SECTION 07 52 00

TEMPORARY TORCH APPLIED ASPHALT ROOFING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. All labor, materials, equipment and services necessary related to the provision of torch-down asphalt roofing at all building perimeters (main and addition roofs) and perimeters of bulkheads. This system shall function as the temporary membrane prior to installation of insulation and the Hybrid Bituminous Roofing Assembly in Section 07 52 16 Hybrid Bituminous Membrane Roofing. See DM101-102 Demolition Roof Plans for extent of scope.

1.02 RELATED REQUIREMENTS

A. Drawings and general provisions of the Contract, including any General and Supplementary Conditions and other Division 01 Specification Sections apply to this Section.

B. Section 03 01 30 - Concrete Repair

C. Section 02 82 13 - Asbestos Abatement of Roof Materials

D. Section 07 52 16 - Hybrid Bituminous Membrane Roofing

1.03 SUBMITTALS

A. Submittals Package - General

B. Submit the Shop Drawings, Product Data, Samples, and Quality Control Submittals specified below at the same time as a package. All submittal packages must be submitted prior to the asbestos abatement.

C. Product Data
   1. Catalog sheets, Specifications and installation instructions for each material specified.

D. Shop Drawings
   1. Submit typical temporary roof detail for approval, showing assembly layers, overlap and water stop (Z dam). See DM101 for proposed typical detail.

E. Samples
   1. Roofing Membrane: 13 in. by width of roll, each type.
   2. Base Flashing: 13 in. by width of roll, each type.
   3. Vent Base Sheet: 13 in. by width of roll, each type.
   4. Field sample of Bitumen (each load)

F. Quality Control Submittals
   1. Qualifications: See Spec. Section 07 52 16 for Membrane Manufacturer and Applicator's Certifications

G. Manufacturer's Installation Instructions: Indicate special procedures.

1.04 QUALITY ASSURANCE

A. Fire Department Regulations
   1. Equipment and fuel shall meet the requirements of the New York City Fire Department.

B. Fire Hazard Classification
   1. The roof system shall have an Underwriters Laboratories Class A or B External Fire Resistance rating; as determined by tests conducted in conformity with UL-790 (ASTM E108).
   2. The roof system, which includes a specific generic type of insulation and in some instances a specific name brand insulation, shall have been tested in conjunction with the type of structural roof deck and roof slope applicable to the project.

C. Company Field Advisor
   1. Secure the services of a Company Field Advisor of the membrane manufacturer. The Field Advisor shall be certified in writing by the manufacturer to be technically qualified in design, installation, and servicing of the required products. Personnel involved solely in

sales do not qualify. The Field Advisor shall be present at and at the beginning of the actual membrane installation for the purpose of:

2. Rendering technical assistance to the Contractor regarding installation procedures of the temporary system.
3. Answering all questions which might arise.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Delivery
   1. Roofing materials shall be delivered to the site in the manufacturer's unbroken containers and shall bear the manufacturer's printed labels.
   2. All bitumen delivered in cartons must have the following printed on the carton:
      a. Manufacturer
         1) Type (ASTM)
            (a) SP (Softening Point)
            (b) FP (Flash Point)
            (c) FBT (Finished Blowing Temperature)
            (d) EVT (Equiviscous Temperature)
      b. All bitumen delivered in tanker trucks shall be accompanied by the manufacturer's certifi-cation stating: manufacturer's name, type, softening point range, flash point, and compliance with ASTM Specifications.
         1) Certification for Asphalt Bitumen shall also state the equiviscous temperature range and the finished blowing temperature range.

B. Storage and Handling
   1. Store materials a minimum of 6" off the ground, in a dry, well ventilated place protected from the weather. Enclosed trailers are recommended.
   2. Mark for identification all materials which become wet. Remove such materials for the site.
   3. Handle roll goods with care; store on end. Do not use roll goods which have been damaged.

C.

1.06 FIELD CONDITIONS

A. Temperature: Do not apply built-up roofing when the deck or air temperature is below 40o F.

B. Do not execute the Work of this Section unless the substrate is dry, and free from debris and dust.

C. Moisture Protection:
   1. Cover, seal, and otherwise protect the roof and all flashings so that water cannot accumulate or flow under the completed portions. When and where required, provide temporary water cut-offs in accordance with the roofing manufacturer's written Specifications.
   2. For existing roof: Limit the removal of existing materials to areas that can be completely re-roofed or temporarily protected within the same day. Temporary protection shall not be considered part of the system.

1.07 REGULATORY REQUIREMENTS

A. NYC Fire Department and DOT Requirements:
   1. Equipment, Fuel and equipment Operators must meet the requirements of the New York City Fire Department and DOT including Certificate for transport of propane.
   2. No propane may be stored on site after work hours (no overnight storage).

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Asphalt Primer and Asphalt

B. GAF Building Materials Corp., Wayne, NJ.

C. Johns Manville, Denver, CO.

D. Trumbull/Owens Corning, Toledo, OH

E. Base Sheet
   1. GAF GAFGLAS #75 Base sheet.
   2. Johns Manville GlasBase.
   3. Firestone MB Base M.

F. Vent Base Sheet
   1. GAF GAFGLAS Stratavent Eliminator Base Sheet.
   2. Johns Manville Ventsulation.
   3. Firestone Venting Base

G. Ply Sheets, Vapor Barrier and Cover Strip
   1. GAF GAFGLAS FlexPly 6.
   2. Johns Manville GlasPly Premier.
   3. Firestone Ply VI M.

H. Base Flashing
   1. Two base plies:
      a. GAF GAFGLAS FlexPly 6.
      b. Johns Manville GLasPly Premier.
      c. Firestone Ply VI M.
   2. One ply cap sheet:
      a. GAF Ruberoid EnergyCap SBS 30 FR.
      b. Johns Manville Dynaflex CR.
      c. Firestone SBS Premium

I. Cant Strip (no perlite)
   1. GAF
   2. Johns Manville
   3. Atlas

2.02 MATERIALS FOR VAPOR BARRIER

A. Asphalt Vapor Barrier over Concrete Deck
   1. Primer: Asphalt primer, ASTM D41.
   2. Steep Asphalt: ASTM D 312, Type III.
   3. Asphalt Fiberglass Felt: Asphalt impregnated glass mat, ASTM D 2178, type VI. UL Classified.

2.03 MATERIALS FOR HUBRID BUILT-UP / SBS BITUMINOUS MEMBRANE

A. Smooth SBS Hybrid Bituminous Membrane
   1. Steep Asphalt (Slopes 0” to 3" per Foot): 190o, Type III.
   2. Asphalt Fiberglass Felt: Asphalt impregnated glass mat, ASTM D 2178, Type VI. UL Classified.
   3. Smooth Finish SBS Hybrid Bitumen Cap Sheet, overlap existing roof 1’-0”, as indicated on the drawings.

2.04 COMPOSITION FLASHINGS

A. 2 ply SBS top granulated set in 2 parts flashing cement.
   1. Temporary torch down SBS water stopping on existing slab and up onto existing roofing verticals.
   2. composite poly-iso insulation and granulated SBS top torch down top flashing sheet up on top of remaining roofing, up parapets and bulkheads
   3. flashing around all penetrations with hybrid SBS flashing cement and mesh reinforcing.

2.05 INSULATION

A. Approval of insulation is contingent upon approval by the membrane manufacturer for use with specified roof system.

PART 3 EXECUTION

3.01 REMOVALS

A. Remove existing roofing, including, but not limited to, felts, asphalt, coal tar, and vapor barrier, down to sound, clean screed coat/concrete deck, as well as vertical surfaces to which flashing will be adhered or which will be caulked, as indicated on the drawings.

B. At roof perimeter, remove 3'0" of roof assembly.

C. At Stair Bulkheads, Incinerator Stacks, Elevator Machine Rooms, remove 16" of roof assembly

D. Scarify exposed deck to remove all coal tar residue.

3.02 PREPARATION

A. Repair concrete deck per section 037330 - Concrete Repair.

B. Moisture Testing of the existing roof deck
   1. All roof decks where roofing is to be installed shall be thoroughly dried out and free of moisture before installing new membrane. There shall be two (2) test areas for every 2500 square feet of area to be roofed.
   2. The Authority's Representative shall be present at these tests. The Contractor shall submit a signed statement that the tests have been performed and list the test results for each area.
      a. Roof Deck Dryness Test (NRCA Approved Method)
         1) Use approximately one pint of bitumen that is specified for use in the roof membrane, heated to a temperature that will ensure an application temperature of 400oF. See Built-up Roofing, Section IV-B, (Equiviscous Temperature) NRCA roofing and waterproofing manual.
         2) Pour the bitumen on the surface of the deck. If the bitumen foams, the deck is NOT dry enough to roof.
         3) After the bitumen has cooled, an attempt should be made to strip the bitumen from the deck surface. If the bitumen strips clean from the deck, the deck is NOT dry enough to roof.
         4) If the tests prove the deck is damp, it shall be allowed to dry and be retested until dry enough for the roofing to be installed. Depending on the severity of the moisture condition, the Architect/Engineer may permit the installation of vented base sheet in lieu of one ply of vapor barrier.

C. Priming (for concrete decks)

D. Prior to application of vapor barrier, and after the deck has passed the dryness test, apply asphalt primer to concrete deck surface at the rate of one

3.03 HEATING BITUMEN

A. Preparation
   1. Use separate kettles or tankers for heating different types of asphalt.
   2. The heating process shall be strictly regulated by means of an automatic thermostatic control of an approved type for positive temperature control. Kettles or tankers shall be the immersion tube type, fire by Liquid LP gas, and shall have 100% safety shutoff.
   3. Equip each kettle or tanker with a recording thermometer that will graphically indicate and record on a chart the maximum and minimum temperatures to which materials have been heated. Recording thermometers shall be capable of accurately recording temperatures as high as 600?F and as low as 0?F. The thermometers shall be properly maintained at all times. Kettles or tankers without recording thermometers in good working condition shall not be used. At the end of each working day, turn the chart from the thermometer on

each kettle or tanker over to the Authority's Representative. If any bitumen is overheated, remove it from the site in the presence of the Authority's Representative.

4. If any underheated or overheated bitumen has been applied on the roof, remove that portion of the roof.
5. Preferred location for locating and heating the kettle is to place on the ground, with the asphalt pumped to the roof. If kettle is placed on the roof, place kettle on a heavy sheet metal tray on dunnage. Metal tray shall extend 18" beyond the sides and ends of the kettle and be turned up 1" at all edges. Verify deck construction. Kettle shall not be placed on thin plank or steel roof deck construction.
    a. Only one gas cylinder shall be on the roof at any one time. The maximum cylinder size shall be 40 lbs. Locate the cylinder at least four feet away from the kettle. Vertically brace the cylinder and shade it from the sun.
    b. Provide fire extinguishers on the roof in the vicinity of the kettles as required to ensure the safety of the roof.
    c. In all cases comply with requirements of the NYC Fire Department in locating equipment, and locate equipment on the ground when necessary in order to meet such requirements.

B. Heating Asphalt Bitumen
1. Heat the bitumen in accordance with the Equiviscous Temperature information furnished by the bitumen manufacturer for that specific run of bitumen.
    a. In no case shall be asphalt be heated to or above the actual COC Flash Point (ANSI/ASTM D92); or the finished blowing temperature for more than 4 hours.
    b. Maintain the temperature of the bitumen at the point of application within the Equiviscous Temperature Range. Use insulated pipes, buckets, luggers, and other insulated roofers equipment as required by the field conditions.
    c. Contractor must have at least one hand held thermometer for each crew installing hot asphalt in order to ensure compliance with EVT.
2. Application temperature: The accepted application temperature range for asphalt is the equiviscous temperature, (EVT) K25?F. All felt installation must occur in this range to be acceptable.

3.04 MIXING FLASHING CEMENT

A. Mix flashing cement components in accordance with printed instructions of the manufacturer.
1. Two Part Flashing Cement
    a. Store activator, and mix materials at temperatures stated in the manufacturer’s instructions. After mixing, pot life time varies with ambient temperature, and must not be exceeded.
    b. Utilize the specific mechanical mixing equipment and method of mixing required by the manufacturer. Do not exceed mixing time of three minutes, or as otherwise stated in the manufacturer’s instructions.

3.05 INSTALLING VAPOR BARRIER

A. Installing Vapor Barrier over Concrete Deck, Existing Vapor Barrier or Lightweight Fill/Screed
1. Install 2 plies of asphalt fiberglass felt shingle fashion. Lap plies 19" over each preceding ply.
2. Embed each ply in a solid mopping of hot steep asphalt applied at the rate of 20 lbs per square. Broom in each ply for complete embedment.

3.06 INSTALLING VENT BASE SHEET AND VAPOR BARRIER

A. Using vent base sheet, start at the low edge of the roof. Fasten along the lap of the ply at intervals not to exceed 9" and stagger-nail down 11" apart with fasteners spaced at approximately 18" o.c. stagger. Provide additional fasteners spaced as required to meet specified wind uplift resistance rating. Prior to installation, have pullout tests performed by the fastener manufacturer to determine the appropriate fastener. All drilling is to be done using a high-speed rotary percussion drill with three-jaw chuck.

B. Run vent base sheet up the perimeter or parapet walls to the height of the counter flashing, mechanically fastening at spacing indicated above. This will allow for proper perimeter venting detail.

C. Stop vent base sheet short by 2'-0" at all drains and penetrations. Seal the edges with a 6" strip of Type VI felt set in steep asphalt or flashing cement.

D. Install one ply of asphalt fiberglass felt with 2" overlap on sides and 6" end laps. Embed each ply in a solid mopping of Type III hot steep asphalt applied at the rate of 20 lbs per square. Broom ply for complete embedment.

3.07 MEMBRANE APPLICATION

A. Before application of roof membrane, turn vapor barrier over insulation at all edges and openings and embed in a full hot application of bitumen. At round openings, seal the edges of the insulation with a trowel coat of plastic roof cement. Overlap roof membrane 1'-0" over existing roof assembly.

B. Installing Roof Membrane
   1. For bituminous roof, provide roof membrane consisting of 3 plies of asphalt fiberglass felt and one ply of mineral-surfaced hybrid bitumen cap sheet. Embed each ply in solid moppings of hot asphalt applied at the rate of 25 lbs per square.
   2. Increase mopping temperature as necessary for application of hybrid bitumen cap sheet to ensure best adhesion.
      a. For asphalt built-up roofs, provide built-up roof membrane consisting of 4 plies of asphalt fiberglass felt. Embed each ply in solid mopping of hot asphalt applied at the rate of 25 lbs per square.

C. Temporary Flashings
   1. Provide a temporary waterproof seal at all membrane edges, penetrations, drains, etc.

D. Around roof penetrations, mop in and seal flanges and flashings with flexible flashing.

E. Coordinate installation of roof drains and sumps and related flashings.

3.08 CLEANING

A. Remove bitumen from surfaces other than those requiring bituminous coatings.

B. Remove all debris from roof area.

END OF SECTION