

PART I – GENERAL

This GUIDE-SPEC is a brief outline of Carlisle's Sure-Seal Mechanically-Fastened Roofing System requirements and is intended for use as a submittal with a bid package. Specifiers and the Carlisle Authorized Roofing Applicator must comply with the "Design Criteria" and "Application" Sections of Carlisle's technical manual prior to design or bid. The "Products" Section included in the Carlisle technical manual and Carlisle's Technical Data Bulletins contain information on proper usage of Carlisle products as well as applicable cautions and warnings. Prior to the installation of this roofing system, this information must be thoroughly reviewed.

PART I GENERAL

1.01 DESCRIPTION

The Mechanically-Fastened Roofing System incorporates Sure-Seal (black) 60 -mil thick **reinforced Sure-Tough™ Reinforced** EPDM membrane. An acceptable insulation is mechanically fastened to the roof deck and the membrane is mechanically fastened with Fastening Plates or Metal Fastening Bars and the appropriate Carlisle Fastener spaced 6" minimum to 12" maximum on center, depending on project criteria, within the center of the membrane splice.

Adjoining sheets of EPDM membrane are spliced together a minimum of 6" using Factory Applied Splice Tape and Primer. Field sheets are either 8' or 10' wide, depending on wind load requirements, building height and type of roof deck. At the roof perimeter, a heavier fastening density is required using 4' or 5' wide sheets or RUSS™ (Reinforced Universal Securement Strip) under a full – width sheet.

As an option, this roofing system can be specified over an existing standing seam, flat seam or corrugated metal roof with the membrane secured to the structural purlins. Refer to the Sure-Seal Metal Retrofit Roofing System Specification for requirements.

1.02 QUALITY ASSURANCE

- A. This roofing system must be installed by a Carlisle Authorized Roofing Applicator in compliance with shop drawings as approved by Carlisle. There must be no deviations made without **PRIOR WRITTEN APPROVAL** of Carlisle.
- B. Upon completion of the installation, an inspection will be conducted by a Technical Representative of Carlisle to ascertain the roofing system has been installed according to Carlisle's specifications and details.
- C. This roofing system meets **Underwriters Laboratories (UL)** and **Factory Mutual (FM)** requirements. For specific code approvals achieved with this system, refer to Carlisle's EPDM Code Approval Guide, Factory Mutual Approval Guide or Underwriters Laboratories Fire Resistance and Roofing Materials and Systems Directories.

1.03 SUBMITTALS

- A. To ensure compliance with Carlisle's warranty requirements, projects should be forwarded to Steven Benjamin (steven.benjamin@syntec.carlisle.com) Technical Manager of Carlisle's Strategic Accounts Group for review prior to bid.

- B. Pay special attention to project circumstances in the following cases and make Carlisle aware of such situations as:
 1. Projects where building height exceeds 75' or is in a coastal wind zone.
 2. Air pressurized buildings, canopies and buildings with large openings where the total wall openings exceed 10% of the total wall area on which the openings are located (such as airport hangars, warehouses and large maintenance facilities).
 3. Projects where EPDM is expected to come in direct contact with petroleum-based products or other chemicals.
 4. Projects where fire – retardant treated plywood will come in contact with the EPDM membrane.
- C. The roofing contractor must include pullout tests when fasteners are used into a steel deck lighter than 22 gauge or into plywood decks less than 5/8" thick. Pullout tests are also required when Sure-Seal HP-NTB Fasteners are used with cementitious wood fiber or gypsum decks or HP Woodie Fasteners are used with OSB decks.
- D. For all projects (prior to project inspection by Carlisle) a final shop drawing must be approved by Carlisle.
- E. Submit a Notice of Award to Carlisle and receive approval prior to work commencing.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to job site in original, unopened containers labeled with the manufacturer's name, brand name and installation instructions.
- B. Job site storage temperatures in excess of 90°F may affect shelf life of curable materials (i.e., uncured flashing, adhesives, sealants, primers, SecurTape, Pourable Sealer and Pressure-Sensitive Flashings).
- C. When liquid adhesives and sealants are exposed to lower temperatures, restore to a minimum of 60°F before use. Do not store adhesive containers with opened lids due to loss of solvent, which will occur from flash off.
- D. Insulation and underlayment must be stored so it is kept dry and is protected from the elements. Store insulation on a skid and completely cover with a breathable material such as tarp or canvas. If the insulation is lightweight, it should be weighted to prevent possible wind damage.

1.05 JOB CONDITIONS

- A. In order to achieve the specified UL ratings, special underlayment materials may be required on portions of a project where **slope exceeds 1/2"** in one horizontal foot.
- B. On retrofit-recover projects, existing roofing material must be investigated and wet material must be removed. Existing sprayed-in-place urethane roofs and Phenolic insulation must be removed.

- C. The use of a vapor retarder to protect insulation and reduce moisture accumulation within an insulated roofing assembly should be investigated by the specifier. Consult the latest publications by ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.) and NRCA (National Roofing Contractors Association) for specific information.
- D. If this roofing system is installed during windy conditions or on projects that are not encapsulated, precautionary measures must be taken to utilize temporary ballast during installation.
- E. Coordination between trades is essential to avoid unnecessary rooftop traffic over sections of the roof and to prevent damage to the membrane.

1.06 WARRANTY

- A. 5 year (72 mph) by manufacture (15 year available if Landlord wants to purchase – not included in original pricing). A 15 year Golden Seal Total System Warranty which utilize all components manufactured or marketed by Manufacturer., with a wind speed coverage up to 72 mph is available for a charge.

Note: Projects must be reviewed by Carlisle prior to bid, preferably in the design phase, to determine system enhancements that may be applicable.

PART II – PRODUCTS

2.01 GENERAL

- A The components of this roofing system are to be products of Carlisle or accepted by Carlisle as being compatible. The installation, performance or integrity of products by others, when selected by the specifier and accepted by Carlisle is not the responsibility of Carlisle and is expressly disclaimed by the Carlisle Warranty.

2.02 MEMBRANE

- A. Sure-Seal (black) 60-mil thick reinforced Sure-Tough Reinforced EPDM (Ethylene, Propylene, Diene Terpolymer). For physical properties of membrane, refer to the "Products" Section of the Carlisle Technical Manual.

Membrane is available in widths of 4' and 5' to be used as perimeter membrane sheets, and 8' or 10', used as field membrane sheets.

2.03 INSULATION/UNDERLAYMENT

- A. Insulation shall be HP – H as supplied by Carlisle SynTec.
 - 1. **Carlisle HP-H Polyiso** – A foam core insulation board covered on both sides with a medium weight fiber-reinforced felt facer meeting ASTM C 1289-06, Type II, Class 1, Grade 2 (20 psi). The product is available in 4' x 8' standard size with a thickness from 1 to 4 inches. 4' x 4' tapered panels are also available.

2.04 RELATED MATERIALS

- A Carlisle Bonding Adhesive, Splice Cleaner, Lap Sealant, Primer, SecurTAPE, Cured EPDM Flashing, Pressure-Sensitive Flashing, uncured Elastoform Flashing, Carlisle

Fasteners and Fastening Plates or Bars and RUSS, (with the corresponding fasteners), metal Fastening Bars, Carlisle Walkway Pads, Pre-Molded Pipe Flashings, Pressure-Sensitive Inside/Outside Corners, Pipe Flashings and Pourable Sealer Pockets are required for use with this roofing system. Other Carlisle products, such as, insulation, insulation fasteners, edgings and Termination Bars are also required when a Total System Warranty is specified.

PART III – EXECUTION

3.01 PROTECTION

- A. Cover walls and adjacent work where materials hoisted or used.
- B. Use warning signs and barriers. Maintain in good order until completion of work.
- C. Dispose of rainwater off roof and away from face of building until roof drains or hoppers installed and connected.
- D. Prevent traffic over completed roofing except where required by work above roof level. Comply with precautions deemed necessary by Consultant. Repair damage cause by non-compliance with Consultant's requirements.
- E. At end of each day's work or when stoppage occurs due to inclement weather provide protection for completed work and materials out of storage.

3.02 EXAMINATION OF ROOF DECKS

- A. **Examine roof decks and immediately inform Architect in writing of any defects.**
- B. Prior to commencement of work ensure:
 - 1. Decks are firm, straight, smooth, dry, free of snow, ice or frost, and swept clean of dust and debris.
 - 2. Curbs have been built.
 - 3. Roof drains have been installed at proper elevations relative to finished roof surface.
 - 4. Plywood and lumber nailer plates have been installed to walls and parapets as indicated.

3.03 VAPOUR BARRIER

- A. Apply vapour barrier to manufacturer's recommendations
- B. Seal vapour barrier on roof into the air/vapour barrier of the wall construction to provide continuity of the building air/vapour envelope.
- C. Do not apply to larger area than can be covered the same day.

3.04 INSULATION

- A. Install insulation in two layers with staggered joints for total thickness as specified.
- B. Butt boards together without gaps greater than ¼ inch.
- C. Fill gaps greater than ¼ inch with spray - applied foam.
- D. Fasten insulation to roof deck with Carlisle InsulFast insulation fasteners and metal or plastic insulation plates.
- E. Fastening density for insulation is 5 fasteners and plates for each 4 by 8 foot board of insulation for 15 year warranties.

3.05 MEMBRANE PLACEMENT AND ATTACHMENT

- A. Unroll and position membrane without stretching. Allow the membrane to relax for approximately 1/2 hour prior to attachment. Provide and secure both perimeter and field membrane sheets in accordance with the manufacturer's most current specifications and details.
- B. Secure the 8 or 10 foot wide membrane (along the pre-printed blue line approximately 3 inches from the edge of the membrane sheet) with the required Sure-Seal Fastener and 2 inch Polymer Seam Plate (required for steel decks) spaced 9 inches on center for 10 foot width sheet or 12 inches on center for the 8 foot width sheet. The minimum distance between the edge of the fastening plate and the edge of the membrane must be 2 inches. A minimum of two perimeter half – sheets are required.
- C. Consult Carlisle requirements for the number perimeter sheets are required for this installation.
- D. Install adjoining membrane sheets in the same manner in accordance with the manufacturer's specifications.

3.06 MEMBRANE SPLICING WITH SecurTAPE

- A. Tape splices where fastening plates are located (along the length of the membrane) must utilize 6 inch wide Factory Applied SecurTAPE. Tape splices at end roll sections (along the width of the membrane without fastening plates) shall utilize 3 inch wide SecurTAPE.
- B. Overlap adjacent sheets and mark a line approximately ¼ inch to ½ inch from the top sheet edge.
- C. Apply Sure-Seal HP-250 Primer to the splice area.
- D. Immediately roll the splice using positive pressure when using a 2 inch wide steel roller. Roll across the splice edge, not parallel to it. When using Factory Applied Splice Tape, Carlisle's Stand-Up Seam Roller can be used to roll parallel to the splice edge.
- E. At all **field splice intersections**, apply Lap Sealant along the edge of the membrane splice to cover the exposed SecurTAPE 2 inch in each direction from the splice intersection. Install Carlisle's Pressure-Sensitive "T" Joint Covers or a 6 inch wide section (with rounded corners) of Sure-Seal Pressure-Sensitive Flashing over the field splice intersection.

3.07 EPDM FLASHING

- A. Wall and curb flashing shall be cured EPDM membrane. Adhere .060 non – reinforced EPDM membrane onto walls and terminate according to Carlisle specifications and details.
- B. Follow Carlisle's typical flashing procedures for wall, curb, and penetration flashing including metal edging/coping and roof drain applications.

3.08 WALKWAYS

- A. Install walkways at the roof hatches and access doors at all serviceable units.
- B. All walkways are to be colour contrasted from the roof membrane.
- C. Adhere walkways to the EPDM membrane in accordance with the manufacturer's specifications.

3.09 DAILY SEAL

- A. On phased roofing, when the completion of flashings and terminations is not achieved by the end of the work day, a daily seal must be performed to temporarily close the membrane to prevent water infiltration.
- B. Complete an acceptable membrane seal in accordance with the manufacturer's requirements.

3.10 CLEAN UP

- A. Perform daily clean-up to collect all wrappings, empty containers, paper, and other debris from the project site. Upon completion, all debris must be disposed of in a legally acceptable manner.
- B. Prior to the manufacturer's inspection for warranty, the applicator must perform a pre-inspection to review all work and to verify all flashing has been completed as well as the application of all caulking.

END OF SECTION

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