPIS and 6 mm (¼") OSB

Issue Date:
February 22, 2017
Revision Date:
February 6, 2020
Subject to Renewal:
January 1, 2021
1 PRODUCT EVALUATED

1.1 BASF HP+™ Wall E Series utilizing WALLTITE® v.3 and WALLTITE® CM01 SPF in combination with Neopor® FPIS and 6 mm (¼") OSB

1.1.1 WALLTITE® CM01 SPF may be used in lieu of WALLTITE® v.3 SPF wherever WALLTITE® v.3 SPF is specified throughout this TER.

2 APPLICABLE CODES AND STANDARDS

2.1 Codes

2.1.1 NBC—10, 15: National Building Code of Canada

2.2 Standards and Referenced Documents


2.2.2 ASTM D1622: Standard Test Method for Apparent Density of Rigid Cellular Plastics

2.2.3 ASTM D1623: Standard Test Method for Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics

1 Building codes require data from valid certification, evaluation, and qualification reports be obtained from accredited third-party organizations. An accredited certifying organization (a type of accredited third-party organization) is a certification body that performs “certification of a product, process, or system.” An accredited third-party organization is accomplished via accreditation using ISO/IEC 17065 evaluation procedures meeting code requirements of independence, accredited testing, and professional personnel. DrJ is an ISO/IEC 17065 ANSI-Accredited Product Certification Body – Accreditation #1131. Through ANSI accreditation, DrJ certification can be used to obtain product approval in any country that is an IAF MLA Signatory, such as Canada, and covered by an IAF MLA Evaluation per the Purpose of the MLA – “certified once, accepted everywhere.” Manufacturers can go to jurisdictions in any IAF MLA Signatory Country and have their products readily approved by authorities having jurisdiction using DrJ’s ANSI accreditation. For more information about DrJ’s accreditation, refer to this letter from the Standards Council of Canada (SCC).

For more information on any of these topics or our mission, product evaluation policies, product approval process, and engineering law, see drjcertification.org.

2 Unless otherwise noted, all references in this TER are from the 2015 version of the NBC. This alternative solution is also approved for use with the 2010 NBC and the standards referenced therein (e.g., CAN/CSA, CAN/ULC). Where this TER is not approved, the AHJ shall respond in writing stating the reasons this TER was not approved. For any variations in provincial, territorial, and local codes, see Section 8.

3 All terms defined in the applicable building codes are italicized.
2.2.4 ASTM D2126: Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging
2.2.5 ASTM D2842: Standard Test Method for Water Absorption of Rigid Cellular Plastics
2.2.6 ASTM D6226: Standard Test Method for Open Cell Content of Rigid Cellular Plastics
2.2.7 ASTM E2126: Standard Test Methods for Cyclic (Reversed) Load Test for Shear Resistance of Vertical Elements of the Lateral Force Resisting Systems for Buildings
2.2.8 ASTM E2178: Standard Test Method for Air Permeance of Building Materials
2.2.9 ASTM E283: Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
2.2.10 ASTM E330: Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference
2.2.11 ASTM E564: Standard Practice for Static Load Test for Shear Resistance of Framed Walls for Buildings
2.2.12 ASTM E72: Standard Test Methods of Conducting Strength Tests of Panels for Building Construction
2.2.13 ASTM E96: Standard Test Methods for Water Vapor Transmission of Materials
2.2.14 CAN/ULC-S102.2: Test for Surface Burning Characteristics of Flooring, Floor Coverings, and Miscellaneous Materials and Assemblies
2.2.15 CAN/ULC-S102: Standard Method of Test for Surface Burning Characteristics of building Materials and Assemblies
2.2.16 CAN/ULC-S127: Standard Corner Wall Method of Test for Flammability Characteristics of Non-Melting Building Materials
2.2.17 CAN/ULC-S701: Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering
2.2.19 CAN/ULC-S705.2: Standard for Thermal Insulation - Spray Applied Rigid Polyurethane Foam, Medium Density – Application
2.2.20 CSA O86: Engineering Design in Wood
2.2.21 CWC: Engineering Guide for Wood Frame Construction

3 PERFORMANCE EVALUATION

3.1 BASF HP+™ Wall E Series was evaluated to determine:

3.1.1 Structural performance under lateral load conditions in accordance with the following:

3.1.1.1 NBC Division B Subsection 9.23.13 Bracing to Resist Lateral Loads Due to Wind and Earthquake
3.1.1.2 NBC Section 4.1 Structural Loads and Procedures and the Engineering Guide for Wood Frame Construction

3.1.2 Structural performance under uplift and gravity loads for use with single top plates in accordance with NBC Division B Article 9.23.11.3

3.1.3 Structural performance under transverse load conditions for use to resist factored external wind loads in accordance with NBC Division B Subsection 9.23.13

3.1.4 Continuous insulating sheathing requirements complying with the provisions of NBC Division B Part 5 and Subsection 9.25.2

3.1.5 Performance for use as a component of the air barrier system in accordance with NBC Division B Section 5.4 and Subsection 9.25.3

3.1.6 Flame-spread rating and smoke developed classification complying with the provisions of NBC Division B Subsection 3.1.12 and Article 9.10.3.2

3.2 Performance of BASF HP+™ Wall E Series or any of its component materials for use as a water-resistive barrier (WRB) assembly or WRB material is outside the scope of this evaluation.
3.3 Performance of BASF HP+™ Wall E Series or any of its component materials as used in the normal construction process is outside the scope of this TER.

3.3.1 The term normal construction process includes storage, weather conditions, durability considerations, handling, installing, restraining, and bracing of BASF HP+™ Wall E Series through the shipping, storing, and construction means and methods process.

3.4 Use of BASF HP+™ Wall E Series in a portal frame is outside the scope of this evaluation.

3.5 Any code compliance issues not specifically addressed in this section are outside the scope of this TER. Consult the manufacturer for other code compliance issues.

3.6 Any engineering evaluation conducted for this TER was performed on the dates provided in this TER and within DrJ’s professional scope of work.

4 PRODUCT DESCRIPTION AND MATERIALS

4.1 BASF HP+™ Wall E Series is a proprietary wall system consisting of WALLTITE® v.3 Spray Polyurethane Foam (SPF) combined with Neopor® Foam Plastic Insulating Sheathing (FPIS) (Figure 1 and Figure 2).

4.1.1 The BASF HP+™ Wall E Series described in this Technical Evaluation Report (TER) contains a combination of the following materials:

4.1.1.1 WALLTITE® v.3 SPF – 25 mm (1") or 38 mm (1½")

4.1.1.2 Neopor® FPIS – 16 mm (5/8"), 29 mm (1¼"), or 57 mm (2¼")

4.1.1.2.1 Minimum 3.3 mm (0.131") x 60 mm (23/8") nail with a minimum of 31 mm (1.25") penetration into framing. Fastener spacing 6" at perimeter and 12" in the field.

4.1.1.3 2x Wood Framing

4.1.1.3.1 2x4 studs – minimum stud grade SPF or greater

4.1.1.3.2 Each stud fastened to top and bottom plates with minimum of three (3) 3.3 mm (0.131") x 83 mm (3.25") nails.

4.1.1.3.3 2x4 top (single or double) and bottom plates – minimum #2 SPF or greater
**Figure 1. Illustration of BASF HP+™ Wall E Series**

**Figure 2. Cross Section BASF HP+™ Wall E Series Layers**
5 APPLICATIONS

5.1 BASF HP+™ Wall E Series are used in buildings constructed in accordance with NBC Division B Section 9.23 for wood frame construction. BASF HP+™ Wall E Series is used to provide:

5.1.1 Lateral load resistance (wind and seismic) for braced HP+™ Wall E Series panels used in wood frame construction

5.1.2 Transverse load resistance for braced HP+™ Wall E Series panels used in wood frame construction

5.1.3 Resistance to uplift and gravity loads in single top plate applications for HP+™ Wall E Series assemblies used in wood frame construction in accordance with NBC Division B Article 9.23.11.3.

5.2 BASF HP+™ Wall E Series is used to provide thermal resistance in the exterior wall component of the building thermal envelope in accordance with NBC Division B Subsections 5.3.1 and 9.25.2.

5.3 BASF HP+™ Wall E Series is used to provide resistance to air leakage in the exterior wall component of the building envelope in accordance with NBC Division B Subsections 5.4.1 and 9.25.3.

5.4 BASF HP+™ Wall E Series may be used in buildings designed in accordance with NBC Division B Section 4.1 Structural Loads and Procedures or the Engineering Guide for Wood Frame Construction.

5.5 Structural Applications

5.5.1 Except as otherwise described in this TER, BASF HP+™ Wall E Series shall be installed in accordance with the applicable building codes listed in Section 2 using the provisions set forth therein for the design and installation of wood structural panels (WSP) and with this TER.

5.5.2 BASF HP+™ Wall E Series are permitted to be designed in accordance with NBC Division B Part 9, Articles 9.23.13.1, 9.23.13.2, and 9.23.13.3 for the design of lateral-load-resisting systems using the methods and conditions set forth therein for equivalence to the sheathing requirements in Tables 9.23.13.6 and 9.23.17.2A as follows:

5.5.2.1 Equivalent to 12.5 mm (0.5") sheathing fastened at a maximum of 150 mm (6") o. c. at edges and 300 mm (12") o.c. along intermediate supports using a minimum 3.3 mm (0.131") diameter fastener having a penetration of at least 38 mm (1.5"), on framing spaced a maximum of 600 mm (24") o.c.

5.5.3 BASF HP+™ Wall E Series are permitted to be designed in accordance with Engineering Guide for Wood Frame Construction Section 10 for the design of lateral-load-resisting systems using the methods and conditions set forth therein for equivalence to Table 10.2.10A or CAN/CSA O86 Table 9.5.1A as follows:

5.5.3.1 Equivalent to 12.5 mm (0.5") sheathing fastened at a maximum of 150 mm (6") o. c. at edges and 300 mm (12") o.c. along intermediate supports using a minimum 3.3 mm (0.131") diameter fastener having a penetration of at least 38 mm (1.5"), on framing spaced a maximum of 600 mm (24") o.c.

5.5.4 Anchorage for in-plane shear shall be provided to transfer the induced shear force into and out of each shear wall in accordance with NBC Division B Subsection 9.23.6.

5.5.4.1 For buildings with two or more floors supported by frame walls that are in areas where the seismic spectral response acceleration, $S_a(0.2)$, is not greater than 0.70 or where the 1-in-50 hourly wind pressure is equal to or greater than 0.80 kPa (16.7 psf) but not greater than 1.20 kPa (25 psf), two anchor bolts per braced wall panel are required.

5.5.4.1.1 Anchor bolts shall have a diameter not less than 15.9 mm (0.625"), be located within 0.5 m (19.75") of the end of the foundation, and be spaced not more than 2.4 m (7'-10") o.c. OR

5.5.4.1.2 Anchor bolts shall have a diameter not less than 12.7 mm (0.5"), be located within 0.5 m (19.75") of the end of the foundation, and be spaced not more than 1.7 m (5'-7") o.c.

5.5.4.2 For buildings supported by frame walls that are in areas where the seismic spectral response acceleration, $S_a(0.2)$, is greater than 0.70 but not greater than 1.8 and the 1-in-50 hourly wind pressure is not greater than 1.20 kPa (25 psf), two anchor bolts per braced wall panel are required and spaced in accordance with Table 9.23.6.1.

5.5.4.3 Where the seismic spectral response acceleration, $S_a(0.2)$, is greater than 1.8 or the 1-in-50 hourly wind pressure is equal to or greater than 1.2 kPa (25 psf), anchorage shall be designed according to Part 4.
The maximum aspect ratio for full height BASF HP+™ Wall E Series braced wall segments shall be 4:1.

The minimum full height panel width shall be 600 mm (24”). Panels may be installed vertically or horizontally.

All Neopor® and OSB panel edges shall be supported with a minimum 38 mm (1.5") framing member. Abutting panel edges shall be generally centered on the framing member.

Installation is permitted for single top plate or double top plate applications in accordance with NBC Division B Article 9.23.11.3 where concentrated loads from ceilings, floors, and roofs are not more than 50 mm (2") to one side of the studs.

Where the application exceeds the limitations set forth herein, design shall be permitted in accordance with accepted engineering procedures, experience, and technical judgment.

Acceptable Solutions in Accordance with NBC Division B Part 9 Bracing Applications

BASF HP+™ Wall E Series may be used to brace walls of buildings as an equivalent to OSB, O-2 Grade in accordance with NBC Division B Table 9.23.17.2.-A. Wall Sheathing Thickness and Specifications as follows:

5.6.1.1 Supports 400 mm (16") o.c. – 6.0 mm (0.24") minimum sheathing thickness

5.6.1.2 Supports 600 mm (24") o.c. – 7.5 mm (0.3") minimum sheathing thickness

Where a building, or portion thereof, does not comply with one or more of the bracing requirements within the acceptable solutions of NBC Part 9, those portions shall be designed and constructed in accordance with NBC Division B Part 4 Structural Loads and Procedures or the Engineering Guide for Wood Frame Construction in accordance with NBC Division B Sentence 9.23.13.1.2(b)(ii or iii) as one of the following:

5.6.2.1 As an equivalent to OSB, O-1 or O-2 Grades in NBC Division B Table 9.23.13.6: supports 400 mm (16") o.c. – 11 mm (0.433") minimum sheathing thickness with fasteners spaced 150 mm (6") o.c. at edges and 300 mm (12") o.c. in field using a 3.7 mm (0.145") diameter fastener having a penetration of at least 40 mm (1.6”).

5.6.2.2 As an equivalent to OSB, O-1 or O-2 Grades in NBC Division B Table 9.23.13.6: supports 600 mm (24") o.c. – 12.5 mm (0.5") minimum sheathing thickness with fasteners spaced 150 mm (6") o.c. at edges and 300 mm (12") o.c. in field using a 3.3 mm (0.131") diameter fastener having a penetration of at least 38 mm (1.5”).

5.6.2.3 Using the design values given in Table 1.
### TABLE 1. SPECIFIED SHEAR DESIGN VALUES (LIMIT STATES DESIGN) FOR BASF HP+™ WALL E SERIES – WIND OR SEISMIC1,2,3,4,5,6,7

<table>
<thead>
<tr>
<th>Wall Assembly</th>
<th>Max. Stud Spacing, mm (in)</th>
<th>Interior Gypsum Wallboard Minimum Thickness, mm (in)</th>
<th>Maximum Gypsum Board Fastener Spacing (edge:field), mm (in)</th>
<th>Specified Shear Strength, kN/m (plf)</th>
<th>Ductility Factor, Rd</th>
<th>Over-strength Factor, Ro</th>
</tr>
</thead>
<tbody>
<tr>
<td>BASF HP+™ Wall E System with 16 mm (0.625”) Neopor® + 38 mm (1.5”) SPF</td>
<td>600 (24)</td>
<td>15.9 (0.625)</td>
<td>300/600/12 (24)</td>
<td>4.6 (320)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>BASF HP+™ Wall E System with 29 mm (1.125”) Neopor® + 25 mm (1”) SPF</td>
<td>4.0 (270)</td>
<td>N/A</td>
<td>N/A</td>
<td>3.0</td>
<td>1.7</td>
<td></td>
</tr>
<tr>
<td>BASF HP+™ Wall E System with 29 mm (1.125”) Neopor® + 38 mm (1.5”) SPF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BASF HP+™ Wall E System with 57 mm (2.25”) Neopor® + 38 mm (1.5”) SPF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SI:** 25.4 mm = 1 in, 1 kN/m = 737.6 lb/ft
1. BASF HP+™ Wall E Series fastening per Section 6.
2. Interior gypsum wallboard attached to framing with minimum 2.14 mm (0.086”) nail or #6 Type W screws. Minimum penetration of screws into framing is 19 mm (¾”). Fastener spacing shall be as required above.
3. Neopor® and OSB sheathing may be laminated together but lamination is not mandatory. Ensure OSB is installed in direct contact with framing.
4. Note: NBC Table 9.23.13.6 requires 15.9 mm thick gypsum with framing 600 mm o.c.
5. Building Height Limitations:
   a. If: $F_{S}(0.2) < 0.2$ – No Limit
   b. $0.2 \leq F_{S}(0.2) < 0.35$ – No Limit
   c. $F_{S}(0.2) \geq 0.35$ – 20 m (65.6 ft)
   d. $F_{S}(1.0) > 0.3$ – 20 m (65.6 ft)
6. Heights are maximum height limits above grade, as defined in NBC Division B Table 4.1.8.9.
7. For combinations of different types of SFRS acting in the same direction in the same storey, $R_dR_o$ shall be taken as the lowest value of $R_dR_o$ corresponding to these systems. See NBC Division B Article 4.1.8.9.

### 5.7 Axial Loading
5.7.1 BASF HP+™ Wall E Series will perform the same as prescriptive wall assemblies.

5.7.2 Designs shall have a load path capable of transferring loads from their point of origin to their final point of resistance in accordance with NBC Division C Sentence 2.2.4.3(1).

### 5.8 Transverse Wind Loading
5.8.1 BASF HP+™ Wall E Series installed over exterior framing spaced a maximum of 600 mm (24") o.c. without an interior covering can resist allowable wind loads as shown in Table 2. Hourly wind pressures (1-in-50) to be resisted are found in NBC Division B, Appendix C, Table C-2, for selected locations.

### TABLE 2. TRANSVERSE (OUT-OF-PLANE) WIND LOAD RESISTANCE1,2,3

<table>
<thead>
<tr>
<th>Wall Assembly</th>
<th>Maximum Stud Spacing, mm (in)</th>
<th>Hourly 1-in-50 Wind Pressure kPa (psf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BASF HP+™ Wall E Series with 29 mm (1.125”) Neopor® + 38 mm (1.5”) SPF</td>
<td>600 o.c. (24 o.c.)</td>
<td>3.1 (65)</td>
</tr>
</tbody>
</table>

SI: 25.4 mm = 1 in, 1 MPa = 145 psi
1. Applicable to both the positive and negative direction.
2. Hourly Wind Pressure (1-in-50) for selected locations can be located in NBC Division B, Appendix C, Table C-2.
3. The attachment of the sheathing to the framing is primarily through the adhesion of the SPF to the framing and Neopor® sheathing.
5.9 Thermal Resistance

5.9.1 BASF HP+™ Wall E Series complies with the continuity of insulation requirements of NBC Division B Article 9.36.2.5.

5.9.2 BASF HP+™ Wall E Series materials have the thermal resistance as shown on Table 3.

**TABLE 3. THERMAL RESISTANCE PROPERTIES**

<table>
<thead>
<tr>
<th>Assembly</th>
<th>RSI/R-Value, m²<em>K/W (ft²</em>hr*°F/Btu)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BASF 16 mm (5/8&quot;) Neopor® + 38 mm (1 1/2&quot;) SPF</td>
<td>2.2 (12.4)</td>
</tr>
<tr>
<td>BASF 29 mm (1 1/8&quot;) Neopor® + 38 mm (1 1/2&quot;) SPF</td>
<td>2.6 (14.6)</td>
</tr>
</tbody>
</table>

Sl: 25.4 mm = 1 in, 1 m²*K/W = 5.678 hr*ft²*°F/Btu
1. Values are for insulation materials only. The framing factor is not included.

5.10 Air Barrier

5.10.1 BASF HP+™ Wall E Series components have the air permeance performance material properties shown in Table 4 in accordance with NBC Division B Article 5.4.1.2 and Subsection 9.25.3.

**TABLE 4. AIR BARRIER PROPERTIES**

<table>
<thead>
<tr>
<th>Product</th>
<th>Air Permeance [L/(s*m²)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>WALLTITE® v.3</td>
<td>≤ 0.02</td>
</tr>
</tbody>
</table>


5.11 Surface Burn Characteristics

5.11.1 BASF HP+™ Wall E Series panels have the flame spread characteristics shown in Table 5.

**TABLE 5. SURFACE BURN CHARACTERISTICS**

<table>
<thead>
<tr>
<th>Product</th>
<th>Flame Spread</th>
</tr>
</thead>
<tbody>
<tr>
<td>WALLTITE® v.3</td>
<td>≤ 500</td>
</tr>
</tbody>
</table>

1. Tested in accordance with CAN/ULC-S102 including CAN/ULC-S127.

5.12 Thermal Barrier Requirements

5.12.1 Foam plastics that form part of a wall or ceiling assembly in combustible construction shall be protected from adjacent spaces in the building, other than adjacent concealed spaces within attic or roof spaces, crawl spaces, and wall and ceiling assemblies by an approved thermal barrier as required by NBC Division B Article 3.1.4.2 and 9.10.17.10.

6 INSTALLATION

6.1 BASF HP+™ Wall E Series shall be installed in accordance with the manufacturer’s published installation instructions and this TER. In the event of a conflict between the manufacturer’s installation instructions and this TER, the more restrictive shall govern.

6.2 WALLTITE® v.3 must be installed in accordance with standard CAN/ULC-S705.2, CCMC listing 13588-L, and BASF Canada’s Quality Assurance and Training Program (QATP) manual by installers licensed through the QATP and certified by Morrison Hershfield (MH).

6.3 A copy of the manufacturer’s published installation instructions shall be available at all times on the jobsite during installation.

6.4 Where required, gypsum wallboard shall be a minimum 12.7 mm (0.5") thickness.
6.5 Orientation

6.5.1 BASF HP+™ Wall E Series sheathing panels must be installed vertically with the length dimension of the panels parallel to the framing behind and all panel edges supported by framing or blocking.

6.5.2 BASF HP+™ Wall E Series sheathing panels must be installed over studs, with framing that has a thickness of not less than 38 mm (1.5") and spaced a maximum of 600 mm (24") o.c.

6.6 Fasteners

6.6.1 Neopor® FPIS and OSB:

6.6.1.1 Minimum 3.3 mm (0.131") x 60 mm (2½") nail with a minimum of 31 mm (1.25") penetration into framing. Fastener spacing 6" at perimeter and 12" in the field.

6.6.2 Gypsum Wallboard

6.6.2.1 Where required, gypsum wallboard shall be installed in accordance with NBC Division B Subsection 9.29.5 except No. 6 x 32 mm (1¼") Type W or S wood screw, or equivalent is permitted where a fire-resistance rating is not required.

6.7 Fastener Spacing

6.7.1 Neopor® FPIS and OSB:

6.7.1.1 Maximum of 150 mm (6") o.c. along the edge and 300 mm (12") o.c. in the field.

6.7.2 Gypsum Wallboard

6.7.2.1 For NBC Division B Part 9 applications, gypsum nail fasteners shall be spaced a maximum of 150 mm (6") o.c. on vertical wall supports and 300 mm (12") o.c. along intermediate supports.

6.7.2.2 For NBC Division B Part 9 applications, gypsum screw fasteners shall be spaced a maximum of 150 mm (6") o.c. on vertical wall supports and 300 mm (12") o.c. along intermediate supports.

6.7.3 For engineered design, see Table 1.

6.8 Fastener Edge Distance

6.8.1 For NBC Division B Part 9 applications, fastener edge distance is a minimum of 10 mm (3/8") for both BASF HP+™ Wall E Series and gypsum in accordance with Division B Article 9.29.5.8.

7 TEST ENGINEERING SUBSTANTIATING DATA

7.1 Lateral load testing in accordance with ASTM E2126 conducted by Structural Building Components Research Institute (SBCRI)

7.2 Transverse wind load testing in accordance with ASTM E330 conducted by SBCRI

7.3 Uplift load testing in accordance with ASTM E72 conducted by SBCRI

7.4 Gravity load testing for single top plate applications in accordance with ASTM E72 conducted by SBCRI

7.5 Neopor® FPIS surface burning characteristics testing in accordance with CAN/ULC-S102.2 conducted by Underwriters’ Laboratories of Canada

7.6 WALLTITE® SPF surface burning characteristics testing in accordance with CAN/ULC-S102 conducted by Exova Canada

7.7 Neopor® SPF material property testing in accordance with CAN/ULC-S701 conducted by QAI Laboratories

7.8 WALLTITE® SPF material property testing in accordance with CAN/ULC-S705.1 conducted by Exova Canada

7.9 WALLTITE® v.3 product listing per CCMC 13588-L

7.10 WALLTITE® CM01 product listing per CCMC 14100-L

7.11 Some information contained herein is the result of testing and/or data analysis by other sources which conform to NBC Volume I commentary on Conformity Assessment and relevant professional engineering law. DrJ relies on accurate data from these sources to perform engineering analysis. DrJ has reviewed and found the data provided by other professional sources to be credible.
Where appropriate, DrJ’s analysis is based on design values that have been codified into law through codes and standards (e.g., NBC, NECB, CAN/CSA). This includes review of code provisions and any related test data that aids in comparative analysis or provides support for equivalency to an intended end-use application. Where the accuracy of design values provided herein is reliant upon the published properties of commodity materials (e.g., lumber, steel, and concrete), DrJ relies upon the grade mark, stamp, and/or design values provided by raw material suppliers to be accurate and conforming to the mechanical properties defined in the relevant material standard.

8 FINDINGS

8.1 When used and installed in accordance with this TER and the manufacturer’s installation instructions, BASF HP+™ Wall E Series complies with the applicable sections of the codes listed in Section 2 for the following applications.

8.1.1 Lateral load resistance due to wind and seismic loads carried by shear walls in accordance with Table 1.
8.1.2 Transverse wind load resistance in accordance with Table 2.
8.1.3 Thermal resistance properties in accordance with Table 3.
8.1.4 Air permeance performance in accordance with Table 4.
8.1.5 Material fire properties in accordance with Table 5.

8.2 NBC Article 1.2.1.1. states:

1.2.1.1. Compliance with this Code

1) Compliance with this Code shall be achieved by
   a) complying with the applicable acceptable solutions in Division B (see Note A-1.2.1.1.(1)(a)), or
   b) using alternative solutions that will achieve at least the minimum level of performance required by Division B in the areas defined by the objectives and functional statements attributed to the applicable acceptable solutions (see Note A-1.2.1.1.(1)(b)).

2) For the proposes of compliance with this Code as required in Clause 1.2.1.1.(1)(b), the objectives and functional statements attributed to the acceptable solutions in Division B shall be the objectives and functional statements referred to in Subsection 1.1.2 of Division B.

8.3 NBC Division C Section 2.3 includes additional guidance for alternative solutions.

8.4 This product has been evaluated in the context of the codes listed in Section 2 and is compliant with all known provincial, territorial, and local building codes. Where there are known variations in provincial, territorial, or local codes applicable to this evaluation, they are listed here.

8.4.1 No known variations

9 CONDITIONS OF USE

9.1 When BASF HP+™ Wall E Series are not installed for use as wall bracing, as described in this TER, the walls shall be braced by other materials in accordance with the applicable code.

9.2 Loads applied shall not exceed those recommended by the manufacturer as follows:

9.2.1 Allowable shear loads do not exceed values in Table 1, as applicable.
9.2.2 Allowable axial loads do not exceed values in Section 5.7.
9.2.3 Allowable transverse loads do not exceed values in Table 2.

9.3 The manufacturer’s installation instructions shall be available on the jobsite for inspection.

9.4 Neopor® panel edges shall be supported by wall framing or solid blocking with a minimum thickness of 38 mm (1.5").

9.5 Where required by the authority having jurisdiction in which the project is to be constructed, this TER and the installation instructions shall be submitted at the time of permit application.

9.6 Any generally accepted engineering calculations needed to show compliance with this TER shall be submitted to the AHJ for review and approval.
9.7 Design loads shall be determined in accordance with the building code adopted by the jurisdiction in which the project is to be constructed and/or by the designer (e.g., owner).

9.8 At a minimum, this product shall be installed per Section 6 of this TER.

9.9 This product is manufactured under a third-party quality control program with quality control inspections established by the governing legislation of the adopting province or territory, as described in NBC Volume 1 commentary on Conformity Assessment.

9.10 The actual design, suitability, and use of this TER, for any particular building, is the responsibility of the owner or the owner's authorized agent. Therefore, the TER shall be reviewed for code compliance by the AHJ for acceptance.

9.11 The use of this TER is dependent on the manufacturer's in-plant QC, the ISO/IEC 17020 third-party quality assurance program and procedures, proper installation per the manufacturer’s instructions, the AHJ's inspection, and any other code requirements that may apply to demonstrate and verify compliance with the applicable building code.

10 IDENTIFICATION

10.1 The product(s) listed in Section 1.1 are identified by a label on the board or packaging material bearing the manufacturer's name, product name, TER number, and other information to confirm code compliance.

10.2 Additional technical information can be found at basf.com.

11 REVIEW SCHEDULE

11.1 This TER is subject to periodic review and revision. For the most recent version of this TER, visit drjcertification.org.

11.2 For information on the current status of this TER, contact DrJ Certification.