This guide specification has been prepared according to the principles established in the Manual of Practice published by the Construction Specification Institute. This guide specification was issued December 2007 and may be superseded without notice at any time. Therefore, please confirm that this specification is still current and has not been superseded by checking at www.cetco.com or by calling CETCO at 1-847-392-5800.

STRONGSEAL DB ROOFING UNDERLAYMENT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. All of the Contract Documents, including General and Supplementary General Conditions and Division 1 General Requirements, apply to the work of this Section.

1.02 DESCRIPTION OF WORK

(Spec Writer) Determine scope of work and edit or add as required for project requirements.

A. The Work of this Section includes furnishing and installation of a premium, nail-down rubber roofing underlayment membrane derived from recycled tire crumb rubber and other proprietary products and features no asphalt. The underlayment membrane shall be installed over the field of the roof deck prior to common exterior roofing materials like architectural shingles, slate, tile, shake and metal roofs. The membrane underlayment shall also be capable of being used at such areas as parapet walls behind EIFS or stucco architectural finish systems. The roofing underlayment is not a self-adhering roofing underlayment and is therefore not recommended for use on critical roof areas to protect the structural roof deck from water penetration or from ice dams.

1.03 RELATED WORK SPECIFIED ELSEWHERE

A. Carefully examine all of the Contract Documents for requirements which affect the work of this section.

B. Other specifications sections which directly relate to the work of this section include, but are not limited to, the following:

(Spec Writer) Select from the items below and edit or add as required for project requirements

1. Section 06100 - Rough Carpentry
2. Section 07270 - Air Barrier Membranes
3 Section 07310 - Asphalt Shingle Roofing
4. Section 07315 - Slate Roofing
5. Section 07317 - Wood Shingles and Shakes
6. Section 07320 - Roof Tiles
7. Section 07600 - Flashing and Sheet Metal
8. Section 07610 - Sheet Metal Roofing
9. Section 07720 - Roof Accessories
10. Section 07810 - Plastic Skylights
11. Section 07900 - Joint Fillers and Sealers

1.04 QUALITY ASSURANCE

A. Installers: Firms responsible for installing the above referenced work shall have at least two years experience in application of nail-down membrane underlayment waterproofing materials and be acceptable to the underlayment manufacturer.

B. Source: For roofing underlayment materials required for the work of this section, provide primary materials which are the products of CETCO of Arlington Heights, IL., or a firm that produces underlayments that meet the requirements of one-year exposure, no asphalt, 300°F temperature rating, and include a minimum of 40% recycled materials including tire crumb rubber.

C. Conference: Convene a pre-installation conference to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work. Representatives of the General Contractor, Architect, and Roofing Contractor shall be present three days prior to start of work to inspect substrate and review installation requirements. Advise other trades to ensure that no other work adversely affect installation.

1.05 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. D412 Standard Test Methods for Vulcanized Rubber and Elastomeric Tension
2. D1204 Standard Test Method for Linear Dimensional Changes of Nonrigid Thermoplastic Sheeting or Film at Elevated Temperature
3. D1970 Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection
4. D2523 Standard Practice for Testing Load-Strain Properties of Roofing Membranes
5. D5147 standard Test Methods for Sampling and Testing Modified Bituminous Sheet Material.
6. E96 Standard Test Methods for Water Vapor Transmission of Materials

1.06 SUBMITTALS

A. Product Data: Submit manufacturer's product data, installation instructions, use limitations and recommendations for each material and system specified in this section.

B. Samples: Provide a minimum of two 3.25" x 7" samples of roofing underlayment material to be used for the system described herein.

1.07 DELIVERY, STORAGE AND HANDLING

A. Deliver materials and products to the job site in original, unopened package, clearly labeled with the manufacturer's identification, printed instructions and Material Safety Data Sheets (MSDS). All material shall be stored and handled in accordance with manufacturer's instructions and recommendations. Protect from damage.

1. Roofing underlayment rolls should be stored vertically on end, in a covered storage facility where the temperature is between 40°F and 100°F (4°C and 38°C). Use a protective covering over pallets while being temporarily stored on site. Underlayment must be kept at a minimum 40°F (4°C) for 24 hours prior to use. Do not double stack pallets.

1.08 PROJECT CONDITIONS

A. Conditions: Perform work only when ambient conditions are within the limits established by manufacturers of the materials and products used.

B. Substrates: Proceed with work related to roofing underlayment only when substrate construction and penetrating work is complete.

1.09 WARRANTY

A. Provide written warranty within 90 days signed by manufacturer agreeing to replace materials which exhibit defects as defined in CETCO Limited Warranty under normal conditions. Warranty period shall be as follows:

1. Roofing Underlayment Membrane: 20 year limited warranty from date of Substantial Completion as defined in CETCO Limited Warranty.

PART 2 - PRODUCTS

2.01 ROOFING UNDERLAYMENT MEMBRANE

A. Provide nail down roofing underlayment consisting of a durable 30 mil thick rubber membrane waterproofing material that contains no asphalt. The membrane shall be produced with up to 89% recycled tire crumb and other proprietary product making it a "GREEN" product. The underlayment shall be capable of resisting temperatures as high as 300°F (149°C) without flowing. Underlayment membrane shall be StrongSeal DB as manufactured by **CETCO Building Materials Group**. Other manufacturers and underlayment products meeting or exceeding this specification may be accepted by the Architect. Underlayment membrane properties shall be as follows:

PROPERTY	TEST METHOD	VALUE
Membrane Thickness	ASTM D5147	30 mils (0.75 mm)
Tensile Strength	ASTM D2523	>25 lbs./in
Elongation	ASTM D2523	>20%
Permeance	ASTM E96	0.01 Perm
Nail Sealability	ASTM D1970	Pass
Low Temperature Flexibility	ASTM D1970	Unaffected @ -20°F

B. Other Features and Attributes shall be as follows:

1. One Year Exposure Period: StrongSeal DB membrane can remain exposed for up to one (1) year to direct sunlight and inclement weather.

2. Low Temperature Application: StrongSeal DB remains flexible in cold weather and will roll out without cracking or shattering.

3. Seals Around Fasteners: StrongSeal DB shall seal around most fastener penetrations like a gasket, resisting leakage and moisture intrusion by water backed up behind ice dams, or from wind-driven rain.

4. Slip Resistant Surface: StrongSeal DB features a slip resistant surface for safe and easy installation.

5. Easier and Less Costly Re-roofing: StrongSeal DB will not adhere to the underside of the exposed roof covering, making re-roofing easier and less costly. The non-aggregate underlayment will not score the underside of metal roofing caused by constant expansion and contraction, resulting in no underside rust or corrosion.

6. Non-Absorbent: Membrane does not absorb moisture, avoiding buckling and wrinkling associated with conventional organic felt underlayments. Avoids drying downtime.

2.02 ACCESSORIES

A. StrongSeal SA is a high performance self-adhering roofing underlayment membrane derived from recycled tire crumb rubber and other proprietary products and features no asphalt. The underlayment membrane shall be used as either 1) at critical roof areas such as eaves, valleys, ridges, rakes, dormers, and skylights to protect the structural roof deck from water penetration created by ice dams and wind-driven rain; or 2) installed over the field of the roof deck prior to common exterior roofing materials like architectural shingles, slate, tile, shake, synthetics and metal roofs.

PART 3 - EXECUTION

3.01 INSPECTION

A. The Installer shall examine substrates and conditions under which this work is to be installed and notify appropriate parties, in writing, of conditions detrimental to the proper completion of the work. Do not proceed with work until unsatisfactory conditions are corrected. Beginning work means Installer accepts substrates and conditions.

3.02 ROOF DECK PREPARATION

A. StrongSeal DB roofing underlayment membrane shall be installed directly on a clean, dry, continuous sloped structural roof deck. Suitable deck materials shall include plywood, OSB (oriented strand board), wood plank (no chamfered edges), metal, and concrete. Remove dust, dirt, loose nails, and other debris. Roof deck shall have a minimum pitch of 2" on 12" (50 mm on 300 mm) without voids or unsupported areas. Remove all protrusions and sharp edges. Repair damaged deck areas before installing the membrane. Re-roofing projects require the removal of old roofing materials.

3.03 STRONGSEAL DB UNDERLAYMENT MEMBRANE INSTALLATION

A. Do not stretch membrane when installing. Roll out membrane flat and allow the membrane to relax prior to fastening to the roof deck. Do not tack at one end of roll and stretch during installation like conventional felt products. Do not apply heat to the product for application in cold weather.

B. Apply StrongSeal DB underlayment membrane directly to properly prepared roof deck. Always begin installation at lowest point on the deck and work up the roof so membrane overlap seams shed moisture. Roll out membrane flat and allow the membrane to relax prior to fastening to the roof deck.

C. Fasten membrane securely to deck with button cap (plastic washer head) fasteners in accordance with local building code for conventional 30-lb. felt underlayment products or equivalent. Overlap membrane end seams minimum 6” (150 mm). Do not fold over the roof edge unless the edge is protected by drip edge or other flashing type material.

D. For successive membrane courses, align and overlap the edge of the previously installed underlayment sheet a minimum 3" (75mm); lap minimum 6" (150mm) in high wind areas. Stagger end laps a minimum 12" (300mm) and overlap minimum 6” (150 mm).

E. For valley, hip, and ridge applications, center the membrane over the valley, hip, or ridge and secure with button cap fasteners. On extreme slopes, it is recommended to narrow spacing of button cap fasteners and cover nails by over lapping with next sheet.

F. Full roof deck coverage may be applied with proper attic ventilation and roof drainage to minimize interior condensation. Consistent with good roofing practice, install the membrane such that all laps shed water by always working from the low point to the high point of the roof.

G. StrongSeal DB membrane can be left exposed during construction as a temporary dry-in barrier for up to one (1) year.

H. When used with previously installed self-adhering roof underlayment, align and overlap the down slope membrane edge of StrongSeal DB a minimum 3" (75 mm) over the adhered membrane so that the lap sheds moisture. Lap minimum 6" (150mm) in high wind areas. Lap membrane ends a minimum 6" (150mm). At the ridge of the roof, self-adhering underlayment may be installed over StrongSeal DB to provide proper lap that will shed water. Refer to local building codes regarding self-adhering roofing underlayment application and installation requirements.

I. When fastening shingles over the membrane, use smooth shank, electroplated galvanized nails to provide the best seal. Place metal drip edges of wood starter shingles over the membrane.

3.04 PRECAUTIONS AND LIMITATIONS

A. Membrane is slippery when wet or covered with frost. Fall protection equipment is required when working on a roof deck.

B. Do not leave permanently exposed to sunlight. Maximum recommended exposure is one (1) year.

C. Membrane should not be folded over the roof edge unless protected by a gutter, drip edge, or other flashing material.

D. Do not install on chamfered edges of wood plank.

E. Do not install fasteners through the membrane over unsupported areas of the structural deck or leave holes from removed fasteners.

F. Repair holes, fishmouths, tears or other damage to membrane with a patch of membrane extending past the damaged area 6" (150 mm) on all sides.

G. If the use of a sealant or flashing is necessary, use an EPDM Black Lap Sealant or Black Lap Caulk with a butyl base. Avoid using solvents on membrane.

3.05 REPAIR AND CLEAN UP

A. Remove and replace work which is damaged or deteriorated in any respect.

B. Keep roof surfaces free from debris. At the end of each day dispose of unused damaged underlayment membrane, cartons, rubbish and other debris resulting from the work of this Section in dumpsters provided by the General Contractor.

END OF SECTION