

CABINET HARDWARE SCHEDULE

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>IDENT. NO.</u>	<u>LOCATION</u>
Butt Hinges	Wrought steel Button top pins	BHMA B81351	All casework doors not otherwise indicated.
Continuous Hinges	Wrought steel	BHMA B81491	Where indicated.
Concealed Hinges, Reversible	Wrought steel	BHMA B81501	Casework doors where indicated
Pivot Hinges	Wrought steel	BHMA B81551	Wardrobe doors where indicated
Casework Pulls	Extr. Alum., back mounted	OEPCCO MC-402	One each casework door, drawer.
Cabinet Catches	H.D., Magnetic	BHMA B43172	One each casework door.
Adj. Shelf Standards	Wrought steel	BHMA B84071	Where indicated use BHMA B84001 shelf rests (4 per shelf).
Drawer Slides	Side mount,	BHMA B85062	2 ea. Drawer.
Casework Locks	Half-mortise, 5-pin tumbler & dead bolt	'Corbin' #0696 or #0796	Where indicated.

INSTALLATION: Install architectural woodwork plumb, level and straight with no distortion. Shim as required using concealed shims. Scribe and cut woodwork to fit as joining work. Anchor Woodwork to anchors or blocking or directly to substrates, using concealed fasteners.

STANDING AND RUNNING TRIM: Install with minimum number of joints possible using full-length pieces from maximum length of lumber available. Cape at returns, miter at corners.

CABINETS: Install without distortion so that doors and drawers fit openings and are properly aligned.

PANELING: Anchor paneling to supporting substrate with concealed panel hanger clips. Blind nail back-up strips and similar associated trim and framing.

TOPS: Anchor securely to base units.

WOOD STORAGE SHELVING: Complete assembly of units and install in areas indicated including hardware and accessories.

PART 1 — GENERAL**1.01 RELATED DOCUMENTS**

- A. All of the Contract Documents, including General and Supplementary Conditions and Division 1 General Requirements, apply to the work of this section.

1.02 SUMMARY

- A. The work of this section includes, but is not limited to, the following:
 - 1. Fluid applied waterproofing system
 - 2. Prefabricated drainage composite
 - 3. Protection board
- B. Related Sections: Other specification sections which directly relate to the work of this section include, but are not limited to, the following:
 - 1. Section 02710 – Drainage Composites
 - 2. Section 02712 – Subsurface Drainage Pipe
 - 3. Section 03300 – Cast-In-Place Concrete
 - 4. Section 04200 – Unit Masonry
 - 5. Section 05810 – Expansion Joint Cover Assemblies
 - 6. Section 07150 – Dampproofing
 - 7. Section 07600 – Flashing and Sheet Metal
 - 8. Section 07900 – Joint Sealers
 - 9. Section 15400 – Drains

1.03 REFERENCE STANDARDS

- A. The following standards and publications are applicable to the extent referenced in the text.
- B. American Society for Testing and Materials (ASTM)
 - C 836 Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course
 - C 898 Standard Guide for Use of High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane With Separate Wearing Course
 - D 412 Standard Test Methods for Rubber Properties in Tension
 - D 903 Standard Test Method for Peel or Stripping Strength of Adhesive Bonds
 - D 1644 Test Methods for Nonvolatile Content of Varnishes
 - D 1970 Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection
 - D 3767 Standard Practice for Rubber - Measurements of Dimensions
 - D 5295 Preparation of concrete Surfaces for Adhered Membrane Waterproofing Systems

1.04 SUBMITTALS

- A. Product Data: Submit manufacturer's product data, installation instructions, use limitations and recommendations.
- B. Samples: Submit representative samples of the following for approval:
 - 1. Fluid applied membrane
 - 2. Protection board
 - 3. Prefabricated drainage composite

1.05 QUALITY ASSURANCE

- A. Installer: A firm which has at least 3 years experience in work of the type required by this section.
- B. Materials: Fluid applied waterproofing material shall be two part synthetic rubber based system free of isocyanates and bitumen. For each type of material required for the work of this section, provide primary materials which are the products of one manufacturer.
- C. Pre-Installation Conference: A pre-installation conference shall be held prior to commencement of field operations to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work. Agenda for meeting shall include review of special details and flashing.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials and products in labeled packages. Store and handle in strict compliance with manufacturer's instructions, recommendations and material safety data sheets. Protect from damage from sunlight, weather, excessive temperatures and construction operations. Remove damaged material from the site and dispose of in accordance with applicable regulations.
 - 1. Do not double-stack pallets of waterproofing material on the job site. Provide cover on top and all sides, allowing for adequate ventilation.
 - 2. Store drainage composite or protection board flat and off the ground. Provide cover on top and all sides.
 - 3. Protect waterproofing materials from freezing. In cool temperatures, store the material for several hours at room temperature to facilitate mixing and application.
- B. Sequence deliveries to avoid delays, but minimize on-site storage.

1.07 PROJECT CONDITIONS

- A. Perform work only when existing and forecasted weather conditions are within the limits established by the manufacturer of the materials and products used.
- B. Proceed with installation only when substrate construction and preparation work is complete and in condition to receive membrane waterproofing.

1.08 WARRANTY

- A. Fluid Applied Waterproofing Membrane: Provide written 5 year material warranty issued by the membrane manufacturer upon completion of the work.

PART 2 — PRODUCTS

2.01 MATERIALS (by Grace Construction Products as noted below or approved equal)

- A. Fluid Applied Waterproofing Membranes: Procor® fluid applied membranes by Grace Construction Products; a two part, self-curing, synthetic rubber based material. Procor® fluid applied membranes meet or exceed the performance requirements of ASTM C 836 and other ASTM standards as shown in the following table.
- B. Waterproofing Membrane Physical Properties:

PHYSICAL PROPERTIES FOR PROCOR® FLUID APPLIED MEMBRANES:

Property	Test Method	Typical Value
Color		terra cotta
Cured Film Thickness	ASTM D 3767 Method A	1.5 mm (0.060 in.) nominal
Solids Content	ASTM D 1644	100%
Flexibility, 180° bend over 25 mm (1 in.) mandrel at 32°C (-25°F)	ASTM D 1970	Unaffected
Elongation	ASTM D 412	500% minimum
Peel Adhesion to Concrete	ASTM D 903 Modified ¹	880 N/m (5 lbs/in.)

Footnote:

1. Procor waterproofing membrane is applied to concrete and allowed to cure. Peel adhesion of the membrane is measured at a rate of 50 mm (2 in.) per minute with a peel angle of 90° at room temperature.

- C. Prefabricated Drainage Composite: Hydroduct® 660 Drainage Composite by Grace Construction Products for horizontal surfaces. Hydroduct 220 Drainage Composite by Grace Construction Products for all vertical surfaces. Drainage composite shall be designed to promote positive drainage while serving as a protection course.
- D. Protection Board (only if prefabricated drainage composite is not used):
 - 1. Asphalt Hardboard: A premolded semi-rigid protection board consisting of bitumen, mineral core and reinforcement. Provide 3 mm (0.125 in.) thick hardboard on horizontal surfaces not receiving steel reinforced slab. Where steel reinforcing bars are to be used, apply two layers of 3 mm (0.125 in.) thick hardboard or one layer of 6 mm (0.25 in.) thick hardboard.

2. Expanded Polystyrene Protection Board: 25 mm (1 in.) thick for vertical applications with the following characteristics.
 - Normal Density: 16 kg/m³ (1.0 lb/ft³)
 - Thermal Conductivity, K factor: 0.24 at 5°C (40°F), 0.26 at 24°C (75°F)
 - Thermal Resistance, R-Value: 4 per 25 mm (1 in.) of thickness.
- E. Miscellaneous Materials: Tape and other accessories specified or acceptable to manufacturer of fluid applied waterproofing membrane.

PART 3 — EXECUTION**3.01 EXAMINATION**

- A. The installer shall examine conditions of substrates and other conditions under which this work is to be performed and notify the contractor, in writing, of circumstances detrimental to the proper completion of the work. Do not proceed with work until unsatisfactory conditions are corrected.

3.02 PREPARATION OF SUBSTRATES

- A. Tie-holes and "bugholes" larger than 13 mm (1/2") in diameter or deeper than 3 mm (1/8"), or both, should be either pretreated with Procor or repaired with a lean concrete mix or with a lean concrete mix or grout. See ASTM D 5295, Preparation of Concrete Surfaces for Adhered Membrane Waterproofing Systems, for further details on substrate preparation.
Cracked, pitted, honeycombed or heavily bugholed surfaces can be filled by spraying from close in (10" to 12") but high material usage with result. Under these circumstances it may be more efficient to fill the surface with a parge coat of lean mortar mix before application of the Procor. It is also acceptable to fill in gaps with a compatible sealant or caulk.
- B. Cast-In-Place Concrete Substrates:
 1. Waterproofing application may commence as soon as the substrate can accept foot traffic. Surface shall be free of any visible water.
 2. Fill form tie rod holes with concrete and finish flush with surrounding surface.
 3. Repair bugholes greater than 1/2" (13 mm) in depth and 1/4" (6 mm) in diameter deep and finish flush with surrounding surface.
 4. Remove scaling to sound, unaffected concrete and repair exposed area.
 5. Grind irregular construction joints to suitable flush surface.
- C. Masonry Substrates: Apply waterproofing over concrete block and brick with smooth trowel-cut mortar joints or parge coat.
- D. Plywood Substrates: Pretreat all plywood joints with 75mm (3 in.) wide, reinforced self-adhesive tape. Secure all fasteners.
- E. Related Materials: Treat joints and install flashing as recommended by waterproofing manufacturer.

3.03 INSTALLATION

- A. Refer to manufacturer's literature for recommendations on installation, including but not limited to, the following:
 1. Apply minimum 1.5 mm (0.060 in.) in all areas to be waterproofed. Apply minimum 3 mm (0.120 in.) in all detail areas.
 2. If area to be waterproofed is in direct sunlight and temperature is rising, apply "scratch coat" (a thin application of fluid applied waterproofing) prior to the full application of the waterproofing membrane.
 3. In applications where a minimum slope of 11 mm/m (0.13 in./ft) cannot be achieved, a two coat application of Procor membrane is recommended to achieve the total thickness.
 4. Apply protection board and related materials in accordance with manufacturer's recommendations.

3.04 CLEANING AND PROTECTION

- A. Remove any masking materials after installation. Clean any stains on materials which would be exposed in the completed work.
- B. Protect completed membrane waterproofing from subsequent construction activities as recommended by manufacturer.

GENERAL

DESCRIPTION

Work Included: *Exterior Walls *Sound attenuation
 *Ceilings *Roof Tapered Board Insulation

PRODUCT HANDLING

PROTECTION: Deliver to site; store in dry place with labels intact. Protect materials before, during, and after installation. Protect installed work of other trades.

REPLACEMENTS: In event of damage, make necessary repairs and replacements.

PRODUCTS

BUILDING INSULATION: provide the following insulations or as indicated on drawings.

Insulation shall be the product indicated or an equal approved in advance by the Architect. Location, thickness and type of each insulation listed below refer to Drawings.

RIGID WALL INSULATION: All insulation shall be minimum 2.0 lbs density, class A materials, and provide a 5-year aged "R" value of 5.0 min. at 75 deg. F Mean. Thickness required may vary with manufacturer.

- ***Styrofoam SH:** Dow Chemical
- ***Foamular 250:** U.C. Industries
- ***Polyisocyanurate:** Rmax, Inc.
- ***AMOFoam-SB:** Amoco Foam Products Co.
- ***Thermasheatb:** Rmax, Inc.
- ***Thermal Gard:** Thermal Systems, Inc.

WALL INSULATION:

MASONRY FILL INSULATION - Zonolite: W. R. Grace and Co.

Exterior Wall Insulation-2" Rigid polyisocyanurate Board Insulation with foil facers on both sides-Rmax Inc..

CEILING INSULATION: Flame Spread: 25; R-Value:

- Foil Faced Fiberglas:** Owens-Corning FS-25. R-19
- Thermafiber Foil faced Blankets:** U. S. Gypsum FS-25. R-19.
- Foil Faced Fiberglas Batt:** CertainTeed FSK-25. R-19.
- Foil Faced Fiberglas Batts:** Manville FSK-25. R-19.

METAL BUILDING INSULATION: Provide insulation as indicated on drawings. 2" insulation with thermal liner and 6" fiber glass insulation w/foil face suspended on poultry mesh.

ROOF INSULATION:

ROOF TAPERED BOARD INSULATION: Prelite board insulation. Refer to drawings for slope. Johns Manville or equal.

Roof Board Insulation: 2" Rigid polyisocyanurate Board Insulation with foil facers on both sides-Rmax Inc..

SAFING INSULATION AND FIRE RATED SEALANT

SAFING INSULATION: The following safing insulation shall be used unless otherwise specified.

- Thermafiber:** U. S. Gypsum, 4 pound density (non-asbestos)
- Pyro-Fiber:** Manville, 4 pound density.

SEALANTS: (The following sealants shall be used unless otherwise specified)

Silicone Foam: Dow Corning Fire Stop Foam. (non-asbestos)

Caulk: 3M, Fire Barrier CP-25.

MASTIC: Provide mastic for rigid wall insulation as recommended by manufacturer (non-asbestos).

OTHER MATERIALS: Fasteners, retainers or other materials not specifically described shall be as selected by Contractor and approved by Architect

EXECUTION

SURFACE CONDITIONS

INSPECTION: Prior to work of this Section, inspect installed work and verify that this installation may properly commence. Verify that insulation may be installed in accordance with original design and manufacturer's recommendations.

DISCREPANCIES: In event of discrepancy notify Architect. Do not proceed until discrepancies have been resolved.

INSTALLATION

GENERAL: Install insulation in accordance with manufacturer's current edition of insulation application instructions. Install safing insulation and/or sealant at all fire wall penetrations of structural members, control joints, expansion joints, openings, etc. and as indicated on drawings in accordance with local code authority.

INSPECTION: Verify that all insulation work is properly installed and complete.

GENERAL

Location, all steel col., joists, metal deck, etc. in A/C mezzanine.

FIRE RESISTANCE RATINGS: Provide fireproofing conforming to assemblies indicated by reference to design designations in UL "Fire Resistance Directory"

SUBMITTALS: In addition to product data submit the following.

Certified test results evidencing compliance with requirements: Test results of in-place performance as required for field quality control. Certificates attesting compliance of products and, for primed steel, of primer compatibility with fireproofing under fire exposure conditions, from fireproofing manufacturer

PRODUCTS

CONCEALED SPRAYED - ON FIREPROOFING: For applications of sprayed -on fireproofing concealed from view behind other construction when the work is completed provide manufacturer's standard products complying with requirements indicated below:

CEMENTITIOUS FORMULATION: Factory-mixed dry formulation of inorganic binders and lightweight mineral aggregates mixed with water at project. site to form a slurry for pumping and for dispersal by compressed air introduced at spray nozzle.

BOND STRENGTH: 80 lbs. per sq. ft. min. per ASTM E 736.

COMPRESSIVE STRENGTH: 3.47 lbs. per sq. in. min. per ASTM 761

CORROSION RESISTANCE: No evidence of corrosion per ASTM E 937.

DEFLECTION: No cracking, spalling, delamination or the like as ASTM E 759.

EFFECT OF IMPACT ON BONDING: No cracking, spalling, delamination or the like per ASTM E 760.

AIR EROSION: Maximum weight loss of 0.25 grams per sq. ft. per ASTM E 859.

DRY DENSITY: Values for average and individual densities as req. for fire-resistance ratings indicated, per ASTM E 605.

HARDNESS: 0.50 in. max. penetration per ASTM C 569.

SURFACE BURNING CHARACTERISTICS: Max. flame spread & developed values of 10 and 0, respectively per ASTM E 84.

PRODUCTS: Subject to compliance with requirements, provide one of the following:

"Monokote"; Grace Construction Products Div., W. R. and Co.

AUXILARY FIREPROOFING MATERIALS: Provide products compatible with sprayed-on fireproofing products and substrates and approved by fireproofing manufacturer for uses and fire-resistance rated designs indicated.

INSTALLATION

Comply with fireproofing manufacturer's instructions for mixing materials, for application procedures and for types of equipment used to convey and spray-on fireproofing materials; as applicable to the particular conditions of installation and as required to achieve fire-resistance ratings indicated.

For exposed fireproofing provide a uniform finish complying with description indicated for each type of material and Patching Architect's sample, or if none, finish approved for field-erected mockup.

Spray textured finish with flat surfaces rolled with a damp paint roller

CLEANING: Remove over-spray and fallout of materials from surfaces of other work and clean exposed surfaces to remove evidence or soiling.

PERFORMANCE REQUIREMENTS: Provide preformed panel systems which comply with performance requirements indicated based on pre-testing of installed panels using the following methods.

***Air infiltration:** ASTM E 283.

***Thermal:** ASTM C 236.

***Water Penetration:** ASTM E 331.

***Structural Properties:** ASTM E 72.

STRUCTURAL DESIGN REQUIREMENTS: Provide panels which comply with structural requirements indicated, based on design procedures of AISI "Specification for the Design of Cold-Formed Steel Structural Members".

SUBMITTALS: Submit manufacturer's product data describing preformed roofing and siding panels and structural support system. Submit shop drawings showing layout of panels on roofs and walls, and details of special and typical conditions. Submit certifications by manufacturer that products have been pre-tested and comply with performance requirements indicated.

STEEL FOR PAINTING/COATING: Hot-dip zinc coated steel sheet, ASTM A 446, Grade A, except as otherwise indicated, G90 zinc coating, surface treated for maximum coating performance.

FASTENERS: Manufacturer's standard, with heads gaskets where exposed on exterior. Comply with UL 90 wind uplift requirements.

ACCESSORIES: Provide manufacturer's standard and accessories as required for a complete installation including trim, copings, fasciae, gravel stops, mullions, sills, flashing, corner units, ridge closures, clips, seam closures, battens, gutters, downspouts, louvers, gaskets, sealants, and similar items.

PRODUCT

1. **Ultra Deck** (roof installation) by MBCI or approved equal **(Ultra Deck not used)**
 - A. Panel profile: 3" high rib 24" wide.
 - B. Panel style: Trapezoidal rib, positive snap together panels, seams utilizing male & female rib configurations, with factory applied hot melt mastic in female rib.
 - C. Gauge: 24
 - D. Substrate: Galvalume sheet steel, .05 ounces minimum, minimum yield of 50,000 PSI
 - E. Clip: Articulating clip, providing thermal expansion and contraction, correcting for out-of-place sub framing alignment to a maximum of 7 degrees.
 - F. Texture: Smooth
 - G. Finish: Bare Galvalume (20 yr. Warranty)
 - H. Color: Selected from manufacturer's standard color chart
 - I. Acceptable manufacturer: Southern Structures, Inc. MBCI "Ultra-Deck"
Mc Elroy Metal "Master Deck" or approved equals.

2. **Vertical Leg Panel BattenLok** MBCI or approved equal **(Vertical Leg not used)**
 - A. Panel profile: 2" high rib, 16" pitch, 16" wide
 - B. Panel style: Flat panel with field seamed ribs, seams utilizing rib configurations.
 - C. Gauge: 24
 - D. Texture: Smooth
 - E. Finish: Signature 300 Kynar 500/ Hylar 5000
 - F. Color: Selected from manufacturer's standard color chart
 - G. Acceptable panel substitute: LokSeam or approved equal

3. **Artisan series L12** no beads by MBCI- fascia at curved roof
 - A. 1" in. ht. 12" wide
 - B. Panel style: flat interlocking panel no beads @ 12" o.c

- C. Gauge: 24
 - D. Texture: 1. Smooth.
 - E. Finish: Signature 300 Kynar 500/ Hylar 5000; Color: Selected from manufacturer's standard line.
 - G. Acceptable panel substitute: FW 120-1 w/ bead by MBCI or approved equal
4. **FW 120-0** by MBCI- wall panel
- A. 1" in. ht. 12" wide
 - B. Panel style: flat interlocking panel
 - C. Gauge: 24
 - D. Texture: 1. Smooth.
 - E. Finish: Signature 300 Kynar 500/ Hylar 5000; Color: Sandstone metallic or as Selected from manufacturer's metallic color line.
 - F. Acceptable panel substitute: FW 120-1 w/ bead by MBCI or approved equal
5. **High Seam (1-1/2") Tee Panel** standing seam metal curved roof Berridge or approved equal.
- A. Panel profile: 1-1/2" high rib, 18.25" wide.
 - B. Panel style: curved panels, concealed fasteners. extruded vinyl weather seal, UL 90 wind uplift
 - C. Gauge: 24
 - D. Texture: Smooth
 - E. Finish: Premium thermoset silicone polyester 20 yr warranty
 - F. Color: as selected by architect.
 - G. Acceptable manufacturer: submit for approval.
6. **FlexLoc** by MBCI- soffit
- A. 3/16" in. ht. 10.5" wide
 - B. Panel style: flat interlocking panel
 - C. Gauge: 24
 - D. Texture: 1. Smooth.
 - E. Finish: Signature 300 Kynar 500/ Hylar 5000; Color: Sandstone metallic or as Selected from manufacturer's metallic color line

FABRICATION

- A. Roll from panels in continuous length, full lengths of detailed runs.
- B. Standard panel length shall be no more than 45 feet.
- C. Fabricate trim, flashing, and accessories to detailed profiles.
- D. Fabricate trim and flashing from same material as panel.

INSTALLATION

Comply with panel mfr's. Instructions for anchorage, joint sealers, flashing and trim for the proper and permanent installation of panels, with provisions for thermal expansion, erected in panel pattern indicated. Comply with UL 90 wind uplift requirements. Conceal fasteners by use of laps and joint clips. Separate aluminum sheets from contact with wood, masonry and steel (structure, panels or fasteners), by either a 15 mill coating of fibered asphalt paint or by tapes or gaskets of type recommended by panel manufacturer. Except as otherwise recommended by manufacturer, fasteners, gaskets where needed for waterproof or vapor performance.

WARRANTY/GUARANTEE

Provide manufacturer's standard 20 yr. material warranty/guarantee.

PART 1 GENERAL**1.01 SUMMARY**

- A. Section Includes
 - 1. Asphaltic modified bituminous roofing
 - 2. Insulation
- B. Related Sections
 - 1. Section 06100: Rough Carpentry
 - 2. Section 07620: Sheet Metal Flashing and Trim
 - 3. Section 15430: Plumbing Specialties

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)
- G. American Society of Civil Engineers (ASCE)

1.03 DEFINITIONS

- A. Roofing Terminology: Refer to ASTM D1079 and the glossary of the National Roofing Contractors Association (NRCA) *Roofing and Waterproofing Manual* for definitions of roofing terms related to this section.

1.04 PERFORMANCE REQUIREMENTS

- A. Provide an installed roofing membrane and base flashing system that does not permit the passage of water, and will withstand the design pressures calculated in accordance with the most current revision of ASCE 7
- B. GAF® shall provide all primary roofing materials that are physically and chemically compatible when installed in accordance with manufacturers current application requirements.

1.05 SUBMITTALS

- A. Product Data: Provide product data sheets for each type of product indicated in this section.
- B. Shop Drawings: Provide manufacturers standard details and approved shop drawings for the roof system specified.
- C. Samples: Provide samples of insulation(s), fasteners and roll goods for verification of quality.
- D. Certificates: Installer shall provide written documentation from the manufacturer of their authorization to install the roof system, and eligibility to obtain the warranty specified in this section.

1.06 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: GAF® shall provide a roofing system that meets or exceeds all criteria listed in this section.
- B. Installer's Qualifications:
 - 1. Installer shall be classified as a **Master** or **Master Select**™ contractor as defined and certified by GAF®.
- C. Source Limitations: All components listed in this section shall be provided by a single manufacturer or approved by the primary roofing manufacturer.
- D. Final Inspection

Manufacturer's representative shall provide a comprehensive final inspection after completion of the roof system. All application errors must be addressed and final punch list completed.

1.07 PRE-INSTALLATION CONFERENCE

- A. Prior to scheduled commencement of the roofing installation and associated work, conduct a meeting at the project site with the installer, architect, owner, GAF® representative and any other persons directly involved with the performance of the work. The installer shall record conference discussions to include decisions and agreements reached (or disagreements), and furnish copies of recorded discussions to each attending party. The main purpose of this meeting is to review foreseeable methods and procedures related to roofing work.

1.08 REGULATORY REQUIREMENTS

- A. All work shall be performed in a safe, professional manner, conforming to all federal, state and local codes.

1.09 DELIVERY, STORAGE AND HANDLING

- A. Deliver all roofing materials to the site in original containers, with factory seals intact. All products are to carry either a GAF® or GAF® label.
- B. Store all pail goods in their original undamaged containers in a clean, dry location within their specified temperature range.
- C. Store roll goods on end on pallets in a clean, dry, protected area. Take care to prevent damage to roll ends or edges. Do not double stack modified bitumen products.
- 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. Remove manufacturer supplied plastic covers from materials provided with such. 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 work day. Do not remove any protective tarpaulins until immediately before the material is to be installed.
- F. Materials shall be stored above 55°F (12.6°C) a minimum of 24 hours prior to application.

1.10 PROJECT CONDITIONS

- A. Weather
 1. Proceed with roofing only when existing and forecasted weather conditions permit.
 2. Ambient temperatures must be above 45°F (7.2°C) when applying hot asphalt or water based adhesives.

1.11 WARRANTY

- A. Provide Manufacturer's standard WeatherStopper® Diamond Pledge™ Guarantee with single source coverage* and no monetary limitation, where the manufacturer agrees to repair or replace components in the roofing system, which cause a leak due to a failure in materials or workmanship.

Base Bid: Duration: Fifteen (15) years from the date of completion.

Alternate # 3: Duration: Twenty (20) years from the date of completion **(not used)**.

*Materials and workmanship of listed products within this section when installed in accordance with current GAF® application and specification requirements. Contact GAF® Contractor Services for the full terms and conditions of the guarantee.

PART 2 PRODUCTS**2.01 ACCEPTABLE MANUFACTURER**

- A. GAF® - 1 Campus Drive, Parsippany, NJ 07054
- B. Johns Manville
- C. Submit others for approval.

2.02 INSULATION

- A. Rigid polyisocyanurate board, with a strong white or black fibrous glass facer conforming to or exceeding the requirements of ASTM C 1289 / FS HH-I-1972. **EnergyGuard™ Polyiso**, by GAF® with the following characteristics:

1. Board Thickness:	1"	1.5"	2"	3"
2. Thermal Resistance (LTTR value) of	R6	R8.6	R12	R18.5
3. Compressive Strength:	20 psi			
- B. Expanded perlite mineral aggregate board conforming to or exceeding the requirements of FS HH-I-529b, ANSI/ASTM C 728 **EnergyGuard™ Perlite Recover Board**, by GAF® or equal with the following characteristics
 - 1. Board Density: 9 lb./cu. ft. min
 - 2. Board Thickness: ½"
 - 3. Thermal Resistance (R value) of: 1.32
- C. Expanded perlite mineral aggregate board conforming to or exceeding the requirements of FS HH-I-529b, ANSI/ASTM C 728. **EnergyGuard™ Perlite Tapered Roof Insulation**, by GAF® with the following characteristics
 - 1. Board Density: 9 lb./cu. ft. min.
 - 2. Board Thickness: **tapered 1/8" and 1/4" slope**
 - 3. Thermal Resistance (R value) of varies

2.03 INSULATION ACCESSORIES

- A. Cant Strip: Factory fabricated rigid perlite strip cut at angles to provide a true 45° Angle between horizontal and vertical surfaces. **EnergyGuard™ Perlite Cant Strip**, by GAF®
- B. Tapered Edge Strip: Factory fabricated rigid perlite strip cut at angles to provide a smooth transition between differences in elevation. **EnergyGuard™ Tapered Edge Strip**, by GAF or equal.

2.04 PLY SHEETS

- A. Premium glass fiber asphalt saturated ply sheet with flexible design: Conforms to or exceeds requirements of ASTM D 2178 Type VI and UL Type G1 BUR. Each roll contains five (5) squares (530 sq. ft.) of material. approximately 39.375' x 161.8' (1.0m x 49.3m), 44 lbs. (20 kg), **GAFGLAS® FlexPly™ 6** or equal.

2.05 MEMBRANE MATERIALS

Base Bid: Fire resistant, strong, resilient, asphalt modified bitumen membrane containing a core of non-woven polyester mat coated with flexible, SBS polymer-modified asphalt. Conforms to or exceeds the requirements of ASTM D 6164 Type I Grade G. Each roll contains one (1) square of material. approximately 39.625' x 32.8' (1 m x 10 m), 102.5 lbs. (46.4 kg), **Ruberoid® Mop Granule FR** roof membrane with a granular surface, 15 year No Dollar Limit warranty, spec # I-2-1 MGFR

2.06 FLASHING MATERIALS

- A. Heavyweight asphalt coated glass fiber base sheet: Conforms to or exceeds requirements of ASTM D 4601, Type II, UL Type G2 BUR, and Federal Spec SS-R-620B Type II. Each roll contains three (3) squares (320 sq. ft.) of material, approximately 39.375" x 97.5' (1 m x 29.7 m); 68 lbs. (30.8 kg), **GAFGLAS® #75** base sheet.
- B. Premium glass fiber asphalt saturated ply sheet with flexible design: Conforms to or exceeds requirements of ASTM D 2178 Type VI and UL Type G1 BUR. Each roll contains five (5) squares (530 sq. ft.) of material, approximately 39.375" x 161.8' (1.0m x 49.3m), 44 lbs. (20 kg), **GAFGLAS® FlexPly™ 6**
- C. **Base Bid:** Fire resistant, strong, resilient, asphalt modified bitumen membrane containing a core of non-woven polyester mat coated with flexible, SBS polymer-modified asphalt. Conforms to or exceeds the requirements of ASTM D 6164 Type I Grade G. Each roll contains one (1) square of material, approximately 39.625" x 32.8' (1 m x 10 m), 102.5 lbs. (46.4 kg), **Ruberoid® Mop Granule FR** roof membrane.

2.07 BITUMEN / ADHESIVES

- A. Asphalt Bitumen: ASTM D 312 Type III or IV

2.08 ACCESSORIES

A. Mechanical Fasteners

- 1. **Drill•Tec™ Standard Roofing Fastener:** Alloy steel fastener with CR-10 coating with a .220" diameter thread: Factory Mutual Standard 4470 Approved, #3 Phillips truss head or hex head.
- 2. **Drill•Tec™ 3" Galvalume® Plate:** Galvalume, 3" (7.5 cm) diameter, center hole .25" (inch), for use with Standard, Heavy Duty, CD-10, Fluted Nail or Toggle Bolt. 3" flat plate shall be used to fasten Dens Deck® or Securock® Roof board in cold applied systems.
- 3. **Threaded Cap Nail:** Annular-threaded electro-galvanized with yellow di-chromate coating, with 1" (25 mm) round or square cap, as manufactured by the Simplex Nail Corporation.

B. Standard Vents

- 1. A spun aluminum vent, pre-flashed with modified bitumen designed to waterproof soil pipes and roofing protrusions. The **Standard MVent**, by MWeld®.
NOTE: Not for use over active pipes that emit steam or excessive moisture vapor, condensation may occur. Not for use over boiler or heater/furnace vent pipes..

C. Plumbing Vents

- 1. 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. The **Pre-Flashed Plumbing Vent**, by MWeld®.

D. Sealant Pans

- 1. 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. The **M-Curb** and **M-Thane**, by MWeld®

E. Expansion Joint Covers

- 1. 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. The **Metalastic® Expansion Joint Cover**, by GAF®.

F. **TOPCOAT® Flexseal**

1. Solvent-based synthetic elastomeric sealant

G. **TOPCOAT® Flashing Fabric**

1. Non-woven, 100% fully spun-bonded polyester fabric.

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 SUBSTRATE PREPARATION

A. Plywood Deck

1. Plywood sheathing must be exterior grade, minimum 4 ply, and not less than 15/32" (12 mm) thick.
2. Preservatives or fire retardants used to treat the decking must be compatible with roofing materials.
3. The deck must be installed over joists that are spaced 24" (61 cm) o.c. or less.
4. The deck must be installed so that all four sides of each panel bear on and are secured to joist and cross blocking. "H" clips are not acceptable.
5. Panels must be installed with a 1/8" to 1/4" (3mm – 6mm) gap between panels and must match vertically at joints to within (1/8" (3mm).
6. Decking should be kept dry and roofed promptly after installation.
7. Light metal wall ties or other structural metal exposed on top of the wood deck shall be covered with one ply of a heavy roofing sheet, such as Stratavent® Eliminator™ Nailable Base Sheet, extending 2"-6" (5.1 cm – 15.2 cm) beyond the metal in all directions. Nail in place before applying the base ply.
8. Tape and staple fastening systems may be used on wood decks when they comply with local building codes.
9. Attach an acceptable base sheet through flat metal caps or use nails with attached 1" (25 mm) square or round metal caps that have a minimum withdrawal resistance of 40 pounds each (178 N).

3.03 INSTALLATION - GENERAL

- A. Install GAF®'s Ruberoid® roofing system according to all current application requirements in addition to those listed in this section.
- B. GAF® Ruberoid Specification #: **Base Bid: I-2-1 MGFR;**
- C. When the slope of the roof is 1/2" per foot or greater, install all plies parallel with the slope of the roof, and install intermediate wood nailers as required for the specific roof slope. Plies must extend over ridges and nailed on 6" centers.
- D. 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.

3.04 BITUMEN

- A. Do not mix different types of asphalt
- B. Use only ASTM D 312, Type III or Type IV Steep Asphalt. **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. Application with hot asphalt requires continuous, uniform interply mopping rates of 25 lbs. +/- 20% per 100 square feet of roof area (1.2 kg/m²).
- D. Application temperature of the asphalt must be at the Equiviscous Temperature (EVT) with a tolerance of +/- 25°F (13.9°C), at which a viscosity of 125 centipoise is attained. When using mechanical asphalt applicators, the target viscosity should be 75 centipoise.
- E. For all SBS modified asphalt flashings, the minimum application temperature of the asphalt must be at the EVT or 425°F (218°C), whichever is greater, with a rolling bank (puddle) of mopping asphalt across the full width of the roll.
- F. Do not heat the asphalt to or above its flash point or hold the asphalt at temperatures above the finished blowing temperature for more than 4 hours.
- G. Do not keep heated tankers above 325°F (163°C) overnight.

3.05 INSULATION - 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 may 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 hot steep 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.

3.06 INSULATION – 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.

3.07 INSULATION – SUBSEQUENT LAYERS

- A. Install insulation layers, maximum 4' x 4' (1.22m x 1.22m) board size, in a full and uniform mopping of hot 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.

3.08 PLY SHEETS

- A. Type III and Type IV asphalt may be used on slopes less than 1/2" per foot. Type IV must be used on any slopes greater than 1/2" per foot.
- B. Asphalt must be applied in a full uniform layer, at a rate of 25 lbs./square (1.2 kg/m²).
- C. Two-ply interply 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 style. 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).

3.09 CAP SHEET

- A. For slopes less than 1/2" per foot (4.2 cm per meter), Type III or IV asphalt may be used. Type IV must be used on all slopes 1/2" per foot (4.2 cm per meter) and over. Asphalt shall be applied at its EVT temperature or 425°F (218°C), whichever is greater, in a uniform layer, without voids, at a rate of 25 lb/square (1.2 kg/m²) ±20%. See Article 3.04 "Bitumen". The mopping stroke will be such that the side lap is covered with asphalt last. A rolling bank (puddle) of mopping asphalt must be maintained across the full width of the roll.
- B. Cap sheet application: Install full width cap sheets, lapping 3" (7.62 cm) on the sides and 6" (15.2 cm) on ends. Stagger adjacent end laps a minimum of 18" (45.7 cm) apart. All side and end laps must be staggered from underlying plies.
- C. All laps must be parallel or perpendicular to the slope of the roof such that the flow of water is never against the lap.
- D. SBS membranes must not be applied during adverse weather or without precautionary measures in temperatures below 45°F (7.2°C). Contact GAF® Contractor Services for details.
- E. Coiled rolls should be unrolled, placed upside down and allowed to "relax" prior to installation. Then re-roll to apply.
- F. Care should be taken to insure that the cap sheet lays flat in the asphalt. There must be complete adhesion between the cap sheet and the mopping asphalt. Brooming of the plies may be necessary under certain conditions to insure that the cap sheet adheres solidly to the asphalt. Apply extra pressure to avoid creating open channels, where three or more membranes are lapped.
- G. A minimum 3/8" (10 mm) asphalt flow-out must be obtained at all laps. Dry laps are not acceptable. Check all seams for full and uniform adhesion.

- H. 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 Ruberoid® Mop SBS membrane must be installed over the end laps.

3.10 BITUMINOUS BASE FLASHINGS

- A. Install GAF® base flashing specification 3WB6M over all cant strips, horizontal to vertical transitions, roof edges and roof penetrations. Flashings are to be secured in accordance with current GAF® application guidelines.
- B. Nailable curbs and walls must be covered with a layer of approved GAFGLAS® 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 as shown in the applicable GAF® construction detail.
- 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 as shown in the applicable GAF® construction detail.
- 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 counterflashing. The finished flashing ply must extend out onto the field of the roof as shown in the applicable GAF® construction detail, 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 Type IV hot asphalt. Maintain asphalt at the Equiviscous Temperature (EVT) +/- 25°F (13.9°C) for all base and ply sheets used in flashing details. Apply flashing membranes at the EVT temperature or 425°F (218°C) whichever is greater. 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. An alternate method of corner reinforcing is to install a smooth MB membrane reinforcement piece on the prepared corner substrate prior to final surfacing membrane. Refer to MB Flashing Details section of the GAF® *Application and Specifications Manual*.

3.11 PENETRATIONS

- A. Horizontal penetrations shall be flashed with M-Curbs filled with M-Thane sealant, then coated with Topcoat® Flexseal.
- B. Vertical penetrations shall be flashed with Topcoat® Flashing Fabric embedded between two coats of Topcoat® Flexseal.

3.12 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. All metal edge details scheduled to be included in the **Edge to Edge Coverage** of the Diamond Pledge™ Guarantee must be submitted and approved in writing by the manufacturer prior to project commencement
- C. When it is unavoidable to use metal in the roofing system (i.e., lead flange at drains, gravel stops), 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.) should be 16 oz. (0.56 mm) copper, 24 gauge (0.71 mm) galvanized or stainless steel, 2 1/2 to 4 lb (1.1-1.8 kg) lead, or 0.032" (0.81 mm) aluminum.
- D. 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.
- E. 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.
- F. Use fastener types compatible with the sheet metal type.
 - 1. Copper or lead-coated copper: use copper or bronze fasteners.
 - 2. Lead and galvanized steel: use galvanized or cadmium-plated sheet fasteners.
 - 3. Aluminum: use aluminum fasteners.
 - 4. Stainless steel: use stainless steel fasteners
- G. Metal counter-flashing shall have a minimum 4" (10.2 cm) face with a drip lip. The bottom edge of the counterflashing shall cover the roofing membrane and/or base flashing by a minimum of 4" (10.2 cm). Metal counter flashing used for masonry walls, wooden 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, wood siding 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.
- H. 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.

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 Ruberoid® 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

3.13 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. This type of walkway is not for sidewalk or patio-type use.
- 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

3.14 ROOF 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

3.15 CLEAN-UP

- 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.

END OF SECTION