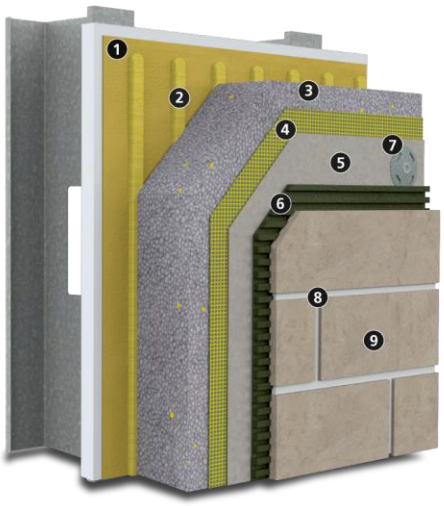
StoTherm® ci MVES

Masonry Veneer Engineered System with continuous insulation, and continuous air and water-resistive barrier



Substrate: Glass Mat Gypsum sheathing in compliance with ASTM C1177, Exterior or Exposure I wood-based sheathing (plywood or OSB), code compliant concrete, concrete masonry, or existing structurally sound, uncoated brick wall costruction	
1)	Air & Water-Resistive Barrier, choose among: • Sto Gold Coat® • Sto AirSeal® • StoGuard® VaporSeal®
2)	Insulation Adhesive: Sto TurboStick®
3)	Insulation, choose among: • GPS: Sto GPS Board • EPS: Sto EPS Insulation Board
4)	Reinforcement: Sto Mesh 6 oz
5)	Base Coat: Sto Primer/Adhesive
6)	Masonry Veneer Adhesive: StoColl Adhesive Mortar
7)	Fastener (by others): corrosion resistant fastener and washer (not required at ground floors up to 10ft [3m] in height)
8)	Masonry Veneer Grout (by others): ANSI 118.7 compliant portland cement-based grout
9)	Masonry Veneer (by others): thin brick, thin natural stone, ceramic tile, or manufactured stone in conformance with applicable building code requirements
System Accessory: StoSeal STPE Sealant for use as an exterior weather seal around wall penetrations, at dynamic joints in wall construction, and as an interior air seal for air barrier continuity	

System Description

StoTherm ci MVES is an engineered wall system with Adhered Masonry Veneer (AMV) – thin brick, natural stone, ceramic tile, or manufactured stone. It combines superior air and weather tightness with excellent thermal performance and durability. It incorporates continuous exterior insulation and a continuous air and water-resistive barrier (AWRB) with Sto high strength masonry veneer adhesive. The system integrates seamlessly with StoTherm ci GPS (or StoTherm ci) and is ideal for use as an impact and abrasion resistant exterior wainscoting.

Uses

StoTherm ci MVES can be used in residential or commercial wall construction where energy efficiency, superior aesthetics, and air and moisture control are essential in the climate extremes of the Americas.

Features	Benefits
Variety of masonry veneers that integrate seamlessly with Sto finishes	Design versatility on a single compatible substrate
Continuous exterior insulation	Energy efficient, reduced heating and cooling costs
Fire resistant wall design	Occupant safety
Lightweight	Reduced structural costs (compared to full thickness masonry veneer assemblies)
Continuous air and water-resistive barrier	Impedes air infiltration/exfiltration and water penetration, helps reduce energy costs
Fully tested, building code compliant	Peace of mind
Properties	
Weight (not including sheathing and frame)	< 21 lb/ft² (103 kg/m²) with 15 lb./ft² (73.2 kg/m²) thin veneer
Thickness (insulation)	1-4 inches (25-102mm)
R-value (not including sheathing and frame) GPS:1-1/16 - 4in (27-102mm) EPS: 1 - 4in (25-102mm)	GPS: 5.0 – 19 ft²•h•°F / Btu (0.88 – 3.35 m²•K / W) EPS: 3.6 – 14.4 ft²•h•°F / Btu (0.63 – 2.53 m²•K / W)
Wind Load Resistance (varies with stiffness of stud wall construction, sheathing attachment)	Capable of achieving ultimate load capacity of: +220, -167 lb/ft² (+10.5, -7.98 kPa)
Code Compliance: Complies with 2021, 2018 IBC IRC, and IECC	See ICC ES Evaluation Reports: StoGuard: ICC ESR-1233 StoTherm ci MVES: ICC ESR-1748
Construction Types and Fire Resistance	• NFPA 285: for Types I – IV, noncombustible construction • ASTM E119: 1-hour rated load bearing and non-load bearing wall construction

Warranty

15-year Limited Warranty

Maintenance

Requires periodic cleaning to maintain appearance, repair of cracks and impact damage if they occur. Sealants and other façade components must be maintained to prevent water infiltration.

Design Guidance and Limitations
Fire resistance: 1-hour load bearing and non-load bearing fire rating over steel frame, concrete, and concrete masonry wall construction with maximum 4-in (102mm) thick insulation board
Noncombustible construction (Types I, II, III, and IV): use with maximum 4-in (102mm) thick Sto GPS Board or Sto EPS Insulation Board
Minimum insulation board thickness: 1 inch (25 mm). Maximum insulation board thickness: 4 inches (102mm), subject to restrictions based on fire tests (see above).
Wind load resistance: design for maximum allowable deflection of L/360, or stiffer when required by veneer manufacturer, local building code, or design professional. Maximum allowable stud spacing / minimum stud gauge: 16 inches (406mm) on center / 18 gauge. Capable of achieving ultimate pressures of: +220, -167 lb/ft^2 (+10.5, -7.98 kPa), depending on veneer, sheathing, sheathing attachment, and stiffness of supporting wall construction (Refer to ICC ESR-1748).
Moisture Control: drainable wall assembly. Design and detail air and water-resistive barrier as a continuous assembly, incorporate flashing and coping to shed water and prevent water entry into wall construction, select compatible wall assembly components at material interfaces and to seal penetrations. For more information refer to Sto Design Guide and Detail Booklet, and Sto Tech Hotlines: TH-0403-BSc, *Critical Detail Checklist for Wall Assemblies*, TH 0603-BSc, *Moisture Control Principles for Design and Construction of Wall Assemblies*, and Sto Tech Hotline No. 1001-BSc, *Effects of Temporary Heating on Construction Materials in Cold Weather*.
For use on vertical above grade walls only, up to 6-stories or 72 ft (22m) in height, whichever is less, except for manufactured stone and natural stone, which have stricter height limitations. Refer to Sto Tech Hotline No. 0821-M, *Quick Reference Guide on Adhered Masonry Veneers in Exterior Wall Construction*, for additional information.
Not for use below grade, sloped or horizontal surfaces, or on roofs or roof-like surfaces. Refer to Sto Details.
Joints: provide expansion joints where they exists in the supporting wall construction, at control joints or cold joints in the supporting wall construction, at changes in support construction (e.g., masonry to frame wall), at junctures with dissimilar construction, at different substrates, at floor lines in multi-story wall construction, at changes in building height and other areas of stress concentration, and within areas of not greater than 144 ft^2 (13.4m^2) with length or height not exceeding 12 ft (3.6m) for ceramic tile, and not more than 18 ft (5.5m) for brick or stone, and with length/height or height/length ratio not greater than 2-1/2 to 1. Dark colored veneer units may require closer spacing due to increased thermal movement. Consult with design professional. Do not bridge expansion joints, control joints, or cold joints in wall construction with adhered masonry veneer. Refer to Sto Details.
Mortar Joints: must be grouted except where permitted for manufactured stone (refer to Sto Tech Hotline No. 0821-M, *Quick Reference Guide on Adhered Masonry Veneers in Exterior Wall Construction*)
Dark brick, stone, and ceramic tile colors with LRV (Light Reflectance Value) < 20 are not recommended unless analyzed by the design professional with regard to temperature exposure of GPS/EPS insulation (limited to maximum service temperature of 165°F (73.9°C).
Adhered masonry veneer units are limited in thickness, size and weight by the IBC and IRC. Refer to Sto Tech Hotline No. 0821-M, *Quick Reference Guide on Adhered Masonry Veneers in Exterior Wall Construction*.
Efflorescence is a normal occurrence in portland cement-based materials and can affect final appearance of finish products. To minimize risk of efflorescence, follow best construction practices to prevent water entry into walls through proper design detailing, and the proper use of flashing, copings, and sealant. Refer to Sto Details
Insulation materials are flammable. Keep away from flame, ignition sources, high heat and temperatures in excess of 165°F [73.9° C]).
Air Barrier, insulation board, and base coat materials are not intended for prolonged weather exposure. Refer to specific component product bulletins and packaging for other limitations that may apply involving use, handling and storage of component materials.

Sustainable Design	
Air Quality and VOC Compliance	
Adhesive mortar, AWRB joint treatments and coatings meet South Coast AQMD (Rule 1113) VOC standard for Building Envelope Coating: less than 50 g/L.	
LEED Credit Eligibility	
The system has high potential for LEED and other sustainability program credits based on efficient and effective use of a continuous air barrier and continuous exterior insulation for energy savings and resulting reductions in greenhouse gas emissions, and through the use of light gauge metal framing with recycled content. The system also has potential positive impacts on life cycle energy use based on reduced dead load, permitting the use of lighter gauge metal studs, and supporting structural members and foundation footings, when compared to full thickness/weight masonry units. Sto GPS Board and Sto EPS Insulation do not use fluorocarbon blowing agents (HFC, HCFC, or CFC) in manufacturing and have excellent long term thermal stability, low global warming potential and zero ozone depletion potential	
Regulatory Compliance and Standards Testing	
NFPA 285, ASTM E119	System meets acceptance criteria for use on noncombustible construction and requirements for 1-hour fire resistance rating over load-bearing and non-load bearing steel frame wall assembly (see above for insulation thickness limits).
ICC ESR-1233	StoGuard air and water-resistive barriers comply with 2018 and 2021 IBC, IRC, IECC.
ASTM E2178, E2357	Sto Gold Coat air and water-resistive barrier meets air leakage requirements as a material and as an assembly.
ICC ESR-1748	System complies with performance and weather resistance requirements of 2018 and 2021 IBC and IRC.
ASHRAE 90.1-2019	System complies with Section 5, Building Envelope, air barrier and continuous insulation requirements (subject to limits on insulation thickness)

For complete information refer to www.stocorp.com

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