

GreenSil EPDM Silicone Roof Restoration System TECHNICAL SPECIFICATION

PART 1 GENERAL REQUIREMENTS

1.01. SCOPE

- A. Provide labor, materials, equipment, and supervision necessary to install an elastomeric silicone coating restoration system as outlined in this specification for the complete roof restoration.
- B. Successful application is dependent upon the experience, integrity, ability, technology, and common sense of the designer and applicator/contractor.
- C. The manufacturer's application instruction for each product utilized is to be considered part of these specifications and should be followed at all times.

1.02. QUALITY ASSURANCE

- A. Supplier Qualifications: The GreenSil Silicone Restoration System, utilizing GreenSil 100 series high solids silicone, as manufactured by UltraTite Solutions, LLC (UltraTite).
- B. Applicator Qualifications: The applicator shall be approved by UltraTite to apply the system. The manufacturer's written verification of applicator approval is required.
- C. In the absence of a general contractor, the roofing contractor shall be the prime contractor. All subcontractors shall be identified and approved at the time the proposal is submitted. The contractor shall carry a valid state roofing license.
- D. Field Quality Control: Before commencing installation of the GreenSil 100 Silicone Restoration System, an Adhesion Pull Test must be installed and pass the minimum pull value of 2.0 pli. During the installation of the GreenSil 100 Silicone Restoration System, an authorized UltraTite field inspector shall visit the job site as needed to review the installation with the Roofing Contractor. Upon completion of the GreenSil 100 Silicone Restoration System installation, an inspection by UltraTite or UltraTite's designated third-party inspection firm is required to confirm the installation meets the requirements of this specification. Consult with UltraTite for details and warranty requirements.
- E. Moisture Survey: A roof membrane that has insulation beneath the membrane shall have an infrared moisture survey conducted before installation begins to identify any wet areas (> 18% moisture) beneath the membrane.

1.03. SUBMITTALS

- A. The bidders shall submit verification that they are an approved UltraTite contractor.
- B. A copy of the manufacturer's technical data bulletins for specified coating materials shall be submitted.

1.04. PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Products shall be delivered in the manufacturer’s original, unopened containers, clearly labeled with the manufacturer’s name, product identification, safety information, and lot numbers.
- B. Containers shall be stored out of the weather and out of direct sunlight at temperatures specified by the manufacturer.
- C. Protect all products from freezing and other damage during transit, handling, storage, and installation.

1.05. PROJECT CONDITIONS

- A. Consult the coatings manufacturer for recommendations on the proper system to use on the project substrate and at the expected substrate and ambient temperatures. Do not spray-apply coatings when wind velocity is above 15 mph.
- B. Do not apply materials unless the surface to receive 100% silicone coating is clean and dry.
- C. If any area under the roof substrate is saturated, it must be removed and replaced with like materials before application.
- D. The entire system shall fully adhere to the surface on which it is applied. Voids left under the system caused by bridging are not acceptable.
- E. Install all material in strict accordance with all published safety, weather, or applicable regulations of the manufacturer and/or federal agencies that have jurisdiction.

1.06. DETAIL WORK

- A. Refer to GreenSil Detail Drawings for preparation and finishing of drains, vents, ducts, flashings, parapet walls, etc. The contractor should outline this work before work commences and the work shall be performed by observing good trade practices. Any details not shown in the drawings need to be approved by UltraTite before application.

PART 2 PRODUCTS

2.01. ELASTOMERIC, SILICONE COATING SYSTEM

- A. The coating shall be the GreenSil 100 high solids elastomeric silicone coating, manufactured by UltraTite.
- B. Physical Properties of Cured Coating System:

PROPERTY	ASTM METHOD	RESULTS	GreenSil HS SILICONE
Tensile Strength, psi (Max @ 73°F)	D6694/ D-2370	Minimum 150	307
% Elongation @ Break (73°F)	D6694/ D-2370	Minimum 100	205%
Volume Solids %	D6694/ D-2697	> 57	93.0
Weight Solids %	D6694/ D-1644	Report Value	95.0

2.02. ACCESSORIES AND MISCELLANEOUS MATERIALS

- A. Flashing and waterproof coverings for expansion joints shall be compatible with the GreenSil 100 Silicone coatings.
- B. UltraTite GreenSil Silicone Flashing Grade shall be used to seal fatigued flashings, such as curbs, through roof penetrations, drains, base flashings, and other areas of concern.
- C. UltraTite GreenClean shall be used to enhance the adhesion of the GreenSil Silicone to the existing EPDM membrane.
- D. Repairs can be made to the roof surface utilizing roofing fabric and GreenSil 100 Silicone, GreenSil Flashing Grade.
- E. Miscellaneous materials such as adhesives, elastomeric caulking compounds, vents, and drains shall be a composite part of the roof system and shall be compatible with the coating materials.

PART 3 EXECUTION

3.01. MANUFACTURER'S INSTRUCTIONS

- A. Compliance: Comply with the manufacturer's product data, including product technical bulletins and product guide specification instructions.

3.02. EXAMINATION

- A. Inspect surfaces that will receive the coating system to make sure they are clean, smooth, sound, properly prepared, and free of moisture, dirt, debris, or other contamination.
- B. Verify that all roof penetrations, mechanical equipment, cants, edge metal, and other on-roof items are in place and secure.
- C. Verify that all critical areas around the immediate vicinity of the spray area are suitably protected.
- D. Verify that all roof drains are clean and in working order.
- E. Verify that all air conditioning and air intake vents are suitably protected or closed.

3.03. SURFACE PREPARATION

A. GENERAL

- 1. Existing roofing materials shall be securely fastened to meet wind uplift requirements.
- 2. All roofing surfaces shall be free of loose material, grease, soft asphalt, and other materials that could interfere with adhesion. Typically, this can be achieved by power washing with a minimum of 3500 psi power washer. Severe contamination may require industrial cleaning products. **Check with your UltraTite**

Representative for recommendations.

3. If any area under the membrane is saturated, it must be removed and replaced with like materials before application.
4. Areas of ponded water must be repaired with the application of SPF or GreenLevel or the installation of additional drains.
5. Based on the results of the moisture survey, remove any wet insulation and replace it with like type and kind of insulation.

B. EPDM

1. EPDM roofs should be repaired and made watertight according to the manufacturer's recommended procedures.
2. Apply GreenClean typically at a rate of 1 gallon per 500 square feet by spraying, rolling, or brushing. GreenClean should sit on the surface for at least 5 minutes but not be allowed to dry. Wash GreenClean off thoroughly before final system application with a power washer with a minimum of 3500 psi using a #40 nozzle.
3. The entire restoration system shall be fully adhered to the surface on which it is applied. Voids left under the system caused by bridging are not acceptable.
4. All sealants should be applied to achieve 50 dry mils.
5. All penetrations and edges should be sealed with GreenSil 100 Silicone, GreenSil Flashing Grade. All seams to receive GreenSil FG at a rate of 2gal/square in 4" strip on seam.
6. Seal around all mechanical equipment and roof penetrations with GreenSil 100 Silicone or GreenSil Flashing Grade. At a rate of 2gal/square in 4" strip.
7. The areas where additional fasteners are installed should be covered in fiber reinforced coatings application, as described in the section below.
 - a. Install fasteners using appropriate fasteners and plates to meet local wind uplift requirements.
8. All failing seams should receive detail per the procedure below.
 - a. Screw and plate seam to meet wind uplift. Apply GreenSil 100 Silicone or GreenSil FG in a 6-inch-wide strip over the seam at a rate of 3 gallons per 100 square feet (48 wet mils / 42 dry mils).
 - b. Allow to dry for 12 to 24 hours.

9. All areas of significant ponding, valley areas, drain areas, walkways, and high-traffic areas should receive fabric as follows:
 - a. Apply GreenSil 100 Silicone in a 45-inch-wide strip over the area at a rate of 1.5 gallons per 100 square feet (32 wet mils / 28 dry mils).
 - b. In the wet coating, embed the 40-inch wide polyester fabric. To ensure a completely smooth surface, use a light broom to saturate the fabric and work out all fabric wrinkles and fish mouths.
 - c. Immediately spray or roll a 45-inch-wide layer of GreenSil 100 Silicone at a rate of 1 gallon per 100 square feet (16 wet mils / 14 dry mils).
 - d. Large areas may require multiple widths of fabric. In these areas, the fabric should be overlapped at least 4 inches.
 - e. Coating and fabric should always extend at least six inches above the maximum potential waterline.
 - f. Allow to dry for 12 to 24 hours.

3.04. APPLICATION

A. GreenSil 100 High Solids Silicone Coating System:

LABOR AND MATERIAL WARRANTY	APPROXIMATE COVERAGE RATE
5 Years	1.5 Gallon/sq. (24 wmt / 21 dmt)
10 Years	2 Gallons/sq. (32 wmt / 28 dmt)
15 Years	2.5 Gallons/sq. (40 wmt / 35 dmt)
20 Years	3 Gallons/sq. (48 wmt / 42 dmt)

1. Material shall be applied to the entire roof according to the application chart:
2. The coating system shall be sprayed, or roller applied, without causing runs or puddles. If using a spreader bar application, back-roll immediately behind the silicone extrusion application before skinning occurs.
3. These minimum recommendations for material usage are for ideal conditions. The number of gallons per 100 square feet may need to increase due to uneven application, roof profile, wind conditions, or other variables.
4. No coating shall be applied if the weather will not allow it to skin over before exposure to precipitation.
5. Allow to thoroughly dry before exposing to foot traffic.

3.05. FIELD QUALITY REQUIREMENTS

- A. Inspection by the coating manufacturer's representative shall be made, as needed, to verify the proper installation of the system. Any areas that do not meet the minimum standards for application as specified herein shall be corrected at the contractor's expense.

3.06. CLEANING

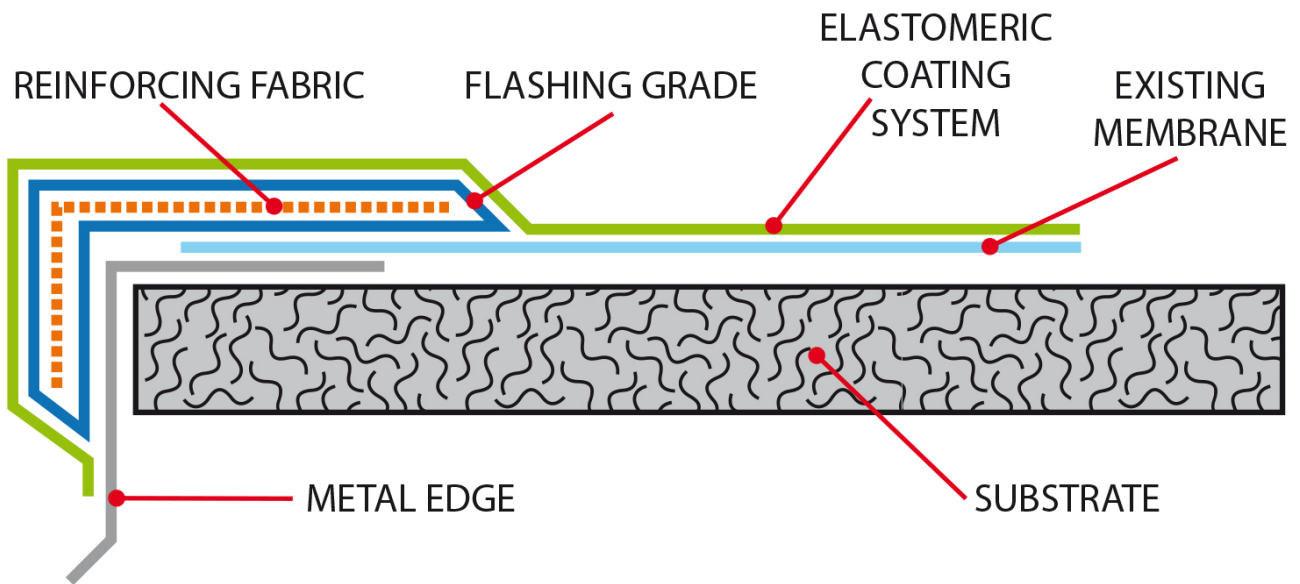
- A. Surfaces not intended to receive spray polyurethane foam insulation and/or elastomeric coating materials shall be protected during the application of the system. Should this protection not be effective, or not be provided, the respective surfaces shall be restored to their proper conditions by cleaning, repairing, or replacing.
- B. All debris from the completion of work shall be completely removed from the project site. The site shall be left in a broom-clean condition.

3.07. MATERIAL

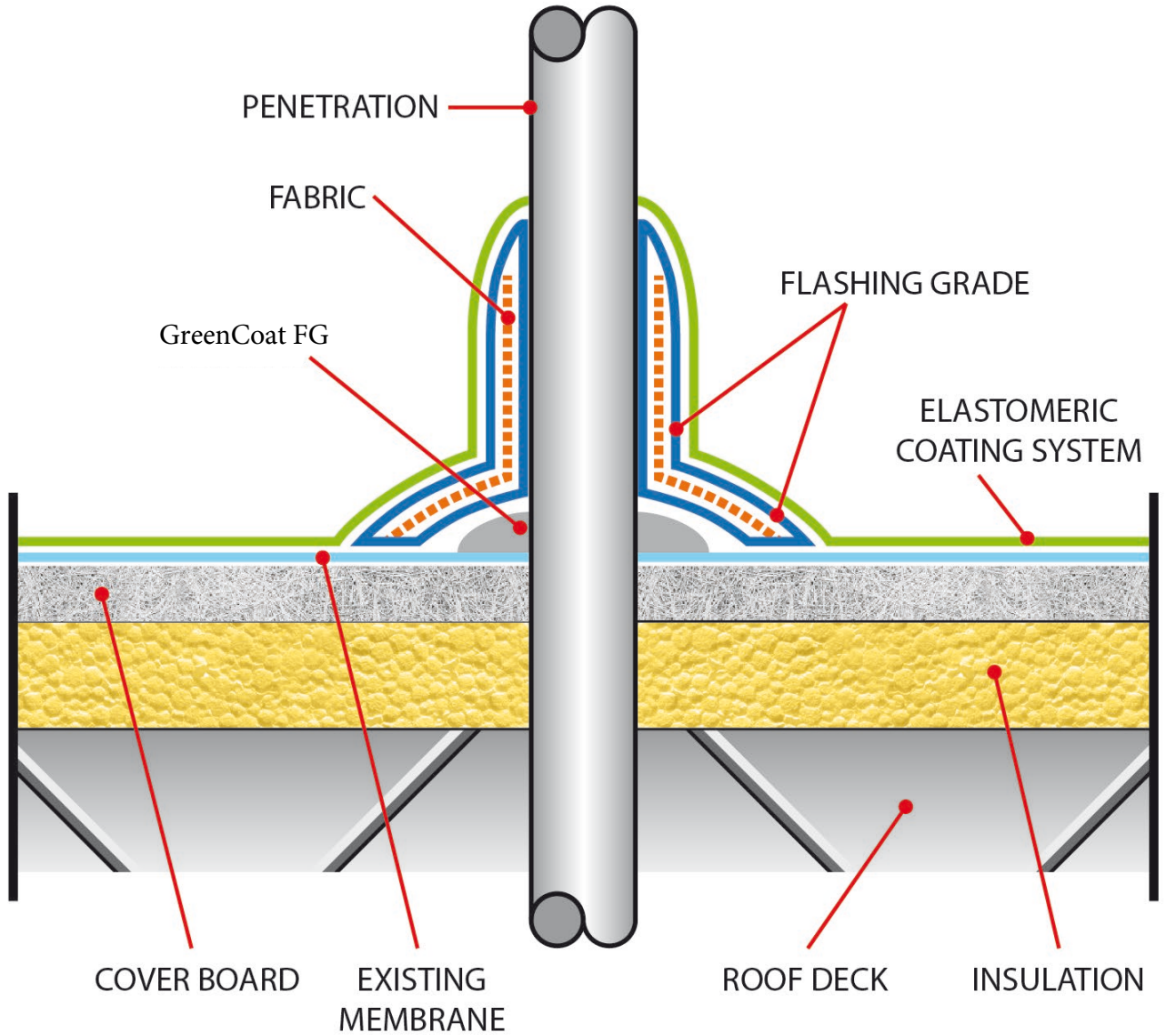
- A. The following materials are available from UltraTite:
 - 1. GreenSil 100 High Solids Silicone, high-performance, elastomeric roof coating.
 - 2. GreenSil Flashing Grade - High Solids Flashing Grade Silicone
 - 3. GreenKnit – Polyester Fabric
 - 4. GreenClean – EPDM Wash Primer
 - 5. GreenLevel – 2 Component Roof Leveling Compound

3.08. Detail Drawings

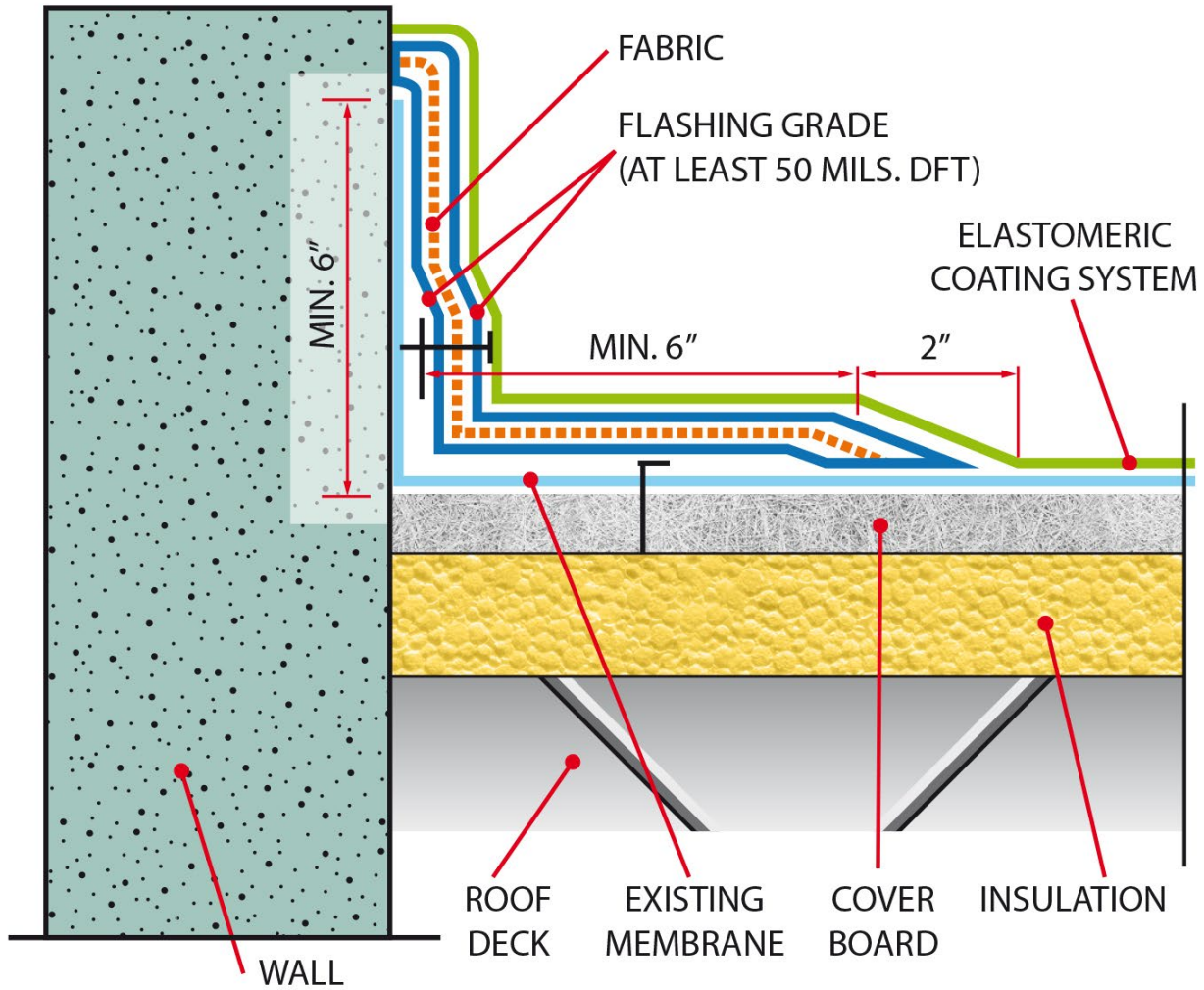
3-COURSE METAL EDGE



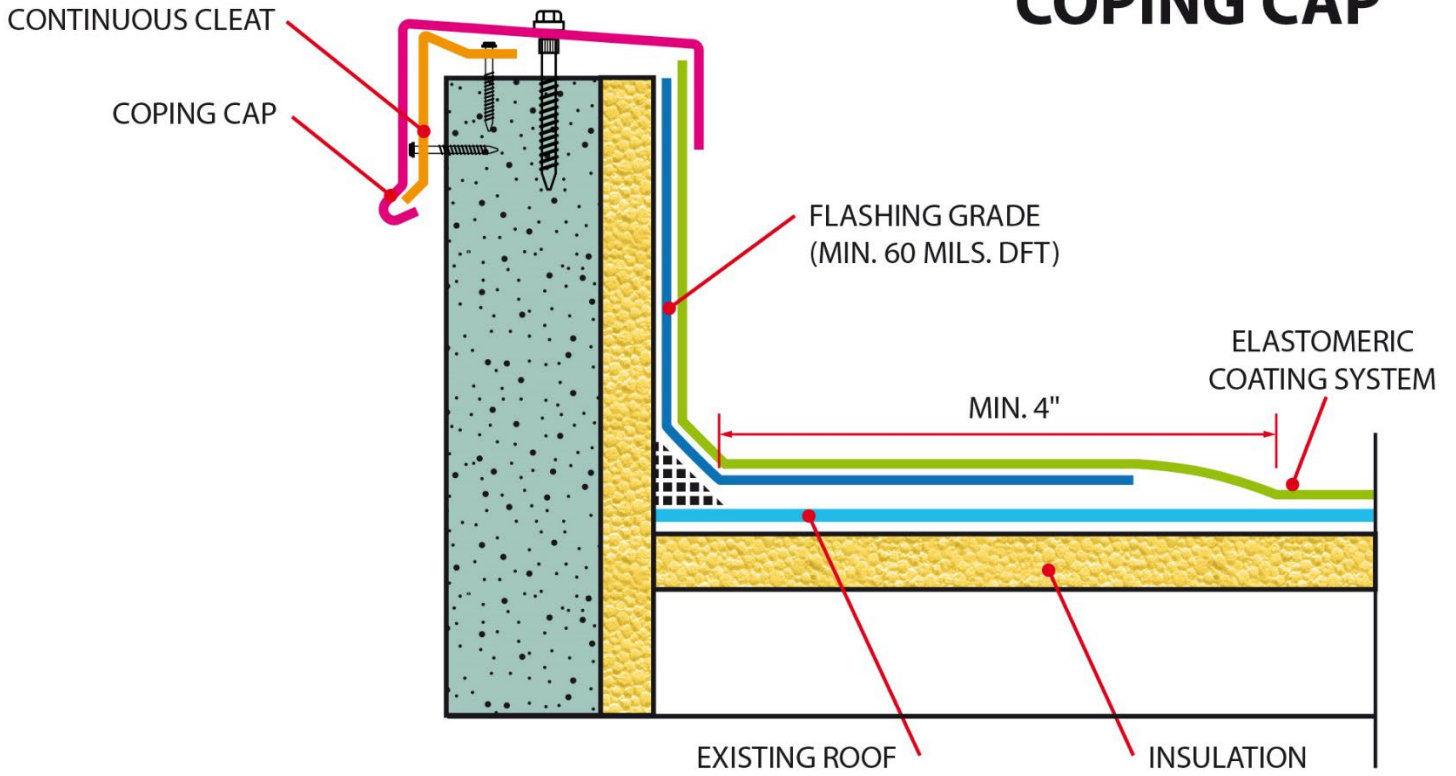
3-COURSE PIPE FLASHING

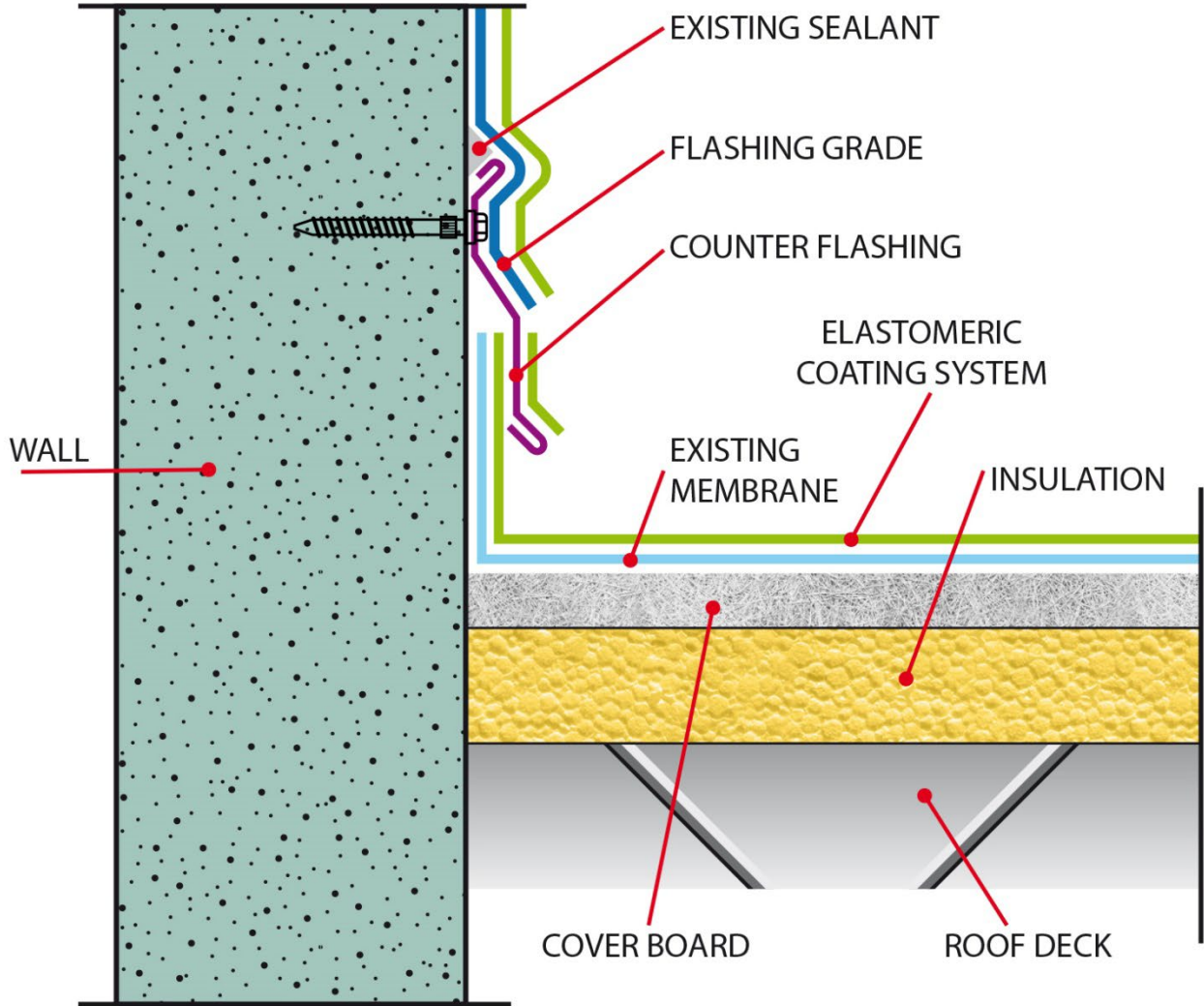


3-COURSE ROOF-TO-WALL DETAIL

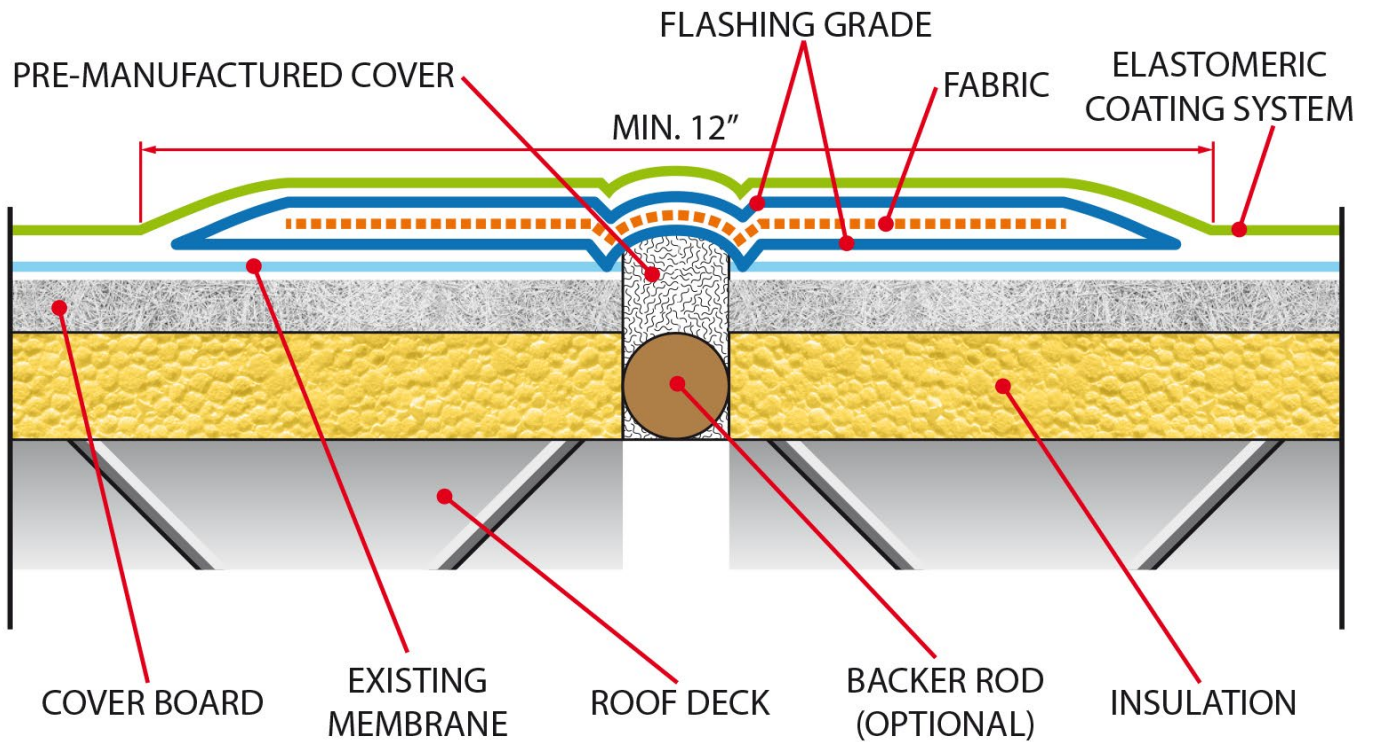


COPING CAP



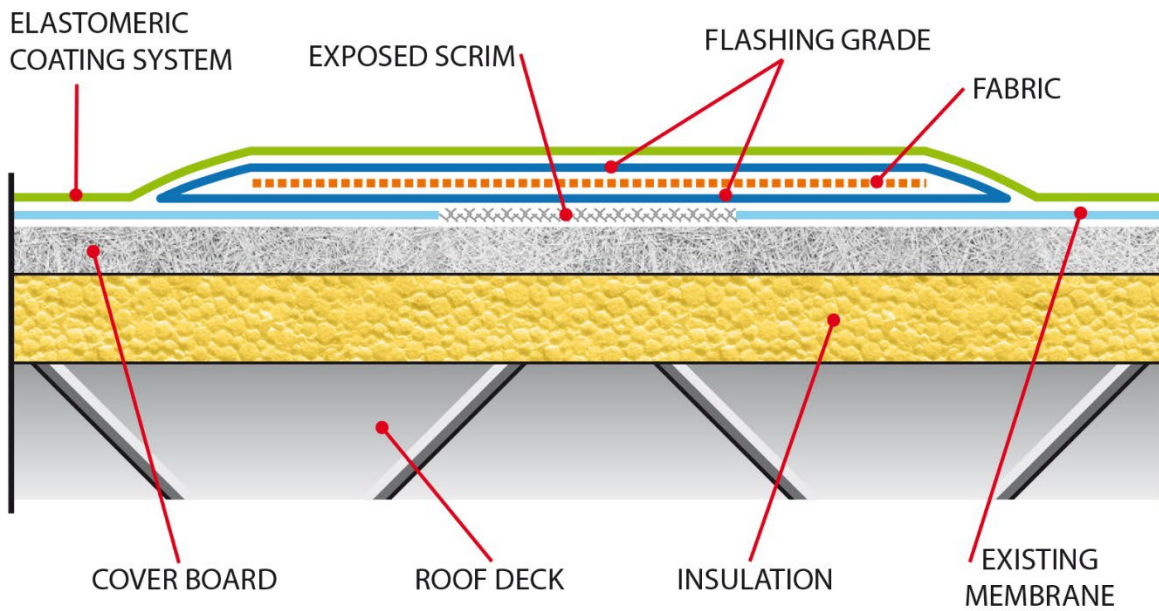


COUNTER FLASHING

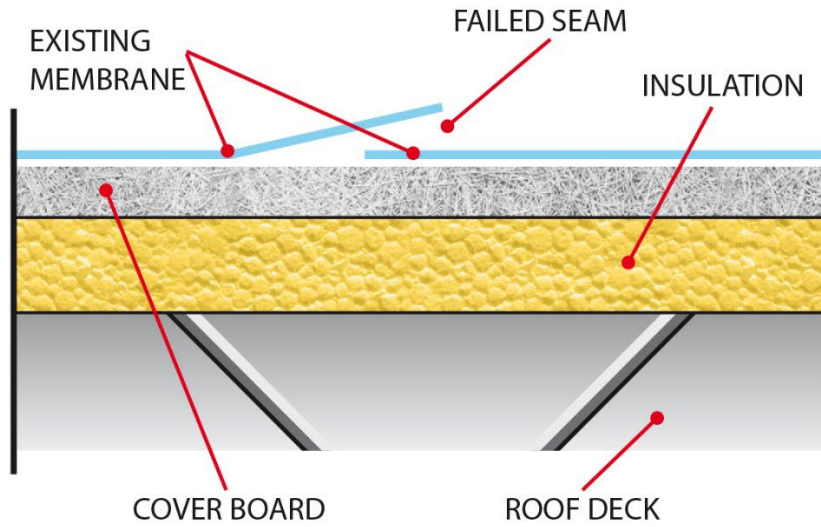


EXPANSION JOINT

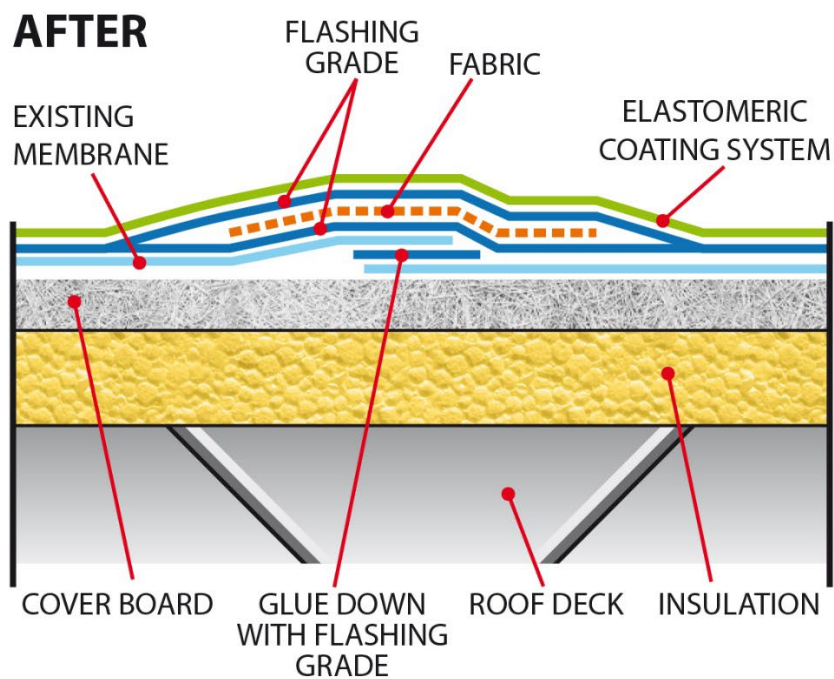
EXPOSED SCRIM IN SINGLE-PLY MEMBRANE

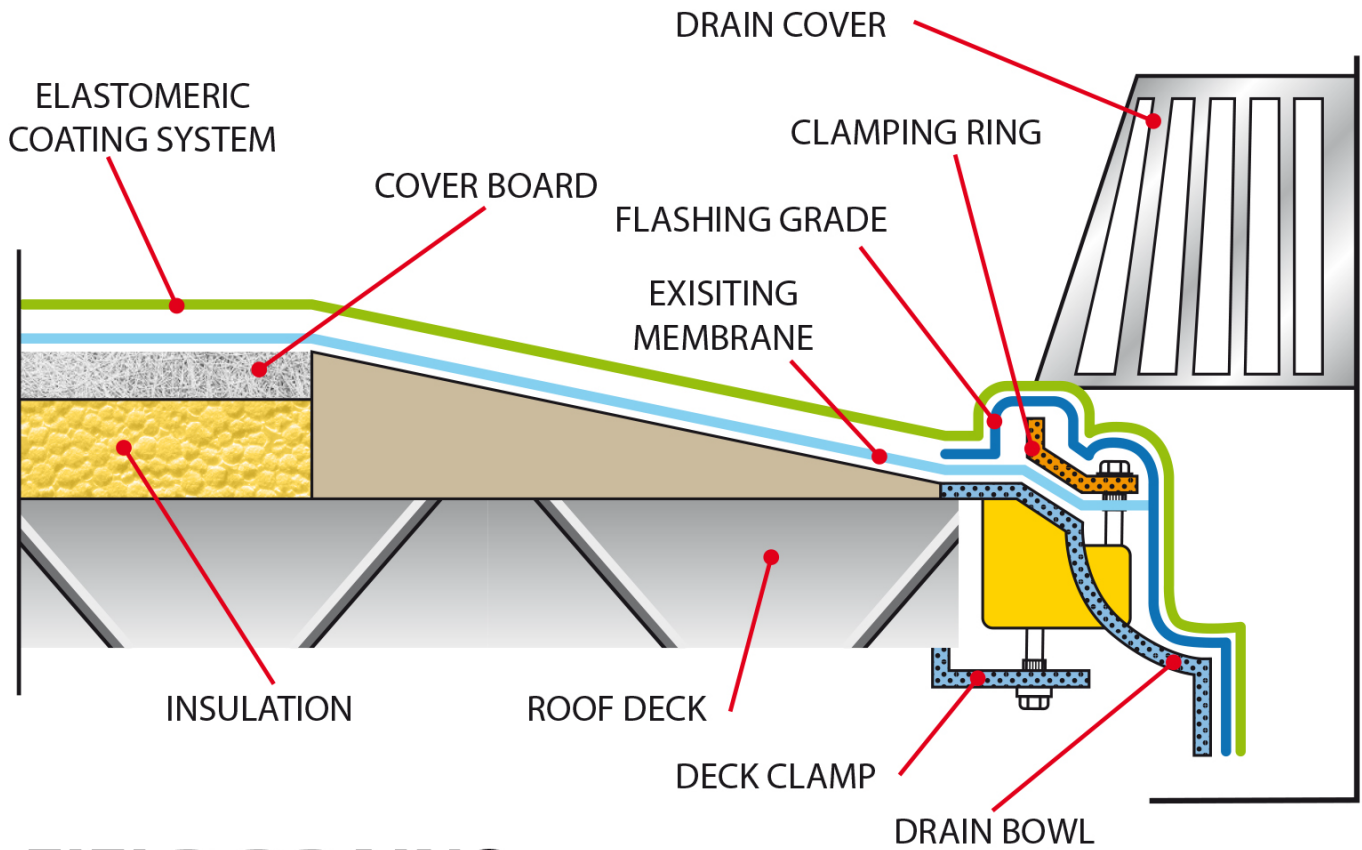


BEFORE



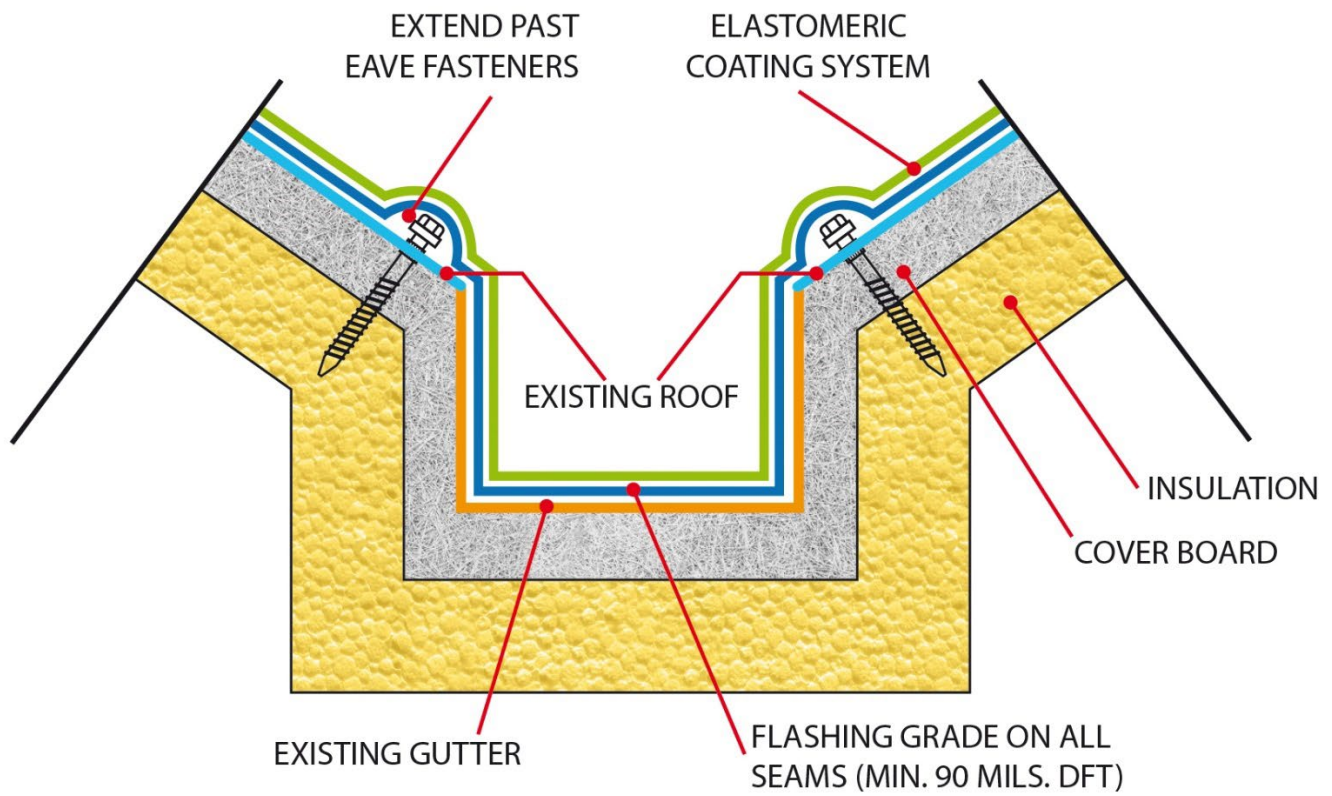
FAILED SEAM REPAIR





FIELD DRAINS

MEMBRANE ROOF GUTTER (INTERNAL)



PITCH POCKET

