Modified Bitumen Roof Restoration

I. General

1.01 Summary

A. This outlines smooth modified bitumen roof repair, coating and restoration procedures for the application of EPDM Coatings to fix roof leaks and extend the service life.
B. These are suggested specifications and actual application requirements may vary and are the responsibility of the installer.
C. The manufacturer's application instructions for each product used are considered part of these specifications and should be followed at all times.

1.02 Submittals

A. Submit product data sheets, technical data verifying physical properties of materials and installation instructions.
B. Upon request, submit test reports demonstrating compliance with specified design and performance criteria.
C. Submit material safety data sheets.

1.03 Quality Assurance

A. **Supplier Qualifications:** The EPDM Roof Coating System for *modified bitumen roofs*, as supplied by EPDM Coatings, is approved for use on the project.
B. **Installer Qualifications:** Utilize an installer with demonstrated experience on projects of similar scope and complexity. The installer shall be approved by EPDM Coatings to apply the system. Manufacturer's written verification of applicator approval is required.

1.04 Delivery, Storage and Handling

A. **Delivery:** Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
B. **Storage:** Store all materials at temperatures between 55°F - 90°F (12.7°C - 32.2°C) with careful handling to prevent damage. Do not store at high temperatures in direct sunlight. Protect from exposure to harmful environmental conditions.
C. **Protection:** Protect all materials from freezing and other damage during transit, handling, storage and installation.

1.05 Project / Site Conditions

A. Substrate should be structurally sound.
B. Recommendations for material consumption are for ideal conditions. Product coverage rates may vary due to uneven application, surface texture, absorptive properties, wind conditions while spraying and/or other variables.
C. A moisture survey or other assessments may be needed to determine the presence of wet insulation under existing roofing material.
D. No application of materials are permitted if inclement weather, precipitation, freezing temperatures are expected within 24 hours or if the following conditions are present:

Water-Based	
Ambient Air Temperature	below 55°F (10°C) or above 100°F (37.8°C)
Substrate Temperature	below 45°F (7.2°C) or above 130°F (54.4°C)
Humidity:	above 85% (allow extended drying time above 80%)

Solvent-Based	
Ambient Air Temperature	below 45°F (7.2°C) or above 95°F (35.0°C)
Substrate Temperature	below 35°F (1.6°C) or above 120°F (48.8°C)
Humidity	above 95%

1.06 Detail Work

A. This specification may not outline all procedures for preparation and finishing of penetrations, drains, flashings, etc. This work should be outlined separately by the contractor before the work commences and shall be performed observing good trade practices.

1.07 Warranty

A. **Manufacturer's Warranty:** Manufacturer's standard warranty document shall be executed by the authorized company official.
B. Comply with manufacturer's warranty application procedures. A Pre-Job Qualification Form should be submitted and approved prior to job commencement.
C. **Warranty Period:** [5 years] [10 years]

II. Products

2.01 EPDM Roof Restoration System

A. The elastomeric roofing system for *modified bitumen roofing* is a spray-applied roof coating supplied by EPDM Coatings.

Product	Acrylic System	Solvent System
PrimeLock® Primer	Bonding Primer	Neoprene Primer
SeamStitch®	Polyester Roofing Fabric Acrylic Elastomeric Caulk	Polyester Roofing Fabric Butyl Rubber Caulk
EnergyGuard® Coating	Acrylic Elastomeric Coating	Butyl Rubber Coating

2.02 Product Substitutions

A. For quicker repairs, use SeamStitch® Butyl Tape or Eternabond® WebSeal in lieu of PrimeLock® Bonding Primer and SeamStitch® Polyester Roofing Fabric when sealing non-structural gaps, seams, overlaps, flashings and penetrations.
B. Use EnergyGuard® Butyl Rubber Coating instead of PrimeLock® Bonding Primer as the adhesive for SeamStitch® Polyester Roofing Fabric when installing the Solvent Based System.

2.03 Related Materials

A. Roof accessories, flashing, seam tapes and similar materials shall be approved by the manufacturer. All materials used shall be applied in accordance with its manufacturer's recommendations.

2.04 Equipment

A. Visit the EPDM website for recommended spray equipment guidelines, or consult the spray equipment manufacturer directly.

III. Execution

3.01 Manufacturer's Instructions

A. Comply with the instructions and recommendations of the roof restoration system manufacturer.
B. Comply with manufacturer's product data, including product technical bulletins.

3.02 Examination

A. Verify conditions are acceptable for application of roof restoration system.
B. Inspect *modified bitumen roof* to receive roof coating and make sure they are clean, sound, properly prepared and free of moisture, dirt, debris or other contaminants.
C. A comprehensive moisture survey is to be conducted to locate and identify areas of trapped moisture and saturated insulation.
D. Verify that all on-roof items, penetrations, mechanical equipment, hvac drains are in place and secure. All air conditioning and air intake vents should be suitably protected or closed.
E. Verify that areas within the vicinity of the application area as protected from overspray.
F. Verify that all roof drains, gutters, downspouts, catch basins are clean and in working order.

3.03 Preparation

A. **Cleaning:** The entire *modified bitumen roof* surface must be clean, sound, dry and free of any contaminants that would interfere with the proper adhesion of the roof coating. This may require pressure washing, scraping, wire brushing or other means necessary while observing responsible trade practices. All loose paint and rust should be removed before applying any product.
B. **Ponding Water:** Contractor shall make every effort to mechanically eliminate all ponding water areas on the *built up roof* prior to application of any roof coating product. For roofs with minor ponding (ie. small puddles less than 1/2" deep) that cannot be corrected, consider using the solvent system.
C. **Repairs:** Wet roof insulation and damaged membranes are to be removed and replaced as necessary to match existing specified material. All ponds that hold water over 1" for more than 48 hours should be mechanically diverted.
D. Do not apply coatings until all unsatisfactory conditions have been corrected in a manner acceptable to the original *modified bitumen roofing* manufacturer.

3.04 Application

A. Inspect *modified bitumen* to receive roof coating. Always perform a coating adhesion test before doing the entire job.
B. **Primer:** Entire *modified bitumen roof* shall be primed using the appropriate primer and following the application rates specified in the table below.
C. **Seams:** All seams, penetrations and parapet walls should be flashed using SeamStitch® Polyester Roofing Fabric and PrimeLock™ Bonding Primer. Apply a thin coat of PrimeLock® Bonding Primer over the seam and roll out 6" fabric over the seam and apply another coat of PrimeLock® Bonding Primer over the fabric. Encapsulate the fabric with the appropriate elastomeric coating and feathering it at least 2" to 3" past the edge of the fabric. Substitute PrimeLock™ Bonding Primer with EnergyGuard® Butyl Rubber Coating when installing a solvent system. Read 2.02 for details.
D. **Cracks / Splits:** Repair all cracks and splits using the same method as seam preparation above. If cracks and splits are all over the *built up roof*, a full fabric system will be necessary.
E. **Base Coat:** Apply appropriate base coat using the application rates specified in the table below. Allow to dry thoroughly for 8 - 12 hours depending on humidity and temperature.
F. **Top Coat:** Apply appropriate top coat in a cross-hatch technique using the application rates specified in the table below. Allow to dry and cure before exposing to foot traffic.

Standard System: Use the Acrylic System for *built up roofs* with good slope and no ponding water issues. Use the Solvent System for *built up roofs* with minor ponding issues or when outdoor temperatures are no longer favorable for acrylic coatings.

Acrylic Fabric Reinforced System: SeamStitch® Polyester Roofing Fabric should be installed on the entire *built up roof* surface. Apply a thin coat of PrimeLock® Bonding Primer on the roof surface, roll out 40" SeamStitch® Polyester Roofing fabric making sure there are no air pockets and the fabric lays as flat as possible. Apply another coat of PrimeLock® Bonding Primer to totally saturate the fabric. Overlap edges of fabric at least 4".

Solvent Fabric Reinforced System: Prime the entire roof with PrimeLock® Neoprene Primer. Use the same procedure above but use EnergyGuard® Butyl Rubber Coating instead of PrimeLock® Bonding Primer.

Acrylic System for Built Up Roofs	PrimeLock® Primer	EnergyGuard® Base Coat	EnergyGuard® Finish Coat
Standard System 5 yr (30 mils)	Bonding Primer 0.65 gal / 100ft^2	Acrylic Elastomeric Coating 1.50 gal / 100ft^2	Acrylic Elastomeric Coating 1.50 gal / 100ft^2
Reinforced System 5 yr (40 mils)	Bonding Primer 2.50 gal / 100ft^2	Acrylic Elastomeric Coating 1.25 gal / 100ft^2	Acrylic Elastomeric Coating 1.25 gal / 100ft^2
Standard System 10 yr (40 mils)	Bonding Primer 0.65 gal / 100ft^2	Acrylic Elastomeric Coating 2.00 gal / 100ft^2	Acrylic Elastomeric Coating 2.00 gal / 100ft^2
Reinforced System 10 yr (45 mils)	Bonding Primer 2.50 gal / 100ft^2	Acrylic Elastomeric Coating 1.50 gal / 100ft^2	Acrylic Elastomeric Coating 1.50 gal / 100ft^2

Solvent System for Built Up Roofs	PrimeLock® Primer	EnergyGuard® Base Coat	EnergyGuard® Finish Coat
Standard System 5 yr (20 mils)	Neoprene Primer 0.75 gal / 100ft^2	Butyl Rubber Coating 1.75 gal / 100ft^2	Butyl Rubber Coating 1.75 gal / 100ft^2
Reinforced System 5 yr (30 mils)	Neoprene Primer 0.50 gal / 100ft^2	Butyl Rubber Coating 2.00 gal / 100ft^2	Butyl Rubber Coating 1.75 gal / 100ft^2
Standard System 10 yr (30 mils)	Neoprene Primer 0.75 gal / 100ft^2	Butyl Rubber Coating 2.25 gal / 100ft^2	Butyl Rubber Coating 2.25 gal / 100ft^2
Reinforced System 10 yr (35 mils)	Neoprene Primer 0.50 gal / 100ft^2	Butyl Rubber Coating 2.25 gal / 100ft^2	Butyl Rubber Coating 2.25 gal / 100ft^2

3.05 Field Quality Control

A. Utilize manufacturer's field services to verify proper installation of the system. Areas that do not meet the minimum standards for application specified herein shall be corrected at the contractor's expense. Manufacturer's inspection or verification shall not constitute acceptance of responsibility for any improper application of material.

3.06 Cleaning

A. Surfaces not to be coated shall be protected during the application of the system. If protection is not feasible, surfaces shall be restored to their proper condition by cleaning, repairing or replacing.
B. In conjunction with the final inspection, all debris, containers, materials and equipment are to be properly removed from the job site. Grounds are to be cleaned undamaged and acceptable to the owner.
C. Dispose of all containers in accordance with state and local environmental regulations.
D. Reflectivity of coatings may be reduced if roof surface is not cleaned regularly.

3.07 Protection

A. Control overspray especially during windy conditions.
B. All parking areas adjacent to (within 75 feet) the work area are to be cleared and roped off.
C. Protect work from damage due to subsequent construction activity on the site.
D. Roof coatings are not traffic grade. Areas surrounding roof top equipment may be reinforced by embedding SeamStitch® Polyester Roofing fabric and applying a thicker membrane (40 - 50 mils). Walk pads should be used if frequent maintenance traffic is expected.