



CLIMATE-SHIELD® ROOF COAT

DESCRIPTION

Climate-Shield® Roof Coats are highly efficient, energy-saving, flexible coatings, made from a water-based pure acrylic resin system filled with vacuumed sodium borosilicate ceramic micro spheres of less than 100 microns in size. Each micro sphere acts as a sealed cell and the entire mastic acts as a thermally efficient blanket covering the entire structure. These coatings are non-toxic, friendly to the environment, and form a monolithic (seamless) membrane that bridges hairline cracks. They are completely washable and resist many harsh chemicals. Climate-Shield® Roof Coats have high reflectance and high emittance as well as a very low conductivity value. Climate-Shield® Roof Coats greatly reduce thermal shock and heat penetration by keeping roof surfaces much cooler in hot summer weather. They offer UV protection and low VOC's. They display excellent dirt pick-up resistance and retain their flexibility after aging. Climate-Shield® Roof Coats reduce noise transmission and have an effective use range from -40 Deg C (-40 Deg F) to 204 Deg C (400 Deg F).

TYPICAL USES

Primarily used as a roof coating where joints, seams, cracks and gaps around protrusions are reinforced with a 100% polyester spun laced fabric embedded in the membrane. They may be utilized wherever a weather resistant membrane-like coating is required. The STANDARD formula is used in most climatic conditions. The TROPICAL formula is used in climatic conditions where fungi growth is a major concern. The UL CLASS A formula is used on projects where shear extra-high fire resistance is desired (i.e. oil & gas).

PRIMER

No primer is usually required. Follow instructions for proper application regarding guaranteed systems on bitumen roofs. Our Climate-Shield® Acrylic Flex Tac bonding coat is required to obtain good adhesion between a bitumen substrate and Climate-Shield® water-based roof coatings. Rusty surfaces require rust control prior to the application of the roof coats.

SURFACE PREPARATION

All surfaces must be clean and free from laitance (efflorescence), dust, dirt, oil and grease. Minimally, surfaces should be power washed prior to coating, providing this will not damage the roof or cause leaks.

COLORS

White and any custom color available. Darker colors will give a correspondingly lower reflectivity.

SPECIFIED MINIMUM DRY FILM THICKNESS

Flat Roofs: 700 microns DFT (27 Mills) at any location

Well Sloped or Pitched Roofs: 380 microns DFT (12 Mills) at any location

V.O.C.

0.33 lbs / gallon 39.5 grams / liter

THEORETICAL COVERAGE (2 or more coats)

3 m² per gallon at 700 microns DFT (32 sf/gallon at 27 Mills DFT) 7 m² per gallon at 300 microns DFT (75 sf/gallon at 12 Mills DFT)

DRYING TIME

To set: 45 minutes
To re-coat: 12 hours
To through: 12 hours

At 24 Deg C (75 Deg F) and 50% relative humidity

After 45 minutes, Climate-Shield® Roof Coats have surface set to the point where they are no longer susceptible to airborne dust and will not run in the presence of increased humidity. Do not apply Climate-Shield® Roof Coats if precipitation is imminent, or is likely to occur before Climate-Shield® Roof Coats are dry through, or if temperature is expected to drop below 4 Deg C (-40 Deg F).

INSULATION

Reflectance 89%, Emittance 94%, Conductance 0.05 W/mK - unlike typical mass insulation where heat conduction is just slowed down, this technology keeps the heat out. Sun light only produces heat when it is absorbed by a surface. The amount of sun light left over after the reflection process, can either be absorbed into the roof surface as heat, or emitted back out into the atmosphere as infrared light, not heat. The emittance process leaves less than 2% of the radiant energy to be absorbed into the surface as heat. The Climate-Shield® coatings, although at a small thickness, have a very low conductivity value to do the rest of the insulation work.

FLEXIBILITY

Coatings remain flexible at -50 Deg F (-45.6 Deg C). Eliminate thermal-shock damage. Maintain their strength at 400 Deg F (204.44 Deg C).

ADHESION

Excellent adhesion to a wide variety of substrates: wood, urethane foam, galvanized steel, aluminum, asphalt roof shingles, concrete, asbestos and many others.

RESISTANCE TO WATER PONDING

Excellent resistance to ponding water. This is the result of a careful balance of the following properties:

- Passage of bulk water at 50 hours40-55 mg/m2
- Permeability (ASTM E 96-80)08.80% Perms
- Film Swelling (at Equilibrium)10.17%

THINNING

None required. Clean water in small amounts of up to 0.24 Liter (1 cup) per gallon may be added to replace evaporation losses or to adjust for spray equipment configuration.

Caution: excessive thinning will cause the coating to lose adhesion and elasticity.

EQUIPMENT

Roller or airless spray application is recommended. Very small areas may be brushed. When Climate-Shield® Roof Coats are applied by brush, three (3) coats cross-brushed is required for adequate protection.

Airless Sprayer:

Tip Orifice: .031 inches

Atomizing Pressure: 2200-2500psi

Fan Spread: 60 Degrees

Pump: Minimum 1 gallon per minute at 2500 psi

Filter: Remove filters and screens

Prime pump with water before attempting to spray Climate-Shield® Roof Coats.

VARIABLE PERMEABILITY

This feature, unique to Climate-Shield® allows the membrane to perform unlike any other coating. When conditions are dry, the polymers shrink and the pores open to allow trapped water vapor to breathe out of the substrate, but when conditions are wet (raining, ponding of water, etc.), the polymers swell, the pores close, and the entire membrane becomes watertight.

SPREADING RATE PER COAT (1 millimeter = 1000 microns)

	m2/gallon	WFT(microns)	DFT(microns)
Suggested	9	371 (15 mills)	233 (10 mills)
Maximum	12	275 (11 mills)	175 (7 mills)
Minimum	6	567 (23 mills)	350 (15 mills)

This rate allows for 10% loss

MIXING

Stir each container thoroughly using low speed mechanical agitation to avoid air entrapment.

NUMBER OF COATS

Two to three coat application (minimum dry film-build of 700 microns DFT for flat and asphalt shingle granulated roofs and 300 microns for well sloped roofs) will give the best long term protection at minimum cost. The principle cause of coating failure is water ponding in areas of low film thickness (i.e. less than the recommended thickness).

Acceptable equipment includes: Binks Super Hornet, Graco 433 or larger, and many others.

METHODS

To assure adequate and uniform coverage, the “spray and back roll” techniques are recommended. Climate-Shield® Roof Coats should be applied in full wet coats.

CLEAN UP

Clean tools and equipment with warm soapy water. Rinse with clean water; flush mineral spirits through spray equipment to prevent rusting and to lubricate packing and gaskets.

PACKAGING

22,7 kg / 19 l

STORAGE

Store at minimum 1 Deg C (33.8 Deg F) - maximum 30 Deg C (86 Deg F) **DO NOT FREEZE**

SHELF LIFE

Minimum 2 years (keep from freezing)

SETA FLASH POINT

Non-Flammable (water based)

DOT CLASS

Not regulated

PRODUCT WARRANTY

5 years. Extendible to 10 or 15 years.