

BONFORT TECHNICAL DOCUMENT

BFT-606-A ACRYLIC COOL ROOF REFLECTIVE COATING

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Single Component, Ultra High Solids, Water-based Elastomeric Acrylic Cool Roof Top Coat



Code: BFT-606-A

Product name: Acrylic Cool Roof Reflective Coating

Color: White (Customizable)

Base Resin: Water-based 100% pure elastomeric all-acrylic emulsion with infrared-reflective TiO₂ pigments, UV stabilizers, thixotropic additives, biocide and low-VOC deionized water

Key Attributes:**Ultra High Solids Acrylic Formulation**

- Weight solids ≥88%
- Single-coat high-build, reduces labor and application costs
- Superior UV & Weather Resistance
- Formulated for long-term outdoor exposure, anti-chalking, anti-fading
- Pass full ASTM D6083 accelerated UV aging requirements • Low VOC Environmental Compliance
- VOC ≤50 g/L (EPA Method 24), compliant with California AQMD, Title 24
- Water-based, no hazardous solvent, low odor during construction, non-dangerous goods for standard transport

Simple Construction

- Single-component, no on-site mixing; spray, roller, brush all applicable

Cool Roof Energy Saving Performance

- Initial SRI ≥100, meets performance thresholds for CRRC rating & ENERGY STAR® qualification
- UL 790 Class A single-coat fire classification evaluation underway

Superior Dirt Pick-Up Resistance (DPUR)

- Minimizes dust & stain accumulation, retains long-term high solar reflectance and cooling efficiency

TARGET APPLICATION**Roofing systems:**

- Modified bitumen & BUR built-up roofing
- Sprayed Polyurethane Foam (SPF)
- Low/slope metal roof panels
- Single-ply aged membranes (TPO, PVC, EPDM with proper primer)
- Concrete roof slabs Vertical Surfaces: Parapets, roof curb, exterior facade coating Consult technical service for special substrate compatibility.

CHARACTERISTICS/ADVANTAGES

- Fully complies with ASTM D6083 specifications for liquid-applied acrylic roof coatings
- Cures into a seamless, monolithic flexible waterproof membrane
- Delivers superior crack-bridging capability to offset thermal expansion and contraction of roofing substrates
- Combines high solar reflectance and thermal emittance to lower roof surface temperatures and reduce building cooling demand
- Features excellent dirt pick-up resistance (DPUR) to minimize surface staining and sustain long-term SRI & energy-saving performance
- Exceptional resistance to UV degradation, chalking and fading for extended service life in intense sunlight and high-temperature environments
- Waterborne low-VOC formulation compliant with all North American air quality regulations
- Ready-to-use single-component design; compatible with airless spray, roller and brush application methods
- Compatible with dedicated asphalt bleed-block primers for bituminous roofing substrates to prevent tannin staining

TECHNICAL INFORMATION & TESTING

PRODUCT INFORMATION	Value	Test Method
Packaging	5 US gal (18.9 L) plastic pail; 55 gal drum and 275 gal tote available upon request	—
Unopened Shelf Life	24 months stored under 32°C; frost resistant	Manufacturer Internal Stability Test
Standard Color	Bright reflective white (custom colors available)	—

LIQUID RAW MATERIAL PROPERTIES

Property	Value	Test Method
Weight Solids Content	≥88%	ASTM D2697 / Internal QC
Volume Solids Content	52-56%	ASTM D2697 / Internal QC
Viscosity (KU)	100-120 KU	ASTM D2196
Weight per Gallon	11.2-11.6 lbs/gal (5.08-5.26 kg/gal); approx. 56 lbs (25.4 kg) per 5 gal pail	ASTM D1475
VOC Maximum	≤50 g/L; typical QC target 45-49 g/L	EPA Method 24
pH Value	8.8-10.2	ASTM E70
Skin-Over Time	40-50 mins @25°C 50%RH	ASTM D1640

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COOL ROOF RESISTANCE & PERFORMANCE SUMMARY

Property	Value	Test Method
Initial Tensile Strength	260 psi (1.79 MPa)	ASTM D2370
Initial Elongation at Break	250%	ASTM D2370
Elongation after 1000h UV Aging	≥220%	ASTM D2370
Tear Resistance	≥28 lb/in (4.9 N/mm)	ASTM D624
Shore A Hardness	34–38	ASTM D2240
Low Temperature Flexibility (1000h aged)	Pass, no cracking @ -10°F (-23.3°C)	ASTM D522 (Complies with ASTM D6083 performance requirements)
Fungi Resistance Rating	0 (Zero mildew growth)	ASTM G21
Water Vapor Permeance	3.6 perms	ASTM E96 BW (23°C/50%RH)
Water Swelling (Mass Gain)	≤9%	ASTM D471

COOL ROOF SOLAR THERMAL PROPERTIES (WHITE STANDARD COLOR)

Property	Value	Test Method
Initial Solar Reflectance	0.85	ASTM C1549 / CRRC method alignment
Initial Thermal Emittance	0.90	ASTM C1371
Initial SRI Value	112	ASTM E1980 / CRRC method alignment
Aged Solar Reflectance (Accelerated Weathering)	≥0.77	ASTM C1549 / CRRC method alignment
Aged Emittance	≥0.86	ASTM C1371
Aged SRI (1000h UV)	≥90	ASTM E1980 / CRRC method alignment

APPLICATION INFORMATION

Application Parameter	Specification
Target Dry Film Thickness	20–30 mil (0.51–0.76 mm)
Coverage Rate (30 mil DFT)	10–12 sq.ft./gal (0.23–0.28 m ² /L)
Min Ambient Air Temp for Application	40°F (4.4°C)
Max Ambient Air Temp	95°F (35°C)
Maximum Relative Humidity during Application	80% RH
Substrate Surface Temp Range for Coating	40°F to 120°F (4.4°C to 48.9°C)
Recoat Interval (25°C/50%RH)	Minimum 4 hours between coats

Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

APPLICATION INSTRUCTIONS

Versatile Application Methods

High-pressure airless spray, roller, brush all permitted; back-roll required after spray to eliminate pinholes.
 Spray Equipment Recommendation: Working pressure 3300 psi, flow rate ≥2 gal/min, standard roof coating spray tips.
 Roller Selection: Smooth roof surface: ½"–¾" nap roller; textured/granulated modified bitumen: 1¼"–1½" nap roller.

High-Build Feature

Single-coat construction can reach target dry film thickness without sagging on low-slope roofs. Multi-coat application allowed for heavy-duty aged roof restoration.

Surface Preparation Rules

Base substrate must be structurally sound, fully dry, free of dust, oil, grease, mildew, loose deteriorated coating, frost and standing water.
 All roof cracks, holes, blisters must be repaired with compatible acrylic sealant prior to coating.
 Severely saturated roof substrate must be removed and replaced before coating work.
 Asphalt/bitumen roof must apply asphalt bleed-block primer first to prevent tobacco staining discoloration.
 Conduct small-scale adhesion test on unknown existing coatings before full construction.

Usage & Mixing Guidance

Single-component ready-to-use. DO NOT ADD WATER, SOLVENTS OR THINNERS.
 If settlement occurs after long storage, stir slowly and uniformly before use.
 Seal bucket tightly immediately after use to avoid surface skin formation.

Pre-Cure & Post-Cure Cleaning

Uncured wet coating: Clean tools with clean water; dried uncured skin residue can be wiped with alcohol.
 Fully cured coating film: Remove with razor blade scraper or fine abrasive pad.

Construction Environment Restrictions

Do not apply if heavy rain, hail or snow forecast within 24 hours after coating.
 Avoid spraying under strong wind to prevent overspray drift on windows, vehicles, vegetation.
 Mask all non-coating surfaces (vent pipes, skylights, metal flashings) before construction.
 Cold weather condition: Extended curing time required; delay foot traffic until film fully cured.
 Hot weather condition: Short skin-over time, reduce pause between spray passes to avoid lap marks.

COMPATIBLE SUBSTRATES

Modified bitumen (granulated & smooth surface), BUR built-up asphalt roofing
 Sprayed Polyurethane Foam (SPF)
 Galvanized/galvalume metal roof panels
 Concrete roof slabs, cement parapet walls
 Aged single-ply membranes (TPO, PVC, EPDM, CSPE) with matching primer
 Existing sound intact acrylic roof coatings



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PRODUCT LIMITATIONS

Not suitable for continuous pedestrian heavy traffic walkways, roof decks, load-bearing platforms.
Not designed for permanent continuous water immersion (ponding water over 72 hours without drainage).
Not recommended for unventilated cold storage roofs without vapor barrier system.
Do not apply to wet, moldy, oily, chalky, blistered or structurally damaged substrates without repair.
Poor adhesion on untested vulcanized rubber, failed old sealants, some adhesive tapes; run adhesion test first.
Must use dedicated asphalt bleed primer when coating bituminous substrates to prevent staining.

STORAGE & TRANSPORTATION

Storage Conditions

Seal containers airtight to prevent premature skin formation before use.
Store warehouse temperature ≤90°F (32°C); avoid direct long-term sunlight exposure.
Freeze-resistant formula; can be stored in unheated warehouse in winter, no crystallization risk.
Shelf life: 24 months from production date under proper sealed storage.

Transportation

Classified as non-dangerous goods, general cargo transport allowed. Prevent container freezing during winter shipment.

CURING MECHANISM

Waterborne pure acrylic latex; cures via water evaporation, no moisture-dependent crosslinking (different from silicone moisture-curing coatings). Good ventilation accelerates full curing.

PRODUCT HAZARD OVERVIEW

Temporary surface skin will form when liquid coating exposed to air for long time.
Remove surface skin completely before pumping/spraying to avoid equipment clogging.
Wear standard PPE: safety goggles, nitrile gloves, long-sleeve work clothes during construction.
Avoid direct contact with eyes; flush with plenty of clean water if contact occurs.

COMPLIANCE & CERTIFICATION ROADMAP

Mandatory Performance Standard: ASTM D6083 Liquid Applied Acrylic Roof Coating
Cool Roof Rating: CRRR Rated – White & Tan color, certification pending
Fire Classification: UL 790 Class A – Single-coat roof system qualification ongoing
Energy Efficiency Certification: ENERGY STAR Cool Roof Product – Product application filed
Regional Code Compliance: Compliant with California Title 24, compatible with ICC-ES ESR-2140, eligible for LEED sustainability credits
Environmental Regulation: Low VOC compliant per EPA Method 24, meets all North America AQMD emission limits