SECTION 07 5200 Modified Bituminous Membrane Roofing

PART 1 - GENERAL

1.01 SUMMARY

A. Supplying all labor, materials, equipment, and apparatus not specifically mentioned herein or noted on the plans, but which are incidental and necessary to complete the Work specified and shown on drawings, inclusive of but not limited to Modified Bituminous Membrane Roofing-Cold Applied.

1.02 REFERENCES

A. Factory Mutual (FM Global) - Approval Guide
B. Underwriters Laboratories (UL) - Roofing Systems and Materials Guide (TGFU R1306
C. American Society for Testing and Materials (ASTM) - Annual Book of ASTM Standards
D. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual
E. Asphalt Roofing Manufacturers Association (ARMA)
F. National Roofing Contractors Association (NRCA)

1.03 ADMINISTRATIVE REQUIREMENTS

A. Pre-Installation Meetings
   1. The Contractor shall schedule a Pre-Roofing Meeting upon receipt of the approved shop drawings from the Architect. This meeting shall take place not less than seven (7) days prior to beginning installation of the roofing system. Attendees shall include: The Owner or Owner's representative, Architect, General Contractor, Job Site Superintendent, Roofing Sub-Contractor, Manufacturer's Technical Representative, and Job Site Foreman of trades directly impacted by the roofing system installation.
   2. The following items shall be reviewed and noted for written distribution to all attendees:
      a. Roof deck conditions.
      b. Flashing and expansion joint details.
      c. Insurance underwriters or building code requirements.
      d. Unusual project conditions.
      e. Protection of the roof, building, building occupants, and contents during and after application.
      f. Application techniques.
      g. Coordination and scheduling of other trades who will be working on project.
      h. Designation by the roofing contractor of a qualified person responsible for quality control. This person shall be on the project full-time during application of the roof system.

i. Scheduling of material shipments, material storage, and rooftop loading.

1.04 SUBMITTALS

A. Product Data: Submit three (3) copies of the Manufacturer's product data for review and written approval by the Architect.
B. Shop Drawings: Submit seven (7) copies of shop drawings for review and written approval by the Architect. Indicate dimensions, description of materials and finishes, general construction, specific modifications, component connections, anchorage methods, hardware, and installation procedures.
C. Sustainable Design Submittals: Submit three (3) copies of the Manufacturer's program certifications identifying credits that apply toward the "LEED for Schools for New Construction and Major Renovations, First Edition November 2007".

1.05 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: Submit three (3) copies of Manufacturer's operation and maintenance manuals.
B. Warranty Documentation: Submit three (3) copies of the Manufacturer's warranty documents.
C. Sustainable Design Closeout Documentation: Submit three (3) copies of the Manufacturer's program certifications identifying credits that apply toward the "LEED for Schools for New Construction and Major Renovations, First Edition November 2007".

1.06 QUALITY ASSURANCE

A. Qualifications of Manufacturer: Roofing materials shall be products of a manufacturer regularly engaged in manufacture of this product for not less than 10 years. Manufacturer shall supply references of at least 5 satisfactory installations in which roofing materials have been in service for at least 5 years.
B. Qualifications of Installer: Minimum 5 years experience in successfully installing the same or similar roofing materials, and certified in writing by the roofing materials Manufacturer to install the roofing products.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Examine all materials as they are received. Do not use any materials that are damaged, unlabeled or otherwise appear to be unfit for use.
B. Materials must display legible labels, which identify the materials and applicable reference standards.
C. Immediately notify carrier and manufacturer of damaged, wet, or defective materials.

D. Do not expose materials to moisture in any form before, during, or after delivery to the site. Reject delivery of materials that show evidence of contact with moisture.
E. At the job site, no more material should be stored than will be used within two weeks. For periods longer than two weeks, the materials should be properly warehoused, i.e., dry, ventilated, on pallets, etc. No more material should be stored on the roof than can be used within five days. When prolonged inclement weather threatens, i.e., rainy seasons, no more roofing materials should be supplied to the rooftop than can be used within two days.
F. Store roll goods on end on pallets in a clean, dry, well ventilated protected area. Take care to prevent damage to roll ends or edges. Do not double stack modified bitumen products.
G. Remove manufacturer supplied plastic covers from materials provided with such covers. Use "breathable" type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Cover and protect materials at the end of each days work.
H. Lightweight insulation products should be properly stored and weighted to avoid weather and wind damage.
I. Store roofing asphalt to prevent leakage and carton deterioration.
J. Store all adhesives, coatings and sealants/caulks to protect from freezing. Frozen material must be discarded and replaced. Properly seal all liquid material containers after use.
K. Materials should be stored above 55°F (12.8°C), a minimum of 24 hours prior to application. Do not remove any protective tarpaulins until immediately before material will be installed.
L. Do not install cold adhesives when temperatures fall below 45°F (7.2°C) or when inclement weather threatens.
M. In the unlikely event that obviously defective or damaged material reaches the job site or damage to the material occurs from improper storage on the job site, it is the responsibility of the roofing contractor not to install this material. Manufacturer should be notified immediately about material that has apparent manufacturing defects.

1.08 WARRANTY

A. Manufacturer Warranty: Provide Manufacturer's twenty (25) year No Dollar Limit warranty on all materials and workmanship covered by this section and identified in the contract documents. The warranty period shall begin from the date of substantial completion issued by the Architect.
B. Contractor's Warranty: Provide Contractor's three (3) year warranty on all materials and workmanship covered by this section and identified in the contract documents. The warranty period shall begin from the date of substantial completion issued by the Architect.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

A. Manufacturer List:

1. GAF Materials Corporation: 1361 Alps Road Wayne NJ 07470, Phone: 1 (973) 628-3000, www.gaf.com
2. TAMKO Building Products, Inc.: 220 W. Fourth Street Joplin, MO 64801, Phone: 1 (800) 641-4691, www.tamko.com
3. Siplast, Inc.: 1000 E. Rochelle Blvd. Irving, TX 75062, Phone: 1 (800) 922-8800, www.siplast.com

2.02 MATERIALS

A. All roofing material shall not contain any asbestos.
B. All roofing material shall be from the same Manufacturer.
C. Insulated Metal Deck Application:
   1. Insulation: Rigid polyisocyanurate board, with a strong fibrous glass facer and a tapered profile. Conforms to or exceeds the requirements of ASTM C 1289 / FS HH-I-1972.
   2. Board Thickness: 2 ½ inches
   3. Thermal Resistance: As required by the 2006 International Energy Conservation Code.
   4. Roof Board: Underlayment or overlayment board with a water-resistant and silicone treated gypsum core with glass fiber facers embedded on both sides.
   5. Board Thickness: ½ inch
   6. Membrane Materials:
   7. Base Ply: Smooth surfaced modified bitumen membrane with a fiberglass reinforcing mat coated with flexible, SBS polymer-modified asphalt.
   8. Inter Ply: Smooth surfaced modified bitumen membrane with a fiberglass reinforcing mat coated with flexible, SBS polymer-modified asphalt.
   9. Top Ply: Granule-surfaced, white color, modified bitumen membrane with a non-woven fiberglass reinforcing mat coated with flexible SBS polymer-modified asphalt. Conforms to or exceeds the requirements of ASTM D 6163 Type I Grade G.
D. Concrete Deck Application:
   1. Application to substrate: Torch modified bitumen membrane with a fiberglass reinforcing mat coated with flexible, SBS polymer-modified asphalt directly to concrete surface.
   2. Apply light weight concrete to obtain a positive slope of ¼ inch per foot.
   3. Base Ply: Vented modified bitumen membrane with a fiberglass reinforcing mat coated with flexible, SBS polymer-modified asphalt.
   4. Inter Ply: Smooth surfaced modified bitumen membrane with a fiberglass reinforcing mat coated with flexible, SBS polymer-modified asphalt.
   5. Top Ply: Granule-surfaced, white color, modified bitumen membrane with a non-woven fiberglass reinforcing mat coated with flexible SBS polymer-modified asphalt. Conforms to or exceeds the requirements of ASTM D 6163 Type I Grade G.
E. Flashing Materials:
   1. Base ply: Smooth surfaced modified bitumen membrane with a fiberglass reinforcing mat coated with flexible, SBS polymer-modified asphalt.

2. Top Ply: Granule-surfaced, white color, modified bitumen membrane with a non-woven fiberglass reinforcing mat coated with flexible SBS polymer-modified asphalt. Conforms to or exceeds the requirements of ASTM D 6163 Type I Grade G

F. Cant Strip: Non-Structural Perlite cant strips must be installed at the intersection of the roof and all walls, parapets, curbs, or transitions approaching 90° that are to be flashed. They shall be approximately 4" (10.2 cm) in horizontal and 4" (10.2 cm) in vertical dimension. The face of the cant shall have an incline of not more than 45° with the roof.

G. Primer: Asphalt primer shall comply with ASTM D-41.

H. Adhesive: Cold process rubberized adhesives shall be installed as recommended by Manufacturer and application shall be with sprayer, squeegee or roller.

I. Edge Sealant: Rubberized asphaltic roof cement shall be installed per Manufacturer's recommendations.

J. Pipe and Stack Flashings: rubberized closed boot supplied by the roof materials Manufacturer and installed in accordance with published flashing details.

K. Plumbing Vents: A pre-flashed with modified bitumen membrane and is designed to waterproof vent pipes. It can be used as a pipe cover to replace finger and cap flashing on standard vent pipe details.

L. Drains:
   1. A spun aluminum roof drain with gravel guard, strainer cap, and waterproofing plumbing seal attached. Pre-flashed with modified bitumen and available in full and insert sizes to accommodate new construction and retrofit applications.
   2. A Pre-flashed metal through-wall roof drain designed for easy installation to aid in quick lateral removal of water.

M. Sealant Pans: A structural urethane outer shell, bonded to the roof surface, filled with a urethane rubber sealant. The urethane sealant conforms to the shape of any roof penetration through a roof surface to protect the roof system from moisture.

N. Expansion Joint Covers: Factory fabricated assemblies used to accommodate three-dimensional joints in a roof structure. Heavy reinforced flexible cover with a flexible flame retardant foam bellows for support. Nailing flanges conform to curb irregularities.

O. Walkway Panels: Multi-ply, reinforced, asphaltic panels with non-slip top surface, color in contrast to roof color; types compatible with roofing sheets and recommended by roofing sheet manufacturer. Unless otherwise noted; install in clean straight lines from roof access to all rooftop equipment access panels, and adhered in accordance with the manufacturer's recommendations.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Verify that the surfaces and site conditions are ready to receive work.
B. Verify that the deck is supported and secured.
C. Verify that the deck is cleaned and smooth, free of depressions, waves, or projections, and properly sloped to drains, valleys, eaves, scuppers or gutters.

D. Verify that the deck surfaces are dry and free of ice or snow.
E. Verify that all roof openings, curbs, pipes, sleeves, ducts, vents or other penetrations through the roof are solidly set, and that all flashings are tapered.

3.02 APPLICATION

A. General
   1. Start the application of membrane plies at the low point of the roof or at the drains, so that the flow of water is over or parallel to, but never against the laps.
B. Bitumen
   1. Do not mix different types of asphalt.
   2. Use only ASTM D 312, Type III or Type IV Steep Asphalt.
   3. Type III asphalt may be used on slopes up to ½" per foot (4cm/m). Type IV asphalt must be used on all slopes greater than ½" per foot (4 cm/m).
C. Insulation
   1. General
      a. Do not apply roof insulation or roofing until all other work trades have completed jobs that require them to traverse the deck on foot or with equipment. A vapor retarder coated lightly with asphalt shall be applied to protect the inside of the structure prior to the insulation and final roofing installation. Before the application of the insulation, any damage or deterioration to the vapor retarder must be repaired.
      b. Do not install wet, damaged or warped insulation boards.
      c. Install insulation boards with staggered board joints in one direction (unless taping joint).
      d. Install insulation boards snug. Gaps between board joints must not exceed ¼" (6 mm). All gaps in excess of ¼" (6 mm) must be filled with like insulation material.
      e. Wood nailers must be 3-1/2" (8.9 cm) minimum width or 1" (25 mm) wider than metal flange. They shall be of equal thickness as the insulation with a minimum 1" (25 mm) thickness. All nailers must be securely fastened to the deck.
      f. Do not kick insulation boards into place.
      g. Miter and fill the edges of the insulation boards at ridges, valleys and other changes in plane to prevent open joints or irregular surfaces. Avoid breaking or crushing of the insulation at the corners.
      h. Do not install insulation over old lightweight insulating concrete decks without the use of a vapor retarder. Insulation should not be installed over new lightweight insulating concrete.
      i. Cant strips must be installed at the intersection of the roof and all walls, parapets, curbs, or transitions approaching 90°, to be flashed. They shall be approximately 4" (10.2 cm) in horizontal and 4" (10.2 cm) in vertical dimension. The face of the cant shall have an incline of not more than 45 degrees with the roof.
      j. Roof tape, if required over insulation joints, must be laid evenly, smoothly and embedded in a uniform coating of asphalt with 4" (10.2 cm) end laps. Care must be taken to assure smooth application of tape, and full embedment of the tape in the asphalt.
      k. Do not install any more insulation than will be completely waterproofed each day.
   2. Base Layer

a. The insulation must be securely attached to the roof deck. A minimum FMRC 1-60 attachment is recommended. Refer to FMRC Approval Guide for FM fastening patterns. Factory Mutual requires fastener density increased in corner areas for FM 1-60 and perimeter, and corner area fastener density increases for FM 1-90 or greater. Refer to FM Loss Prevention Data Sheets 1-7, 1-28, and 1-49.
b. Use only fasteners with a minimum 3 inch (7.6 cm) stress plate when mechanically attaching insulation. Do not attach insulation with nails.
c. Install insulation layers, maximum 4' x 4' (1.22m x 1.22m) board size, in a full and uniform mopping of cold asphalt applied at the rate of 25 lbs./square (1.2 kg/m2) ±20%. Press each board firmly into place. Stagger the joints of additional layers in relation to the insulation joints in the layer(s) below by a minimum of 6" (15.2 cm) to eliminate continuous vertical gaps.

3. Subsequent Layers
   a. The insulation must be securely attached to the roof deck. A minimum FMRC 1-60 attachment is recommended. Refer to FMRC Approval Guide for FM fastening patterns. Factory Mutual requires fastener density increased in corner areas for FM 1-60 and perimeter, and corner area fastener density increases for FM 1-90 or greater. Refer to FM Loss Prevention Data Sheets 1-7, 1-28, and 1-49.
   b. Multiple layers of insulation of the same, non-tapered insulation material may be simultaneously mechanically fastened with approved fasteners and plates through the top layer of insulation to the structural deck. Individual layers of insulation must not exceed 3" (7.6 mm) in thickness nor total thickness of all layers should not exceed 5" (12.7 cm).
   c. Use only fasteners with a minimum 3 inch (7.6 cm) stress plate when mechanically attaching insulation. Do not attach insulation with nails.
   d. Install insulation layers, maximum 4' x 4' (1.22m x 1.22m) board size, in a full and uniform mopping of cold asphalt applied at the rate of 25 lbs./square (1.2 kg/m2) ±20%. Press each board firmly into place. Stagger the joints of additional layers in relation to the insulation joints in the layer(s) below by a minimum of 6" (15.2 cm) to eliminate continuous vertical gaps.
4. Ply / Cap Sheets
   a. For slopes less than 1/2" per foot (4 cm per meter), membrane should be applied shingle fashion, perpendicular to the slope of the roof deck. On all slopes 1/2" per foot (4 cm per meter) and over, membrane should be installed parallel to the slope of the roof. In no case should the flow of water be against the laps.
   b. SBS membranes must not be applied during adverse weather or without precautionary measures in temperatures below 45°F (7.1°C).
   c. The membrane material shall be unrolled, cut into 12'-18' (3.7-5.5 m) lengths, placed upside down and allowed to "relax" prior to installation. Re-roll to apply.
   d. Install full width sheets, lapping 4" (10.1 cm) on the sides and 6" (15.2 cm) on ends. Stagger adjacent end laps a minimum of 18" (45 cm) apart. Where installed over base sheet, stagger sheet's side and end laps from underlying plies.
   e. Starting at the low point or the drains, apply the cold adhesive to the substrate as follows:
      1. Pour the adhesive on the substrate and spread, using a serrated edged squeegee, applied at the rate of 1-1/2 gal per square (6 L/m2), or,

2. Spray, using equipment that will apply the adhesive at a rate equal to 1-1/2 gal/square (6 L/m2).
3. Apply the adhesive so that the substrate is coated in a pattern slightly larger than the first sheet being applied.

f. End laps and selvage laps must be coated with adhesive so that a visible bead of adhesive appears. Roll all laps with a steel roller to ensure proper adhesion. Alternately, the end laps and side laps may be hot-air welded. The hot-air welding method will provide a watertight lap immediately and may be preferable when inclement weather is threatening.
g. Allow 5 to 15 minutes for solvents to evaporate from the adhesive (i.e. tack time or open time) before embedding any sheets into newly applied adhesive. Tack times may vary based on ambient conditions.
h. Be careful to insure that the membrane lays flat in the cold adhesive. There must be complete adhesion between the cap sheet and the cold adhesive. Brooming of the plies may be necessary under certain conditions to assure that the cap sheet adheres solidly to the cold adhesive. Apply extra pressure to avoid creating open channels where three or more membranes are lapped.
i. A minimum 3/8" (10 mm) and maximum 1" (2.5 cm) cold adhesive flow-out must be obtained at all seam areas when the side laps are not heat welded. Dry laps are not acceptable. Check all seams for full and uniform adhesion.
j. All end laps must be staggered a minimum of 18" (45.7 cm) so that no adjacent end laps coincide. If end laps fall in line or are not staggered the proper distance, a full width of SBS membrane must be installed over the end laps.

5. Ply Layout
   a. Two-ply application: Install 19 11/16" (50 cm) and 39 3/8" (100.0 cm) width starter plies, and follow with a second 39 3/8" (100.0 cm) width sheet with a maximum of 17 11/16" (44.9 cm) exposure, applied shingle fashion. Lap felts 20 11/16" (52.6 cm) with an 18 11/16" (47.5 cm) exposure and 6" (15.2 cm) on end laps. Stagger adjacent end laps a minimum of 18" (45.7 cm).
6. Bituminous Base Flashings
   a. Install base flashing over all cant strips, horizontal to vertical transitions, roof edges and roof penetrations. Flashings are to be secured in accordance with current application guidelines.
   b. Nailable curbs and walls must be covered with a layer of Base Sheet or backer ply fastened 8" (20.3 cm) o.c. in all directions with approved fasteners. All vertical laps shall be 4" (10.2 cm). Base sheet or backer ply must extend out onto the field of the roof.
   c. Prime all metal and masonry surfaces with asphalt primer, and allow adequate drying time prior to adhering flashing plies.
   d. Backer plies installed over masonry or other non-nailable substrates must be cut into manageable lengths to ensure adequate adhesion to the cant strip and vertical surfaces without excessive voids. All vertical laps shall be 4" (10.2 cm). Backer plies shall extend onto the field of the roof.
   e. The finished ply of base flashing shall be run vertically to provide a selvage edge that will aid in achieving proper adhesion at the 3" (7.6 cm) vertical laps. If the sheet is run horizontally, the vertical laps must be a minimum of 6" (15.2 cm) and the selvage

edge must be removed from the sheet or fully covered by the counter-flashing. The finished flashing ply must extend out onto the field of the roof, and must be extended a minimum of 4" (10.2 cm) beyond the edge of the prior flashing plies. The flashing must be soundly adhered to the parapet, cant area and roof surface to result in a minimum void, non-bridging construction.

f. Base flashing heights must be a minimum of 8" (20.3 cm) and a maximum of 24" (61.0 cm) above the roofline.
g. Use only trowel-grade modified adhesive. Apply using a trowel or wide-edged putty knife with a uniform 1/8" thickness throughout. Firmly press sheets into the adhesive, and immediately nail the top of the flashing as specified in the appropriate flashing detail.
h. Corner membrane flashings, such as "bow ties" for outside corners and "footballs" for inside corners or other membrane reinforcements are required to ensure that base flashing corners are sealed at cant areas.

7. Sheet Metal
   a. Metal should not be used as a component of base flashing. Because of the high coefficient of expansion of sheet metals and the large temperature changes that can be experienced on a roof, sheet metal or exposed metal components must be isolated from the waterproofing components of the roofing and flashing system as efficiently as possible to prevent the metal from splitting the membranes.
   b. When it is unavoidable to use metal in the roofing system, fire- retardant treated wood nailers and insulation stops, 1" (25 mm) wider than the metal flange, should be provided for metal flange attachment. Metal flanges must always be set on top of the roof membrane with modified trowel grade cold adhesive applied material for SBS roof systems. The metal flange is then sealed using the applicable construction detail to meet applicable guarantee requirements. Metal accessories (gravel stops, counter flashing, etc.) shall be 24 gauge (0.71 mm) galvanized or stainless steel or 0.032" (0.81 mm) aluminum.
   c. Fabricate and install all sheet metal materials as shown in applicable construction details. Refer to SMACNA (Sheet Metal and Air Conditioning Contractors National Association, Inc.) for guidance on sheet metal treatments not addressed in this specification.
   d. Clean metal and apply asphalt primer to all sheet metal surfaces that will come into contact with asphalt or other bituminous materials; allow the primer adequate time to dry.
   e. Use fastener types compatible with the sheet metal type.
   f. Metal counter-flashing shall have a minimum 4" (10.2 cm) face with a drip lip. The bottom edge of the counter-flashing shall cover the roofing membrane and/or base flashing by a minimum of 4" (10.2 cm). Metal counter flashing used for masonry walls, or through wall metal flashings should be a two piece design to allow for installation and later removal. Metal counter-flashings for stucco, EIFS, or similar materials should be designed appropriately, such as "Z" type flashing. End joints shall be lapped 3" (7.6 cm) or more. Adequate fasteners must be provided to secure against wind forces. Skirt fasteners shall be watertight.

g. Metal termination bars shall be a minimum of 1/10" (3 mm) thick x 1" (25 mm) wide with preformed sealant edge lap. Bar should have 1/4" (6 mm) x 3/8" (10 mm) slotted holes on 4" (10.2 cm) centers to facilitate mechanical anchorage.
h. Note: Termination bars are not suitable in all base flashing and wall flashing conditions. Termination bars may only be used in conjunction with an appropriate counter-flashing extending a minimum of 4" (10.2 cm) below the termination bar.
i. Metal flanges for gravel stops, eave strips, and pitch pockets to be used in conjunction with roofing shall be primed (both sides), set in modified trowel grade cold adhesive applied material for SBS roof systems. Flanges shall be a minimum of 3 1/2" (8.9 cm) wide for gravel stops or eave strips and 4" (10.2 cm) wide for projections and extensions through the roof. The gravel stop lip should be at least 3/4" (19 mm) high. Eave strip lips shall be at least 3/8" (10 mm) high. Provisions must be made for securing the skirt to the face of the wall. This may be a wood nailer strip for masonry and metal construction. In all cases, gravel stop and eave strip nailer should be fastened to the deck or deck system with adequate resistance against wind forces.
j. Stacks shall have metal sleeve flashing a minimum of 8" (20.3 cm) high. Pitch pockets for brackets, supports, pad-eyes, etc., shall have a 4" (10.2 cm) minimum height metal sleeve.
k. On re-roofing projects, provisions shall be made for reinstallation of existing sheet metal duct work, equipment, coping metal and counter-flashing removed in conjunction with the new work. Also, provide for cleaning and repairing of existing defective sheet metal, and replacement of missing and irreparable sheet metal to match existing types. Light gauge sheet metal flashings which are incorporated into the roof system are not suitable for re-use and must be replaced with new material.
l. Conduits and piping such as electrical and gas lines must be set on wood blocking or some other form of support. Wood blocking/supports must be set on pads constructed of an additional layer of roof membrane material.

8. Walkways
   a. Walkways for normal rooftop traffic may be constructed from two plies of modified bituminous membrane of the same type as the field of the roof.
   b. Construct walkways by solidly adhering a first ply of smooth surfaced membrane to the field of the roof followed by a granule surfaced membrane to the surface of the first ply.
   c. Walkway sections should be no longer than 10' (3 m), with a 6" (15.2 cm) minimum gap between each section to allow for drainage.

3.03 CLEANING

A. All work areas are to be kept clean, clear and free of debris at all times.
B. Do not allow trash, waste, or debris to collect on the roof. These items shall be removed from the roof on a daily basis.
C. All tools and unused materials must be collected at the end of each workday and stored properly off of the finished roof surface and protected from exposure to the elements.

D. Dispose of or recycle all trash and excess material in a manner conforming to current EPA regulations and local laws.
E. Properly clean the finished roof surface after completion, and make sure the drains and gutters are not clogged.
F. Clean and restore all damaged surfaces to their original condition.

3.04 PROTECTION

A. Protect all partially and fully completed roofing work from other trades until completion.
B. Whenever possible, stage materials in such a manner that foot traffic is minimized over completed roof areas.
C. When it is not possible to stage materials away from locations where partial or complete installation has taken place, temporary walkways and platforms shall be installed in order to protect all completed roof areas from traffic and point loading during the application process.
D. Temporary tie-ins shall be installed at the end of each workday and removed prior to commencement of work the following day.

END OF SECTION