

# Wall System A Series Technical Installation Manual

Issue Date: August 5, 2016

Only the most recent published installation manual should be used. The most recent document is available at: <http://www.construction.basf.us/resources/technical-resources>

## CONTENTS:

Handling and Storage . . . . .	2	Water Resistive Barrier (WRB) Installation . . . . .	3
Framing and Bracing Requirements . . . . .	2	Vapor Barrier Considerations . . . . .	3
Oriented Strand Board (OSB) Installation . . . . .	3	Thermal and Ignition Barrier Requirements . . . . .	4
WALLTITE® HP+ Spray Foam Installation . . . . .	3	Damage Repair Recommendations . . . . .	4

## General Information:

### Code Requirements:

This manual is intended to provide general information to the builder, designer, and end user. The following guidelines will help you properly install the HP+ A Series wall system. Failure to install and finish this product in accordance with these guidelines and applicable building codes may lead to personal injury, affect system performance, and violate local building codes. These guidelines will not cover every installation as they are general in nature. Proper installation is defined as the most restrictive requirement specified by BASF Corporation, DrJ Engineering Design Detail (DD) No. 1607-01 manufacturer's installation guidelines, local building code, engineer or architect of record, or other authority having jurisdiction. The builder and / or installer acknowledges that it is solely your obligation to comply with safety requirements and code compliance.

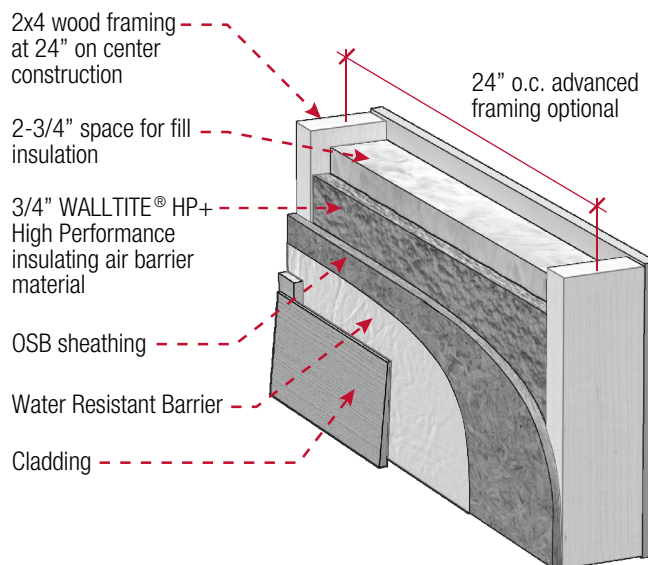
### WALLTITE HP+ Building Envelope Insulation (closed cell spray foam insulation):

WALLTITE HP+ ICC ESR-2642 must be followed throughout installation by a BASF WALLTITE HP+ Certified Installer that has completed the BASF Quality Assurance and Training Program (QATP).

### What is the HP+ Wall System?

HP+ Wall System A Series is a durable, structural assembly that meets or exceeds codes while using less wood than traditional construction, resulting in exceptional energy and cost efficiency.

The wall assembly features the following:



**TIP!** DrJ Engineering Design Detail No. 1607-01 may be found at [www.drjcertification.org/code-compliance](http://www.drjcertification.org/code-compliance). WALLTITE HP+ ESRs may be found at [www.spf.basf.com](http://www.spf.basf.com)

## Handling and Storage:

### WALLTITE® HP+ Building Envelope Insulation:

- Component storage to follow WALLTITE HP+ ICC ESR-2642.
- Shelf life of WALLTITE HP+ is approximately 6 months when stored in original, unopened containers at 50-80 degrees F.
- Components must be stored in a covered, secure location and never in direct sunlight.

### Premanufactured HP+ Panels:

- To minimize damage to OSB sheathing and discoloration of WALLTITE HP+ due to UV exposure, stack panels OSB to OSB and stud to stud.
- Discoloration due to UV exposure is cosmetic only and does not affect structural integrity or insulation values.
- During handling, avoid dragging and dropping panels to avoid panel damage.

## Framing and Bracing Requirements:

**Confirm the installation crew is familiar with the provisions of the construction documents, this installation manual, site specific conditions and issues, and OSHA jobsite lifting and fall protection requirements.**

### Advanced Framing Considerations:

Advanced Framing (also known as Optimum Value Engineering) may be incorporated with this wall system by the Design Professional. Contact your Design Professional to coordinate which advanced framing options, if any, were designed into the wall system.

Additional studs or blocking may be required by the cladding manufacturer, or for window and door frame bearing. Follow manufacturer's installation instructions or contact the Center for Building Excellence to evaluate discrepancies.

### Temporary perpendicular bracing:

Means and methods for construction of temporary bracing perpendicular to exterior walls are the responsibility of the building contractor. For guidance in temporary perpendicular bracing, see SBCA's *Guide for Handling, Installing & Temporary Bracing of Wall Panels*.

### Pre-WALLTITE HP+ in-plane bracing:

In most cases, in-plane bracing should be sufficient to temporarily support the structure while under construction if the proper nailing and installation of exterior OSB sheathing has occurred. In extraordinary loading situations, discuss with the project design team if supplemental in-plane bracing should be utilized for the project.

**Panels built off-site may or may not be fully braced.** Verify panel installation requirements with Design Professional of record or panel manufacturer.

**TIP!**

The wall system does not achieve full structural design capacity until the complete HP+ Wall A Series–system (or Walltite HP+ closed cell spray foam) is installed along with all other hardware, strapping, and fasteners required in the Wall Bracing Design drawing.

### Permanent Bracing Requirements:

Bracing requirements must follow the Wall Bracing Design drawing provided in the plan set and the DD No. 1607-01 to which it references.

**TIP!**

The fastener type and the panel edge and field fastening pattern are listed in the Wall Bracing Design drawing.

### Uplift Strapping:

The requirement for mechanical uplift connections must be determined by the designer of record, local building codes, or authority having jurisdiction.

### Installation Tolerances:

Refer to DD No. 1607-01 for installation tolerances acceptable for finished framing installation.

## OSB Sheathing Installation:

All items below apply regardless of wall construction method (e.g. tilt up, site built, or panelized).

**TIP!** Sheathing must be installed vertically with the long dimension of the panels parallel to the stud behind and all panel edges supported by framing or blocking. See DD No. 1607-01.

### Fastening requirements:

**TIP!** Multiple fastening methods are allowed with the HP+ A Series. Refer to the Construction Documents to determine the minimum fastening requirements for your project.

One approved method is galvanized roofing / siding nails. When using galvanized nails, they must have a minimum of .113" shank diameter and a 3/8" diameter head.

- Fasteners must be of sufficient length to penetrate the framing a minimum of ¾" and shall be installed with the head flush to the surface of the sheathing.
- Fasteners must be spaced a maximum 6" o.c. at panel edges and 12" o.c. in the field.
- Recommended separation of panels is 1/8 inch at end and edge joints, except where otherwise indicated by the OSB manufacturer.

**TIP!** Maintain a tight connection to studs to prevent spray foam from expanding in any space left between the OSB and the stud, resulting in an uneven surface for the cladding

### Clearance and flashing requirements:

- Maintain a minimum 6" clearance between ground and sheathing.

## WALLTITE® HP+ Spray Foam Installation:

For site-built projects, installation must only start after all exterior walls on all floors have been framed and braced, and all exterior OSB sheathing has been attached.

Only a BASF WALLTITE HP+ Certified Installer that has completed the BASF Quality Assurance and Training Program (QATP) can install WALLTITE HP+.

Excerpts from the WALLTITE HP+ ESR and the DD No. 1607-01 are reproduced below for quick reference:

- WALLTITE HP+ sets almost immediately. Ensure wall is square and true prior to spray foam application.
- Ensure the interior face of the OSB sheathing is unfaced with any plastic, foil, or other film before application.
- The insulation is applied in passes having a minimum thickness of ½ inch and a maximum thickness of 2 inches per pass, up to the total thickness specified.

- All personnel entering the work area must wear appropriate personal protective equipment according to the WALLTITE HP+ ESR, the "Guidance on Best Practices for the Installation of Spray Polyurethane Foam" by the Spray Foam Coalition, and the QATP.
- Safety signage must be posted at all entrances.
- A Daily Work Record Sheet (DWR) is required for each project. A copy of the DWR must be retained by the contractor as outlined in the QATP.

### For Premanufactured HP+ Panels:

- Spray Foam application area must be isolated and ventilated per guidelines set forth in the WALLTITE HP+ ESR.

## Water Resistive Barrier (WRB) Installation:

A water – resistive barrier is required on top of OSB sheathing in accordance with local building code requirements. The WRB must be installed with penetration and joint flashing in accordance with local building code requirements. BASF manufactures the ENERSHIELD® liquid-applied air and water resistant barrier, which complies with building code requirements.

We recommend a rain screen assembly behind unvented cladding to ensure proper WRB drainage and promote drying of the wall assembly to the outside.

## Vapor Barrier Considerations:

WALLTITE HP+ is a Class II Vapor Retarder when installed at 1.5". Please see WALLTITE HP+ ICC ESR-2642 to determine the vapor transmission class at other thicknesses.

Additional Vapor Retarders MUST NOT be installed on either the exterior or interior of the wall when WALLTITE HP+ depth exceeds 1.5". Ensure interior and exterior material finishes are vapor permeable or ventilated.

## Thermal and Ignition Barrier Requirements:

All exposed WALLTITE® HP+ must be separated from the interior of the building by a minimum 15-minute thermal barrier.

There must be a minimum 2" clearance between WALLTITE HP+ and all combustion appliances and components such as fireplaces and flues

or as required by the appliance manufacturer, whichever is more stringent.<sup>1</sup>

There must be a minimum 3" clearance between WALLTITE HP+ and all recessed can lights – even IC rated fixtures.<sup>1</sup>

## Damage Repair Recommendations:

Definitions of repair size:

- **Small damage repair:** an area smaller than a 10"x10" square, located more than 18" from the top and bottom plates, and more than 1" away from the studs (Section A). An example that fits into this definition is moving a side-wall vent.
- **Small damage repair against stud or plate:** an area smaller than 10" x 10" located within 18" from the top and bottom plates, and less than 1" away from the studs (Section B).
- **Large damage repair:** an area outside of the limitations of small damage repair and small against stud damage repair (Section C).

**Sealants and caulking used to repair WALLTITE HP+ foam must be polyurethane based.** BASF manufactures MasterSeal® NP 1 one-component elastomeric polyurethane sealant, which complies with these requirements.

**OSB sheathing damage only:**

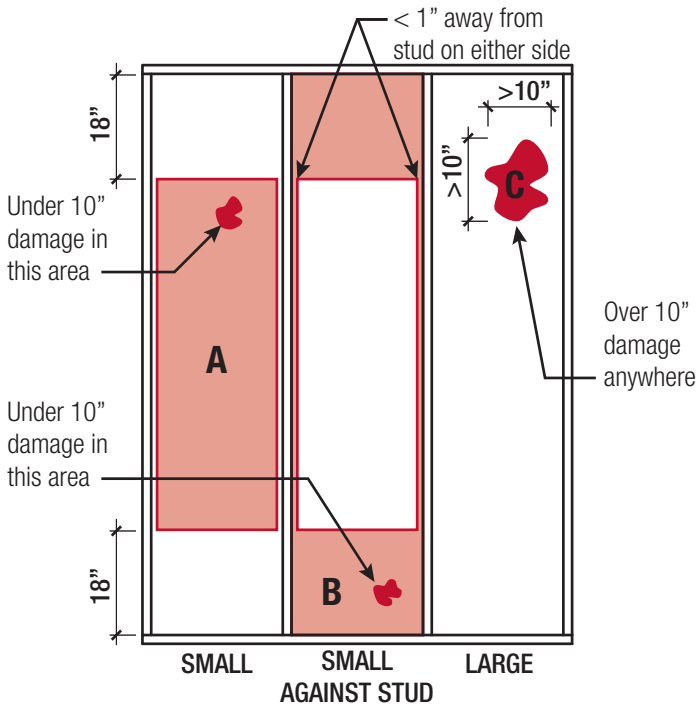
- **Small damage repair** – Damaged material can be removed and/or replaced with the same size plug of OSB sheathing material. The repair piece must be adhered, taped, or mechanically fastened to avoid any change in sheathing plane. Do not tape the interior face of the sheathing which would prevent full adherence of the WALLTITE HP+ spray foam.
- **Small damage repair against stud or plate** – Damaged material can be removed and / or replaced with the same size plug of OSB sheathing material in the same method as in small damage repair.
- **Large damage repair** – Requires full sheet replacement.

**WALLTITE HP+ damage only:**

- **Small damage repair** – Repair with a single-component spray or can polyurethane foam.
- **Small damage repair against stud or plate** – Repair with a two-component closed cell spray foam.
- **Large damage repair** – Repair with a two-component closed cell spray foam application using WALLTITE HP+.

**HP+ Wall System damage:**

- **Small damage repair** – Repair OSB with same size plug of OSB material. The repair piece must be adhered, taped, or mechanically fastened to avoid any change in sheathing plane. Seal edges with single-component spray OR can polyurethane foam OR sealant. Fill cavity insulation void with an equivalent R-value substitute.
- **Small damage repair against stud or plate** – Repair with a two-component closed cell spray foam.
- **Large damage repair** – The entire framing bay(s) damaged must be fully repaired following the original Construction Document requirements, the DD No. 1607-01 and this Installation Manual.



**TIP!** One component and two-component foams used for WALLTITE HP+ repair must be polyurethane based.

<sup>1</sup> As outlined in the Seal & Insulate with ENERGY STAR supplement to the ESR-2642 and local code requirements. (R1001.11 Fireplace Clearance; R1003.18 Chimney Clearance; R302.14 Combustible Insulation Clearance)

ENERGY STAR is a registered trademark of the Environmental Protection Agency.

MasterSeal is a registered trademark of BASF Group, ENERSHIELD and WALLTITE are registered trademarks of BASF Corporation, HP+ Wall System is a registered trademark of BASF (patents pending).