

GUIDE SPECIFICATIONS

SECTION 07 51 13.13 RAM COLDTAR PLUS® RESTORATION OF GRAVEL SURFACED BITUMINOUS ROOFS RCT • ___ • ___ • ___

- Surfacing Options in Guide Spec**
- RCT – Ram Cold Tar
 - NR – Non-reinforced
 - R – Reinforced
 - I – Insulated
 - C – Non-nailable uninsulated deck
 - BS – nailable deck (base sheet)
 - RR – Reroof recover
 - GS - Gravel surface
 - SC – Ultra Coating
 - MG - Shingle Granules

PART I - GENERAL REQUIREMENTS

1.01 RELATED SECTIONS

Section 06 06 10.23	Carpentry
Section 07 62 00	Sheet Metal
Section 07 70 00	Roofing Accessories
Section 07 92 13	Caulking & Sealants

Edit to Project Conditions

1.02 SUBMITTALS

- Submit Manufacturer's sample warranty.
- Submit most recent copy of Manufacturer's literature applicable to products and specifications to be used.
- Submit written statement from primary manufacturer stating that materials being supplied strictly comply with written specifications.
- Submit details of all flashing conditions throughout the project.
- Submit plan view shop drawing indicating all areas of wet insulation replacement and membrane repair.

1.03 QUALITY ASSURANCE

- All the materials specified herein are cited as a minimum standard of quality, and shall not preclude consideration of equal materials. All suggested "equivalent materials" are to be submitted to the Architect a minimum of ten days prior to bid date. Submittal shall include all evidence of compliance of material from the proposed substitute Manufacturer. If substitution is approved, an addendum will be issued to all bidders

for their consideration of the proposed substitute Manufacturer.

- B. Contractor shall have ten (10) years documented experience in the application of similar roof systems. Lack of proficiency as shown by past work under other contracts which, in the judgment of the Owner, might hinder or prevent the prompt completion of additional work, if so awarded, or involvement in any legal actions which relate to past or present performances shall be sufficient cause to reject any bid offer.
- C. The areas to be roofed shall have an approved infrared moisture survey (or approved equal) completed prior to installation. Survey shall indicate all wet insulation areas and be quantified for bidding purposes.

1.04 DELIVERY, STORAGE AND HANDLING

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

1.05 PROJECT CONDITIONS

- A. Follow local, state and federal regulations, safety standards and codes. When a conflict exists use the stricter requirements. Do not smoke or expose materials to open flames during application.
- B. Do not apply roofing materials below 45 degrees Fahrenheit or when rain is expected within 12 hours. Do not proceed if moisture in any form (i.e. rain, dew, ice, frost, snow, etc.) is present on the deck.
- C. Ensure roof deck is structurally sound to support the live and dead load requirements of roofing system and sufficiently rigid to support construction traffic.
- D. All air intakes on or near the roof shall be covered, all doors and windows closed and contractor shall provide other engineering controls as may otherwise be necessary on this project to prevent odors from entering the building. All engineering controls shall be instituted as agreed to with the Owner.
- E. To reduce the potential for any odors entering the building, working in conjunction with the Building Engineer, shut down all non-essential air intakes and provide charcoal filtration cover at fresh air intakes that cannot be shut down. Close windows and doors and any other opening which could allow odors to enter the building during application. Prior to starting work, notify all occupants, in writing, of the work to be completed along with MSDS information so highly allergic people can avoid exposure and allergic reactions.

1.06 REGULATORY COMPLIANCE

- A. It shall be the roofing contractor's responsibility to obtain any required permits and licenses prior to the start of the job.
- B. Do not apply any bituminous materials over any substrate that is used for potable water collection.

1.07 WARRANTY

- A. Prior to project close out, the roofing contractor shall submit the Manufacturer's pre-approved Seven (7) year warranty.

PART II - 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 herein.

2.02 ROOFING MATERIALS

- A. Materials required per 100 sq. ft. of roof area (1 square):

Over Smooth surface	3 gallons per square Ram ColdTar Plus®
Over Granular surface	3 to 4 gallons per square Ram ColdTar Plus®
Over Gravel surface*	6 to 10 gallons per square Ram ColdTar Plus® (*Some gravel surfaces may require additional material. Test for coverage rates before bidding.)

CHOOSE ONE FINISH OPTION:

(US) Ram Ultra Silver Coating	1 1/2 gallons per square
(UW) Ram Ultra White Primer and Coating	2 gallons per square
(GS) Gravel	400 pounds per square
(MG) Granules	60 pounds per square

- 1. Cold Process Elastomeric Bitumen:

Ram ColdTar Plus® cold process bitumen for repair and membrane surfacing flood coat shall be compatible with asphalt and coal tar pitch bitumen and shall comply with the following performance values:

<u>Description</u>	<u>Method</u>	<u>Test Results</u>
Weight	ASTM-1475	7.6 lbs/gal
Viscosity	ASTM-D-2196	11,200 cps
Elongation	ASTMD-412	2000%
Tensile Strength	ASTMD-412	200 psi
Pliability at 0°C	ASTM-D-6511	Pass
Non-Volatile Matter	ASTM-D-4586	60%
Mineral Stabilizers	ASTM-D-4	3.8%

B. Related Materials

1. Primer: **Ram Primer/Surface Conditioner** shall comply with ASTM D-41.
2. Mastic: **Ram Mastic**, flashing mastic shall be trowel grade SBS modified cold process cement which shall comply with ASTM D-4586, Type I.
3. Sheet Flashing: **Ram 306** SBS based, fabric reinforced, with granule surface, shall comply with ASTM 6164, Type II, Grade G.
4. Polyester reinforcement material shall comply with ASTM D-5665, Type II.
5. Replacement Plies: **Ram 40**, coated ply sheet, reinforced with three layers of polyester and fiberglass fabrics, shall comply with the following performance values:

<u>Test</u>	<u>Method</u>	<u>Typical Results</u>
Breaking Strength, lbf/in	ASTM D-146	120 MD 130 XD
Pliability (½ inch radius bend)	ASTM-D-146	No Failures
Tear Strength	ASTM-D-1117	15 lbf MD
Asphalt	ASTM-D-228	10 lb/100 ft
Puncture Resistance	ASTM-E-154	120 lbf
Surfacing/Stabilizer max	ASTM-D-4601	65%

Weight	ASTM-D-228	32 lb/100 ft
Mass of De-saturated Polyester/Glass Mat min	ASTM-D-228	2.2 lb/100 ft

6. Termination Bars shall be extruded aluminum, 1/8 inch thick, and 1 inch wide with holes pre-punched 6 to 8 inches on centers.
7. Sealant: **Ram Silicon Sealant** shall comply with ASTM-C-1193 standard guide.
8. Surfacing:

Specifier Shall Choose One of the Following;
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 - a. Gravel shall comply with ASTM-D-1863 specifications with nominal 3/8-inch diameter.
 - b. Reflective aluminum coating shall be **Ram Ultra Silver** aluminized coating in compliance with ASTM D-2824 requirements.
 - c. White primer and coating shall be Energy Star® Approved **Ram Ultra White** primer and **Ram Ultra White** acrylic latex topcoat in compliance with ASTM D-6083 requirements.
 - d. Mineral granules shall be ASTM D-451, number 11 size, as provided by manufacturer in standard color as approved by Owner.

PART III – EXECUTION

3.01 PREPARATION

- A. All loose gravel shall be removed with power brooming and power vacuuming. Finish preparation of existing roof surface by using a power blower to remove any remaining dirt and dust. The roof surface should be continuously evaluated for contamination during the application process. No surface shall be covered that displays evidence of deleterious surface conditions.
- B. Where existing roofing or insulation is wet, remove wet area down to deck or vapor retarder. Repair or replace deteriorated deck as necessary on unit price basis. Replace wet insulation with new insulation to match type and thickness. Mechanically fasten new insulation with Factory Mutual Approved fasteners at the rate of one for every two square feet of roof area. Install three (3) plies of **Ram 40** over the new insulation in shingle fashion. Feather out successive plies onto properly prepared and cleaned adjacent roofing. Remove all gravel 18 inches wide at perimeter of repair areas. All three (3) plies of **Ram 40** shall be set into continuous applications of **Ram ColdTar**

Plus® at the rate of 2 ½ gallons per 100 square feet, per ply, over the new insulation. Allow repair areas to adequately cure before proceeding. To accelerate work, repairs can be made with hot applied asphalt bitumen in accordance with accepted industry standards as delineated in the NRCA “Handbook for Roof Repairs” and Barrett installation instructions with ASTM D-312 Type III asphalt.

- C. Scrape and remove all gravel 18 inches wide at perimeter of repair areas and a minimum of 9 inches wide at all base flashings and gravel stops. Membrane blisters and all other visible defects shall be cut open and allowed to dry. Dry flaps shall be sealed down in an application of **Ram ColdTar Plus®** or **Ram Mastic**. Cover entire area with two 2 additional plies of **Ram 40** set into **Ram ColdTar Plus®** or **Ram Mastic** and feathered onto the properly prepared roof surface roof.
- D. Spud off all gravel at roof drains, 40 inches square and install a 36 inch square piece of **Ram 40** set into a uniform coating of **Ram ColdTar Plus®** or **Ram Mastic** at the rate of 3 gallons per square. The flashing sheet shall run under the drain clamping collars and the clamping ring torqued down before the center of the flashing sheet is cut out. Repair or replace all clamp collars and drain baskets as required.
- E. Remove or lift existing counter flashings and gravel stops unless indicated otherwise on contract drawings.
- F. Remove all deteriorated, loose or otherwise defective base flashings and provide temporary base flashings of **Ram Mastic** and two plies of **Poly•Felt 155** or **Ram 40** to keep roof watertight.
- G. Refill pitch pockets using **Ram Mastic**. Peak and slope for drainage and cover with “umbrella” or “witch’s hat” flashing covers fabricated with 0.015 thick stainless steel.
- H. After all repairs are completed, the repair work properly cured and roof surface is clean and dry, apply **Ram Primer** to asphaltic roof surfaces at the rate of one gallon per 100 square feet and allow to dry tack free. Coal Tar pitch roofs do not require any primer.

3.02 APPLICATION

- A. Base flashings: Where existing flashings are to remain, trowel apply **Ram Mastic** to all prepared flashings and perimeter edge surfaces. Install one ply of **Poly•Felt 155**. Apply second coat of **Ram Mastic** and embed **Ram 306** granulated SBS sheet to reinforce all flashings, metal edges and gravel stops. Mechanically fasten new termination bar 6 inches on centers, at the top of all flashing membranes. Seal top and vertical seams of all flashings with **Ram Mastic** and fabric. Reset existing or install new counter flashings where required and caulk reglets with **Ram Silicone** sealant.
- B. Where base flashings have deteriorated or are unbounded to the substrate, they shall be completely removed until the roof system is found to be dry and stable. Replace insulation and cant strips to match existing. Install two plies of PolyFelt 155 and one

ply of Ram 306 in Ram Mastic following all other requirements of recover base flashings in paragraph A. above.

- C. Applications: Squeegee apply **Ram ColdTar Plus®** over entire roof area at the following rates:

Smooth or granule surface (with notched squeegee) 3-4 gallons per square
Graveled surface, (with flat squeegee) 6-10 gallons per square
(Large size gravel aggregate may require additional **Ram ColdTar Plus®**)

It is recommended that the **Ram ColdTar Plus®** be spread with the proper squeegee in two directions, 90 degrees to each other.

Finished application shall present a smooth, glossy finish.

3.03 SURFACING APPLICATION ALTERNATIVES

Specifier Shall Choose One Finish Below

- A. Gravel –As **Ram ColdTar Plus®** flood coat is squeegeed out, before a skin develops on the **Ram ColdTar Plus®**, apply aggregate surfacing at the rate of 400 pounds per square.
- B. **Ram-Ultra Silver** –Allow the **Ram ColdTar Plus®** membrane to cure for 90 days. Apply **Ram Ultra Silver** at the rate of 1.5 gallons per square. A second coat may be required if the **Ram ColdTar Plus®** is not completed cured out.
- C. **Ram-Ultra-White** - Allow the **Ram ColdTar Plus®** membrane to cure for 90 days. Apply **Ram Ultra-White Primer** at the rate of 0.5-.75 gallons per square. After the primer has dried, apply **Ram Ultra-White** in two coats applied diagonally to each other totaling 1.5 to 2.0 gallons per square.
- D. **Granules** –As **Ram ColdTar Plus®** is applied, install granules at the minimum rate of 60 pounds per square, later the same day, before a skin develops on the **Ram ColdTar Plus®**. Allow the **Ram ColdTar Plus®** to set overnight before removing excess granules.

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.
- C. Immediately rinse or flush tools with mineral spirits or citrus cleaner after use. Use waterless hand cleaner on skin.

3.05 PROTECTION

- A. General Contractor and the Owner shall protect finished roof areas from damage during subsequent construction not related to roofing.
- B. Cure times will vary with temperature, sunlight, wind, thicknesses and job conditions. No other trades shall be allowed on the roof until the membrane is cured out.

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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