

# STEVENS ROOFING SYSTEMS VENTED ROOF SYSTEM (VRS) STEVENS HYPALON

## TABLE OF CONTENTS

	<b>PAGE</b>
<b>Part 1</b>	<b>General</b>
1.01	Description ..... HYP VRS 10.04.1
1.02	Quality assurance ..... HYP VRS 10.04.1
1.03	Submittals ..... HYP VRS 10.04.1
1.04	Delivery and storage ..... HYP VRS 10.04.2
1.05	Precautions ..... HYP VRS 10.04.2
1.06	Warranty ..... HYP VRS 10.04.2
<b>Part 2</b>	<b>Products</b>
2.01	General ..... HYP VRS 10.04.2
2.02	Membrane ..... HYP VRS 10.04.3
2.03	Related materials ..... HYP VRS 10.04.3
<b>Part 3</b>	<b>Execution</b>
3.01	Substrate preparation..... HYP VRS 10.04.4
3.02	Applications procedures ..... HYP VRS 10.04.5
3.03	Fastening requirements ..... HYP VRS 10.04.7
	<b>Tables and Charts</b>
	Table 1 -Physical Properties ..... HYP VRS 10.04.3
	Table 2 -ASCE Exposure Classification Chart ..... HYP VRS 10.04.8
	<b>Appendix A -Fastener Selection Guide</b>
	<b>Appendix MA-B - Fastening requirements MA-EP</b>
	<b>Appendix MA-C- FM Fastening requirements MA-EP</b>

# CSI Division 7 Guide Specifications

# VENTED ROOF SYSTEM

# STEVENS HYPALON®

## MONOLITHIC DECKS

### PART 1 - General

#### 1.01 Description

- A.** Furnish and install the Stevens Hypalon Vented Roof System (VRS) in accordance with drawings and specifications approved by Stevens Roofing Systems (Stevens).

#### Special Conditions

**NOTICE:** No installation will be accepted for Stevens VRS Warranty unless the complete Request for Warranty (RFW) has been received and approved by Stevens prior to job start.

1. This specification is intended to be applied to building roofs that have deck structures meeting guidelines herein and have no normally severe or unknown environmental exposures, e.g. coastal winds or certain chemicals, except as specifically authorized herein (*Reference Table 2, ASCE Exposure classification Chart*).
2. All applications require review by Stevens Roofing Systems Technical Review Dept. before any specification is valid.

**WARNING:** Buildings operating with interior positive pressure at the deck require review by the Stevens Technical Review Dept. before any specification is valid.

- B. Related work:** Metal work other than Stevens Edge Metal Systems is not covered by Stevens for Warranty. Metal work must be secured in a manner approved by Stevens and/or in accordance with SMACNA guidelines to prevent damage from buckling or wind exposure. All metal work that is part of the waterproofing envelope must be sealed, structurally sound, and appropriately anchored to prevent leakage.

#### 1.02 Quality assurance

- A.** Apply roofing system using a Stevens authorized roofing applicator. Applicator must have written

certification from Stevens for approval to install the VRS System.

- B.** Stevens Hypalon membrane is classified by Underwriters Laboratories as a Class A sheathing material for use in construction of Class A roofing assemblies. See UL's *Roofing Materials and Systems Directory* for specific assemblies.
- C. Inspection:** Job start training by a Stevens Technical Representative is mandatory for ALL VRS installations. Upon completion of the installation, an inspection shall be performed by a representative of Stevens to ascertain that the roofing membrane system has been installed according to Stevens approved specifications and details. Upon approval of the project, a Warranty shall be written.
- D. Changes:** Should there be deviations or changes from this specification without written approval of Stevens or the submitted construction conditions are inaccurate, the project is not authorized for installation and is not eligible for Warranty.
- E.** Stevens Hypalon membrane is manufactured in an ISO-9001:2000 facility.

#### 1.03 Submittals

- A.** Minimum job file submittal information for consideration for labor and material warranty coverage shall be an accurately completed Request for Warranty form ([www.StevensRFW.com](http://www.StevensRFW.com)) and the information discussed in paragraph B following.
- B.** Samples and data sheets of all materials not supplied or approved by Stevens shall be submitted to Stevens for written approval prior to the start of installation. VRS Authorized Applicators must submit a roof drawing indicating which details will be employed in the project as well as all accurate existing construction conditions. These drawings shall be approved by Stevens prior to the start of work. These must include: exact deck construction, outline and size of the roof, location and type of penetrations, perimeter (including any overhang or soffit condition) and

penetration flashing detail references as well as a layout of any substantial above deck piping or mechanical screens and a copy of any non-SR details to be used. Details which do not conform to Stevens Standard SR Detail Drawings must be shown as to their anticipated construction.

### 1.04 Delivery and storage

- A.** All materials provided by Stevens shall be delivered with appropriate packaging labels indicating warnings, storage conditions, lot numbers, and usage instructions.
- B.** Materials shall be stored in their original undamaged packaging and storage conditions shall be maintained in accordance with the manufacturer's requirements.

### 1.05 Precautions

- A.** Adhesives, primer, and caulks as indicated are extremely flammable and/or toxic. Follow precautions indicated on container or packaging labels.
- B.** Surfaces to be bonded shall be dry, clean and free of debris. Suitable surfaces are usually considered to be smooth; solid masonry, wood, and metal, plus insulation board fastened to the specific manufacturers recommendations.
- C.** All fasteners should be installed with a depth-sensing screw gun to prevent overdriving or underdriving. Insulation may be loose laid with a minimum 1/2-in. thick moisture resistant gypsum board overlayment. If the job specification requires insulation attachment, an approved insulation board shall be mechanically attached with Stevens fasteners and insulation plates or bonded to the structural concrete deck with hot steep asphalt or an adhesive as approved by Stevens and the insulation board manufacturer. Consult Stevens for specific recommendations.
- D.** Block off or shut down positive pressure building ventilation systems during application to prevent sheet from billowing during application.
- E.** Consideration should be given in the project design to potential safety problems that can precipitate from the smooth surface characteristic of the Stevens Hypalon sheet. The membrane surface becomes slippery when wet. If access to roof is required, walkway surfaces are highly recommended. In northern climates, sliding snow could create a hazard below and adjacent to the perimeter if a retarding system is not installed on roofs with slopes greater than 2-in. per foot.

- F.** Job specification and retrofit preparation should always include provision to ensure positive drainage in all areas. Good roofing practice does not permit uncontrolled, uncollected drainage over the edge of a roof.
- G.** All rooftop mechanical units are to have their condensation lines piped to drains, or off the roof.
- H.** Grease shall not be allowed to accumulate onto the roof. If rooftop grease units are not to receive a continual maintenance program, they are to have an approved grease containment system specified.
- I.** At the discretion of Stevens, excessive patching as a result of damage to the Stevens Hypalon membrane or caused by faulty installation may require total recover in those areas.
- J.** For buildings with large wall openings, e.g. hangar doors and truck entrances or docks, which are subject to positive pressurization from wind or from air handling systems, consult Stevens for suitability of application and possible design enhancement requirements.
- K.** After exposure to sunlight for 24 hours or longer, Stevens Hypalon membranes may have achieved a "surface" curing. Prior to hot-air welding, an application of Stevens Hypalon Solvent in conjunction with Stevens Hypalon All-weather Primer/Seam Caulk is required to achieve a proper weld (*Reference Welding of cured membrane, Section 3.02.C.3*).

### 1.06 Warranty

- A.** A Stevens representative shall inspect the installation for compliance with applicable Stevens specifications upon completion of the roofing system.
- B.** Upon acceptance through inspection, Stevens Standard Warranty will be issued for a five (5) or ten (10) year period that covers wind damage at up to 60 mph.
- C.** Reference General Warranty section of the Stevens Technical Manual CD-Rom for more information.

## PART 2 - PRODUCTS

### 2.01 General

- A.** All material shall be furnished, specified or approved in writing by Stevens. Samples of all materials used on the project that are not sup-

plied by or approved by Stevens shall be furnished to Stevens for written approval prior to the start of work.

## 2.02 Membrane

- A.** Membrane shall be .045 in. nominal thickness overall, scrim-reinforced, uncured, Hypalon-based sheet 76.5 in. wide by appropriate length conforming to the minimum physical properties in Table 1, *Physical Properties Chart*. Stevens Hypalon membrane is available in White only. Contact your Stevens representative or the Stevens Sales Department for more information. Packaging to bear the UL label.

## 2.03 Related materials

- A. Flashing:** Flashing shall be .045-in. membrane for walls and curbs. Unreinforced .055-in.-thick, uncured Hypalon-based membrane shall be supplied for field-fabricated vent stacks, pipes, drains, and corners. Stevens Hypalon-Clad Metal may be used for gravel stops or drip edges.

### B. Adhesives, Sealants, Primers and Caulks:

#### 1. Stevens Hypalon Bonding

**Adhesive:** Stevens Hypalon Bonding Adhesive is designed for bonding all Stevens Hypalon membranes to wood, metal, masonry, and approved roof insulation board surfaces. Stevens Hypalon Bonding Adhesive is **not** approved for use with other roofing membrane types.

#### 2. Stevens Hypalon All-Weather Primer/Seam Caulk:

Stevens Hypalon All-Weather Primer/Seam Caulk is a solvent-based primer developed to reactivate cured Stevens Hypalon membranes (when used in conjunction with Stevens Hypalon Solvent) in preparation for hot-air welding. Stevens Hypalon All-Weather Primer/Seam Caulk is also used to seal exposed cut edges of reinforced membrane.

- 3. Stevens Hypalon Solvent:** Stevens Hypalon Solvent has been developed for initial reactivation of partially cured Stevens Hypalon membranes in preparation for hot-air welding, and used in conjunction with Stevens Hypalon All-Weather Primer/Seam Caulk for

**TABLE-1— 45 mil (Nominal)\*  
Stevens Hypalon Physical Properties**

Physical Property	Test Method	Specification	Typical Values
Breaking Strength	ASTM D-751 (Grab Method)	225 lbf. (1.0 kN)	280 lbf. (1.2 kN)
Tear Strength	ASTM D-751 (Tongue Tear)	25 lbf. (0.1 kN)	110 lbf. (0.5 kN)
Shore A Hardness	ASTM D-2240	75	82
Dimensional Stability (% change, max.)	ASTM D-1204 (24 hrs. @ 129.2°F/54°C)	±0.4%	-0.1%
Hydrostatic Resistance	ASTM D-751 (Method A)	300 psi (2.1 MPa)	400 psi (2.8 MPa)
Ozone Resistance**	ASTM D-1149 (70 hrs @ 100°F/37.8°C)	Pass	Pass
Weather Resistance	Xenon Arc, ASTM G-26; (4000 hrs @ 176°F/80°C)	Pass	Pass
	EMMAQUA, ASTM G-90, (Concentrated Natural Sunlight)	Pass (4 million Langleys)	Pass
Puncture Resistance	FTM 101B (Method 2031)	200 lbf. (0.9 kN)	230 lbf. (1.0 kN)
Vapor Transmission	ASTM E-96, Procedure B (Condition BW @ 72°F/22.2°C)	N/A	0.049 PERMS

\*Thickness (nominal) per ASTM D-751 Test Method  
\*\*Test performed on unreinforced Stevens Hypalon membrane.

rewelding cured Stevens Hypalon membrane.

- 4. Stevens All-Purpose Sealant:** Stevens All-Purpose Sealant is designed to be used as a water cutoff mastic, sealant to top off pitch boxes, as an exterior grade caulk for metalwork.
- 5. Stevens Insulation Adhesive:** Stevens Insulation Adhesive is a VOC-free, one-part, rising, moisture-cure foam adhesive designed for bonding most insulation and recover boards to most flat roofing decks.

- C. Insulation:** Insulation or protection board must be accepted in writing by Stevens.

**D. Mechanical fasteners:** All air-seal terminations shall be made per Stevens approved details utilizing fasteners supplied by Stevens (*Reference Appendix A, Stevens Fastener Selection Guide*). When insulation is to be mechanically attached, secure as directed in *Appendix MA-B, Stevens Approved Insulation List and Fastening Rates*.

**E. Termination bar:** Stevens Termination Bar fastened 6-in. o.c. is the only authorized product.

**F. Stevens Edge Metal Systems:** Stevens Edge Metal must be installed per standard SR Detail Drawings.

**G. Roof walkways:** When roof traffic is indicated (for example to service rooftop units), a walkway over the membrane shall be made. Please contact the Stevens Technical Review Dept. for walkway product recommendations.

**H. Prefabricated Stevens Hypalon Pipe Boots:** Are provided as alternatives to .055-in. unsupported flashing for Stevens VRS Vents, vent stacks and pipes 1-in. to 6-in.

**I. Prefabricated Stevens Hypalon Corners:** Are provided as an alternative to .055-in. unsupported flashing for use at outside and inside corners.

**J. Stevens Flashing Tape:** 6-in. wide x 70-mils thick, packaged 100-ft. rolls. This product is made with unsupported membrane with a butyl tape backing (with a release paper) and is the preferred method for stripping-in non-Stevens gravel stop and drip edge metal (not for use on Stevens Clad Metal). Stevens Hypalon Flashing Tape eliminates the need for Stevens Flashing Adhesive and Stevens All-Purpose Sealant when completing edge flashings. Surfaces must be prepared with Stevens Tape Primer prior to Stevens Hypalon Flashing Tape application.

**K. Stevens VRS Air Valves:** Shall be supplied by Stevens.

must be removed. In all cases, prior to the start of work the substrate shall be smooth and free of debris, sharp edges, and other surface irregularities. Any unevenness or joints gapped greater than 1/4-in. in the membrane substrate can cause inconsistent membrane welds and must be avoided. Maximum slope allowed is one (1-in.) in twelve inches (12-in.), for slopes greater than one inch (1 in.) in twelve inches (12 in.) contact Stevens Technical Review Dept. for acceptability.

**B. Concrete deck:** Surface shall be a monolithic structural or light weight concrete poured over structural concrete (see 3.01.C) poured tightly at penetrations and perimeters which are dry, level, clean, smooth, free of structural cracking or sharp edges, and suitable for acceptance of Stevens Hypalon membrane. Concrete deck must be dry, fully cured, and prepared smooth with dust removed. The membrane shall have a fastened expansion joint detail (as per SRV Detail Drawings) where deck joints exist or when crossing a building expansion joint.

**NOTE: Any cracks or other breaches in the roof deck must be sealed to prevent air infiltration into the system. Consult Stevens for acceptable sealing techniques.**

**C. All other decks:** Metal, wood, plank, and cementitious wood fiber shall be overlaid with poured in place structural or an approved lightweight concrete in good condition. Some lightweight concrete products may not be suitable contact Stevens Technical Review Dept. for acceptable products.

**D. Reroofing over existing roof:** The specifier and/or applicator shall determine the condition of the existing roof. Significantly deteriorated decking must be repaired or replaced, as appropriate. Wet materials (containing free moisture that would evaporate if exposed to atmosphere) must be found and replaced. Existing surface shall be dry, reasonably smooth and even, blisters cut, and loose aggregate removed prior to installation of approved insulation board.

**E. Vapor retarder:** Is not required for protection of Stevens Roofing System membrane. As a guideline, the National Roofing Contractors Association states, "...vapor retarders should be considered for use when both of two conditions are anticipated: (1) the outside mean, average January temperature is below 40°F (4.4°C), and (2) the expected winter, interior relative humidity is 45 percent or greater."

## PART 3 - EXECUTION

### 3.01 Substrate Preparation

**A.** The applicator shall be responsible for the suitability of the substrate to accept Stevens Hypalon membrane. In reroofing, test cuts shall be made by the roofing contractor to determine existing condition and deck suitability. All noticeably damp, wet or deteriorated materials

**NOTE:** In all high humidity situations consult Stevens Technical Review Dept. and the insulation manufacturer for specific application requirements.

**F. Nailers:** Pressure preservative treated, wooden nailers shall be installed at gravel stops or drip edges.

- 1. Reroofing:** Use #2 or better wood treated for rot resistance. Creosote and asphaltic preservatives are not acceptable.
- 2. New roofing:** A treated wood nailer is recommended. Effective perimeter attachment must be achieved per approved standard Detail Drawings and/or as specified by architect/consultant.
- 3. All construction:** Nailer should be anchored with a suitable fastener for the application having a minimum withdrawal resistance of 100-lbs, staggered 6-in. o.c. within 8-ft. of an outside corner, and 12-in. o.c. along other perimeter areas.
- 4. All construction:** Nailer thickness shall be chosen to match the top surface of adjacent construction  $\pm 1/4$  inch. This permissible variation shall not contribute to ponding.
- 5. Nailers** around skylights, curbs, expansion joints, etc., are not required. Use of Stevens Air Seal Detail is acceptable.

**G. Existing flashings:** Must be removed and completely cleaned off wherever new Stevens Roofing System terminations and water stops are to be installed. Existing flashings may be left in place up to Stevens termination areas when in good structural condition and solidly attached to substrates.

**H. New construction or reroof with complete tearoffs of flashings:** The applicator is responsible for determining the suitability of the substrate for the Stevens Hypalon membrane. The substrate shall be smooth and free of sharp edges and other surface irregularities that prevent the flashing membrane from being 100% adhered.

### 3.02 Application procedures

**NOTE:** For insulation application and suitability, refer to [Appendix MA-B, Stevens Approved Insulation List & Fastening Rates](#).

#### A. Insulation or protection board:

- 1. Minimum thickness:** Shall be approved in writing by Stevens. Since the insulation

requirement for thermal value will vary for each project, the thickness of the insulation must be calculated for the desired results.

- 2. Compatibility:** Certain insulations such as polystyrene are not compatible with coal tar pitch. Contact manufacturer for recommendations ([Reference Appendix MA-B, Approved Insulation List & Fastening Rates](#)).
- 3. Manufacturer's instructions:** In regard to compatibility and spanning metal flutes, the manufacturer's specifications shall determine the suitability for an application, subject to acceptance by Stevens.
- 4. Approved insulation:** May be loose laid with a minimum 1/2 in. thick moisture resistant gypsum board overlayment. If the job specification requires insulation attachment, an approved insulation board shall be mechanically attached with Stevens insulation fasteners and insulation plates ([reference section 2.03.D](#)) or bonded to the structural concrete deck with hot steep asphalt or an adhesive as approved by Stevens and the insulation board manufacturer. Consult Stevens for specific recommendations. Boards will be butted as close as possible, and voids greater than 1/4-in. shall be filled.

#### B. Membrane installation

- 1. Air seal:** The Stevens Hypalon membrane shall be sealed and mechanically attached with appropriate Stevens fastener at all perimeters and through deck penetrations ([Reference specific SRV air-seal detail drawing](#)).
- 2.** At all perimeters that are to receive a gravel stop or metal edging after installing approved air-seal the Stevens Hypalon membrane must be brought over the outside edge and terminated 12-in. o.c. ([Reference specific SRV Detail Drawings](#)). All field areas of membrane must overlap prior sheet by minimum 2-in. and be hot-air welded as in [section 2.03.C](#).
- 3.** Stevens VRS Valves to be installed as per Stevens detail at pre-specified locations determined by Stevens Technical Review Dept.

**C. Lap splice:** Membrane shall be overlapped 2 in. and hot-air welded without any contaminants (adhesive, dirt, debris, etc.) in the seam ([Reference SR Detail Drawing SR-600](#)).

1. **Hot-air welding:** An automatic hot-air welder and hand-held welder which are functionally in top condition are required for Stevens applications. Small work and repairs can be done efficiently with the hand-held welders; however, hand-held welders are not a recommended means of field seaming.
2. **The entire lap edge must be probed:** with approved seam probing tool (Sears cotterpin extractor) after it has cooled completely to verify seam consistency. Probing before the seam area has cooled will damage the membrane. In addition there should be destructive tests performed daily on a 3-in. wide area of seam weld to verify sufficient peel strength. A properly welded seam will have membrane delamination from scrim prior to weld failure. Destructive test welds should be done for the first seam of the day, first seam after the robot welder has been allowed to cool down, and after any extreme changes in weather conditions. Cut edges shall be caulked by applying Stevens Hypalon All-Weather Primer/Caulk from a squeeze bottle.
3. **Hot-air welding of exposed and cured membrane:** Stevens Hypalon membrane is manufactured as an uncured Hypalon-based sheet and by design will cure with extended exposure to sunlight and moisture. Poor storage conditions can also initiate the curing process. After one day of exposure the curing process begins from the top surface down. Hot-air welding will be impossible after curing begins without first applying Stevens Hypalon Solvent to the cured surface. After more than one day of surface cure, Stevens Hypalon Solvent *and* Stevens Hypalon All-Weather Primer/Caulk must be applied to the cured surface. The following procedure must be followed.
  - a. Surfaces to be primed must be clean and free of debris. Remove all dirt by washing with a detergent cleanser (for example, 409® or Fantastik®). Rinse thoroughly with water, allow to dry, and then wipe the cleaned surface with a white rag or natural bristle brush wet with Stevens Hypalon Solvent (a soaking application is required). **DO NOT SCRUB.**
  - b. Brush or roller-apply a 100% even coverage of Stevens Primer. Allow the primer to dry until tacky. Primer should

not be allowed to become dry for more than 20 minutes. If this occurs, reapply primer.

**NOTE: Welding of cured membrane. After prolonged curing of the membrane (more than a three day cure), it is necessary to use a two-coat primer application procedure to ensure that the chemical bonding process between old and new Stevens Hypalon membrane is effective. Allow liberal first coat on cured sheet to thoroughly dry. Apply second coat to cured surface and first coat to uncured surface, then hot-air weld after five minutes.**

- c. Position the membrane that is to be welded to the cured membrane for proper seam overlap.
- d. Weld the two sheets of membrane together as if they were two uncured sheets.

**NOTE: In cold temperatures, warming of the membrane with a hand welder is necessary prior to application of primer and solvent.**

### 3. T-Seams

- a. Definition: The point where two perpendicular lap seams intersect is called a “T-seam” and if T-seams are not properly welded, a seam void may result.
- b. For .045-in. membrane, T-seams should be properly creased in at the step-off area, using a hand roller. For T-seam locations that have not been welded properly, a patch is required. Patches shall be a minimum of 4-in. in diameter and can be either .045-in. reinforced Stevens Hypalon membrane or .055-in. unsupported membrane.

**D. Perimeter fastening:** Wood nailers are required for perimeter gravel stops or drip edges and are independent of most air seal terminations. Membrane will be fastened by use of specified Stevens Air Seal detail.

**1. Wooden nailers:** See 3.01.F.

**2. Perimeter or curb:** Membrane must be mechanically attached 6-in. o.c. with a Stevens approved air seal detail to the deck at all perimeters and at all through-deck penetrations.

**E. Flashing:** Perimeters, curbs, vents, expansion joints, drains, and other details shall be flashed as shown in Stevens Detail Drawings. Under no condition shall flashings cover weep holes or any

form of through wall drainage.

1. Apply Stevens Hypalon Bonding Adhesive to both underside of flashing membrane and surface to which it is to be bonded, at a rate of approximately one gallon per 60 square feet (when applied to two surfaces).

**NOTE: Stevens Hypalon Bonding adhesive shall not be applied to membrane surfaces that are to be hot-air welded. Hot-air welding shall be used throughout the system where Stevens Membrane overlaps itself.**

2. Stevens Hypalon Bonding Adhesive shall be allowed to dry until tacky to finger touch until it does not string or stick to a dry finger. Roll the flashing into the adhesive. Care must be taken to ensure that the flashing does not bridge where there is any elevation or directional change. Completely roll the flashing membrane against the substrate applying pressure to the entire surface area.
3. All flashing shall be mechanically fastened at the top, under or through appropriate counterflashing with approved fasteners as shown in standard SR Detail Drawings.
4. Stevens Hypalon Metal flashing at perimeter shall be made and installed as per Standard SR Detail Drawings.
5. Pipe flashings shall be installed in accordance with Standard SR Details. Remove existing flashings and sleeves. Do not flash to lead.
6. Expansion joints shall be installed in accordance with Standard SR Details.
7. Roof drains shall be installed in accordance with Standard SR Details. In reroofing, old drains must be cleaned or replaced as needed for clamping detail. All bolts must be properly secured to supply 100% continuous compression of the clamping ring. Remove old leads and packings. Field seams shall not be run through drains. Drain sleeves are not covered under Warranty. However, a prefabricated sleeve insert with clamping ring and backflow seal are acceptable.

**F. Metal work:** Metal work other than Stevens Edge Metal Systems are not covered by Stevens Warranty.

1. Metal work shall be installed in a manner that prevents damage from buckling or wind.
2. All metal work must be sealed and waterproofed in an acceptable manner.

**G. Overnight seal/temporary water stop:**

Shall be made by a sealant method approved by Stevens. To protect the insulation from inclement weather at the end of a day's work, the membrane is extended beyond the insulation and set into the approved overnight seal material. Roofing contractor shall coordinate installation to ensure the system is made watertight at the end of each workday.

**H. Roof walkways:** When regular roof traffic is indicated (for example, to service rooftop units), a walkway over the membrane shall be made. Please contact Stevens Technical Review Dept. for walkway product recommendations.

**NOTE: Walkways shall not be installed over seams. When installed adjacent to a seam, the pad should be kept a minimum 2-in. from the edge of the seam on the bottom sheet of the completed lap and a minimum 6-in. from the edge of the seam when located on the top sheet of a completed lap.**

### 3.03 Vented Roof System variations for severe exposures.






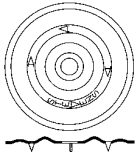
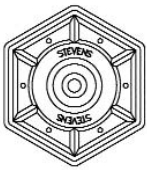

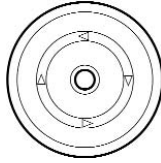
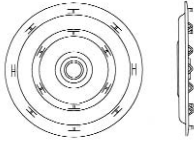
**NOTE: For seacoast application, ASCE Exposure D, and buildings with large wall openings such as hangar doors or truck docks, contact Stevens Technical Review Dept. for suitability of specification.**

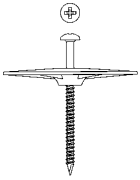
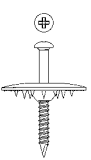
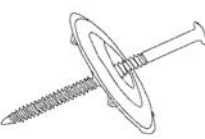
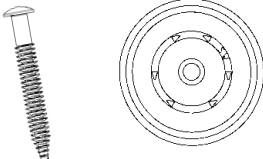



**TABLE 2 - ASCE Exposure Classification**

<b>ASCE Exposure Classifications Defined</b>	
ASCE (American Society of Civil Engineers) has defined the roughness of the terrain into four “ground roughness” categories, or “exposures”.	
<b>Exposure A</b>	This classification applies to large city centers with at least 50 percent of the buildings having a height in excess of 70 feet (21.3 m). Use of this exposure category shall be limited to those areas for which representative terrain prevails in the upwind direction for a distance of at least one-half mile (0.8 km) or 10 times the height of the building or structure, whichever is greater. Possible channeling effects or increased velocity pressures due to the building or structure being located in the wake of adjacent buildings shall be taken into account.
<b>Exposure B</b>	Urban and suburban areas, wooded areas, or other terrain with numerous closely spaced obstructions having the size of a single-family dwelling or larger. Use of this exposure category shall be limited to those areas for which representative terrain prevails in the upwind direction for a distance of at least 1,500 feet (460 m) or 10 times the height of the building or structure, whichever is greater.
<b>Exposure C</b>	Open terrain with scattered obstructions having heights generally less than 30 feet (9.1 m). This category includes flat, open country and grasslands.
<b>Exposure D</b>	Flat, unobstructed areas exposed to wind flowing over open water for a distance of at least one mile (1.61 km). This exposure shall apply only to those buildings and other structures exposed to the wind coming from over the water. Exposure D extends inland from the shoreline a distance of 1,500 feet (460 m) or 10 times the height of the building or structure, whichever is greater.

# STEVENS ROOFING SYSTEMS FASTENER SELECTION GUIDE

APPENDIX A

				
<p><b>PRODUCT DESCRIPTION:</b> Stevens #14 All-Purpose Fastener</p>	<p><b>PRODUCT DESCRIPTION:</b> Stevens #12 Insulation Fastener</p>	<p><b>PRODUCT DESCRIPTION:</b> Stevens Maxfast Fasteners</p>	<p><b>PRODUCT DESCRIPTION:</b> Stevens Purlin Fasteners</p>	<p><b>PRODUCT DESCRIPTION:</b> Stevens DeckGrip Fastener</p>
<p>All-purpose fastener for membrane and insulation attachment. Use with 2-inch (50-mm) BMSP or Hex Insulation Plate.</p>	<p>General purpose fastener for insulation attachment. Use with Hex Insulation Plate.</p>	<p>A large diameter head fastener for membrane attachment. Use with Maxfast Plate only.</p>	<p>A roofing fastener for membrane attachment to structural steel purlins in standing seam metal roof retrofit applications.</p>	<p>#15 fastener for membrane and insulation attachment. Used for Stevens EP and EV membrane</p>
<p><b>SIZE AVAILABLE:</b> 1¼, 2, 3, 4, 5-8-inch (30, 50, 75, 100, 125 - 200 - mm) in 1-inch (25-mm) increments and 10 and 12-inch (250 and 300-mm).</p>	<p><b>SIZE AVAILABLE:</b> 1<sup>5</sup>/<sub>8</sub>, 2¼, 2<sup>7</sup>/<sub>8</sub>, 3¼, 3¾, 4½, (41, 57, 73, 85, 95, 114-mm) 5 - 8-inch (125 - 200-mm) in 1-inch (25-mm) increments</p>	<p><b>SIZE AVAILABLE:</b> 2 - 8-inch(50 - 200-mm) in 1-inch (25-mm) increments</p>	<p><b>SIZE AVAILABLE:</b> Overall Length: 3¾, 4¾, 5¾, 7 and 8-inch (95, 120, 146 , 178 and 200-mm) Note: Usable length is ¾-inch (19-mm) less than overall length to allow the screw to quickly drill thru the purlin before the threads engage.</p>	<p><b>SIZE AVAILABLE:</b> 1¼, 2, -8, 10, 12, 14 and 16-inch (30, 50 - 200, 250, 300, 355 and 406-mm )</p>
<p><b>DECK TYPE:</b> Structural concrete (pre-drilling required), wood and 18 to 26 (1.3 - .55-mm) gauge steel.</p>	<p><b>DECK TYPE:</b> Wood and 18 to 26 (1.3 - .55-mm) gauge steel</p>	<p><b>DECK TYPE:</b> FM approved minimum 22 gauge steel* [*Test drill to check for installability on 18 and 20 (1.3 - 2.5-mm) gauge steel decks prior to committing to a project].</p>	<p><b>DECK TYPE:</b> 18-12 (1.3 - 2.5-mm) gauge steel</p>	<p><b>DECK TYPE:</b> Structural concrete (pre-drilling required), wood and 18 to 26 (1.3 - .55-mm) gauge steel.</p>
<p><b>PACKAGING:</b> 1¼ - 6-inch (30 - 150-mm): 1000/bucket 7, 8, 10, 12-inch (175, 200, 250, 300-mm): 500/bucket</p>	<p><b>PACKAGING</b> 1<sup>5</sup>/<sub>8</sub> - 6-inch (41 - 150-mm): 1000/bucket 7 and 8-inch (175 and 200-mm): 500/bucket</p>	<p><b>PACKAGING:</b> 2 and 3-inch (50 and 75-mm): 1000/bucket 4 - 6-inch (100 - 150-mm): 500/bucket 7 and 8-inch (175 and 200-mm): 250/bucket</p>	<p><b>PACKAGING:</b> 500/box</p>	<p><b>PACKAGING:</b> 1¼ (30-mm) 2, -5 -inch (50 -125-mm): 1000/box 6, 7, 8 , 10, 12, 14-inch (150, 175, 200 250, 300, 355-mm): 500/box and 16-inch (406-mm)250/box</p>
				
<p><b>PRODUCT DESCRIPTION:</b> Stevens 2-in. (50 mm) Barbed Metal Seam Plates (for membrane attachment)</p>	<p><b>PRODUCT DESCRIPTION:</b> Stevens Hex Insulation</p>	<p><b>PRODUCT DESCRIPTION:</b> Stevens Maxfast Plate</p>	<p><b>PRODUCT DESCRIPTION:</b> Stevens 2" Purlin Plate</p>	<p><b>PRODUCT DESCRIPTION:</b> Stevens DeckGrip Plate</p>
<p>2-inch (50-mm) Galvalume® coated steel barbed seam plate for use with Stevens #14-10 fasteners or Stevens CD-10 concrete fasteners.</p>	<p>2<sup>7</sup>/<sub>8</sub>-inch (73-mm) Hex-shaped Galvalume coated steel insulation plate for use with Stevens #12, #14 or Stevens CD-10 concrete fasteners.</p>	<p>A 3-inch (76-mm) diameter plate for use only with the Stevens Maxfast Fastener for membrane attachment.</p>	<p>A 2-inch (50-mm)diameter barbed metal seam plate designed to accommodate the head of the Stevens Purlin fastener. Use of other Stevens Plates may be necessary depending on project requirements.**</p>	<p>Galvalume steel seam palte featuring a unique patented "Eye Hook" design.</p>
<p><b>SIZE AVAILABLE:</b> 2-inch (50-mm) round barbed</p>	<p><b>SIZE AVAILABLE:</b> 2<sup>7</sup>/<sub>8</sub>-inch (73-mm) diameter</p>	<p><b>SIZE AVAILABLE:</b> 3-inch (76-mm) diameter</p>	<p><b>SIZE AVAILABLE:</b> 2-inches (50-mm)</p>	<p><b>SIZE AVAILABLE:</b> 2 5/8-inch (67-mm)</p>
<p><b>DECK TYPE:</b> NA</p>	<p><b>DECK TYPE:</b> NA</p>	<p><b>DECK TYPE:</b> NA</p>	<p><b>DECK TYPE:</b> NA</p>	<p><b>DECK TYPE:</b> NA</p>
<p><b>PACKAGING:</b> 1,000/bucket</p>	<p><b>PACKAGING</b> 1000/box</p>	<p><b>PACKAGING:</b> 500/bucket</p>	<p><b>PACKAGING:</b> 1000/box</p>	<p><b>PACKAGING:</b> 500/5-gal. bucket</p>

			
<p><b>PRODUCT DESCRIPTION:</b> Stevens PIF (Preassembled insulation plate &amp; fastener)</p> <p>Preassembled #12 (black) fastener with 3-inch (75-mm) (blue) locking plate for insulation attachment.</p> <p><b>SIZE AVAILABLE:</b> 2¼, 2⅞, 4½, 5 - 8-inch (57, 73, 114, 127 - 200-mm) in 1-inch (25-mm) increments plus 10 and 12-inch (250 and 300 -mm). Other lengths available on special order.</p> <p><b>DECK TYPE:</b> Wood and 18 to 26 (1.3 - .55 - mm) gauge steel.</p> <p><b>PACKAGING</b> 2¼ - 8-inch (57 - 200-mm): 250/box 10-inch (250-mm) and longer: 200/box</p>	<p><b>PRODUCT DESCRIPTION:</b> Stevens ASAP (Preassembled membrane seam plate &amp; fastener)</p> <p>All-purpose #14 fastener pre-assembled with 2-inch (50-mm) (gray) nylon locking plate for membrane attachment.</p> <p><b>SIZE AVAILABLE:</b> 2 - 8-inch (50 - 200-mm) in 1-inch (25 -mm) increments plus 10, 12, and 14-inch (250, 300, 355-mm) and other lengths available on special order.</p> <p><b>DECK TYPE:</b> Structural concrete (pre-drilling required), wood and 18 to 26 gauge (1.3 - .55-mm ) steel.</p> <p><b>PACKAGING:</b> 2 and 3-inch (50 and 75-mm): 500/per box; 4-inch (100-mm): 450/box; 5-inch (125-mm) 400/box; 6-inch (150-mm): 350/box; 7 and 8-inch (175 and 200-mm): 300/box; 10 - 12-inch (250 and 300-mm): 200/box;</p>	<p><b>PRODUCT DESCRIPTION:</b> Stevens Preassembled DeckGrip</p> <p>Preassembled membrane seam plate &amp; fastener</p> <p><b>SIZE AVAILABLE:</b> 2 - 8, 10, and 12-inch (50 - 200, 250 and 300-mm)</p> <p><b>DECK TYPE:</b> Structural concrete (pre-drilling required), wood and 18 to 26 gauge (1.3 - .55-mm ) steel.</p> <p><b>PACKAGING:</b> 2 and 3-inch (50 and 75-mm): 500/box 4 - 8-inch (100 - 200-mm) 250/box 10,12-inch (250, 300-mm) 125/box</p>	<p><b>PRODUCT DESCRIPTION:</b> Stevens SW Fastener and Plate Kits</p> <p>A "Superior Withdrawal" fastener for membrane attachment with 23/8-inch (60-mm) SW Barbed Metal Seam Plate.</p> <p><b>SIZE AVAILABLE:</b> 2 - 8-inch(50 - 200-mm) in 1-inch (25-mm) increments</p> <p><b>DECK TYPE:</b> FM Approved minimum 22 (.85-mm ) gauge steel* (*Test drill to check for installability on 20 (1.0-mm) gauge steel decks prior to committing to a project).</p> <p><b>PACKAGING:</b> 2 - 8-inch (50 - 200-mm) 250 fasteners and plates/bucket</p>
			
<p><b>PRODUCT DESCRIPTION:</b> Stevens CD-10 Concrete Fastener</p> <p>Non-threaded hammer-in (spike type) fastener for membrane and insulation attachment.</p> <p><b>SIZE AVAILABLE:</b> 2 - 4-inch (50 - 100-mm) in ½-inch (13-mm) increments, 4 - 10-inch (100-250-mm) in 1-inch (25-mm) increments, and 12-inch (300 -mm)</p> <p><b>DECK TYPE:</b> Structural concrete</p> <p><b>PACKAGING:</b> 2 - 8-inch (50 - 200-mm): 500/box 9-inch (228-mm) and longer: 250/box</p>	<p><b>PRODUCT DESCRIPTION:</b> Stevens Masonry Anchor</p> <p>Hammer-in-type fastener for securing termination bar.</p> <p><b>SIZE AVAILABLE:</b> 1/4-inch (6-mm) diameter x 1¼-inch (30-mm) length</p> <p><b>FOR USE IN:</b> Concrete and masonry</p> <p><b>PACKAGING:</b> 1,000/box</p>	<p><b>PRODUCT DESCRIPTION:</b> Stevens Termination Bar</p> <p>Aluminum bar for use in membrane termination. Refer to specific SR details.</p> <p><b>SIZE AVAILABLE:</b> 1-inch (25-mm) wide, 10-ft. (3-m) long 6-inch (150-mm) o/c slotted, punched</p> <p><b>DECK TYPE:</b> N/A</p> <p><b>PACKAGING:</b> 500-ft. (152-m)/tube 50 pcs,10-ft. (3-m) long</p>	



Nine Sullivan Road, Holyoke, MA 01040 USA  
 Tel: 800/621-ROOF · Int'l: 1-413/552-1000 · Fax: 413/552-1070  
 www.stevensroofing.com

## Appendix MA-B

(page 1 of 2)

### STEVENS Approved Insulation List and Fastening Rates (Chart 5) for Mechanically Attached, Ballasted and VRS System Types

#### Introduction

This is a listing of insulation and cover board products acceptable for use with the Stevens Mechanically Attached Roofing System. Each listing shows specific manufacturer and product names, indicates which products are approved for retrofit applications and which are eligible for Stevens "Total System" Warranty coverage. Further information is provided regarding the pre-securement of these products for Mechanically Attached and Fully Adhered systems. It is especially important to note the variations in required insulation pre-securement as it relates to membrane color, insulation type and thickness.

It is not within the scope of this chart to provide information relating to building code compliance, or specific Factory Mutual Global or Underwriters Laboratories, Inc. approvals. FMG, UL and/or building code requirements for insulation type, thermal barrier requirements, minimum/maximum insulation thickness and product pre-securement rates may differ from the Stevens requirements shown herein. Refer to the current edition of the FMG Approval Guide, the UL Roofing Materials and Systems Directory and/or the UL Fire Resistance Directory for complete information, or contact the Stevens Technical Review Department. In addition, consultation with local building department is recommended to ensure compliance with applicable requirements.

#### General Recommendations

- 1) Refer to the product manufacturer's literature to confirm minimum allowable thickness required to span steel deck flutes, etc.
- 2) Adjacent insulation/cover boards shall be installed as closely as possible with no gaps or offsets greater than 1/4 inch.
- 3) Since many insulation systems provide taper to 1/2 inch thickness only, a tapered edging of Stevens approved insulation is *recommended* to be installed at all such transitions on Mechanically Attached, VRS (Vented Roofing System) and Ballasted Roofing Systems. Approved tapered edging is *REQUIRED* at such transitions on all Fully Adhered Stevens Roofing Systems.
- 4) Approved insulation products shall be installed with the longest dimension of the board perpendicular to the direction of mechanically secured membrane lap seams whenever possible. Insulation end joints shall be staggered.
- 5) Insulation pre-securement fasteners/plates shall be installed at the rates shown herein and located on each board as shown in Stevens detail drawings SR-622A, 622B and 622C.
- 6) For applicable substrates, Stevens permits insulation boards to be adhered using Stevens Insulation Adhesive, hot steep asphalt (ASTM D312, type III and IV) and some commercial insulation adhesive products. The insulation manufacturer, adhesive manufacturer and Stevens Technical Services must specifically approve such applications.
- 7) For Ballasted Systems (stone, paver), insulation boards shall be loose laid as outlined in the Stevens Guide Specifications. The insulation may be loose laid for VRS (Vented Roofing System) applications provided the boards are overlaid with a minimum 1/2 inch thick layer of moisture-resistant gypsum board.
- 8) Consult the Stevens Technical Review Department at (877)788-8324 if the insulation manufacturer's current installation/securement instructions conflict with information published herein.

#### For Products Not Listed Herein

In the event that you wish to use an insulation product that does not appear on the Stevens Approved Insulation list, please contact the Stevens Technical Review Department at (877)788-8324 for approval requirements. Stevens approval for such a product must be granted prior to submission of a project Request For Warranty form and/or commencement of the project.

**Appendix MA-B**

(page 2 of 2)

**STEVENS Approved Insulation List and Fastening Rates (Chart 5)**  
for Mechanically Attached, Ballasted and VRS System Types

Insulation Type	Approved Manufacturers	Approved Product Name	Approved for Retrofit Applications	Approved for Stevens "Total System" Warranty	Insulation Pre-Securement for Mechanically Attached Systems			
					Stevens EP Colors or Black EP Membrane	Stevens White EP, White EV and White Hypalon		
Expanded Polystyrene (EPS)	Insulfoam (Premier Industries)	Type VIII (1.25 pcf)	Yes (see note 1)	Yes	Overlayment Required (see note 2)	Overlayment Required (see note 3)		
		Type VIII (1.25 pcf) with "Secure-Ply"				6 per 4'x 8' bd.		
		Type II (1.50 pcf)				Overlayment Required (see note 3)		
	Generic	Type VIII (1.25 pcf)		6 per 4'x 8' bd.				
		Type II (1.50 pcf)		N/A		Overlayment Required (see note 3)		
Extruded Polystyrene	DiversiFoam™ Products	CertiFoam® 15, 25, 40	Yes (see note 1)	Yes	Overlayment Required (see note 2)	4 per 4'x 8' bd. 3 per 2'x 8' bd. 4 per 4'x 8' bd.		
	Dow Chemical Company	Styrofoam™	Recover Only (see note 1)			4 per 4'x 8' area	4 per 4'x 8' area	
		Recovermate™ CR (fanfold)				8 per 4'x 8' bd. (see note 6)	6 per 4'x 8' bd.	
		Recovermate™				4 per 4'x 8' bd.		
	Owens-Corning Building Products	Durapink®	Yes (see note 1)			Overlayment Required (see note 2)	6 per 4'x 8' bd.	
		Foamular® 250, 404	Recover Only (see note 1)			7 per 4'x 8' area	4 per 4'x 8' area	
	Paciv Building Products	PB-6® (fanfold)	Yes (see note 1)					
Gypsum Board	Georgia-Pacific Corp.	1/4" Dens-Deck®	(see note 4)	Yes	6 per 4'x 8' bd.	6 per 4'x 8' bd.		
		1/2" Dens-Deck®	Yes					
	Generic	Moisture Resistant	N/A	N/A	Overlayment Required for Mech. Attached systems (see note 5). Approved for VRS applications.			
Perlite	Generic	Various	N/A	N/A	Overlayment Required (see note 5)			
Polyisocyanurate	STEVENS Roofing Systems	Iso 2000	Yes	Yes (see "Warranty Fee Table" for applicable fee discounts)	5 per 4'x 8' bd. 4 per 4'x 4' bd.	5 per 4'x 8' bd. 4 per 4'x 4' bd.		
		Iso 2000 Tapered				6 per 4'x 8' bd.	6 per 4'x 8' bd.	
		Iso 3000				Yes (recover only)		
		Recover Board						
	Apache Products Company	Pyrox™	Yes	Yes	5 per 4'x 8' bd. 4 per 4'x 4' bd.	5 per 4'x 8' bd. 4 per 4'x 4' bd.		
	Atlas Roofing Corporation	AC Foam II®				Yes (recover only)	6 per 4'x 8' bd.	6 per 4'x 8' bd.
		AC Foam III®						
		Recover Board®						
	Celotex Corp.	Hy-Therm AP®	Yes	N/A	5 per 4'x 8' bd. 4 per 4'x 4' bd.	5 per 4'x 8' bd. 4 per 4'x 4' bd.		
		Hy-Therm Composite®						
	Firestone Building Products	ISO 95+®						
	Hunter Panels, LLC	H-Shield						
Johns Manville Corp.	E'NRGY 2™							
	JM ISO I®							
Rmax, Inc.	Multi-Max® FA Recover Board	Yes (recover only)	Yes	6 per 4'x 8' bd.	6 per 4'x 8' bd.			
Wood Fiberboard	Celotex Building Products	High Density Fiberboard	N/A	N/A	6 per 4'x 8' bd. 4 per 4'x 4' bd.	6 per 4'x 8' bd. 4 per 4'x 4' bd.		
	Georgia-Pacific Corp.	High Density Roof Fiberboard						
	IKO	Armourdeck						
	Temple Inland	HD-1, HD-6						
	Masonite	Structodek™					Yes	Yes

Notes:

1. A separation sheet/layer may be required when using a polystyrene product directly over coal tar pitch B.U.R. or PVC-based roof systems. Consult the insulation manufacturer for specific requirements.
2. Stevens requires this product to be overlaid with an approved polyisocyanurate, wood fiberboard, or Dens-Deck™ insulation/cover board when using with black or colored Stevens Membrane.
3. Due to the lower compressive strength of Type II (1.25 pcf nominal density) expanded polystyrene (EPS), Stevens requires this product to be overlaid with an approved polyisocyanurate, wood fiberboard, or Dens-Deck™ insulation/cover board for Mechanically Attached, Fully Adhered and some VRS Roofing Systems. Type I (1.0 pcf nominal density) EPS is acceptable for use under ballasted systems only.
4. This product is not approved as a recovery layer directly over gravel-surfaced B.U.R. roof systems. It is approved for use over existing single-ply and smooth or mineral surfaced roof systems.
5. Stevens considers this product a "barrier board", used as an underlayment in insulation assemblies to meet specific fire ratings. Stevens requires barrier boards to be overlaid with an approved insulation or cover board.
6. Dow "Recovermate™" and Owens-Corning "Durapink®" products may have additional installation requirements/restrictions when used directly under black or dark colored membrane. Consult the product manufacturer and/or the Stevens Technical Department for specific requirements.

### Factory Mutual Global Windstorm Resistance Designs and Fastening Requirements for Mechanically Attached EP Roofing Systems

This chart outlines the basic fastening requirements for a number of Factory Mutual Global (FMG) approved windstorm resistance designs with the Stevens Mechanically Attached EP Roofing System. It is not intended to represent all possible Stevens' or FMG requirements. For additional information, refer to Stevens Specifications, the FMG "Approval Guide" and FMG "Property Loss Prevention Data Sheets" or contact the Stevens Technical Services Department at (877) 788-8324.

System Design	Acceptable Roof Decks <i>(FMG Approved)</i>	Acceptable Seam Fasteners <i>(see Notes 1, 2)</i>		Field Sheets		Perimeter Areas <i>(see Note 3)</i>		
		Fastener	Seam Plate <i>(see Note 5)</i>	Sheet Width	Fastening Rate	Sheet Width	Fastening Rate	
FMG Class 1-60	22 ga. Steel	<ul style="list-style-type: none"> <li>#14 All-Purpose</li> <li>ASAP Preassembled</li> </ul>	2" (51mm)	76-1/2" (1.94M)	12" (305mm)	52-1/2" (1.33M) or 38-1/4" (972mm)	12" (305mm)	
	Structural Concrete (2500 psi [17.2 MPa])	<ul style="list-style-type: none"> <li>CD-10 Anchor</li> <li>#14 All-Purpose</li> <li>ASAP Preassembled</li> </ul>						
	22 ga. Steel	<ul style="list-style-type: none"> <li>DeckGrip <i>(Note 4)</i></li> </ul>	2-5/8" (67mm)		18" (457mm)			
	Structural Concrete (2500 psi [17.2 MPa])	<ul style="list-style-type: none"> <li>CD-10 Anchor</li> <li>#14 All-Purpose</li> </ul>	DeckGrip					
FMG Class 1-75	22 ga. Steel	<ul style="list-style-type: none"> <li>DeckGrip <i>(Note 4)</i></li> </ul>	2-5/8" (67mm)	125-1/2" (3.19M)	12" (305mm)			
	Structural Concrete (2500 psi [17.2 MPa])	<ul style="list-style-type: none"> <li>CD-10 Anchor</li> <li>#14 All-Purpose</li> </ul>	DeckGrip					
FMG Class 1-90	22 ga. Steel	<ul style="list-style-type: none"> <li>#14 All-Purpose</li> <li>ASAP Preassembled</li> </ul>	2" (51mm)	76-1/2" (1.94M)	6" (152mm)		52-1/2" (1.33M) or 38-1/4" (972mm)	6" (152mm)
	Structural Concrete (2500 psi [17.2 MPa])	<ul style="list-style-type: none"> <li>CD-10 Anchor</li> <li>#14 All-Purpose</li> </ul>						
	22 ga. Steel	<ul style="list-style-type: none"> <li>DeckGrip <i>(Note 4)</i></li> </ul>	2-5/8" (67mm) DeckGrip		12" (305mm)			
		<ul style="list-style-type: none"> <li>MaxFast Screws</li> </ul>	3" (76mm) MaxFast			18" (457mm)		
	Structural Concrete (2500 psi [17.2 MPa])	<ul style="list-style-type: none"> <li>CD-10 Anchor</li> <li>#14 All-Purpose</li> </ul>	2-5/8" (67mm) DeckGrip		12" (305mm)			
	22 ga. Steel	<ul style="list-style-type: none"> <li>MaxFast Screw with special-order 2-5/8" (67mm) DeckGrip plate</li> </ul>				125-1/2" (3.19M)		
FMG Class 1-120	Structural Concrete (2500 psi [17.2 MPa])	<ul style="list-style-type: none"> <li>CD-10 Anchor</li> <li>#14 All-Purpose</li> </ul>	2-5/8" (67mm) DeckGrip	52-1/2" (1.33M)	6" (152mm)			
	22 ga. Steel	<ul style="list-style-type: none"> <li>DeckGrip <i>(Note 4)</i></li> </ul>						
FMG Class 1-135	Structural Concrete (2500 psi [17.2 MPa])	<ul style="list-style-type: none"> <li>CD-10 Anchor</li> <li>#14 All-Purpose</li> </ul>	2-5/8" (67mm) DeckGrip	76-1/2" (1.94M)	6" (152mm)			
	22 ga. Steel	<ul style="list-style-type: none"> <li>DeckGrip <i>(Note 4)</i></li> </ul>						
FMG Class 1-150	Structural Concrete (2500 psi [17.2 MPa])	<ul style="list-style-type: none"> <li>CD-10 Anchor</li> <li>#14 All-Purpose</li> </ul>	2-5/8" (67mm) DeckGrip	64-1/2" (1.64M)	6" (152mm)			
	22 ga. Steel	<ul style="list-style-type: none"> <li>DeckGrip <i>(Note 4)</i></li> </ul>						
FMG Class 1-195	Structural Concrete (2500 psi [17.2 MPa])	<ul style="list-style-type: none"> <li>CD-10 Anchor</li> <li>#14 All-Purpose</li> </ul>	2-5/8" (67mm) DeckGrip	52-1/2" (1.33M)	6" (152mm)			
	22 ga. Steel	<ul style="list-style-type: none"> <li>DeckGrip <i>(Note 4)</i></li> </ul>						

Notes:

- Fasteners should be sized to project through steel decking 3/4-in. (19mm), structural concrete 1-1/4-in. (32mm) for a pointed screw and 1-in. (25mm) for the CD-10 anchor.
- Preassembled fastener combinations that utilize a plastic plate, may not seat properly on applications directly over hard coverboards or on uninsulated (direct to deck) applications.
- The extent of perimeter/corner enhancement (number of perimeter sheets) required by FMG is based on the smaller value of: 10% of the building width or 40% of the building height. Consult FMG Property Loss Prevention Data Sheets for specific requirements or contact The Stevens Technical Services Department at (877)788-8324.
- Stevens DeckGrip fasteners and 2-5/8-in. Galvalume steel plates are available in a "loose" or preassembled format.
- Seam overlap shall be 4-1/2-in. (114mm) when using 2-in. (50mm) diameter seam plates and 5-1/2-in. (140mm) when using plates with a diameter larger than 2-in. (50mm).