

GUIDE SPECIFICATIONS

**SECTION 07500
ELASTOMERIC MODIFIED BUILT-UP ROOFING
SEBS MODIFIED MOPPING BITUMEN, TWO-PLY POLYESTER FELT AND
SBS CAP SHEET OVER INSULATED DECK
KLB 100-2P-I-CS**

PART 1 - GENERAL

1.01 RELATED SECTIONS

- Section 02050 Demolition
- Section 06100 Carpentry
- Section 04500 Masonry Repair
- Section 07220 Roof Insulation
- Section 07600 Sheet Metal
- Section 07710 Roofing Accessories
- Section 07900 Caulking & Sealants

1.02 SUBMITTALS

- A. Submit Manufacturer's written approval or license of Applicator for installation of the herein specified roofing system.
- B. Submit Manufacturer's sample Fifteen Year Labor and Material System Warranty and Manufacturer's Intent to Warranty Certification for this project.
- C. Submit most recent copy of Manufacturer's literature applicable to products and specifications to be used, as specified herein, including applicable flashing details.
- D. Submit three sheet samples, approximately 8 inches x 10 inches, of both ply sheet and cap sheet.
- E. Submit evidence of Manufacturers history of production for the system specified herein. A minimum of ten (10) years experience is required. Documentation shall include job lists with project size, Architect of record, installing Applicator, telephone numbers and contact names.
- F. Submit, in duplicate, certification from the primary Manufacturer, properly attested by a corporate officer, stating that all materials being supplied comply with the specifications and requirements of the contract documents, including conformance with all federal, state and local building codes including United States Code Section

41:10, Subsections a-d, popularly known as the "Buy American Act".

1.03 QUALITY ASSURANCE

- A. All the materials specified herein are cited as a minimum standard of quality and shall not preclude consideration of equal or superior materials. All suggested "equivalent materials" or other substitutions are to be submitted to the Architect for consideration a minimum of ten (10) days prior to bid date. Submittal shall include all evidence of compliance or superiority of material from the proposed substitute Manufacturer. If accepted by the Architect, an addendum will be issued to all bidders for their consideration of the proposed substitute Manufacturer. Determination of equivalency of all substitutions shall rest exclusively with the Architect and such decision shall be final.
- B. All installation details and techniques shall conform with manufacturer's requirements and the current N.R.C.A. Manual of Low Slope Roofing recommendations and details. In the event of conflict, the more stringent recommendation shall be followed.

1.04 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to jobsite on pallets. Package labels shall indicate material name, production date and product code.
- B. Store materials in dry, protected areas in an upright position. Control temperature of storage areas in accordance with Manufacturer's instructions. Protect moisture sensitive materials with breathable tarps on top and side surfaces.

1.05 PROJECT CONDITIONS

- A. Follow local, state and federal regulations, safety standards and codes. When a conflict exists use the stricter requirements.
- B. Do not apply roofing materials unless proper bitumen application temperatures (EVT or approximately 350°F - 475°F) can be maintained or when water in any form (i.e. rain, dew, ice, frost, snow, etc...) is present on the deck. Do not heat bitumen above 500°F. Under no circumstances should material be heated above flash point.
- C. Ensure roof deck is structurally sound to support live and dead load requirements of the roofing system and sufficiently rigid to support construction traffic.

1.06 CODE COMPLIANCE

It shall be the Applicator's responsibility to ensure that all work done under this project shall be in compliance with applicable City code requirements including obtaining any required permits prior to the start of work.

1.07 WARRANTY

Prior to project close out, the Applicator shall submit the Manufacturer's preapproved Fifteen Year Labor and Material Warranty.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

Barrett Company or Architect approved equal in accordance with specification requirements.

2.02 ROOFING MATERIALS

A. Roofing Membrane System:

Materials required per 100 sq. ft. of roof area:

Polyester Felt	2 plies
SEBS Elastomeric Bitumen	90 lbs. (approx.)
SBS Cap Sheet	1 ply

1. Polyester Ply Sheet: Shall comply with the following minimum specifications:

Material - Heat set, resin stabilized, spunbond polyester.

<u>TEST</u>	<u>METHOD</u>	<u>TYPICAL TEST RESULTS</u>
Basis Weight	ASTM D-3776	170 gm/m, 5.0 oz/yd ²
Thickness	ASTM D-1777	19.7 mils
Tensile Strength, lbf	ASTM D-4830	137 MD, 94 XD
Elongation, %	ASTM D-4830	26 MD, 28 XD

Tear Strength, lbf	ASTM D-4830	31 MD, 27 XD
Fatigue Life	ASTM D-8B	>10,000 cycles
Frazier Air Perm Ft ³ /Ft ²	ASTM D-1117	245 min

2. SEBS Elastomeric Bitumen: Shall comply with the following minimum specifications:

<u>TEST</u>	<u>METHOD</u>	<u>TYPICAL TEST RESULTS</u>
Softening Point	ASTM D-36	200°F
Flash Point	ASTM D-92	min 580°F
Viscosity Brookfield, Model HAT #1 probe @ 50 RPM	ASTM D-3236	75-250 cp
Penetration (dmm)	ASTM D-5	30-70 dmm
Elongation @ 77°F min	ASTM D-2523	1,000%
Elastic Recovery, 77°F	ASTM D-412	80%
Heat Resistance Penetration 77°F, 100 g, 5 sec	ASTM D-5	25-70 dmm
Ductility 77°F	ASTM D-113	40 cm
Flexibility Low Temp	ASTM D-3111	-10°F
Recommended Application Temperature		350°F-475°F
Max. Kettle Temperature		500°F

3. SBS Cap Sheet and Flashing: Shall comply with ASTM D-6164 Grade G Type I minimum specifications.

B. Related Materials

1. Primer: Shall comply with ASTM D-41 requirements.

2. Pipe and Stack Flashings: Lead, 4 lb/S.F, copper, 16 oz., or stainless steel .015, installed in accordance with published flashing details.
3. Cant Strips: Impregnated fiber cant strip in compliance with ASTM C-208 with 4 inch face and approved by membrane Manufacturer.
4. Flashing Mastic: Trowel grade SBS modified cold process cement.
5. Nails and Mechanical Fasteners: As specified by the fastener Manufacturer for specific application and approved by membrane Manufacturer.
6. Roof Insulation - See Section 07220.
7. Sheet Metal - See Section 07600.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Remove all trash, loose debris and ponding water from roof.
- B. Inspect roof deck surface, all perimeters and all roof projections. Notify Architect of any unsatisfactory conditions prior to proceeding.
- C. Install vapor barrier and new insulation in accordance with Section 07220.

3.02 APPLICATION

A. Roofing Membrane:

1. After new insulation has been properly installed, set two plies of polyester felt in solid mopping of SEBS elastomeric bitumen, by starting at the low point and applying a 20 inch width sheet followed by a full 40 inch sheet then overlapping each ply by 3 inches, shingle fashion. Start second ply with a full 40 inch sheet and overlap each ply by 3 inches shingle fashion. At least two plies of polyester felt shall cover the roof surface at every point.

Bitumen interply mopping shall be approximately 25-30 pounds per 100 square feet, per mopping and provide a continuous film of bitumen without voids or holidays. Broom in all polyester felt plies from the side of the sheet. Do not walk on installed plies until bitumen is thermoset cool. In no place shall felt touch felt nor shall there be any evidence of "fishmouths" or wrinkles. Bitumen shall "bleed-out" at all side laps. Lack of bleed-out is

unacceptable.

2. Complete installation of all plies each day including cap sheet. Provide water cut offs at end of days work. Cut offs shall be removed prior to resuming work.
3. Install SBS cap sheet in full mopping of specified bitumen. Ensure that moppings exceed the roll width. Install loose granules over bitumen bleed at side laps while bitumen is warm and with tack. Finished membrane appearance shall not show evidence of visible bitumen.

B. Rooftop Equipment & Pitch Pockets:

1. All air conditioners and mechanical roof top units shall be lifted to allow new roofing and flashing under unit as required. Minimum height for all curbs is 8 inches. Raise as shown or required. New equipment dunnage, flashing and metal coping shall be installed as shown or required. Install new neoprene wearpads between the unit supports and dunnage.
2. Install new pitch pockets as per Manufacturer's requirements with integral rain hoods. Provide compatible metal umbrella flashings over pitch pockets.

C. Roofing Drains:

All drains shall be flashed with new sheet lead flashing weighing four pounds per square foot, set in mastic over the new roofing and flashed with two plies of polyester felt and SEBS elastomeric bitumen.

D. Base Flashings:

1. Bridge all junctions of vertical and horizontal surfaces with cant strips providing a 45° transition. All roofing plies shall extend minimum of 2 inches above the top of cant.
2. The flashing system shall be a component of, or attached to, the roof deck or roof deck system. Apply flashing only after the built-up roofing has been installed. Start flashing system by mopping in two plies of polyester felt overlapped 4 inches and 6 inches onto the horizontal roof surface.

Complete with one ply of SBS cap sheet, overlapped 8 inches onto the horizontal roof surface, with side laps off set 18 inches from polyester felt backer sheets. Apply mastic seal and granules at all base flashing seams.

Base flashings shall be mechanically fastened 8 inches, on center, with

fasteners and termination bar approved for the substrate receiver. Minimum height for base flashing is 8 inches, and counter flashing must be provided.

3.03 FIELD QUALITY CONTROL

A. Roof Cuts:

Test cuts may be directed by a representative of the Architect or Manufacturer at their discretion. Test cuts should be 3 inches by 48 inches and should run perpendicular to the direction of the felts to provide a representative sample of the roofing work. Test cuts generally will not exceed 1 per 100 squares of roof area.

1. Follow field audit criteria outlined by ASTM D-3617-83.
2. Send roof cuts to: Structural Research, Inc., Madison, Wisconsin, or Manufacturer approved, equally accredited laboratory, for laboratory examinations. Applicator shall allow \$500.00 for testing fees per 100 squares of roof area. Laboratory results shall be submitted by the laboratory directly to the Architect.
3. Repair sampled areas by filling in the cut-out area then use a "feathered in" patch consisting of same number of plies as in the roof specification following the Manufacturer's and NRCA procedures.

B. Correct deficiencies in roof, if any, (determined by roof cut analysis) as prescribed by material Manufacturers and approved by the Architect.

3.04 CLEANING

- A. Remove equipment, trash, debris and any excess material from the jobsite.
- B. Repair any damage and remove any stains caused by work of this Section.

3.05 PROTECTION

General Contractor and the Owner shall protect finished roof areas from damage during subsequent construction not related to roofing.

MAINTENANCE:

Semi-annual inspections and a systematic maintenance program are recommended to the Owner and Architect. Consult your Manufacturer's Representative or Approved Applicator for further information.

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