CARLISLE'S SURE-SEAL EPDM CLASSIC

G U I D E - S P E C

Sure-Seal® Design "B" Loose Laid Ballasted Roofing System

June 2006

This GUIDE-SPEC is a brief outline of Carlisle's Sure-Seal Design "B" Loose Laid Ballasted 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

This Sure-Seal Design "B" Loose Laid Ballasted Roofing System incorporates minimum 45-mil thick Sure-Seal (black) non-reinforced or minimum 60-mil reinforced EPDM membrane. Both the EPDM membrane and an acceptable membrane underlayment or insulation are loose laid over the roof deck. Adjoining sheets of EPDM membrane are spliced together a minimum of 3" using or SecurTAPE™/ Primer. As an option for maximum 10 year warranty projects, Splicing Cement, In-Seam Sealant™ and Lap Sealant may be used in lieu of SecurTAPE/Primer.

The membrane and insulation are then held in place with a minimum of 10 pounds of ballast per 1 square foot. Additional ballast or larger sized stone may be required based on building height and a possible extended wind speed coverage on the warranty.

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 the **PRIOR WRITTEN APPROVAL** of Carlisle.

B. Upon completion of the installation, an inspection will be conducted by a Field Service Representative of Carlisle to ascertain that the roofing system has been installed according to Carlisle's specifications and details.

C. This roofing system is approved by **Underwriters Laboratories** (UL) as a Class A roofing system. For specific code approvals achieved with this system, refer to Carlisle's EPDM Code 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, the following projects should be forwarded to Carlisle for review prior to installation and preferably prior to bid.

1. Projects where a wind speed warranty greater than 55 mph peak gusts is specified.
2. Projects where the building height exceeds 75'.
3. 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).
4. Cold storage buildings and freezer facilities.
5. Projects where EPDM is expected to come in direct contact with petroleum-based products or other chemicals.

B. For all projects (prior to project inspection by Carlisle) a final shop drawing must be approved by Carlisle.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver materials to the job site in the 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., adhesives, sealants, primers, splice tape, pourable sealer, pressure-sensitive flashings and uncured flashing).

C. When liquid adhesives and sealants are exposed to lower temperatures, restore to a minimum of 60°F before use.

D. Do not store adhesive containers with opened lids due to loss of solvent which will occur from flash off.

E. 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.

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1.05 JOB CONDITIONS

A. This roofing system **must not be specified** on portions of a project where the **slope exceeds 2"** in one horizontal foot.

B. On retrofit - recover projects, existing roofing material must be investigated by the specifier and all wet material must be removed.

C. Existing Phenolic insulation must be removed.

D. 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.

E. Coordination between various trades is essential to avoid unnecessary rooftop traffic over sections of the roof and to prevent subsequent damage to the EPDM membrane roofing system.

1.06 WARRANTY

All Warranties are available for commercial projects only.

A. A **5 or 10 year Membrane System Warranty** with a wind speed coverage up to 55 mph is available for a charge.

B. A 10 or 15-year Golden Seal™ Total System Warranty is available for a charge on projects which utilize all components manufactured or marketed by Carlisle. These projects will receive a standard maximum peak gust wind speed coverage up to 55 miles per hour.

Roofing systems may be eligible for a Total System Warranty with a peak gust wind speed coverage greater than 55 mph. For criteria required to obtain such coverage, refer to the 10 or 15-year Extended Wind Speed Criteria Attachment in the Sure-Seal/Sure-White EPDM Roofing System “Design Criteria” Specification.

C. A **20-year Total System Warranty** is available for a charge for projects utilizing minimum 60-mil thick Sure-Seal non-reinforced or 75-mil thick reinforced (Sure-Tough) membrane and incorporating additional design enhancements as outlined in the 20-year Warranty Design Enhancements Attachment in the Sure-Seal/Sure-White™ EPDM Roofing System Design Criteria Specification.

PART 2 PRODUCTS

2.01 GENERAL

The components of this roofing system are to be products of Carlisle or accepted by Carlisle as 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

Sure-Seal (black) 45-mil or 60-mil thick non-reinforced EPDM (Ethylene, Propylene, Diene Terpolymer), maximum 50 foot wide, is typically specified for use with this roofing system. Sure-Seal 60-mil or 75-mil thick reinforced EPDM membrane, maximum 10 foot wide, can also be specified.

For physical properties of the membrane, refer to the "Products" Section of the Carlisle technical manual.

2.03 RELATED MATERIALS

A. 90-8-30A Bonding Adhesive, Primer, SecurTAPE™, Splicing Cement, In-Seam Sealant, Lap Sealant, Cured EPDM Flashing, Pressure-Sensitive Elastoform Flashing®, uncured Elastoform Flashing, Seam Fastening Plates, and RUSS (with the corresponding fasteners) are used with this roofing system. Other Carlisle products, such as, insulation, edgings and Termination Bars are required when a Total System Warranty is specified.

B. Other Products: Carlisle Walkway Pads/Rolls, Pre-Molded Pipe Flashings, Pressure-Sensitive Inside/Outside Corners, Pipe Flashings and Pourable Sealer Pockets.

C. Products Supplied by Others: Rounded water-worn gravel or concrete pavers to be used as ballast for securement of the EPDM membrane and insulation.

PART 3 EXECUTION

3.01 GENERAL

A. When feasible, begin the application at the highest point of the highest roof level and work to the lowest point to prevent moisture infiltration and to minimize construction traffic on completed sections. This will include completion of all flashings and terminations.

B. Follow criteria outlined in the "Design Criteria" Section of Carlisle's technical manual to prepare the roof deck or the substrate prior to the application of the new roofing system.

3.02 ROOF DECK CRITERIA

A. A proper substrate shall be provided by the building owner. The structure shall be sufficient to withstand normal construction loads and live loads.

B. Defects in the roof deck must be reported and documented to the specifier, general contractor and building owner for assessment. The Carlisle Authorized Roofing Applicator shall not proceed unless the defects are corrected.

3.03 SUBSTRATE PREPARATION

A. On retrofit-recover projects, cut and remove wet insulation, as identified by the specifier, and fill all voids with new insulation so that it is relatively flush.

B. For all projects, the substrate must be even without noticeable high spots or depressions, and must be free of accumulated water, ice or snow.

C. Clear the substrate of debris and foreign material. Fresh bitumen based roof cement must be removed or concealed.

3.04 INSTALLATION

Refer to the applicable Material Safety Data Sheets and Technical Data Bulletins for cautions and warnings.

A. **Insulation Placement**

1. Sure-Seal Insulation shall be loose laid over the roof deck with no gaps greater than 1/4". Gaps greater than 1/4" must be filled with the same material.

2. If the insulation is specified to be mechanically fastened, fasteners and fastening plates must be overlaid with a protective layer of cured reinforced EPDM membrane in accordance with the "Design Criteria" Section in Carlisle's technical manual.

   Sure-Seal FAST™ Adhesive, OlyBond 500® or VersiGrip® Insulation Adhesive can be used to secure insulation in lieu of mechanical fasteners.

B. **Membrane Installation**

1. The EPDM membrane shall be loose laid over the acceptable substrate and allow to relax approximately 30 minutes prior to splicing.

2. Overlap adjacent EPDM membrane sheets a minimum of 3".

3. Membrane Splicing With SecurTAPE™

a. Apply Sure-Seal Primer to the splice area.

b. Position SecurTAPE onto bottom membrane sheet with the edge of the release film along a line marked 1/2" out from the top sheet. Press tape onto sheet using hand pressure, overlapping tape roll ends a minimum of 1".

c. Remove the release film and press top sheet onto tape using hand pressure. Roll the splice with a 2" wide steel roller.

d. Install Pressure-Sensitive T-Joint Covers or a 6" wide section of Pressure-Sensitive Elastoform Flashing® over all field splice intersections.

e. The use of Lap Sealant with tape splices is optional except at tape overlaps and cut edges of reinforced membrane.

4. **Membrane Splicing With Splicing Cement** (for maximum 10 year Membrane System Warranty projects only)

a. The splice area on both membrane sheets must be scrubbed with Weathered Membrane Cleaner or HP-250 Primer.

Note: If Pre-KLEENED™ EPDM membrane is used (maximum 10' wide sheets), cleaning the splice area is not required unless the membrane has been contaminated with field dirt, adhesive or other residue. To remove accumulated dirt, footprints, etc., scrub the membrane sheets with Weathered Membrane Cleaner or HP-250 Primer.

b. Apply Splicing Cement at the rate of approximately 120 linear feet per gallon. Just prior to closing the splice, apply a 1/8" to 1/4" diameter bead of In-Seam Sealant 1/2" from the inside edge of the bottom membrane sheet and a minimum of 2" from the lead edge.

c. Roll the top membrane sheet onto the mating surface and roll the splice with a 2" steel roller.

d. After adjoining membrane sheets have been spliced together, wait a minimum of 2 hours and clean exposed edge of splice (when applicable) with Weathered Membrane Cleaner or Primer. Apply a 5/16" diameter bead of Lap Sealant. Feather Lap Sealant to completely cover the splice edge.

C. **Additional Membrane Securement**

The EPDM membrane must be secured at the perimeter of each roof level, roof section, curb, skylight, interior wall, penthouse, etc., at any angle change which exceeds 2" in one horizontal foot, and at other penetrations in accordance with Carlisle's details. The additional membrane securement may be provided by Pressure-Sensitive RUSS™ (Reinforced Universal Securement Strip) or Seam Fastening Plates.

D. **Membrane Flashing**

1. When feasible, flash all penetrations and walls with Cured EPDM Membrane or Flashing.

2. Pressure-Sensitive Elastoform Flashing and Uncured Elastoform Flashing (for 10 year warranty projects only) must be limited to overlay vertical seams (as required at angle changes) or to flash inside and outside corners, scuppers, pourable sealer pockets and other unusually shaped penetrations or walls where the use of cured membrane flashing is not practical.

3. Carlisle's prefabricated accessories (Pre-Molded Pipe Flashings and Pressure-Sensitive Products; such as, Flashings, Pourable Sealer Pockets, Pipe Boots and Inside/Outside Corners) should be used, when feasible, in lieu of Pressure-Sensitive Elastoform Flashing.

4. When using Pressure-Sensitive Cured Cover Strip or Overlayment Strip to overlay Fastening Plates or metal edging flanges, etc., Sure-Seal Primer must be used to clean the membrane and metal surfaces.

5. Terminate the flashing in accordance with an appropriate Carlisle U-9 Termination.

E. **Ballasting**

1. The structural capability of the roof deck must be evaluated by the specifier to ensure that the design loads for the structure are not exceeded.

2. Rounded water-worn gravel, individual concrete pavers or approved lightweight interlocking pavers must be installed for adequate securement and to provide complete coverage of the loose laid EPDM membrane.

3. Ballast must be adequate to provide sufficient wind uplift protection and must be continuously distributed to maintain a minimum of 10 pounds per square foot when rounded water-worn gravel or interlocking concrete pavers are specified. Individual concrete pavers must weigh a minimum of 18 pounds per square foot. Refer to the "Design Criteria" Section of Carlisle's technical manual for acceptable ballast gradations and other requirements.

F. **Other Related Work**

1. **Walkways** are required at all traffic concentration points (i.e., roof hatches, access doors, rooftop ladders, etc.), regardless of traffic frequency. Walkways are also required if regular maintenance (once a month or more) is necessary to service rooftop equipment. Walkways are considered a maintenance item and are excluded from the Carlisle Warranty.

   a. Smooth concrete pavers, when specified, must be loose laid over a slip sheet of HP Protective Mat or EPDM membrane and cannot weigh more than 80 pounds per paver for ease of removal.

   b. Carlisle Walkway Rolls, when used, must be adhered to the membrane with SecurTape/Primer. Pressure-Sensitive Walkway Pads (with Secur-TAPE Factory-Applied to the walkway underside) are also available.

      Walkway Pads/Rolls cannot be installed within 10' of the roof perimeter or on projects, which exceed 50' in height.

   c. Sure-Seal Interlocking Pavers™ can be placed directly over the membrane, locked together with paver keys provided. Installation instruction sheets are available from Carlisle.

2. **Copings, counterflashing and other metal work**, not supplied by Carlisle, shall be fastened to prevent the metal from pulling free or buckling and sealed to prevent moisture from entering the roofing system or building.

Attach copies of the applicable Carlisle Details which pertain to the individual project to complete a bid package submittal.

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