MASTER GUIDE SPECIFICATION

DIVISION 7 - Thermal and Moisture Protection

071xx Radiant Barriers
07545 Coated Foamed Roofing
07120 Fluid Applied Waterproofing

LEED^{tm} CERTIFIABLE PRODUCT (Credit 7 Landscape and Exterior Designs = 1 pt)

Cool Roof System: 100% Acrylic Fluid Applied Elastomeric Ceramic Coating Systems

6 Year System – See 4.1
12 Year System – See 4.2

PART 1 - GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE
A. Rough Carpentry: Section 06100
B. Board-Stock Roof Insulation: Section 07220
C. Flashing & Sheet Metal: Section 07620
D. Roof Accessories: Section 07800
E. Prefabricated Expansion Joints: Section 07860
F. Painting: Section 09900

1.02 QUALITY ASSURANCE

A. Qualifications of Contractor

1. The Contractor shall be approved by the Coatings Manufacturer, and shall have a minimum of three (3) years experience in the application of acrylic elastomeric roof coatings.
2. The Contractor shall provide a list of project references, including contact name and telephone number.

B. Qualifications of Manufacturer

1. Manufacturer of the fluid applied elastomeric acrylic coating system shall have a proven 10-15 -year track record of successful installations utilizing ceramic elastomeric acrylic technology.
2. Other Manufacturer's products shall be considered for use on this project only after submittal of product data files to the Architect or Owner supporting quality, equality, and full compliance with specifications herein.
3. The Architect or Owner reserves the right to reject the substitution proposals should it be determined the submittals do not provide all functions required for application.

C. Testing & Labeling

1. The coating system must be U.L. 790 classified as a Class A fluid applied system for maintenance and repair of existing Class A, B or C roofing construction. Individual container labels must include the following information or they will be rejected at the jobsite:

   Manufacturer's name, product name, type, and class of material, batch or lot number, mixing and application instructions, and precautions.

1.03 SUBMITTALS

A. Submit Manufacturer's literature, certificates, and samples in a single package to the Architect or Owner in accordance with requirements specified in General Conditions.

B. Manufacturer's Literature: Literature on the protective coating, as well as related primers, sealants, reinforcement, etc., shall be submitted for review before work is started. Include material specifications, physical properties (including ASTM test methods utilized), estimated application rate for required dry mil thickness per warranty requirements, current application instructions, and MSDS.

C. Applicator's Qualifications: Submit a copy of Approved Applicator's letter and/or certificate as issued by the Manufacturer of the elastomeric ceramic acrylic coating system.

D. Warranty: Submit a copy of the Coating Manufacturer's warranty as per project specifications.

1.04 PRODUCT DELIVERY, STORAGE & HANDLING

A. Delivery of Materials: Materials shall be delivered to the jobsite in Manufacturer's original, sealed containers with labels legible and intact.

B. Storage of Materials: Materials shall be stored in an area specifically designated for that purpose, in accordance with Manufacturer's recommendations, where temperatures will not be less than 40°F (10°C) or higher than 80°F (38°C).

C. Material Handling: Materials shall be handled, stored, and installed per Manufacturer's instructions and all applicable safety regulatory agencies.

D. Damaged Materials: Contaminated, damaged, or unsealed materials or materials not conforming to the specified requirements shall not be used in the installation. Rejected containers shall be immediately removed from the jobsite and replaced at no additional cost to the Owner.

1.05 ENVIRONMENTAL CONDITIONS

A. Install all materials in strict accordance with Manufacturer's published safety and weather precautions.

B. Do not apply elastomeric acrylic coating system components when the ambient and/or surface temperature is below 45°F (10°C) or above 140°F (60°C), if any surface moisture is present, when the dew point is within 5°F (3°C) of the surface temperature or when there is a possibility of temperatures falling below 32°F (0°C) within a 24 hour period. Do not apply if weather conditions will not permit complete cure before rain, dew, fog or freezing temperatures occur. Do not spray-apply if the wind velocity exceeds 10 M.P.H. without taking appropriate precautions to eliminate overspray.

C. Take all measures necessary to protect unrelated surfaces from coating overspray or spillage.

1.06 FIELD QUALITY CONTROL

A. The overall weather conditions, including surface temperature, surface moisture, ambient temperature, relative humidity and wind velocity shall be recorded by the Contractor, at designated time intervals, on the Daily Quality Control Report Form if so requested by the Architect or Owner.

B. Verification of Protective Coating Thickness: The wet film thickness shall be measured and recorded daily, along with the quantity, batch numbers and total square feet applied, on the Daily Quality Control Form.

PART 2 - PRODUCTS

2.01 DESCRIPTION

Approved products shall be manufactured exclusively from 100% acrylic resins, ceramic micro-particles sufficient for providing high emissivity, high titanium white for high reflectivity, and enhanced with the addition of urethanes for greater durability, scrub-ability, and tensile strength.

A seamless, fluid applied acrylic *ceramic* membrane system designed for application over built-up, foam, concrete, metal, asphalt, plywood, or other approved roof substrates. Approved system shall be ProTek-USA Ceramic Reflective Insulating Coatings System (CRICS™) consisting of ELASTOPRIME™ Sealer/Primer, THERMCOTE™ Acrylic Elastomeric Ceramic Roof Coating, POLYMESH™ TAPE AND FABRIC, and THERMPATCH™ caulk.

2.02 MATERIALS

A. All Purpose High Adherence Primer and Water Proofing Sealer: ELASTOPRIME™, Elastomeric Acrylic with no fillers or pigments, Waterproof Adhesive, Tie and Bond, Primer Sealer as supplied by Coating Manufacturer for use as a primer coat to prepare roofing surfaces for adherence of a base elastomeric ceramic coat and *for use with all fabric mesh* supplied by Coating Manufacturer. Provides waterproofing, sealing, and bonding. For use with *all* roof substrates (including, all metals, woods, asphalts, concretes, plastics, asbestos, urethane, Styrofoam, slate, etc.). Exceptional adherence to metal and other non-porous substrates. Also is excellent for use in locking down loose gravel, rejuvenates, and strengthens the surface to which it will be applied preventing cracking, efflorescence, spalling, and segregation.

B. High Wind Adherence Primer and Water Proofing Sealer: BMPRIME™, transparent white, acrylic elastomeric, Waterproof Adhesive primer/sealers, as supplied by Coating Manufacturer for use in high wind mobile and stationary applications. Similar to above, but tested to adherence on metal substrate to 200 MPH winds.

C. Water based Red Iron Oxide Primer: OXIPRIME™, single package multipurpose latex, red iron oxide primer sealer, as supplied by Coating Manufacturer for use to protect metals roofs (metal roofing, gutters, rivets, nut & bolts, trims, etc.) to retard the spreading of presently rusted metals.

D. Direct to Rust Moisture Curing 1-Part Polyurethane Coating: RUSTCOTE™, high U.V resistant, one-part moisture curing polyurethane solvent-based, aluminum pigmented, as supplied by Coating Manufacturer for use in highly rusted and corroded areas. It is highly abrasion resistant, a barrier to: acids, solvents, salts, and weather and eliminates the requirement of white sandblasting of surfaces to achieve good adhesion. It is alternative to galvanization or "cold - re-galvanizing". Minimum preparation requires removal of only loose rust. For extremely corroded surfaces specify the High Solid (HS) version.

E. Industrial Grade Urethane Acrylic Concrete Sealer, Stain & Preservative: CRETESEAL™ , low V.O.C waterborne formulation of acrylic and urethane resins with a silicone additive as supplied by Coating Manufacturer for use sealing all concrete surfaces. Excellent penetration on porous surfaces. Superior adhesion on non-porous or compatible previously coated surfaces. High concentration of urethane resin provides for increased water and chemical resistance plus superior resistance to ultraviolet degradation. Non-yellowing with excellent mar, scratch, and abrasion resistance.

F. Water Proofing Elastomeric Caulk & Sealant: THERMAPATCH™, an acrylic elastomeric waterborne sealant with height concentration of acrylic resins, as supplied by Coating Manufacturer, specifically designed to waterproof, fill and seal: holes, valleys, cracks, vents , low spots, flashing and other probable or vulnerable leaking areas.

G. Polyester Mesh Tape: POLYMESH™ TAPE, stitch bonded 100% polyester fabric as supplied by Coating Manufacturer for reinforcement of split seams, flashings, tears, protrusions and perimeter areas.

H. Polyester Fabric: POLYMESH™ FABRIC, stitch bonded 100% polyester fabric as supplied by Coating Manufacturer for full reinforcement of coating membrane or specific areas too large for tape.

I. Fluid Applied Elastomeric Ceramic Mid and Top Coat For Sloped Roofs: THERMCOTE A-10™, 100% high white acrylic coating containing no fillers and enhanced with ceramics, urethanes, and mildewcide, as supplied by Coating Manufacturer to provide a weatherproof membrane with maximum energy savings.

J. Fluid Applied Elastomeric Ceramic Mid and Top Coat For Flat or Low-Sloped Roofs: THERMCOTE A-PW5™ , 100% high white acrylic coating containing no fillers and enhanced with ceramics, urethanes, and mildewcide, as supplied by Coating Manufacturer to provide a weatherproof membrane with maximum energy savings.

K. Multi-Purpose Industrial/Commercial Ceramic Coating Fluid Applied Base and Top Coat for Sloped Roofs: THERMCOTE IC™, 100% high white acrylic coating containing no fillers and enhanced with ceramics, urethanes, and mildewcide, as supplied by Coating Manufacturer to provide a weatherproof membrane with maximum energy savings.

2.03 PERFORMANCE REQUIREMENTS – ELASTOMERIC CERAMIC COATING SYSTEM

A. Compliances: DOE Energy Star, CER, Meet or exceed Title 24, California Code of Regulations, Part 6, Section 118, (f), Mandatory Requirements for Cool Roofs, Sub-Section (3, " Liquid applied roofing products."

B. Require CLASS A, Fire and Smoke certification, under ASTM E 84-01

C. Initial reflectivity of 83%. [ASTM E408-71, E903-88, E892-87] and *after 3 years* shall be a minimum of 78%

D. Emissivity: Minimum of 94% [ASTM E408-71, E903-88, E892-87]

E. Tensile Strength: (A5=1039, A10=1022, A-PW5 =383) psi (± 20) @ Q.U.V. 500 hours [ASTM D 412]

F. Elongation (A5=54%, A10=93%, A-PW5 = 117%) (± 30) @ Q.U.V. 500 hours [ASTM D 412]

G. Dry Adhesion over galvanized steel: (A5=12, A10=10.5, A=W5 – 10.4) -in-PEEL PSI @ 10 mills [ASTM C-794]

H. Permeance: (A5 = 5.0, A10 = 5.1, A-PW5 = 4.5) over 160 hours [ASTM D-1653]

I. Surface Smoothness After Application: Little or no "orange peel" or other surface irregularities. Fluid applied elastomeric acrylic coating must be capable of provide a "near smooth" (see sample) surface to provide maximum reflectivity and minimum dirt retention.

J. Urethane. Fluid applied elastomeric ceramic acrylic coating must contain urethane to increase tensile strength, durability, and scrub-ability.

K. Ceramics. Coating should contain sufficient ceramic particles with particle dispersion high emissivity in the IR range.

2.04 SUBSTITUTIONS

Materials such as cementitious, or asphaltic based coatings, moisture-cured urethanes, Kraton based rubbers, non-ceramic acrylics, Hypalons and butyls are *not* considered acceptable substitutes for materials specified herein.

PART 3 - EXECUTION

3.01 SURFACE INSPECTION

Note: The following procedures are recommended <u>for all types of substrates</u> (metal and concrete substrates may use substitute products as specified.)

A. Roof surfaces shall be clean, dry, and structurally sound, stable, and well secured.

B. The roof surface shall be free of excessive ponding water. Roof surfaces which pond water 72 hours after a rain shall be considered unacceptable. Ponding water is defined as standing water in excess of 100 square feet (10 m2) or in excess of ½" (1.3 cm) deep or water that does not evaporate within 72 hours. Roof surfaces that pond water 72 hours after a rain must be corrected. All water shall be allowed positive drainage from the roof.

C. Inspect condition of flashing details adjacent to protrusions, penetrations, roof mounted equipment, curbs, walls, parapets, drains and roof edge to ensure that details are acceptable and will maintain a weather-tight installation after being properly detailed and coated.

D. Determine moisture content of existing substrate, insulation, and deck. A moisture content of 15% or greater indicates a potential problem. Work shall not proceed until the cause is verified and condition is corrected.

3.02 SURFACE PREPARATION

A. All loose gravel, dirt, and debris shall be removed by vacuuming and/or power sweeping. On heavily graveled areas, removal may be necessary to smooth the surface prior to application of the coating. Use of emulsion is recommended if roof contains embedded gravel to provide a smooth surface prior to application of the Primer/Sealer.

B. All roof surfaces and structures to be coated shall be cleaned using a High Pressure sprayer with at least 1500 P.S.I. of pressure using a water and chlorine solution. Thoroughly remove all dirt, oil, grease, residues, mold, mildew, algae, and any other surface contaminants. Heavy deposits of dirt or contamination may require agitation with a stiff-bristle broom or similar mechanical scrubber. When roof is cleaned completely, rinse with water only. Allow the roof to dry thoroughly before continuing.

Note: THERMCOTE has excellent mildew resistance, but WILL NOT kill mildew already on the surface.

All Roofs: Any unsound areas in the roof deck or insulation, including blisters, delamination, deterioration, excessive moisture content, etc. shall be repaired or replaced. All blisters, delaminations, wrinkles, and loose areas shall either be cut away and removed or cut open and nailed flat to the deck. After surface has thoroughly dried, inspect for any existing leaks and be sure to repair leaks prior to the application of coating. Make sure roof is adequately vented. Patch and Caulk all cracks, crevices, fractures, holes, valleys, vents, voids, etc., with THERMAPATCH™ following manufacturer's instructions. On metal roofs, check for loose or missing fasteners and tighten or replace them. Replace all bolt seals where necessary or patch with THERMAPATCH™ and ELASTOPRIME™ using POLYMESH™ per manufacturer's instructions. Replace and/or repair all damaged areas back to sound and solid condition.

C. Treatment of Rust and Corrosion: Flashing, vents and other metal structures with light to moderate rusting should be coated with ProTek-OXIPRIME™ *Water-based Red Iron Oxide Primer*. (See E. for full application procedure). Heavy or crusted rusted areas should be treated with RUSTCOTE™**,** a Direct-to-Rust one-part polyurethane that eliminates the need to remove the rust prior to application. ProTek-RUSTCOTE™ adheres to metal, masonry, wood, fiberglass, and most other substrates. Follow manufacturer's instruction applying at a rate of 4-5 wet mil coat, 2-2.5 dry mil (@ 200 sq. ft./gal) ProTek-RUSTCOTE™ may be used as an undercoat or as its own topcoat. ONE coat is usually sufficient.

Note: ProTek-RUSTCOTE™ can be used as a PRIMER or as a TOP COAT.

D. Tape Seams & Reinforce All Previously Repaired Areas and Roof Items (If applicable)**:** Tape all visible seams, large cracks & fractures, roof termination points, openings, around the base of all vents, pipes and other protrusions, as well as HVAC units and other roof mounted equipment prone to water intrusion on roof surface. Apply a liberal coat of ELASTOPRIME^{TM} or OXIPRIME^{TM} at minimum of 12 mils wet (*or at sufficient thickness to insure fabric is fully binding to substrate*) wet film thickness, directly to the affected area using brush, roller, or airless sprayer and lay the POLYMESH ^{TM} directly onto the WET PRIMER. Tape must be laid down before PRIMER has had a chance to start drying (approximately 15 minutes). After all areas are taped let dry for 1 to 2 hours or at minimum, dry to the touch and apply a second light coat of PRIMER at 8 mils wet over the top of the tape. Note: Let the taping procedure dry for at least 2 hours before continuing.

Note: If Polyurethane Foam is used in place of POLYMESH^{TM}, coat the PF with ELASTOPRIME^{TM} immediately as Primer/Sealer Coat.

E. Install tapered insulation, cant strips, spray-applied polyurethane foam (immediately sealed with ELASTOPRIME^{TM}), or other similar materials to build up affected roof surfaces as necessary to provide positive slope-to-drain.

F. Severely deteriorated flashings shall be removed and either replaced or repaired utilizing ELASTOPRIME^{TM} and POLYMESH ^{TM} as specified in 3.d above.

G. Large areas of heavy alligatoring, rough texture, and or split seams shall be leveled by applying POLYMESH^{TM} and emulsion as required to achieve a smooth surface.

H. Metal roofs* with light to moderate rust should be coated with OXIPRIME^{TM} *Water-based Red Iron Oxide Primer*. Heavily encrusted metals, including fasteners must be prepared properly by removing all scaling and flaking rust by scraping, sanding, wire brushing or sand blasting or coated with RUSTCOTE ^{TM}. Please be aware that the underside of the metal may also be rusted and should be repaired, or replaced with new metal.

Two Coat application of OXIPRIME^{TM}**.** If thinning is absolutely necessary, use up to 8 ounces of water per gallon of primer. Thin only enough products to be used within a 24-hour period or settling of the pigments may occur. First spot prime all rusted areas and let dry at least 12 hours before applying the second coat of PRIMER to the entire roofing surface. Consideration should be given to use two complete coats of OXIPRIME^{TM} to reduce the possibility of future rust. When spraying or rolling OXIPRIME^{TM}, it must be applied perpendicular to the slope of the roof. Apply the Full Coat application of OXIPRIME^{TM} at a rate of 100 - 200 square feet per gallon covering the entire roof surface. Wet film thickness of 8 - 10 mils wet resulting in dry film thickness of 6 - 8 mils. Let OXIPRIME^{TM} dry at least 12 hours before continuing.

**** If metal roof shows no evidence of corrosion, one coat of ELASTOPRIME ^{TM} may be substituted for OXIPRIME ^{TM}. For heavily rusted metal surfaces substitute OXIPRIME ^{TM} with RUSTCOTE ^{TM}, a Direct-to-Rust one-part polyurethane.***

I. New concrete should be cured a minimum of 28 days. Surface must be dry. All concrete deck surfaces must pass a four (4) to six (6) hour "tape" test for dampness. Tape a thick plastic cover (bag) to the deck for period. If moisture is found on the underside of the bag or plastic the concrete needs to dry more. Repeat the test until no moisture is found. Only then continue by using muriatic acid for etching of heavily soiled and / or smoothly finished concrete. Dilute 1 part of acid to 10 part of water and clean as suggested for the chlorine solution.

J. On both new and existing concrete, CRETESEAL^{TM} shall be applied for additional moisture protection prior to applying ELASTOPRIME^{TM} (see note below) pre-seal with CRETESEAL^{TM} applied by roller, brush or sprayer at temperatures above 40°F. Do not apply to hot surfaces. Apply uniformly and do not leave puddles or build-ups. On POROUS or UNCOATED SURFACES: Thin the first coat with 1 quart of water per gallon of ProTek-CRETESEAL^{TM} to achieve maximum penetration. Let first coat dry at least 4 hours and apply a second coat of ProTek-CRETESEAL^{TM} at full strength as it comes from the container.

Note: It is highly recommended to use ProTek CRICS^{SM} on all concrete and other non-Cool Roof surfaces, protrusions, etc, . Solar radiation will be transmitted through non-CRICS^{SM} surfaces undermining efficiency of the entire system preventing solar, moisture, and thermal shock damages.

After the application of ProTek Primers/Sealers has been completed (the following applies to all roofs and ProTek Primer/Sealers).

3.03 ELASTOMERIC COATING APPLICATION

Specify the Base and Top Coatings to Achieve:

For a 6-Year Standard Warranty specifies THERMCOTE/A-5^{TM}*
For a 12-Year Standard Warranty specifies THERMCOTE/A-10^{TM}*

***Only for Sloped non-ponding roofs. Flat and very low Sloped Roofs requires application of THERMCOTE/PW-5 (see manufactures instructions and limited warranty).**

1. All roof preparation materials shall be allowed to fully dry prior to full roof surface application of the 100% acrylic elastomeric coating system.

2. Immediately prior to application of the acrylic coating system, all dust, dirt and other contaminants shall be blown off the roof surfaces to be coated using high pressure compressed air.

3. Ducting & Pipes: All ducts and pipes should be repaired prior to coating. No priming is necessary unless rusted (apply either OXIPRIME^{TM} or RUSTCOTE^{TM}). For addition protection against energy loss, apply POLYMESH ^{TM} using ELASTOPRIME^{TM} as previously instructed on all seams and joints. All ducts and pipes shall be coated with 2 coats of a THERMCOTE^{TM} coating.

4. BASE AND TOP COATING BY WARRANTY SPECIFICATION

Note: Amount of ELASTOPRIME^{TM} specified in the following systems will vary greatly with the substrate flatness and porosity. A 100 sq. ft test should be conducted prior to application to assure proper application rate.

4.1. Include the following paragraphs only if specifying a 6-Year Standard Warranty

1. Apply one basecoat of ELASTOPRIME^{TM} (or OxiPrime^{TM} if applied over light rust) at a minimum rate of 1 gallon per 100 sq. ft. (.6 l/m²). Allow 12 hours dry time between coats.
2. After allowing the basecoat to dry, apply two coats of THERMCOTE/A-5TM or Thermocote/A-PW5TM (for roofs with ponding water areas - see Limited Warranty), at a minimum rate of 1 gallon per 100 sq. ft. Use a medium-nap roller or airless sprayer to apply the elastomeric coating. Application of the topcoat shall be in a perpendicular direction to the basecoat. Apply consecutive coats perpendicular to the previous coat.
3. The total of basecoat/mid-coat/topcoat – minimum dry film thickness required at any location shall be 20 mils (508 microns).

4.2. Include the following paragraphs only if specifying a 12-Year Standard

1. Apply one basecoat of ELASTOPRIME^{TM} (or OxiPrime^{TM} if applied over light rust) at a minimum rate basecoat at a minimum rate of 1 gallon per 100 sq. ft. (.4 l/m²). Allow 12 hours dry time between coats.

2. After allowing the basecoat to dry, apply 2 coats of Thermocote/A-10™ or Thermocote/A-PW5TM (for roofs with ponding water areas - see Limited Warranty), at a minimum rate of 1.25 gallons per 100 sq. ft. sq. ft. (.5 l/m²). Use a medium-nap roller or airless sprayer to apply the elastomeric coating. Application of the topcoat shall be in a perpendicular direction to the basecoat.
3. Apply consecutive coats of THERMCOTE A-10™ in a perpendicular direction to the previous coat.
4. The minimum dry film thickness of the basecoat/mid-coat/t topcoat required at any location shall be 22 mils (558 microns).

Note: THERMCOTE™ shall extend up and over all roof substrates on vent pipes, parapets and other protrusions to terminate a minimum of 3" above the substrate, creating a self-terminating flashing

1. **High Pollution Environment**: As an option on roofs located in industrial areas and/or subjected to high levels of pollutants, dirt, dust or other contaminants, apply a coat of CLEARPRO™ at the rate of 200 to 300 sq. ft. per gallon (.22 to .13 m²/l). CLEARPRO™ imparts a slick, semi-gloss finish that aids in maintaining a clean surface. Use 2- 3 coats of CLEARPRO™ for increased gloss, if desired. Recoat every 3-5, years, as necessary, to maintain bright white and gloss surface. Another option is to use THERMCOTE A-10™ Semi Gloss

2. **Final Evaluation:** At this time a detailed evaluation of the completed job will determine the quality of the workmanship and whether strict application specifications have been met. The entire roofing surface must be completely coated & sealed. Be sure to check that all roof areas are completely coated & sealed under permanently placed roof items such as roof top air conditioning units. Divide roof into 1,000 square feet sections and randomly check one spot in each section for a dry film thickness equal to the specified minimum DFT per above Warranty System. (Remember to touch up the penetration made by the dry film thickness gauge.) If specifications have not been met, determine how much material will be required to meet specifications and recoat. Check dry film thickness again until specifications has been met.

3.04 CLEANUP

A. Maintain work and work areas in a clean, safe conditions at all times during coating installation. Remove excess materials, trash, and debris from the jobsite daily.

B. At the completion of the project, clean area of any spills and containers, and clean up all roofing debris, leaving jobsite in a clean and orderly condition.

3.05 WARRANTY AND MAINTAINANCE

A. Upon completion of the roof coating system, the Coating Manufacturer's Representative, Owner's Representative, Architect, and Applicator shall make a final inspection to determine the dry film thickness of the fluid applied acrylic membrane and to verify that the system meets the Manufacturer's requirements for warranty. The Contractor shall notify all interested parties in advance of said inspection.

B. As a condition of the project's completion and acceptance, deliver to the Owner a copy of the fully executed and registered Warranty from the Coating Manufacturer, as per project specifications.

C. Roof inspection and maintenance should be performed on the roof at a minimum of once a year, preferably two times a year — spring and fall. The reflective coating should be cleaned as necessary with a low pressure power washer using a mixture of water and detergent (chlorine can be added to the mixture for roofs that are yellowing) to maintain maximum reflectivity and cooling cost savings. Routine roof maintenance should include both roof coating and flashings including cleaning the roof drains of debris). Minor defects, such as flashing or membrane holes/openings can be repaired during the course of the inspection. If new equipment is to be installed (i.e. HVAC units, TV antennas, etc.) or if any other **PHYSICAL** alterations will be made to the roof, the building owner should contact the roofer to assure proper integration and sealing.

D. Coating specified shall have a minimum 6 or 12 years renewable warranty with an additional application of top coats (e.g. THERMCOTE A-10^{TM}) at an application rate sufficient to bring the thickness back to original factory specifications.

Seattle WA
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As an ENERGY STAR® **Roof** Products Partner, ProTek-USA has determined that many of our products meet the ENERGY STAR® guidelines for energy efficiency. When installed properly these products can help reduce energy costs. Actual savings will vary based on geographic location and individual building characteristics. To maximize solar reflectance over time, routine **roof** maintenance should be performed periodically.