

## WALLTITE® v.2

### *Guidelines for WALLTITE v.2 Insulation/Air Barrier System*

WALLTITE v.2 is a medium density polyurethane foam insulation/air barrier material. WALLTITE v.2 produces an insulation/air barrier by the chemical reaction between an isocyanate and a resin. When these materials are combined in the spray gun's mixing chamber, a chemical reaction occurs, releasing heat. This heat or exothermic reaction causes the blowing agent to create foam expansion. The final cured product is purple with indicator dye technology.

WALLTITE v.2 comes in three reactivity grades: regular WALLTITE v.2, WALLTITE v.2 Fast Grade (WALLTITE v.2 F) and WALLTITE v.2 Cold Temperature Grade (WALLTITE v.2 CT). Unless specified, all references to WALLTITE v.2 in these Application Guidelines refer to all three grades of WALLTITE v.2.

#### **CERTIFIED CONTRACTORS ONLY**

Installation of the WALLTITE v.2 Air Barrier System requires special equipment and training. Only individuals trained and certified through the BASF Canada Quality Assurance Training Program (QATP) can install WALLTITE v.2 Air Barrier System. Installer certification cards indicate qualifications to install BASF Canada WALLTITE v.2 Air Barrier System.

These Application Guidelines are for general reference only. Qualified individuals must be familiar with the CAN/ULC S705.2 application standard and the QATP Program Manual. For any questions regarding how to properly apply the WALLTITE v.2 Air Barrier System please refer to the CAN/ULC S705.2 application standard and the QATP Program Manual. To speak to BASF regarding WALLTITE v.2, call 1-866-474-3538 (Eastern Region) or 1-800-891-0671 (Western Region).

#### **PROPER FOAM APPLICATION**

##### **Weather and Environmental Conditions**

Before beginning an application, ensure the surrounding environment meets the following conditions:

Wind	When applying outdoors, wind speed must not be higher than 15km/h (9.3 mph) unless windscreens are used.
Humidity	Care should be taken whenever the relative humidity (RH) is greater than 80%. High RH could cause blistering problems and weaken foam adhesion.
Temperature	The reactivity grade of WALLTITE v.2 is dependant on ambient and substrate temperatures. The following grades are recommended for each temperature range:
WALLTITE v.2	10°C to 40°C (50°F to 104°F)
WALLTITE v.2 F	0°C to 20°C (32°F to 68°F)
WALLTITE v.2 CT	-10°C to +5°C (14°F to 41°F)

##### **Substrate Service Temperature**

Before beginning an application, ensure the continuous substrate temperature onto which WALLTITE v.2 is to be applied remains within the following range at all times:

-60°C to 80°C (-76°F to 176°F)
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### Substrate Preparation

Prior to beginning application, determine if the substrate can be used with WALLTITE v.2 by conducting an adhesion test in accordance with CAN/ULC application standard S705.2.

All substrates to be sprayed must be free of:

- Frost;
- Dew;
- Moisture;
- Dust;
- Oil;
- Grease;
- Oxidization (rust); and
- Any other element that may affect how the product adheres to the surface.

Metal surfaces require the application of a primer, and may require sandblasting prior to priming. Other surfaces may require additional preparation – pay special attention to substrates with high moisture content (concrete less than 28 days old, and wood with moisture content over 19%, etc.). See the CAN/ULC standard S705.2 and the QATP Manual for further information.

### Pass Thickness

The heat created by the exothermic reaction during application creates a risk of scorching and/or fire. This risk increases with pass thickness.

WALLTITE v.2 must be applied to a minimum of 15mm (½”) pass thickness and, to avoid the risk of scorching and/or fire, to a **maximum** of 50mm (2”) pass thickness. Pay close attention to areas where thick pockets of WALLTITE v.2 may develop during application, such as rim joists, header spaces, exterior wall corners, small stud spaces, and wall intersections, to ensure that no section of a pass exceeds 50mm (2”).

If you spray a pass in excess of 50mm (2”) you must immediately remove the WALLTITE v.2 from the substrate using a non-flammable tool such as a crowbar – do not use your hands. After removal, break up large pieces of WALLTITE v.2 on a non-flammable surface using the non-flammable tool.

### Multiple Passes

After spraying a pass, cooling time must be allowed for the dissipation of heat. Not allowing adequate cooling time raises the risk of scorching and/or fire.

**WALLTITE v.2 regular grade:** a period of 10 minutes is required before applying a second pass of WALLTITE v.2. If a third layer is required to bring the depth to more than 100mm (4”) total thickness, there must be a cooling period of at least 1 hour between passes before spraying additional passes. Maximum 200 mm (8”) per 12 hrs.

**WALLTITE v.2 F:** a period of 10 minutes is required before applying a second pass of WALLTITE v.2. If a third layer is required to bring the depth to more than 100mm (4”) total thickness, there must be a cooling period of at least 2 hours between passes before spraying additional passes. Maximum 150 mm (6”) per 12 hrs

**WALLTITE v.2 CT:** allow the surface of the first pass to cool to ambient temperature (approximately 1 hour) before applying the second pass. If a third layer is required to bring the depth to more than 100mm (4”), there must be a cooling period of at least 12 hours before spraying additional passes.

### INSTALLATION OF APPROVED TRANSITION MEMBRANES

When applying self-adhesive, torch applied, and spray applied membranes, it is important to follow the membrane manufacturer’s instructions pertaining to substrate preparation, primer application, and primer curing time. All membranes must be applied by contractors who have been qualified and authorized by the membrane manufacturer/supplier. BASF Canada has set a minimum adhesion strength value of 103 kPa (15 psi) for approved transition membrane-to-substrate and approved transition membrane-to-WALLTITE v.2 adhesion. This value was established when verifying adhesion between WALLTITE v.2 and a reference membrane on a plywood substrate. Approved transition membrane adhesion test results can be obtained in Appendix A at the end of this document.

The minimum overlap of approved transition membranes between dissimilar materials must be 76mm (3”). Additionally, transition membranes being installed in openings (ie. windows, doors, and service penetrations) or around columns must be no less than 76mm (3”) wide. Refer to the Technical Details (TD) in section 3 of the *BASF Canada Technical Binder (Air Barrier/Insulation)*, TD 1A, 2A, 3A, 4A, 1B, 2B, 3B, 4B, 3C, 4C, 3D, 4D and to the CCMC report 13467-R.

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### **APPROVED TRANSITION MEMBRANE TO SUBSTRATE ADHESION TESTS**

Before installation of WALLTITE v.2, the certified installer must verify that approved transition membrane-to-substrate adhesion is equal to or greater than 103kPa (15psi). No adhesion test results shall be less than 103 kPa (15psi). If the minimum adhesion strength between the approved transition membrane and substrate cannot be obtained, the transition membrane must be mechanically fastened (contact the membrane manufacturer / supplier for specifications and instructions). Adhesion tests between transition membrane and substrate are not required if the membrane is secured mechanically. All mechanical fastenings must be covered with WALLTITE v.2 in order to reduce thermal bridging. Wood cannot be used to fasten approved transition membranes.

The approved transition membranes are an integral part of the WALLTITE v.2 Air Barrier System and are substrates for WALLTITE v.2; adhesion tests must be conducted on site using COM-TEN INDUSTRIES series 301N1M equipment or an equivalent. Certified installers for WALLTITE v.2 Air Barrier System are trained to use this equipment according to ASTM D4541.

#### **Adhesion tests should be conducted at:**

- All corners and building angles;
- At the intersections of wall/concrete slab;
- Perform one test on every wall that is less than 30m (100ft) in length;
- For walls that are between 30 and 60m (100 and 200ft) in length, two tests should be conducted;
- For walls that are more than 60m (200ft) long, tests should be conducted at 30m (100ft) intervals;
- If it is not possible to conduct any adhesion tests on the intersections of wall/concrete slab, the approved transition membrane should be mechanically fastened. Repeat this procedure at wall-roof intersections;
- Verify the adhesion of the approved transition membranes at the perimeter of openings (ie. windows, doors, and service penetrations). Adhesion tests must be conducted on 20% of openings, with a minimum of three tests to be completed;
- Adhesion tests must be performed on the approved transition membranes at every tenth column or beam;
- Adhesion tests are not required if the approved transition membrane is mechanically fastened.

Additional adhesion tests may be requested by the architect or engineer responsible for the project.

### **BUILDING WALLS WITH THE AIR BARRIER SYSTEM:**

Refer to the Technical Details in section 3 of the *BASF Canada Technical Binder (Air Barrier/Insulation)* and to the CCMC report 13467-R. The following materials must be used in all cases:

- 20 gauge steel studs, installed at 16" OC;
- Transition membranes approved by BASF Canada as verified through third party testing. (The various adhesion tests described in section 4 of the *BASF Canada Technical Binder (Air barrier/Insulation)* are to be used as reference only, onsite testing is still required (refer to Installation of Approved Transition Membranes). Where applicable, for type of primer, contact the membrane manufacturer/supplier. The width of approved transition membrane to be used can be found in the Technical Details (TD) in section 3 of the *BASF Canada Technical Binder (Air Barrier/Insulation)*, TD 1A, 2A, 3A, 4A, 1B, 2B, 3B, 4B, 3C, 4C, 3D, 4D and in the CCMC report 13467-R;
- # 6 TEK DRYWALL SCREWS, 1 ¼";
- Metal tie – Refer to Technical Details in section 3 of the *BASF Canada, Technical Binder (Air Barrier/Insulation)*, TD 3C and 4C and in the CCMC report 13467-R;
  - Surface mechanical connectors such as Dur-o-wal model # d/a 213, which are attached using threaded rod pins with bolts, e.g. Dur-o-pair by Dur-o-wal. Refer to Technical Details in section 3 of the *BASF Canada Technical Binder (Air Barrier/Insulation)*, TD 3C and 4C and to the CCMC report 13467-R.
  - Horizontal trussed design reinforcement with built-in masonry connectors, such as Dur-o-eye by Dur-o-wal. Refer to Technical Details in section 3 of the *BASF Canada Technical Binder (Air Barrier/Insulation)*, TD 3C and to the CCMC report 13467-R.
  - Adjustable mechanical connectors built into the wall framing, such as the Bailey Brick Connector 10–18. Refer to Technical Details in section 3 of the *BASF Canada Technical Binder (Air Barrier/Insulation)*, TD 4C and to the CCMC report 13467-R.
- Compressible foam pressure gasket, in all openings. Refer to Technical Details in section 3 of the *BASF Canada Technical Binder (Air Barrier/Insulation)*, TD 3B, 3D, and 4B;
- Glass fiber insulation, in all openings, where required. Refer to Technical Details in section 3 of the *BASF Canada Technical Binder (Air Barrier/Insulation)*, TD 3B, 3D, and 4B;
- Galvanized Z bar;

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- Sealant.
  - At the edge of the approved transition membrane on the concrete slab, a bituminous polymer based sealant, i.e., BAKOR 570-05 or equivalent. Refer to Technical Details in section 3 of the *BASF Canada Technical Binder (Air Barrier/Insulation)*, TD 3B, 3D, and 4B and to the CCMC report 13467-R.
  - At all openings, TREMCO Dy Monic sealant. Refer to Technical Details in section 3 of the *BASF Canada, Technical Binder (Air Barrier/Insulation)*, TD 3B, 3D, and 4B and to the CCMC report 13467-R.

### Substrates

- Exterior gypsum wallboard, minimum 1/2”;
- OSB, 7/16” minimum;
- Plywood, 7/16” minimum;
- Concrete block, 6” minimum;
- Poured concrete;
- Precast concrete.

### HOW TO SPRAY WALLTITE v.2 AND WALLTITE v.2 F

The following equipment settings are recommended:

- Hose heat and primary heater temperature of 32°C-49°C (90°F-120°F)
- Dispensing pressure of 59-83 bar (850-1200psi).
- Start with a hose heat of 46°C (115°F) and a dispensing pressure of 69 bar (1000psi). Make adjustments to those settings in small increments (+/- 3°C (5°F), +/- 7 bar (100 psi)).
- Check the reactivity, density, spray pattern, mix quality, and foam cell quality by test spraying onto a disposable piece of substrate.
- Hold the spray gun perpendicular from 0.3 to 0.9 meters (1-3 feet) from the substrate. Arm movement, extension and stretching should be minimized while spraying.
- The thickness of a pass depends on the speed of the arm movement while spraying. Smooth, steady movements ensure proper application and uniform density.

For detailed spray instructions, refer to the QATP Manual.

### HOW TO SPRAY WALLTITE v.2 CT

- WALLTITE v.2 CT must be applied the same way as WALLTITE v.2, with the following important additional instructions.
- Begin spraying in the corners or at the wall-ceiling intersection points. Apply foam in a 0.6-0.9 meter (2-3 feet) wide section and leave a space 0.3-0.6 meters (1-2 feet) wide between the first section and the additional sections. Continue spraying 3-5 meter (10-15 feet) wide sections, leaving 0.3-0.6 meter (1-2 feet) wide spaces between sections. Finish spraying with a 0.6-0.9 meter (2-3 feet) wide section at the next intersection point.
- Allow the foam surface to cool to room temperature before filling in the 0.3-0.6 meter (1-2 feet) spaces left between the sprayed sections.

For detailed spray instructions, refer to the QATP Manual.

**DAILY WORK SHEETS MUST BE COMPLETED AT THE END OF EVERY DAY.**

### TECHNICAL ASSISTANCE

For more detailed information, call:

#### **Eastern region**

Ontario, Quebec, Maritimes

Toll-Free: 1-866-474-3538

#### **Western region**

British Columbia, Alberta, Saskatchewan, Manitoba,  
North Western Territories, Yukon, Nunavut

Toll-Free: 1-800-891-0671

[www.walltite.com](http://www.walltite.com)

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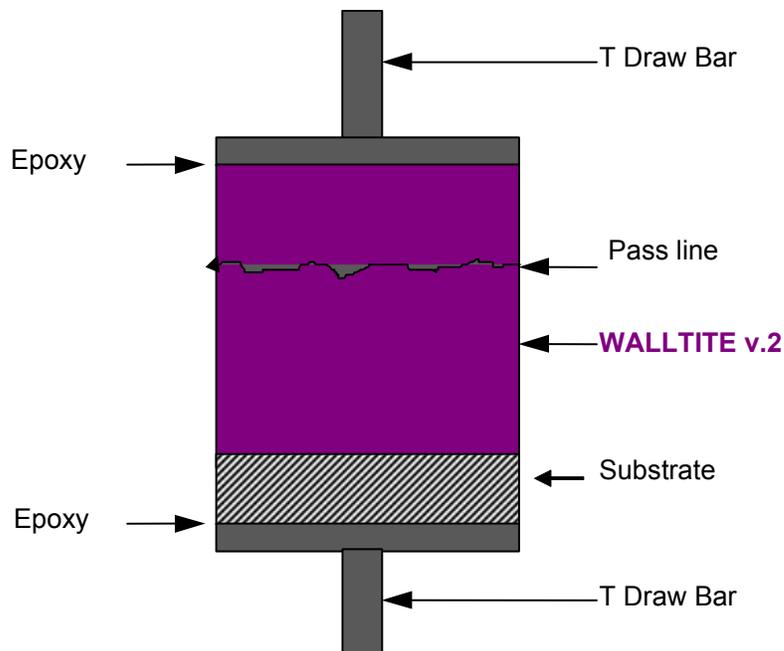
APPENDIX A

**ADHESION TESTS**

**ASTM D1623 (type C sample)**

**DESCRIPTION\*:**

WALLTITE® v.2 was sprayed at 50.8 mm (2 in) in 2 passes. The samples were cut into 50 mm (2 in) cubes. T-shaped draw bars were adhered to the samples using epoxy glue. Tensile break strength was measured in accordance with ASTM D 1623 (Type C sample testing with crosshead speed 1.3 mm/ min). Results are from the average of three tested samples. The minimum adhesion accepted when our insulation / air barrier system is used is the following: membrane over the substrate and WALLTITE over the membrane or substrate is 103.4 kPa (15.0 psi).



**APPROVALS AND CREDENTIALS:**

CCMC # 13530-L – insulation / air barrier material  
CCMC # 13467-R – insulation / air barrier system

\*All the values were obtained in our development facility under controlled conditions. The values will vary with differences in application (i.e. ambient conditions, process equipment and settings, material throughput, etc.). As a result, these published values should be used as guidelines solely for the purpose of evaluation.

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## TYPICAL PROPERTIES

Substrate	WALLTITE® v.2 applied over:	Tensile Break Strength
Owens Corning Codeboard	Substrate	Pass
Dow Cladmate	Substrate	Pass
E2XPTM exterior grade (National Gypsum)	Substrate	Pass
CGC FIBEROCKMD interior panel	Substrate	Pass
CGC GYPLAPMD Exterior Sheathing	Substrate	Pass
GlasRoc® (Certainteed)	Substrate	Pass
DensGlass Gold® exterior grade (GP)	Substrate	Pass
½" Plywood	Substrate	Pass
DensGlass Gold® exterior grade (GP)	Colphene ICF Winter	Pass
Cement Board	Duraseal PermaBase	Pass
DensGlass Gold® exterior grade (GP)	Colphene ICF Summer	Pass
½" Plywood	Colphene ICF Summer	Pass
½" OSB	Substrate	Pass
DensGlass Gold® exterior grade (GP)	Blueskin SA (membrane)	Pass
½" Plywood	Blueskin SA (membrane)	Pass
½" Plywood	Lastobond 195	Pass
DensGlass Gold® exterior grade (GP)	Lastobond 195	Pass
½" Plywood	Lastobond Shield 36	Pass
DensGlass Gold® exterior grade (GP)	Lastobond Shield 36	Pass
½" Plywood	Soprasedal Stick 130S	Pass
DensGlass Gold® exterior grade (GP)	Soprasedal Stick 130S	Pass
½" Plywood	Soprasedal Stick 1100LT	Pass
DensGlass Gold® exterior grade (GP)	Soprasedal Stick 1100LT	Pass
½" Plywood	Soprasedal Stick 1100T	Pass
DensGlass Gold® exterior grade (GP)	Soprasedal Stick 1100T	Pass
Securock	Substrate	Pass
½" Plywood	IKO Torchflex 9TF-95-FF-Base	Pass
DensGlass Gold® exterior grade (GP)	Tremco ExoAir 120	Pass
½" Plywood	Soprema 180 HD F/F	Pass
½" Plywood	Senerflash (BASF)	Pass

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DensGlass Gold® exterior grade (GP)	Bakor AirBloc 32	Pass
<b>Substrate</b>	<b>WALLTITE v.2 applied over:</b>	<b>Tensile Break Strength</b>
DensGlass Gold® exterior grade (GP)	Senerflash (BASF)	Pass
DensGlass Gold® exterior grade (GP)	Duraseal G	Pass
DensGlass Gold® exterior grade (GP)	Enershield I (BASF)	Pass
DensGlass Gold® exterior grade (GP)	Enershield HP (BASF)	Pass
½" Plywood	Enershield I (BASF)	Pass
½" Plywood	Enershield HP (BASF)	Pass

BASF Canada

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**Eastern region**

Ontario, Quebec, Maritimes

Toll-Free: 1-866-474-3538

**Western region**

British Columbia, Alberta, Saskatchewan, Manitoba,  
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