

Rhino Linings® DuraTite® 1395 Silicone Roof Restoration System over PVC, Hypalon or EPDM Membranes

NOTE: These specifications were current at the time of publication but are subject to change without notice. Please confirm the accuracy of these specifications with the manufacturer and/or distributor prior to installation.

SPECIFIER NOTE: This guideline does not outline all procedures for preparation and finishing of penetrations, drains, flashings, etc. This work should be outlined separately by the contractor/applicator before the work commences and shall be performed in a manner consistent with best trade practices and local building code.

This specification is based on systems manufactured by Rhino Linings Corporation, 9747 Businesspark Avenue, San Diego, CA 92131 Telephone: 1-800-422-2603, FAX 858-450-6881, www.rhinolinings.com. For assistance with specific product applications or with editing sections for your specific application, please contact the manufacturer.

Compliance with all Application Guide Specifications contained herein is required for participation in the Rhino Linings® DuraTite® Warranty Program. Prior to the start of a project a Rhino Technical Representative must inspect the proposed project and give written approval before project is eligible for warranty.

PART 1 — GENERAL

1.1 SUMMARY

- A. These application guide specifications outline the materials, methods and conditions required for the proper application of the Rhino Linings DuraTite 1395 Silicone roof restoration system over PVC, Hypalon or EPDM membranes. When applied in accordance to the following specifications, DuraTite 1395 will renew existing membranes that show signs of degradation from exposure to weather elements and common use.
- B. The existing single ply membrane must be in sound condition and must demonstrate industry acknowledged typical effects from aging and use. With proper application DuraTite 1395 will provide a weather tight seal that protects the substrate from further damage caused by ultra violet light, water and other normal weathering hazards.
- C. To qualify for application of this coating system a roof must have positive drainage and no standing water.
- D. On-the-job inspection, technical assistance, and material application guidance as may be necessary to complete the roofing materials application in accordance with Rhino Linings DuraTite Warranty program.

1.2 APPROVED CONTRACTOR

- A. All Rhino Linings DuraTite® coatings and products shall be applied by a Rhino Qualified Contractor in order to qualify for the DuraTite Warranty Program.

1.3 SUBMITTALS

- A. Manufacturers published Technical Data Sheets (TDS) for all products contained in this specification.
- B. Product handling, storage and safety as outlined in applicable Safety Data Sheets (SDS).
- C. If applicable, additional installation procedures from Rhino Technical Representative as required for any unique roof characteristics or desired performance standards.
- D. If applicable, evidence of certification as a Rhino Qualified Contractor from manufacturer.
- E. If applicable, warranty documentation and procedure.

1.4 PRODUCT HANDLING, STORAGE, & SAFETY

- A. Materials shall be delivered to jobsite or contractor in original, unopened containers with manufacturer's original labeling intact and clearly displaying product name, safety information, and batch/lot numbers.
- B. Material shall be handled in accordance with manufacturer's storage and handling requirements as outlined on Technical Data Sheets (TDS) and shall comply with local fire & safety requirements.
- C. Material that appears to have been damaged or frozen in transit, or bearing any other visible defect shall not be used or installed and shall be immediately removed from work site and returned to manufacturer upon discovery.
- D. Adequate ventilation, protection from hazardous fumes and overspray potential shall be observed for all workers and associated trades in close proximity of site applications.
- E. Prior to coating installation all personnel who are to be present during installation shall review appropriate Safety Data Sheets (SDS) provided by manufacturer.
- F. Prior to coating installation contractor must post all appropriate hazard signs in accordance with OSHA jobsite safety standards and take appropriate measure to notify building occupants and jobsite workers of any potential risks if necessary.
- G. Keep Rhino Linings DuraTite® coating containers covered when not in use. Dispose of all containers in accordance with state and local environmental regulations.

1.6 JOBSITE CONDITIONS

- A. Contractor shall not proceed with application of any DuraTite® coatings unless jobsite conditions and weather conditions are acceptable as specified by manufacturer on technical data sheet (TDS). No application of materials shall commence during inclement weather. Do not apply within two hours of sunset, rain, fog or freezing temperatures.
- B. It is acceptable for the premises to remain occupied during the entire roofing project period. Cooperate with the building owner or representative during construction operations to facilitate continued use of the facility and to protect vehicles, building occupants and building contents from damage during roofing project.

- C. No other trades are permitted on the roof during the application of any DuraTite coating applications.
- D. All heating, ventilation and air-conditioning (HVAC) equipment should be turned off during the entire application from prep to finish of DuraTite coating system.
- E. Air intake vents, blowers, air conditioning units and evaporative coolers shall be disconnected or otherwise modified to prevent fumes from entering into the building or from contaminating the roof surface with condensate water.
- F. It is the responsibility of the contractor to protect surfaces near the application work area to prevent overspray damage.
- G. The coatings included herein shall not be applied when moisture is present on the substrate or if rain is expected before coating will properly cure. See all applicable Technical Data Sheets for information on cure profiles.
- H. Wind barriers shall be used if wind conditions could affect the quality of the material being applied.

PART 2 — PRODUCTS

2.1 COATINGS AND RELATED MATERIALS

- A. All materials used shall be supplied by Rhino Linings and shall meet specifications and physical properties as outlined in product Technical Data Sheets (TDS).
- B. Materials approved for use in the Rhino Linings DuraTite® maintenance coating system include:
 - 1. DuraTite® 1395 - High Solids Silicone Base & Top Coat
 - 2. DuraTite Prime 2100 – 1:1 Epoxy Primer
 - 3. DuraTite Prep – Substrate Cleaner
 - 4. TieTex T-325 Polyester Fabric or equivalent
 - 5. Mini Fibers for Thickening Purposes supplied by Rhino Linings.
 - 6. Butyl Rubber Tape
 - 7. Safety Yellow Silicone Walkway Coating

2.2 WARRANTY

- A. Rhino Linings warrants that supplied material will be free from defect and will meet or exceed physical properties as published, when installed according to product application guidelines when applied by a qualified applicator. Any material found to have a manufacturer defect shall be replaced at Rhino Linings expense. This guarantee does not cover incidental or consequential damages, labor, loss of production, or any other damages of any kind. The sole remedy for a claim of defective material shall be limited to replacement of defective material only.
- B. The **Rhino Linings® DuraTite® Warranty Program** is available for an additional fee for qualifying roof projects. To be eligible for the Rhino Linings DuraTite Warranty Program the contractor must be qualified by Rhino Linings in advance and follow all procedures detailed in the warranty documentation. In addition, compliance and installation in accordance with product application specifications contained herein is required for participation in the Rhino Linings® DuraTite® Warranty Program.

2.3 QUALITY ASSURANCE

- A. Primers, coating applied membrane repairs, and basecoats shall be allowed to cure before proceeding with subsequent applications
- B. All coatings and primers shall be coated within recommended time period. If application is delayed beyond that time, consult the Rhino Linings Technical Department for recommendations.
- C. The installation of this system should be accomplished in the presence of or with the advice of a Rhino Linings Representative.
- D. No traffic shall be permitted on the coated roof surface for a minimum of 3 days. Damage to the coating by other trades shall not be the responsibility of the roofing manufacturer or contractor.
- E. It is recommended that 15% variance be added to achieve the minimum dry mils requirement. It is the contractor's responsibility to meet the total dry film thickness required.
- F. It is the responsibility of the contractor to maintain job progress report and daily logs of work completed as required by Manufacturer to assure that installation is in accordance with Manufacturers requirements.
- G. Reflectivity of coatings may be reduced if roof surface is not cleaned on a regularly scheduled basis.

PART 3 — Surface Preparation

3.1 ROOF EXAMINATION

- A. Adhesion tests are required for all surfaces to receive coating including membrane and all metal flashings. Documentation of adhesion tests is the responsibility of the contractor.
- B. Verify roof slope prior to beginning installation. The existing roof must have positive drainage and there shall be no areas of standing water on the roof 24 hours after a rain, greater than 100 sq. ft. and more than ½" deep. Inspect and replace any roof drains or vents to ensure proper performance.
- C. Infrared, nuclear or thermal scan of the roof shall be performed to identify any wet insulation.
- D. Identify all seam failures, flashings failures and inadequate sheet metal details.
- E. All roof drains shall be inspected to ensure proper performance.
- F. All roof systems fasteners shall be inspected for observed back out

3.2 SURFACE PREPARATION AND SUBSTRATE CLEANING

NOTE: Preparation shall include but is not limited to the procedure contained herein. Additional requirements may be advised by Rhino Linings after roof inspection to ensure proper adhesion and performance of coatings. It is the responsibility of the contractor to examine and inspect the substrate and perform all preparation work prior to application of any coatings. Use extreme caution when

pressure washing the substrate in any step mentioned herein so as not to damage the existing roof membrane.

- A. All instances of heavy deposits of dirt, leaves and other debris shall be removed from the roof using broom or air broomer.
- B. Inspect and repair any instances of open seams, tears, cuts, or other flaws so water is not blown under the membrane during the cleaning process.
- C. Any areas where the original membranes have been torn, cracked and or has buckled must be repaired. In addition, all wet areas of the roof or insulation that were previously identified must be removed and replaced with new materials. All repairs must be completed utilizing the original roof technology followed by appropriate surface preparation steps.
- D. Algae, mildew or fungus on any areas of roof shall be treated with a solution of 1 part household bleach and 3 parts water.
- E. Areas of grease contamination are to be cleaned with an industrial strength detergent. If the substrate is heavily soiled, the detergent may need to be applied and “broomed in”.
- F. Once sufficient contaminant removal has been performed, pressure wash the entire substrate with water. Additional time should be spent where contaminants have been treated to ensure that cleaning products are flushed entirely. Be sure not to damage the existing membrane during the pressure washing process.
- G. Once the roof has dried completely apply DuraTite Prep to the entire substrate using a hand-pump, compression type sprayer, or airless spray equipment at the rate of 500 square feet per gallon.

NOTE: When using a hand-pump sprayer, adjust nozzle to achieve a uniform spray pattern with a 3 to 4 foot arc. When using airless spray equipment, use a .015 to .19 reversible tip with a 40 to 50° fan angle.

- H. Allow DuraTite Prep to stand a minimum of 10 minutes to saturate the membrane surface contaminants then, using a minimum 2,000 psi pressure washer, rinse the membrane surface with clean. For sloped roofs begin at the lowest point of the roof and work toward the highest point, keeping the pressure washer tip within 12” of the roof surface. Once at the highest point, work down with a final rinse to remove residue. On flat roofs, work away from and then back toward roof drains to achieve a double rinse.

NOTE: Prolonged contact between the DuraTite Prep and the single-ply membrane, will not adversely impact the performance of the primer. DuraTite Prep in its diluted form is safe to rinse down roof drains and is not harmful to surrounding landscape.

3.3 PRIMING THE SUBSTRATE

- A. Prior to application to the DuraTite Prime 2100 and DuraTite 1395 allow the membrane to dry completely.
- B. Apply at a rate of 300 square feet per gallon with roller or by spray. Allow the primer to cure a minimum of 4-24 hours before proceeding with coating or membrane repairs. Cure time will vary depending upon the ambient temperature and humidity. Stop application two hours before rain or when the dew point would be reached. Primer must be coated within 72 hours of

application. If primer is not coated within 72 hours, contact Rhino Linings Technical Department for further instruction.

- C. Extend DuraTite Prime 2100 up protrusions (vent pipes, parapets, curbs and other protrusions) at a minimum of 3" above existing flashing termination or substrate if existing flashings have been removed, creating a self-terminating flashing.

3.4 SEAM AND FLASHING FORTIFICATION INSPECTION AND REPAIR

NOTE: Surfaces to receive DuraTite coating must be primed prior to application of coating.

- A. Examine flashing details for loose or deteriorated materials. Membrane and flashing terminations should be examined at perimeters, roof penetrations and drains to ensure the original material integrity has not been compromised.
 - 1. Remove and replace loose or backed-out fasteners by moving the plate at least 4" from the original location. Fill the old fastener hole location with DuraTite 1395B or the 2:1 mixture of DuraTite 1395 and Mini Fibers. Follow this procedure with DuraTite 1395 with an embedded 4"X4" patch of Polyester fabric, apply a top coat of DuraTite 1395. The new fastener location should be coated with DuraTite 1395B or 2:1 DuraTite Mini Fiber mixture at a minimum application thickness of 60 wet mils.
 - 2. For roof penetrations, a 12"X12" polyester fabric with hole in the middle (for penetration) should be embedded into a liberal coat of DuraTite 1395. Encapsulate polyester fabric completely in all directions by extending beyond the fabric by 2" on the roof deck and 6" beyond the fabric when waterproofing vertical surfaces.
 - 3. At parapet walls, firewalls, expansion joint curbs, mechanical curbs or large skylights, DuraTite 1395 and Polyester fabric should be used to overlay all flashing. Other areas around field fabricated pipe seals, pourable sealer pockets, small prefabricated curbs, tie-ins, etc. shall also be covered with DuraTite 1395 and Polyester Fabric.
 - 4. Small incidental areas of ponded water will not impact the performance of this coating system: however in accordance with industry standards, the roofing assembly should be designed to prevent ponding of water on the roof for prolonged periods (longer than 48 hours). If necessary, tapered edge strips, crickets, new drains, or saddles are to be installed where periodic ponding may occur.
- B. Re-inspect the roof surface for additional penetrations created in the process of cleaning and repair as well as any seams that may need reinforced or areas that may require fortification.
- C. For seam repairs or fortification in an area 2" or less, use a brush to apply DuraTite 1395 liberally to the affected and surrounding area. While the DuraTite 1395 is still wet, center and embed a strip of 6 inch wide polyester fabric to the coating. Cover the polyester fabric with additional DuraTite 1395 until the fabric is fully encapsulated. Feather the coating out beyond the fabric onto the membrane by 2 inches on both sides.

NOTE: Small tears, cuts or delaminated seams 2" or less may be repaired with DuraTite 1395B or a 2:1 mixture of DuraTite 1395 and Mini Fibers.

- D. Seam repairs or fortification in an area larger than 2" must be re-adhered and overlaid with a minimum 6 inch wide Polyester fabric and DuraTite 1395. Use a brush to apply DuraTite 1395 liberally to the affected seam and surrounding area. While the DuraTite 1395 is in its liquid

form, center and embed a strip of 6 inch wide polyester fabric to the coating. Cover the polyester fabric with additional DuraTite 1395 until the fabric is fully encapsulated. Feather the coating out beyond the fabric onto the membrane by 2 inches on both sides.

PART 4 - COATING SYSTEM

4.1 FIELD QUALITY CONTROL

- A. Care must be taken in applying silicone coatings near tie-in lines. Silicone can inhibit primer adhesion and lead to delamination.
- B. Pay special attention to overspray, which can texture or discolor adjoining finished sections. Wind direction should conduct overspray away from finished roofing surfaces.
- C. Damage to coating by other trades shall not be the responsibility of the roofing manufacturer or contractor.
- D. Minimum application thickness for two coat specification of contrasting colors shall be 23 Minimum TDM (Total Dry Mil). Application rates must be checked periodically to assure proper coating thickness. This may be done with a wet film gauge or by ensuring that coverage of a known quantity of product is aligning with the recommended coverage.

NOTE: The recommended gallons for minimum mil thickness is a guideline and should be verified by the contractor to ensure that the minimum mil thickness is applied to the roof surface. Each contractor should estimate coating requirements based on actual experience, surface texture, substrate condition, wind, waste, and other factors increasing estimated gallons required. The total dry mil thickness of all coatings, as well as the total dry mil thickness of the topcoat shall meet the minimums required by Rhino Linings.

- E. See Technical Data Sheets for application equipment recommendations.

4.2 BASECOAT

- A. Apply one coat of DuraTite 1395 basecoat at a rate of .85 gal per 100 square feet (13 wet mils). Coat all surfaces including expansion joint covers and flashings. Coating must cover all surfaces completely. The total dry mil thickness of the coating shall measure a minimum of 13 wet mils.
- B. Extend DuraTite 1395 basecoat up protrusions (vent pipes, parapets, curbs and other protrusions a minimum of 3" above existing flashing termination or substrate if existing flashings have been removed, creating a self-terminating flashing. An extra pass of coating is required at all flashings, edge terminations and penetrations.
- C. A visual inspection of the basecoat should take place before application of the topcoat to confirm an acceptable surface/substrate to accept the topcoat. Any deficiencies must be repaired prior to application of the topcoat.

4.3 TOPCOAT

- A. Apply one coat of DuraTite 1395 topcoat at a rate of .75 gal per 100 square feet (13 wet mils). Coat all surfaces including expansion joint covers and flashings. The total dry mil thickness of the coating shall measure a minimum of 13 wet mils.

- B. Extend DuraTite 1395 basecoat up protrusions (vent pipes, parapets, curbs and other protrusions a minimum of 3" above existing flashing termination or substrate if existing flashings have been removed, creating a self-terminating flashing. An extra pass of coating is required at all flashings, edge terminations and penetrations.
- C. Spray additional coats when required of contrasting color, an application rate designed to achieve the required 13 TDM for the project at right angle to the previous coats.

4.5 GRANULE APPLICATION & WALK PADS (OPTIONAL)

- A. Contact a Rhino Linings Representative for information on this product and application process.

4.6 JOB COMPLETION

- A. All Rhino Linings DuraTite® coatings must be completely cured before exposing to water or to foot traffic.
- B. Inspect completed roofing system and correct all defects. If areas appear to be undercoated, recoating may be needed to ensure final thickness to meet the Rhino Linings specification.
- C. Verify that all coated areas are fully adhered to the substrate. A visual inspection looking for poor adhesion such as flaking, blistering etc is required. Contact Rhino Linings representative for advice on how to fix flawed areas in need of work.
- D. Certain job conditions, site conditions, or substrates may result in pin holing or out gassing during curing. A visual inspection looking for typical signs of out gassing such as excessive pockmarks, pinholes etc. is required. Contact Rhino Linings representative for advice on how to fix flawed areas in need of work.
- E. Take care to clean up all debris, excess materials, and equipment and remove from the job site.
- F. Restrict construction traffic and equipment movement on completed roofing system to only essential action. Provide appropriate protection against traffic and construction activities on completed roof. Damage to the roof by other trades or personnel shall not be the responsibility of Rhino Linings or qualified applicators.
- G. A Rhino Linings representative or an independent inspector shall inspect the completed roofing system and notify the contractor of any defects in the application. This is only done if a warranty is being issued.
- H. Take care to clean up all debris, excess materials, and equipment and remove from site.