

GUIDE SPECIFICATIONS

SECTION 07 50 00 COLD PROCESS BUILT-UP ROOFING CP80 • 4-40 • CS OVER CONCRETE DECK

PART 1 - GENERAL

1.01 RELATED SECTIONS

Section 02 41 19.13	Demolition
Section 04 50 00	Masonry Repair
Section 07 60 00	Sheet Metal
Section 07 21 00	Thermal Insulation
Section 07 71 00	Roofing Accessories
Section 07 92 13	Caulking & Sealants

Edit to project
conditions.

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 Twenty 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 manufacturer's history of production for the system specified herein. A minimum of fifteen (15) years experience is required. Documentation shall include job lists with project size, Architect of record, installing Applicator, telephone numbers and contact names.
- F. Submit 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 to manufacturer's requirements and the industry recommendations as published in the current N.R.C.A. Manual of Low Slope Roofing. 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 materials from moisture with breathable tarps on sides and top surfaces.

1.05 PROJECT CONDITIONS

- A. Follow local, state and federal regulations and safety standards. When a conflict exists use the stricter requirements.
- B. Ensure roof deck is structurally sound to support the live and dead load requirements of the moisture protection system and sufficiently rigid to support construction traffic.
- C. All air intakes on or near the roof shall be covered with impermeable sheet, all doors and windows closed and the contractor shall provide other engineering controls as may otherwise be necessary to prevent objectionable odors from entering the building. All engineering controls shall be instituted as agreed to with the Owner.

1.06 WARRANTY

Prior to project close out, the Applicator shall submit the Manufacturer's pre-approved Twenty Year Labor and Material Warranty.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

The Barrett Company is set forth as the referenced standard of quality. Other manufacturers of equal or better quality may request approval in conformance with specification requirements. Architect approved equals remain subject to all specification requirements.

2.02 ROOFING MATERIALS

A. Roofing Membrane System:

Project Specification Standard of Quality: **Ram Tough CP 80 • 4P • CS** or approved equal as noted above shall comply with the following minimum specifications.

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

Ram 40	4 plies
CP 80 Cold Adhesive	12 gallons
Ram Cap 306 Granular	1 ply

1. Ply Sheet: **Ram 40** or approved equal, tri-laminate polyester and fiberglass reinforced ply sheet shall comply with the following performance values:

<u>Test</u>	<u>Method</u>	<u>Typical Results</u>
Weight	ASTM-D-228	32 lb/100 ft.
Breaking Strength, lbf/in	ASTM-D-146	120 MD, 130 XD
Pliability, 1/2 inch radius bend	ASTM-D-146	No Failures
Mass of De-saturated Polyester/Glass, Mat, min.	ASTM-D-228	2.2 lb/100 ft.
Tear Strength	ASTM-D-1117	15 lbf MD
Surfacing/Stabilizer max	ASTM-D-4601	65%
Asphalt	ASTM-D-228	10 lb/100 ft.
Puncture Resistance	ASTM-E-154	120 lbf

2. Adhesive: **CP 80**, or approved equal shall comply with the following minimum specifications:

<u>Test</u>	<u>Method</u>	<u>Typical Results</u>
Asbestos Content	ASTM-D-267	None
Density @ 77°F	ASTM-D-1475	8.6 lb/gal
Flash Point	ASTM-D-3278	>100°F
Solids by Weight	ASTM-D-2823	73%
Asphalt Content min	ASTM-D-146	51%
Uniformity & Consistency	ASTM-D-4479	Pass
Viscosity @ 77°, #6 Spindle @ 2.5 rpm Brookfield HBT	ASTM-D-2196	840,000-864,000 cps
Base Asphalt: Softening Point	ASTM-D-36	170-180°
Penetration	ASTM-D-5	10-15 mm

3. Cap and Flashing Sheet: **Ram 306** granular meets or exceeds the requirements of ASTM D-6164 Type I Grade G Test Results per ASTM D-5147.

B. Related Materials

1. Primer: **Ram Primer Surface Conditioner** shall comply with ASTM D-41 requirements.
2. Pipe and Stack Flashings: **Ram Pipe Boot** supplied by primary materials Manufacturer and installed in accordance with published flashing details.
3. Cant Strips: Impregnated fiber cant strip shall comply with ASTM C-208 with 4 inch face and approved by membrane Manufacturer.
4. Flashing Mastic: **Ram Mastic** trowel grade SBS modified cold process cement shall comply with ASTM D-4586, Type I.
5. Nails and Mechanical Fasteners: As specified by the fastener Manufacturer for specific application and approved by membrane Manufacturer.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Remove all trash and loose debris from roof deck.
- B. Inspect roof deck surface, all perimeters and all roof projections for conformance with ASTM D-5295 deck preparation. Check for moisture content with ASTM D-4263 plastic film tests. Notify Architect of any unsatisfactory conditions prior to proceeding.

3.02 APPLICATION

A. Roofing Membrane:

1. Apply **Ram Primer** to concrete deck surface at the rate of one gallon per one hundred square feet. Allow to dry tack-free.
2. **CP 80** Adhesive can be brush, roller, squeegee or spray applied. Set four plies of **Ram 40** in **CP 80**, by starting at the low points and applying a 9 inch width sheet followed by an 18 inch wide sheet followed by a 27 inch sheet and completed with a full sheet. Overlap each succeeding ply by 9 inches, shingle fashion. At least four plies of **Ram 40** shall cover the existing deck surface at every point.

CP 80 shall be applied in a continuous film of adhesive without voids or holidays. Broom in all **Ram 40** plies from the side of the sheet. Do not walk on installed plies until adhesive has "set", approximately 24 hours. 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.

3. Complete installation of all plies each day.
4. After all base flashings have been installed with two plies of **Ram 40** and sealed at top edge, install **Ram 306** cap sheet in **CP 80** over the field of the roof, ensuring that **CP 80** application slightly exceeds the roll width. Broom the cap sheet in place after installation. Finished membrane appearance shall not show evidence any dry laps.

B. Rooftop Equipment & Pipe Penetrations:

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 wear pads between the unit supports and dunnage.

2. Flash grouped pipe and conduits per manufacturer's requirements using metal boxes and/or curbs with integral rain hoods. Flash individual pipes with copper, stainless steel or lead flashings.

C. Roofing Drains:

All drains shall be flashed with new sheet lead flashing 36 inches square weighing four pounds per square foot, set in **Ram Mastic** over the new roofing and flashed with two plies of **Ram 40** and **Ram Mastic**.

D. Base Flashings:

1. Bridge all junctions of vertical and horizontal surfaces with 45° cant strips. 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 system. Apply polyester flashing sheets only after the ply sheets of the built-up roofing have been installed and prior to the cap sheet. Start flashing system by setting in two plies of **Ram 40** in **Ram Mastic** overlapped 4 inches and 6 inches onto the horizontal roof surface. After **Ram 40** base flashing sheets are installed, install Ram 306 cap sheet in the field of roof and terminate at the top of the cant.

Complete base flashing with one ply of **Ram 306** 36 inches wide set in **Ram Mastic**, overlapped 6 inches onto the horizontal roof surface cap sheet. Offset the side laps from **Ram 40** 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 Manufacturer or the Architect 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 Barrett Representative or Barrett Approved Applicator for further information.

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