



Building with conscience.

# Technical Hotline

StoVentec® Render  
No. 304-SVR  
January 2024

## StoVentec® Render

StoVentec Render is a drained and back-ventilated wall system from a single source that combines superior air and weather tightness with excellent thermal performance and fire protection. It incorporates noncombustible continuous exterior insulation and a continuous air and moisture barrier with StoVentro™ Sub-construction and Sto finish systems to produce an advanced high-performance wall assembly. The StoVentec carrier board is a unique panel that combines light weight and high compressive strength and allows for seamless walls and curved surfaces that cannot be achieved with other claddings.



## StoVentec Render

StoVentec® Render is a fully code-compliant rainscreen system complete with wind, fire and rainscreen rated whole-wall assemblies. This Tech Hotline describes prescriptive Render systems that achieve certain allowable wind design pressures up to 80 psf, and, if followed exactly, can bypass the need for project-specific engineering of the Render system - outboard of the base wall. The project engineer of record and/or local code is responsible for governing the adequacy of the primary structure. Please also refer to the comprehensive [Render Application Guide](#), 3-part spec, and details available at [stocorp.com/sto\\_systems/stoventec-render/](http://stocorp.com/sto_systems/stoventec-render/) as this Tech Hotline is **not** a complete installation guide.

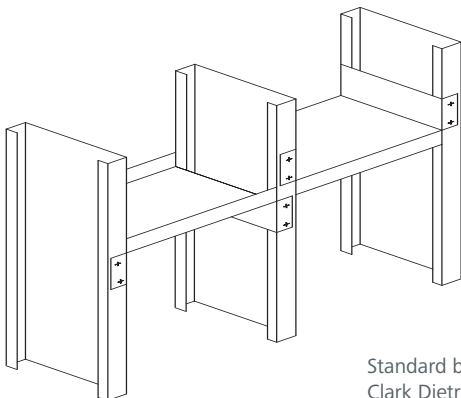
### Base Wall Assembly Requirements

Sto commissioned independent laboratory testing of the StoVentec Render system using materials sampled and governed under an [accredited quality assurance program](#). The test plan development and testing (ASTM E330 and TAS 202-203) were conducted with the guidance of a licensed professional engineer. One base wall and sub-construction design was used as the test frame template for each of the tests and is described below.

#### Metal Framing

- Minimum 18 gauge, 6 inch studs with 6 inch, 18 gauge steel tracks
- 16 inch o.c. maximum stud spacing
- minimum 1-5/8 inch flange width
- minimum yield strength 33 ksi
- horizontal blocking at the mid line of the studs with the same stud material

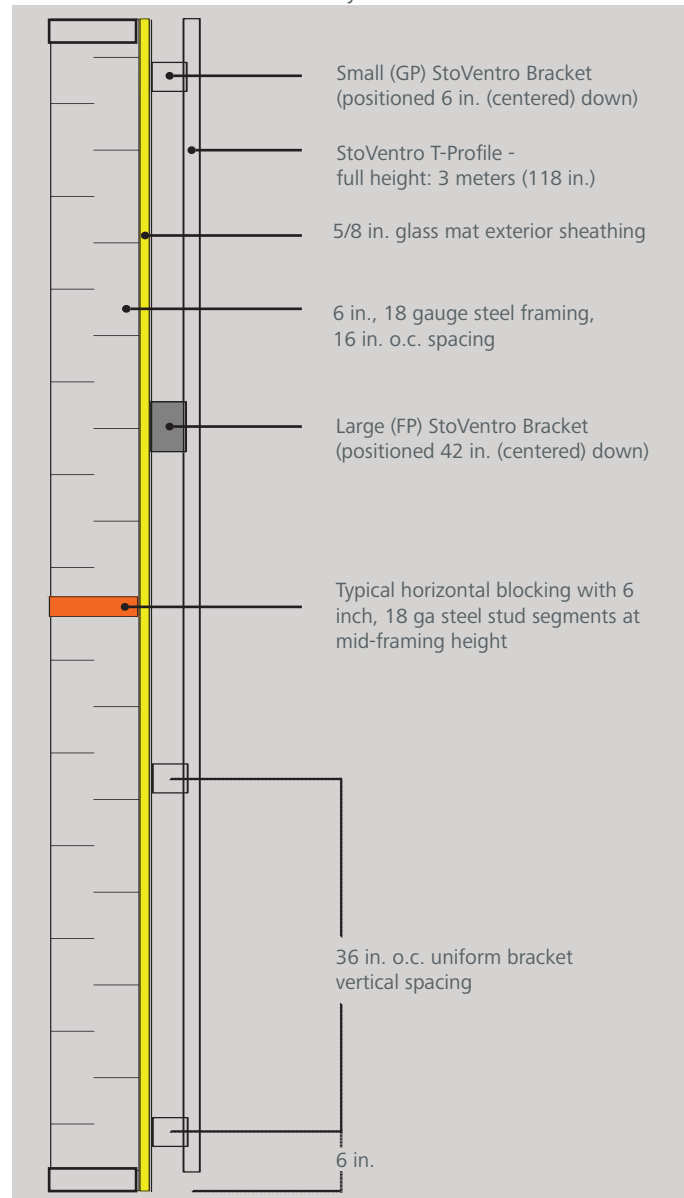
Test frames were 10 feet in height. The Wall Deflection Limit for Render is  $L/360$ . Ensure this per licensed professional structural design engineering and/or local code.



Standard blocking detail by  
Clark Dietrich Building Systems

For any project, always comply with local building code and/or registered design professional for structural adequacy requirements of exterior walls. With StoVentec Render, ensure a wall deflection limit of  $L/360$  and a lateral deflection limit for wind of  $h/500$ .

Wall Section One -  
Base wall and sub-construction layout





### Exterior Sheathing

- Standard Applications:  
Min. 5/8 in. glass mat exterior gypsum (ASTM C1177 compliant)

- Large Missile Impact Resistant Applications  
-Florida High Velocity Hurricane Zones:  
- 5/8 in. APA rated plywood required

### Air and Water-Resistive Barriers

[Sto AirSeal](#) is the typical air and water-resistive barrier utilized with StoVentec Render. Refer to the [Render specification](#) part 2.2 for additional information and alternatives.

### Note: Cast Concrete and CMU Block

Prescriptive options for concrete anchors in lieu of steel stud anchors will be included in the StoVentec Render Miami Dade NoA revision and new pre-engineering resources now in development.

## StoVentro Sub-construction

The following prescriptive configuration enables an allowable design pressure of up to 80 psf to be met without the need for project-specific engineering for StoVentec Render:

**Brackets** (Refer to Wall Section One): Small (GP) and Large (FP) - Zn-Al-Mg galvanized steel or aluminum

Bracket Depths - 40mm and up in 20mm increments

- Zn-Al-Mg galvanized steel: up to 160 mm\*
- Aluminum: up to 160 mm\*

Deeper brackets (up to 360mm) require project-specific engineering.

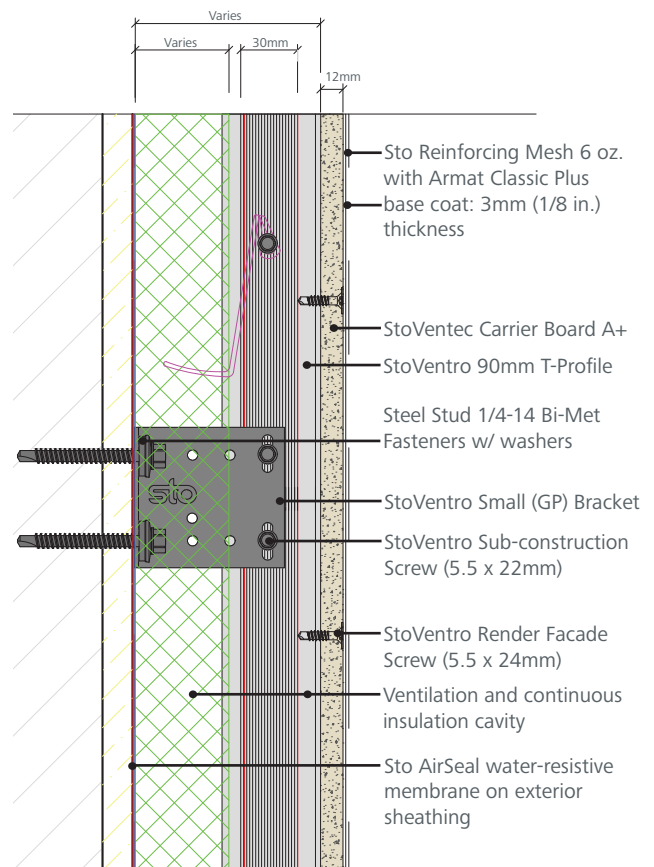
- Horizontal Spacing: 16 inches max.
- Vertical Spacing: 36 inches max.: four total brackets per full-height 3m (~10 ft.) T-Profile
- Keep highest and lowest GP brackets no more than 6 inches from the ends of the T-Profiles
- Position FP brackets as the second row of brackets from the top of the T-Profile or in the center for profiles 8 feet or less in height
- Always keep alike bracket sizes along the same line/height across the elevation (moving left to right, FPs must be neighbors with only FPs and likewise with GPs)

\*80 mm Zn-Al-Mg galvanized steel brackets were tested. Previous testing, engineering section properties and load/span tables allow for larger sizes and Al brackets. Please contact StoVentec Technical Solutions. Stocked bracket sizes: 40-120mm. Other sizes require a lead time.

**T-Profiles** - 3m (118 inches) full lengths: 16 inch maximum horizontal spacing

- Three GP and one FP bracket are required per each full-length T-Profile
- T-Profiles have a 30mm wide bracket fastening zone featuring a lightly grooved surface texture. See Wall Section Two
- T-Profiles are fastened with two StoVentro Sub-construction screws at each bracket (refer to Wall Sections three and four)

Wall Section Two -  
StoVentec Render System build up





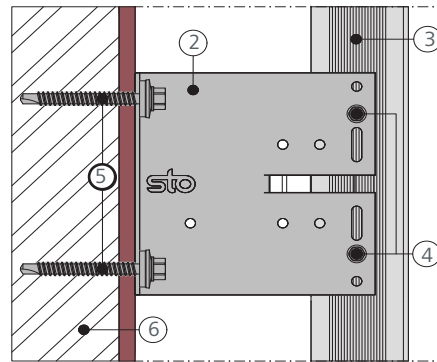
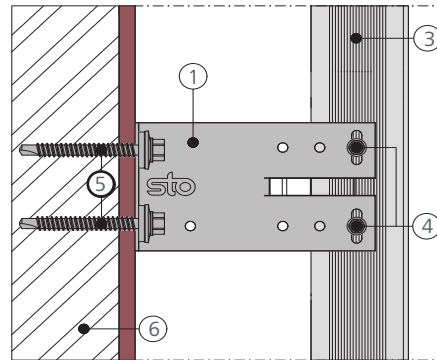
## Ventro Screws

Connect T-Profiles to brackets with two StoVentro screws (5.5mm diameter x 22mm length - stainless) per bracket. See Wall Sections Three and Four. Fasten within the grooved portion of the T-Profiles and utilizing the oblong slots of the GP brackets and circular holes of the FP brackets. Note: FP brackets also have oblong slots and can be utilized as sliding point brackets.

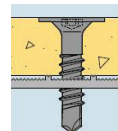
## Wall Anchors

- Metal 18 Gauge Studs - 1/4-14 Bi-Met screws with washer - hex head, self drilling - minimum one (1) inch embed length - use two (2) fasteners per bracket
  - Sto offers this fastener only in two (2) inch length - If needed, please source other lengths or equivalent screws from third parties
- For applications on concrete (CMU, cast-in place, tilt-up, etc), an anchor design per a registered design professional is necessary at this time. However, prescriptive options will be developed for the Render system Miami Dade NoA revision and additional pre-engineering resources now under development.

Wall Sections Three & Four



- Wall Sections Three & Four - Key
- 1- Small (GP) Sliding Bracket
  - 2- Large/Fixed Point (FP) Bracket
  - 3- T-Profile
  - 4- StoVentro Screw
  - 5- Bracket-to-wall anchors
  - 6- Min. 18 gauge steel framing



Ensure Render facade screws are driven flush with the Carrier Board surface.

## Carrier Board A+ Layout and Fastening

Carrier boards must be installed in a staggered/running bond pattern (offset 16"). Refer to the elevation details for the 80 and 42.5 psf allowable load fastener configurations. Do not leave gaps between boards. Keep the boards the same height across each row (i.e. all 4' tall or all 3' tall in the same row - as examples).

Using Render Facade Screws for aluminum substrates, fasten the Carrier Boards along each T-Profile. Vertical maximum spacing of Render screws must be every six (6) inches for the 80 psf configuration or twelve (12) inches for the 42.5 psf setup. In the field of the board, along each T-Profile, stagger the render screws into two vertical columns two (2) inches apart. Keep screws two (2) inches from horizontal edges of the boards and one (1) inch from vertical edges. At vertical butt joints, the screws along each T-Profile must be aligned. Ensure fastener heads are flush with the Carrier Board face. Do not overdrive/countersink.

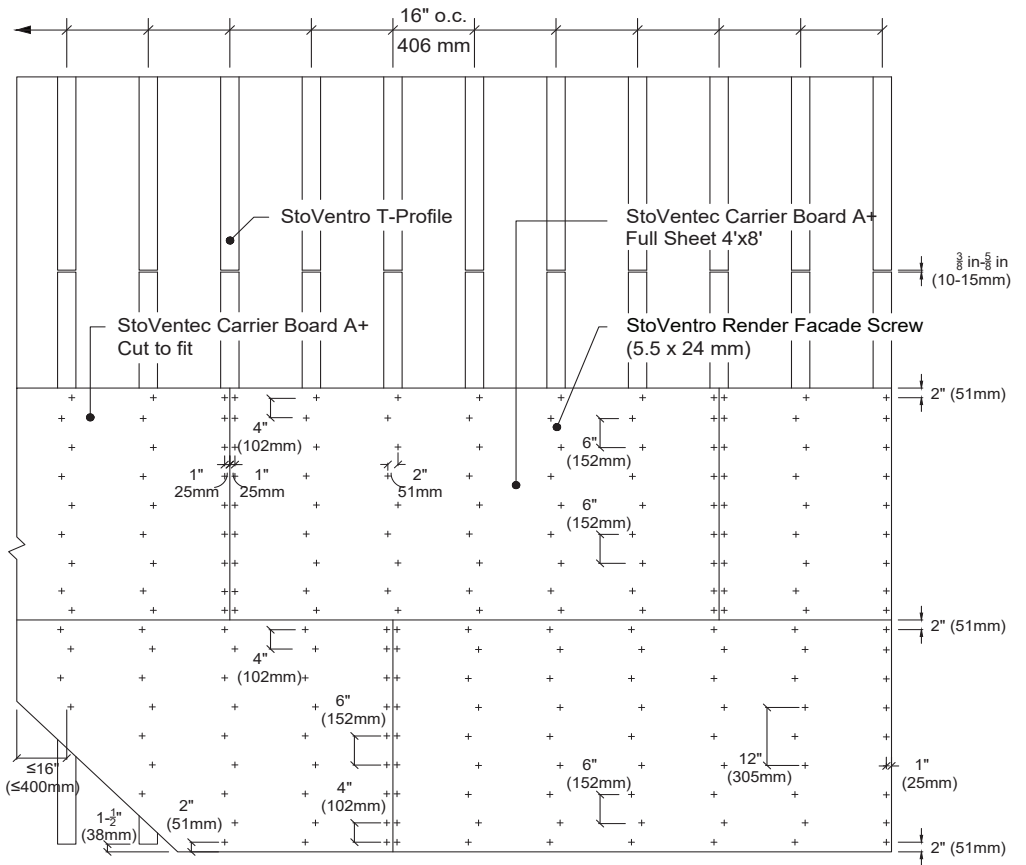
These prescriptive assemblies apply only to flat, vertical walls.

Soffits and curved walls require project-specific engineering.

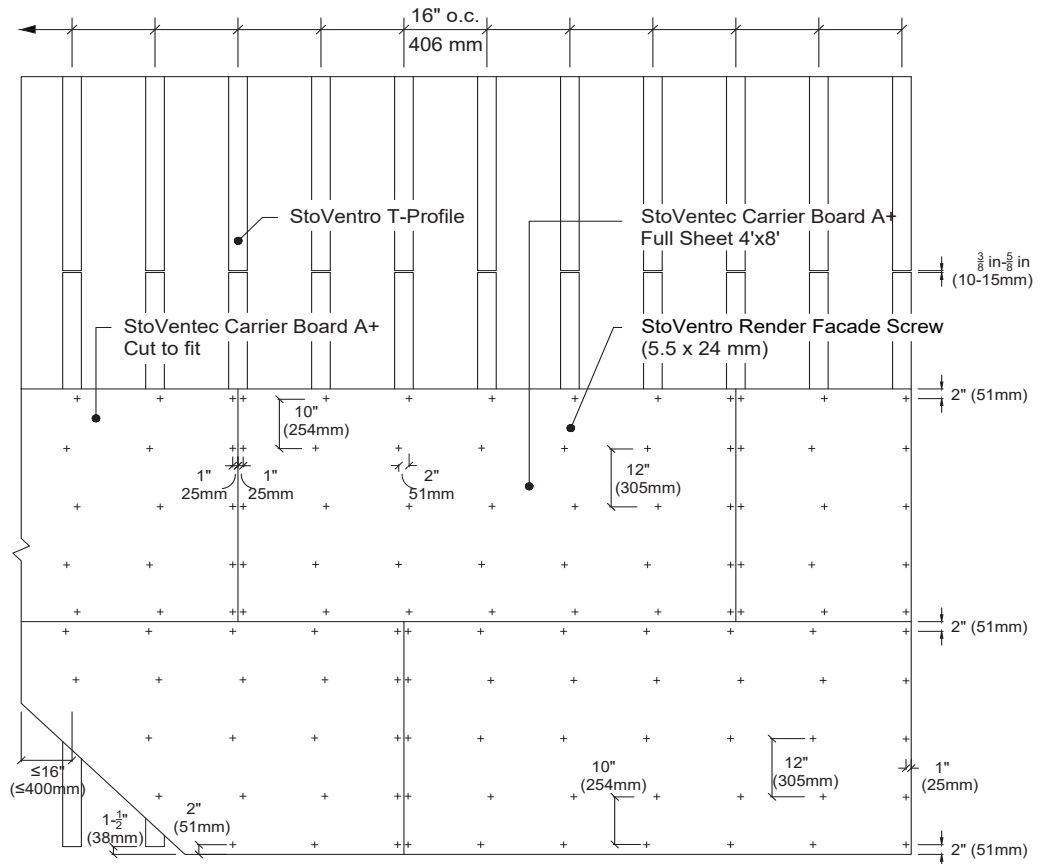
Deviations from the prescriptive Render configurations will change the allowable wind design pressure and could result in product failure. Substantial changes to the prescriptions require project-specific engineering.



Elevation One -  
Carrier Board Fastening -  
6" max screw spacing  
for allowable 80 psf wind design  
pressure  
(ultimate load capacity: 160 psf)



Elevation Two -  
Carrier Board Fastening -  
12" max screw spacing  
for allowable 42.5 psf wind  
design pressure  
(ultimate load capacity: 85 psf)





## Edge Protection Profiles, Basecoat, Mesh, and Finish

Utilize appropriate StoVentec Render edge protection profiles where needed. There are five different profiles available for detailing horizontal and vertical terminations. Refer to the [StoVentec System Accessories Product Bulletin](#) for more info on edge protectors and other available accessories such as ventilation profiles.

Apply [StoArmat Classic Plus](#) basecoat, [6 oz mesh](#) and [Stolit finish](#) per typical application guidelines.

## Fire Breaks

StoVentec Render assemblies are certified to NFPA 285 and CAN/ULC S-134 in Intertek design listings. Included within the listings are specifics concerning fire protection above openings and at floor lines. Wall Section 5 is an example detail for a metal horizontal fire break. At the desired wall height/location, minimum 28 gauge (0.38mm) thick metal angle is secured to T-Profiles with segments of 40x100mm Sto Ventilation Profile L-angles. The fire break metal penetrates the mineral wool by min. 30mm and extends into an open Carrier Board A+ horizontal joint. Alternatively, lamella (minimum 6 lb/ft<sup>3</sup> density mineral fiber insulation) may be used in conjunction with intumescent strips. Other options along with the DWG and PDF details of the Section 5 example are available at the link below.

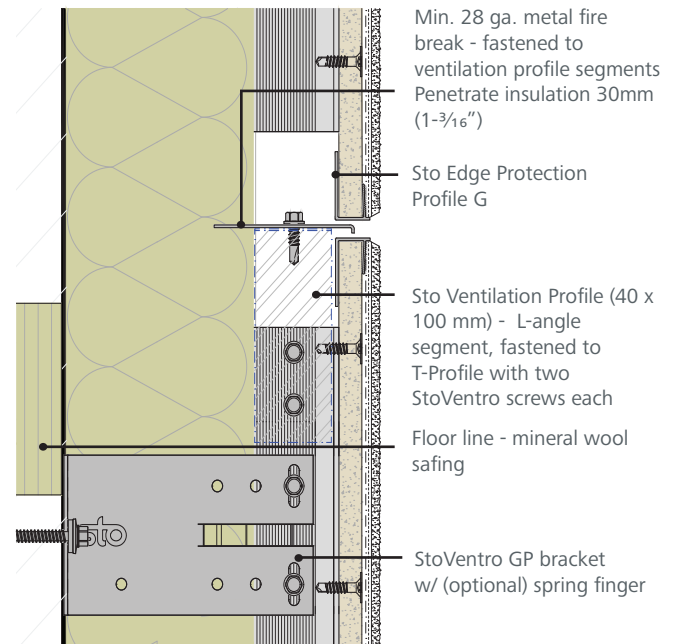
## Details and Technical Solutions

Standard [Details](#), inclusive of all fire protection options, are available in the Sto Document Center. Please contact the StoVentec Technical Solutions team for assistance.

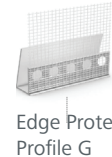
## Estimation and Ordering Tools

Please visit [storainscreen.com](http://storainscreen.com) for resources to help estimate your StoVentec Render project and order materials.

Wall Section Five  
(DTL\_90.R.555)



Ventilation Profile



Edge Protection Profile G

## Certifications & Approval Links

[Intertek CCRR 0454](#)

[Florida Product Approval 41659](#)

[Miami-Dade NoA 22-1103.02](#)

[NFPA 285 and CAN/ULC S-134 Design Listings](#)

NOTE: Third party certifications are under revision to harmonize with new testing utilized for this Tech Hotline. Laboratory test reports are available upon request.

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For more information on this Tech Hotline, please contact Sto Technical Services.

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