PAREX®

BUILDING TRUST

TECHNICAL BULLETIN

Key Detail Considerations for Insulated Stucco Systems

CONTINUOUS INSULATION (CI)

Construction trends, changes in building codes, and standards are driving the increased use and thickness of continuous insulation. (CI). Common CI thicknesses are 1 ½" or more which can create new challenges for detailing the building envelope.

KEY DETAIL CONSIDERATIONS

As is common with many claddings, the use of CI has been limited and regional. Typical stucco thickness ranges from 3/8" to 7/8". With CI added at a thickness of 1" or more, CI stucco systems (stucco + CI) are approximately 1 ½" to nearly 4".

SikaWall Stucco Assemblies have the following maximum allowable continuous insulation thicknesses based on the type of continuous insulation used within the assembly.

CI FLAME SPREAD AND SMOKE DEVELOPED

In Type V, (combustible), construction, CI must have Flame Spread Index not over 75 and Smoke Developed Index not over 450 as measured by ASTM E84.

In Types I, II, III, and IV construction, CI must have Flame Spread Index not over 25 and Smoke Developed Index not over 450 as measured by ASTM E84.

IBC and IRS tables for attachment of claddings over CI require the CI to have a minimum compressive strength of 15 psi. The CI in following list meets this requirement. The thickness limits are also in accordance with the thickness limits for claddings over CI weighing not more than 11 pounds per square foot. Stucco up to 7/8-inch thick is taken to weight 11 piunds per square foot.

Caution: Stucco base coats and veneers adhered to them can together weigh over 11 pounds per square foot and be limited to CI thinner than the maximums below. Consult the IBC and IRC table for cladding attachment over CI for cladding weights over 11 pounds per square foot.

1. Maximum 2.5-inch thickness of ASTM C578 Type II EPS.
2. Maximum 2.5-inch thickness NEOPOR GPS PLUS Type II Rigid Insulation Board (1.35 Density)
3. Maximum 3-inch thickness of ASTM C578 Type XI EPS (must be ASTM E84 Class A)
4. Maximum 3-inch thickness XPS, ASTM C578 Type IV or Type X (must be ASTM E84 Class A)
5. Maximum 3-inch thickness, Atlas EnergyShield Pro
6. Maximum 3-inch thickness, Atlas EnergyShield Pro2
7. Maximum 3-inch thickness, Hunter Xci Class A
8. Maximum 3-inch thickness, Hunter Xci CG
9. Maximum 3-inch thickness, Rmax Durasheath or Rmax EcoMax FR
10. Maximum 3-inch thickness, unfaced noncombustible insulation (e.g. mineral wool)

Generally, stucco claddings terminate into accessories with grounds that match the combined thickness of the stucco and CI (if used). Examples include openings (window, door, etc.), terminations of walls, and transitions to other materials or claddings.

When adding CI to a wall, factors such as interfaces, CI thickness and type of construction should be considered. Additional consideration may need to be given for closer control joint spacing when designing stucco assemblies using continuous insulation.

NON-COMBUSTIBLE CONSTRUCTION

Exterior wall assemblies, such as CI stucco, that incorporate foam plastic insulation (e.g., EPS, XPS, Neopor® GPS Plus, and polyisocyanurate such as Rmax) in the assembly must comply with NFPA 285 (see IBC Section 2603.5), if the project is required to be noncombustible.

This is the case with buildings classified as Type I, II, III, or IV construction. CI stucco assemblies may need to incorporate alternative detail/termination techniques to provide NFPA 285 compliance.

Allowable CI thicknesses published by their manufactures may exceed the thickness limitations listed above. However, the greater CI thicknesses will not be applicable to CI with stucco due to limitations of constructability of the lath and stucco over the CI.

TREATMENT OF OPENINGS AND TERMINATIONS

The edges of the CI must be treated as required for NFPA 285 compliance. This is typically specified and illustrated in the NFPA compliance document. It may include plastered returns on CI edges, metal flashings, fire retardant treated wood blocking, and similar treatments.

WALL GEOMETRY

Adding CI to a stucco system will increase its thickness and change the typical wall geometry or plane. Due to performance needs, and because grounds for trim accessories are generally only commercially available up to 1 ½", there may be a need to consider alternatie CI enclosure or encapsulation.

ALTERNATIVE SUPPORT FOR STUCCO OVER CI

Propretary external framing systems that are thermally broken and accommodate CI within them are available and can be used to support sheathing and stucco. These sytems have their own limitations on CI thickness and cladding weight and are not limited by IBC and IRC table for claddings attached over CI.

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