

**System Bulletin**

# StoVentro™ Sub-construction

Rainscreen sub-construction system with continuous insulation and continuous air and water-resistive barrier



Structural Back-up Wall (by others): Steel or wood frame with glass mat gypsum sheathing in compliance with ASTM C1177, code compliant OSB or plywood sheathing, concrete or concrete masonry, existing structurally sound, uncoated brick or other masonry wall construction.

|    |   |
|----|---|
| 1) | Air and Water-Resistive Barrier: Sto AirSeal®                 |
| 2) | Sub-construction: StoVentro™ Bracket                          |
| 3) | Thermal Insulation: Owens Corning Thermafiber® RainBarrier 45 |
| 4) | Sub-construction: StoVentro™ T-Profile                        |
| 5) | Rainscreen Cladding ( <i>Not Shown</i> )                      |

**System Description**

StoVentro™ Sub-construction is an adjustable, thermally efficient structural system of brackets, rails, fasteners, and accessories for StoVentec® Systems and other rainscreen wall cladding assemblies. Safe and long-lasting, the sub-construction absorbs both the wind loads and dead loads present on the facade. Alongside structural suitability, the design of the sub-construction incorporates corrosion resistance and a reduction in thermal bridging, while also being quick and easy to install.

**Uses**

StoVentro can be used on interior or exterior residential, commercial, and institutional wall construction.

| Features                                | Benefits   |
|---|--|
| Structural                              | Carries dead load of cladding and resists wind load  |
| Adjustable                              | Accommodates substrate irregularities for precise alignment of cladding elements and high aesthetic appeal |
| Zn-Al-Mg Galvanized Steel Brackets      | Low thermal conductivity minimizes thermal bridging  |
| Sliding Point Connections               | Accommodates thermal expansion and contraction   |
| Curves and Radiuses                     | Accommodates facades with curves   |
| Intelligent Design from a Single Source | Simple installation, high performance, and single source warranty  |

**Properties**

|  |   |
|--|---|
| Weight: sub-construction and insulation ( <i>at 2 inches</i> ) | 1.16 lb./ft <sup>2</sup><br>5.66 kg/m <sup>2</sup>                              |
| Insulation combustibility, flame spread                        | Noncombustible, 0 flame spread, 0 smoke development                             |
| Insulation RSI-value (R-value)                                 | 0.74 m <sup>2</sup> •K / W per 25mm<br>(4.3 ft <sup>2</sup> •h•°F / Btu per in) |
| Zn-Al-Mg steel material  | HSLAS-F Gr 80 or S550GD + ZM  |
| Aluminum material  | 6063-T66  |

**Warranty**

Ten-year limited warranty

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## System Depth and Measurements

StoVentro™ Sub-construction can accommodate system depths of ~2" to ~24.5" from the substrate/sheathing to the fastening flange of the T-Profile. To size your system, use the table below, then add the depth of the desired cladding. There is 1-3/16 in (30mm) adjustability with each bracket. If Thermal Blocking Element is used with bracket, add appropriate thickness listed in StoVentro Sub-construction details.

| INSULATION<br>Imperial | INSULATION<br>Metric | BRACKET           | MIN<br>DIMENSION      | MAX DIMENSION<br>Imperial  | MIN<br>DIMENSION    | MAX<br>DIMENSION    |
|------------------------|----------------------|-------------------|-----------------------|----------------------------|---------------------|---------------------|
| 1 in                   | 25.4 mm              | 60mm              | 2-7/16 in             | 3-5/8 in                   | 62.7 mm             | 92.7 mm             |
| 1.5 in                 | 38.1 mm              | 60mm              | 2-7/16 in             | 3-5/8 in                   | 62.7 mm             | 92.7 mm             |
| 2 in                   | 50.8 mm              | 80mm              | 3-1/4 in              | 4-7/16 in                  | 82.7 mm             | 112.7 mm            |
| 2.5 in                 | 63.5 mm              | 100mm             | 4-1/16 in             | 5-1/4 in                   | 102.7 mm            | 132.7 mm            |
| 3 in                   | 76.2 mm              | 100mm             | 4-1/16 in             | 5-1/4 in                   | 102.7 mm            | 132.7 mm            |
| 3.5 in                 | 88.9 mm              | 120mm             | 4-13/16 in            | 6 in                       | 122.7 mm            | 152.7 mm            |
| 4 in                   | 101.6 mm             | 120mm             | 4-13/16 in            | 6 in                       | 122.7 mm            | 152.7 mm            |
| 4.5 in                 | 114.3 mm             | 140mm             | 5-5/8 in              | 6-13/16 in                 | 142.7 mm            | 172.7 mm            |
| 5 in                   | 127.0 mm             | 160mm             | 6-3/8 in              | 7-9/16 in                  | 162.7 mm            | 192.7 mm            |
| 5.5 in                 | 139.7 mm             | 160mm             | 6-3/8 in              | 7-9/16 in                  | 162.7 mm            | 192.7 mm            |
| 6 in                   | 152.4 mm             | 180mm             | 7-3/16 in             | 8-3/8 in                   | 182.7 mm            | 212.7 mm            |
| 6.5 in                 | 165.1 mm             | 200mm             | 8 in                  | 9-3/16 in                  | 202.7 mm            | 232.7 mm            |
| 7" (177.8mm)           | 177.8 mm             | 200mm             | 8 in                  | 9-3/16 in                  | 202.7 mm            | 232.7 mm            |
| 7.5+ in*               | 190.5+ mm            | 220mm to<br>360mm | 8-3/4 to<br>14-1/4 in | 9-15/16 to<br>1' 3-7/16 in | 222.7 - 362.7<br>mm | 252.7 - 392.7<br>mm |

\*Custom insulation configuration

## Storage and Handling

Store cartons and bundles of material inside in a dry area until ready for use on pallets. At the job site store off the ground on pallets in a dry location out of direct sunlight.

## Application

Refer to StoVentro Detail Booklet, Installation Videos, and Specifications for installation information. Always accompany installation with shop drawings, prescriptive and certified designs, and/or engineering analysis to determine proper spacing of components and attachment to backup wall construction.

## Precautions and Limitations

Not intended for use on horizontal or low slope surfaces, below grade, roofs, or roof-like surfaces, or in areas of water immersion, pooling, or ponding water. Soffits require project specific engineering.

Pull-out or withdrawal capacity of fasteners into structural wall must be sufficient to resist negative wind loads (with appropriate safety factor as required by applicable building code).

Insulation board thickness (Standard): 51-178mm (~2-7 in). Thicker insulation available by custom order and with special design and engineering analysis by qualified design professional.

Ventilation cavity depth: 20-50mm (~13/16 - 2in)

Refer to specific component product bulletins and packaging for other limitations that apply on use, handling, and storage of component materials.

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| Technical Data               |                      |  |
|------------------------------|----------------------|--|
| INFORMATION                  | DATA                 | VALUE  |
| StoVentro Bracket – ALUM     | Type                 | Aluminum type: 6063-T66                              |
| StoVentro Bracket – ALUM     | Thermal Conductivity | 200-220 W/m•K (1457 Btu/(ft•h•°F))                   |
| StoVentro Bracket – Zn-Al-Mg | Type                 | Steel type: HSLAS-F Gr 80 + ZM or S550GD + ZM        |
| StoVentro Bracket – Zn-Al-Mg | Thermal Conductivity | 45-50 W/m•K (26-28.9 Btu/(ft•h•°F))                  |
| StoVentro T and L – Profiles | Type                 | Aluminum type: 6063-T66 or 6005A-T5                  |
| StoVentro T and L – Profiles | Tensile Strength     | > 245 N/mm <sup>2</sup> (35,534 lb/in <sup>2</sup> ) |
| StoVentro T and L – Profiles | Elasticity Limit     | > 195 N/mm <sup>2</sup> (28,282 lb/in <sup>2</sup> ) |
| StoVentro T and L – Profiles | Moment of Inertia    | > 5.90 cm <sup>4</sup> (0.142in <sup>4</sup> )       |

  

| Sustainable Design   |  |
|--|--|
| Regulatory Compliance and Standards Testing  |  |
| A complete range of components are offered to minimize or eliminate thermal bridging effects and maximize thermal insulation with resulting positive environmental impacts on energy consumption and greenhouse gas emissions. |  |
| <b>IECC, ASTM E2178</b>  | Air barrier component complies with 2018 and 2021 IECC Section C402.5 as an air barrier material             |
| <b>ASTM C612</b>   | Insulation conforms to applicable standard for board thermal insulation                                      |
| <b>NFPA 220</b>  | Insulation complies with criteria for non-combustibility   |
| <b>ASTM E84</b>  | Insulation has 0 flame spread, 0 smoke development   |
| <b>IBC, IRC, ASTM E 2570</b>   | System WRB conforms with requirements of 2021, 2018 IBC Section 1407, and 2018 and 2021 IRC Section R703.9.2 |

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| <p><b>Sto Corp.</b><br/>3800 Camp Creek Parkway<br/>Building 1400, Suite 120<br/>Atlanta, GA 30331</p> <p>Tel: 404-346-3666<br/>Toll Free: 1-800-221-2397<br/>Fax: 404 346-3119</p> <p><b>www.stocorp.com</b></p> | <p><b>SB_900Sc</b><br/>Revision: 001<br/>Date: 01/2024</p> | <p style="text-align: center;"><b>Attention</b></p> <p>Sto products are intended for use by qualified professional contractors, not consumers, as a component of a larger construction assembly as specified by a qualified design professional, general contractor or builder. They should be installed in accordance with those specifications and Sto's instructions. Sto Corp. disclaims all, and assumes no, liability for on-site inspections, for its products applied improperly, or by unqualified persons or entities, or as part of an improperly designed or constructed building, for the nonperformance of adjacent building components or assemblies, or for other construction activities beyond Sto's control. Improper use of Sto products or use as part of an improperly designed or constructed larger assembly or building may result in serious damage to this product, and to the structure of the building or its components. <b>STO CANADA LTD. DISCLAIMS ALL WARRANTIES EXPRESS OR IMPLIED EXCEPT FOR EXPLICIT LIMITED WRITTEN WARRANTIES ISSUED TO AND ACCEPTED BY BUILDING OWNERS IN ACCORDANCE WITH STO'S WARRANTY PROGRAMS WHICH ARE SUBJECT TO CHANGE FROM TIME TO TIME.</b> For the fullest, most current information on proper application, clean-up, mixing and other specifications and warranties, cautions and disclaimers, please refer to the Sto Corp. website, <a href="http://www.stocorp.com">www.stocorp.com</a></p> |
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