



ThermalStar® LCI™ Residential Retrofit Installation

Date: March 9, 2017

ThermalStar LCI sheathing products are a composite of polymer film, an expanded polystyrene core, and a second layer of polymer film. The products may be used as sheathing in new construction, or over existing sheathing to add continuous insulation to a wall or to bridge uneven surfaces. Installation in new construction, or commercial buildings covered under IBC, is not considered in this technical bulletin.

Where a sheathing product is already installed on an existing wall, it is assumed the structural sheathing (wood, gypsum, foam panels, etc) is fastened and constructed to resist wind pressure adequately for the zone and exposure per the applicable code. Where the sheathing is not structural, it is assumed the wall is braced for racking resistance in a manner suitable for the design loads on the wall. If and when cladding is removed to perform retrofit work, these aspects of the wall design may be discovered to be inadequate. Installation of LCI product will not remedy these deficiencies. (For projects requiring a structural sheathing product, Atlas EPS offers ThermalStar One.)

Removal of cladding may reveal that the underlying wall does not include a water resistive barrier (WRB). If a separate product (ie, housewrap or #15 asphalt felt) is not added to serve this purpose, LCI may be taped and flashed to serve as the approved WRB (see ULEX.R16529-01). If the new cladding will be stucco, a second layer of WRB may be required.

When the LCI is installed over previously installed foam sheathing, fasteners must be long enough to penetrate to either 7/16" wood sheathing, or into the underlying studs. Previously installed foam sheathing does not have the fastener withdrawal capacity to serve as an attachment substrate. The fastening pattern for LCI assumes a solid backing and that the cladding over the wall resists windward and leeward wind pressures, per code. For thick foam layers or heavy cladding, see installation options in NTA report ATL041713-23. Cladding manufacturers typically provide fastening requirements of their products.

ThermalStar LCI has a vapor transmission rate exceeding 2 perms for perforated film configuration (standard) at 1/2" thickness. These values are based on actual ASTM E96 testing of the polymer film faced EPS at both desiccant (A) and "wet cup" (B) conditions. A permeability rate of 2 perms exceeds the vapor transmission rate of OSB, plywood, XPS, and foil faced polyiso sheathing products. Thus, a wall with a Class I or II interior vapor retarder can "dry" to the outside despite installation of LCI on the exterior of most existing sheathing products. If the existing wall already violates the philosophy of "no double vapor retarder", installation of LCI will not repair this design deficiency, but may reduce stud cavity condensation potential. Where a Class III interior vapor retarder is used, observe the requirements in IRC Table R702.7.1 when selecting TOTAL R value of the exterior assembly.

LCI is chemically compatible with and may be installed over OSB, plywood, gypsum, XPS, foil or CGF faced polyiso, wood fiberboard, and other common sheathing materials.

This bulletin is current as of the date above.

Please visit our website at AtlasEPS.com for the most recent technical information.