



Stars Management DMCC

SUBMITTAL

POLAROOF AC
(Acrylic Waterproofing Coating)

PRODUCT DATA

POLAROOF ACTM

Acrylic Waterproofing Coating



DESCRIPTION

POLAROOF AC is a premium quality, waterproof, tough, elastic coating with unique properties that extend the lifespan of most roofs. The technology behind the formulation of this material uses acrylic chemistry and advanced mineral design to create a composite coating that forms a shield to protect against water penetration, corrosion, and stress fatigue from thermal cycling. Long-term waterproofing is maintained by tenacious adhesion to the substrate and flexibility over a wide temperature range without cracking at low temperatures or melting or flowing at high temperatures. The hydrophobic nature of the mineral structure within the composite forms a barrier to prevent the ion transfer that characterizes corrosion. Additionally, the ability to suppress stress fatigue by absorbing the heat energy and conversion through endothermic reaction will significantly enhance the longevity of the roof structure.

OUTSTANDING FEATURE

- Available in a wide range of standard and custom colors
- Carries the highest U.L. rating for fire protection at unlimited slope
- EPA Energy Star rating reassures significant energy savings
- Provides long lasting waterproofing protection
- Performs on all standard roofing substrates

- Reduces stress fatigue due to thermal cycling
- May be combined with I.F. reflecting basecoat to lower B.T.U. consumption
- Very fast setting to prevent wash-off
- Completely dry surface remains clean
- Performs on all standard roofing substrates
- Environmentally friendly (contains no solvents)
- Inhibits corrosion
- Can easily be recoated without use of primer
- Resists fungal attack
- Remains flexible, tough, and weatherproof in all climates

- Will not get brittle and crack with age
- Protects against UV deterioration
- Ten year material warranty
- May be recoated to last 20 or 30 years

APPLICATION

READ THIS ENTIRE DATA SHEET BEFORE CONTINUING

Surfaces must be dry, free of dirt, loose debris, oil, grease, or any substance that could interfere with bond. All repairs of damage or defects must be made prior to application.

POLAROOF AC is an alkaline water-based product. POLAROOF AC is applied straight out of the can after 2 minutes of gentle low speed

SPECIFICATIONS	
Coating	Acrylic elastomeric
VOC	10 grams/liter
Pot Life	Not applicable (single component)
Shelf Life	24 months unopened
Recommended Thickness	32 dry mils
Coverage	3 gallons per 100 square feet; 48 wet mils
Packaging	5 gallons standard; 1 gallon and 55 gallon sizes available
Color	White, Black, Red, Green, Dark Gray, and Colonial Gray are standard. Other colors are available
EPA:	Complies with all existing regulations

POLAPROOF AC™

Acrylic Waterproofing Coating



mixing or stirring. Apply the product using brush, roller, or spray technique. Apply in 2 coats to a uniform wet film thickness of about 24 mils per coat to insure complete coverage on the 2nd coat. Apply the 2nd coat after the 1st coat has set (about 2-4 hours). For spray applications, use a 30:1 ratio Graco with a #36 tip or similar equipment.

For soft brush or high nap roller application, use light pressure and coat in a cross direction to the 1st coat.

LIMITATIONS

Do not apply to frozen or saturated surfaces. Do not apply if the temperature is predicted to drop below 35°F within 4 hours after

-application is completed. Do not apply if rain is forecast within 4 hours of completion of application. Protect POLAROOFF AC from freezing. In roofing areas where water is likely to pond and be present for more than 1 day after precipitation, it is advisable to topcoat the POLAROOFF AC with Clearcoat 44 or Clearcoat AQ. Apply the Clearcoat in these areas at the rate of 1 gallon per 200 square feet.

PRECAUTIONS

Avoid contact with skin and eyes. In case of contact, immediately **eyes, get medical attention in addition** to flushing. Avoid inhalation of spray mist. If inhaled, seek medical attention. In case of ingestion,

contact a physician immediately. Wear rubber gloves, coveralls and safety goggles when applying.

MAINTENANCE

If a surface becomes dirty or stained, wash with a mild soapy water solution. If an area becomes nicked or cut, recoat with POLAROOFF AC. Clean tools and equipment with water before the POLAROOFF AC dries; after that solvent cleaning may be necessary.

For more information, call our Technical Department.

Keep out of reach of children and pets.

TECHNICAL DATA		
Moisture Vapor Transmission	3.5 perms	ASTM E-96
Tensile Strength	250 psi	ASTM D-412
Elongation	750%	ASTM D-412
Impact Resistance	4 mm indent. pass	BS3900 Part E3
Solids	73% (B.W.), 67% (B.V.)	ASTM D-1044
Flashpoint	Non-flammable	Closed Cup
Weatherometer (5000 hours)	Pass	ASTM G23
Fire Rating	Class A	ASTM E-108
Shore 'A' Hardness	60 degrees	ASTM D-2240
Viscosity	7,000 cps	
Density	Average 11.5 lbs/gal	
pH	9.0	

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MATERIAL SAFETY DATA SHEET
U.S. Department of Labor
Occupational Safety & Health Administration

POLAROOF AC

SECTION 1 - IDENTIFIERS

MANUFACTURER: Andek Corporation
TRADE NAME: Polarooft AC
CHEMICAL FAMILY: Acrylic Resin Emulsion

SECTION 2 – HAZARD IDENTIFICATION & EMERGENCY OVERVIEW

Emergency Overview: Not considered to be hazardous. Some individuals may find the odor to be unpleasant.

Effects of Overexposure:

SKIN: May irritate skin.
EYES: Contact is unpleasant; vapor may irritate.
BREATHING: Not considered harmful; slight ammonia odor may annoy some individuals.
SWALLOWING: Although non-toxic, entry into throat may cause choking.

SECTION 3 - COMPOSITION

<u>COMPONENT</u>	<u>CAS #</u>	<u>APPROX %</u>	<u>TLV</u>
Acrylic Resin	25085-46-5	34.0	
Barium Sulfate	7727-43-7	10.7	
Titanium Dioxide	13463-67-7	5.7	
Aluminum Trihydrate	21645-51-2	33.9	
Dispersant (nonionic)/Defoamer (Silicone Emulsion)	744-21-3	0.5	
Fungicides	1897-45-6	0.3	
Water	7732-18-5	14.9	

SECTION 4 – FIRST AID MEASURES

SKIN: While wet, wash with water. If dry, use proprietary hand cleaner, followed by soap and water.
EYES: Flush with plenty of water and seek medical attention.
BREATHING: Move victim to fresh air.
SWALLOWING: Induce vomiting and immediately call a physician.

SECTION 5 – FIRE & EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED): >200°F Seta
FLAMMABLE LIMITS: N/A
EXTINGUISHING MEDIA: N/A
SPECIAL FIRE FIGHTING PROCEDURES: N/A
UNUSUAL FIRE & EXPLOSION HAZARDS: None
DECOMPOSITION PRODUCTS: None

SECTION 6 – SPILL OR LEAK PROCEDURES

Cover with a layer of sand or suitable absorbent material, or wash away with water.

SECTION 7 – HANDLING & STORAGE

Avoid prolonged contact with skin. Do not consume food or beverage while handling. Do not allow to freeze; otherwise, material will be unusable and require disposal.

SECTION 8 – PERSONAL PROTECTION/EXPOSURE CONTROLS

RESPIRATORY PROTECTION (SPECIFY TYPE): Unnecessary if used outdoors. If used outdoors - Ref: OSHA's respirator regulations in 29CFR 1910.134.
EYE PROTECTION: Chemical splash goggles. Ref: OSHA's eye and face protections in 29CFR 1910.133.
SKIN PROTECTION: Neoprene rubber or polyethylene gloves.
OTHER PROTECTIVE EQUIPMENT: Coveralls and/or rubber apron, rubber shoes or boots.
PERSONAL HYGIENE: Wash after applying product.

SECTION 9 - PHYSICAL DATA

BOILING POINT (F)	212°	SPECIFIC GRAVITY (H ₂ O=1)	1.48
VAPOR PRESSURE	68	PERCENT, VOLATILE BY VOLUME	27
VAPOR DENSITY (AIR=1)	As Water	EVAPORATION RATE (N.B.A.=1)	As Water
SOLUBILITY IN WATER	Soluble	pH	9.5

APPEARANCE & ODOR - Opaque viscous liquid with slight ammoniacal odor.

SECTION 10 - REACTIVITY DATA

STABILITY: Stable
 INCOMPATIBILITY (MATERIALS TO AVOID): None
 HAZARDOUS DECOMPOSITION PRODUCTS: None
 HAZARDOUS POLYMERIZATION: Will not occur
 CONDITIONS TO AVOID: Freezing will coagulate material

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE ORAL TOXICITY	MINIMAL
ACUTE INHALATION TOXICITY	MINIMAL
ACUTE DERMAL TOXICITY	MINIMAL
SENSITIZATION	UNLIKELY
MUTAGENICTY	NEGATIVE
CARCINOGENICITY	PROBABLY NOT

SECTION 12 ECOLOGICAL INFORMATION

BIODEGRADATION	NOT SIGNIFICANT
TOXICITY TO FISH	NOT TOXIC
TOXICITY TO AQUATIC INVERTEBRATES	NOT TOXIC
TOXICITY TO MICRO ORGANISMS	NOT TOXIC
ATMOSPHERIC OXIDATION OF VOLATILES	NEGATIVE
BIOACCUMULATION	NEGATIVE
TOXICITY TO PLANTS	NOT TOXIC

SECTION 13 – DISPOSAL CONSIDERATIONS

Dispose of in accordance with local, state and federal regulations.

SECTION 14 - TRANSPORT INFORMATION

PROPER SHIPPING NAME: Paint
 HAZARD CLASS: None
 PACKING GROUP: N/A
 ID #: N/A
 RQ: N/A
 TRANSPORT LABELS REQUIRED: This material is not regulated by the D.O.T.

SECTION 15 – REGULATORY INFORMATION

See reference data for individual components.







SECTION 16 – OTHER INFORMATION (HMIS RATING)

Health	1
Flammability	0
Physical Hazard	0
Personal Protection	B

Disclaimer: Andek Corporation (Andek) believes, to the best of its knowledge, information and belief, the information contained herein to be accurate and reliable as of the issue date of this Material Safety Data Sheet (MSDS). However, because the conditions of handling, use, and storage of these materials are beyond Andek's control, we assume no responsibility or liability for personal injury or property damage incurred by the use of these materials and make no warranty, expressed or implied, regarding the accuracy or reliability of the data or results obtained from their use. All materials may present unknown hazards and should be used with caution. The information and recommendations contained in this MSDS are offered for the users' consideration and examination. It is the responsibility of the user to determine the final suitability of this information and data and to comply with all applicable international, federal, state, and local laws and regulations.



PROJECT REFERENCES

	PROJECT	LOCATION	ANDEK PRODUCT USED
	U.S. Naval Research Lab	Washington DC	Polaroof NW
	Reagan National Control Tower	Reagan National Airport, Washington, DC	Polaroof AC, Wearcoat 66
	Arch Street Presbyterian Church	Philadelphia, PA	Polaprime 21, Polaroof AC
	Trump Building Wall Street (Metal roof)	New York, NY	Polaprime 21, Polaroof AC
	PA DOT-Interstate 476	Pennsylvania	Polagard AG
	McDonnell Douglas (Boeing Aerospace)	New Jersey	Polaroof RAC



John F Kennedy Airport

New York, NY

Polaroof SP, Flashband



LaGuardia Airport

New York, NY

Polaroof SP, Flashband



Throgs Neck Bridge

New York, NY

Roofdx Super, Roofab



Los Angeles Int'l Airport

Los Angeles, CA

Polaroof RAC, Roofab, Polaroof SP



PSE&G Nuclear Power Station

Salem, NJ

Andek 950, Wearcoat 66



Philadelphia Park Horse Stables

Philadelphia, PA

Polaprime 21, Polaroof AC



U.S. Air Force Airlift Command

Dover AFB, DE

Polaroof AC



U.S. Navy (Military Sealift
Command)

Norfolk, VA

Polaroof SP



Walt Disney World

Orlando, FL

Roofdx Super, Polarroof RAC, Roofab, Polarroof AC, Polarroof NW, Clearcoat 44



The Moshulu

Philadelphia, PA

Polaprime 21, Roofab, Polarroof RAC



Interstate 78

Pennsylvania

Polagard AG



Veteran's Administration Hospitals

Delaware & Palo Alto, CA

Polarroof RAC, Polarroof SP



Jazzland Amusement Park

New Orleans, LA

Polagard AG



NASA Goddard Space Flight Center

Greenbelt, MD

Polarroof RAC, Roofab



National Institutes of Health

Bethesda, MD

Cocoon 560, Cocoon Vinyl Bond B



Harrah's Casino

Atlantic City, NJ

Polaroof AC, Roofdx Copper



General Electric

Burkeville, AL

Cocoon 560, Cocoon Vinyl Bond B



Baltimore/Washington Int'l Airport

BWI Airport, MD

Polaroof NW



U.S. Department of State

Overseas Embassies

Rubberkote 1047



Princeton University

Princeton, NJ

Polaroof AC, Polaroof NW,
Wearcoat 44, Roofab



U.S. Army Corps of Engineers

Hungry Horse, MT &
Johnson Atoll

Polajoint



Dupont Corp

Richmond, VA

Polafloor PUR, Wearcoat 44,
Polafloor Epoxy Topping



Lucy the Elephant

Margate, NJ

Polaroof AC, Polaprime 21



Maryland DOT

Chesapeake House
Service Center

Polaroof AC, AIM #3



Philadelphia City Hall

Philadelphia, PA

Roofdx Super



Pfizer Pharmaceutical

Philadelphia, PA

Polafloor PUR



Philadelphia Naval Shipyard

Philadelphia, PA

Polaroof AC, Polaroof NW,
Wearcoat 44, Roofab



University of Texas

Austin, TX

Clearcoat 44



Delaware DOT

Harrington, DE

Polaroof NW



The Ritz Carlton Resort & Golf
Club

Bradenton, FL

Andek Firegard



Pennsylvania State University
Wiley Lab

State Park, PA

Cocoon 560, Cocoon Vinyl Bond B



Hershey Park

Hershey, PA

Polafloor Colorcoat



National Italian Foundation HQ

Washington D.C.

Polagard Fibrelastic



Independence Blue Cross/Blue Shield HQ

Philadelphia, PA

Roofdx Super, Polafloor PUR



U.S. Navy - Military Sealift Command

Norfolk, VA

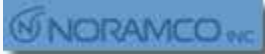
Polaroof SP

Picatinny

U.S. Army

Picatinny Arsenal, NJ

Polajoint Super



Noramco Pharmaceuticals

Wilmington, DE

Polaprime 21, Polaroof NW, Clearcoat 44



U.S. Coast Guard

Cape May, NJ

Polaroof SP, Polaroof RAC, Roofab



Bank of America

Baltimore, MD

Polaprime 21, Roofdx Super, Polaroof RAC, Roofab



Blue Cross/ Blue Shield

Columbia, SC

Polagard AG



Osiris Therapeutics

Columbia, MD

Cocoon 560, Cocoon Vinyl Bond B



Delaware "Smoke House" Fire
Training Facility

Polaprime 21, Wearcoat 44



Kentucky Horse Park-Central
Show Arena Facility

Lexington, KY

Polaprime 21, Polarof NW



Triborough Bridge & Tunnel
Authority

New York, NY

Roofdx Super, Roofab, Silver Film



Druid Hill Recreation Center

Baltimore, MD

Wearcoat 44

DSET LABORATORIES

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Date: November 7, 2007

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TOTAL EMITTANCE TEST REPORT

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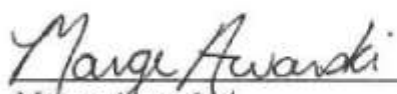
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This report contains 4 pages

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TEST INSTRUMENTS GROUP

- ATLAS MATERIAL TESTING TECHNOLOGY
- ATLAS MATERIAL TESTING TECHNOLOGY GmbH

WEATHERING SERVICES GROUP

- SOUTH FLORIDA TEST SERVICE
- DSET LABORATORIES



ISO/IEC 17025
CERT #717.01

TOTAL EMITTANCE TEST REPORT

1.0 INTRODUCTION

This report presents results of total emittance measurements on nine roofing coating draw downs coded:

Polaroof NW
Polaroof RAC
Silver Film
Wearcoat 66
Wearcoat 44
Andek Firegard
Polaroof SP
Flashband Aluminum
Polaroof AC

2.0 TEST METHODS AND PROCEDURES

Near-Normal Infrared reflectance measurements were performed in accordance with ASTM E408-71 (reapproved 2002), Method A. A Gier Dunkle Instruments Infrared Reflectometer Model DB 100 was utilized for the measurements.

Inside the detector portion are two semi-cylindrical cavities. One of the cavities is heated by an electrical heater and the other stabilizes at approximately room temperature. Thus, the two cavities are maintained at different temperatures. As the cavities rotate, the sample is alternately irradiated at 13 Hz. A vacuum thermocouple views the sample through an optical system that focuses through slits in the ends of the cavities. The detector receives energy emitted by the sample and energy reflected by the sample. Only the reflected energy contains an alternating component as the sample is alternately irradiated by the hot and cold cavities. An amplifier is synchronized with the cavity rotation to pass only the desired alternating signal, which is then rectified and filtered. The zero and gain are set with standards of known emittance. The calibration is rechecked at several intervals during the measurement. The Gier Dunkle Infrared Reflectometer is calibrated using high and low emittance standards. The standards were calibrated at and obtained from the National Physical Laboratory in England. The emittance value for the glass standard equals 0.89. The emittance value for the mirror standard equals 0.01.

TOTAL EMITTANCE TEST REPORT

2.0 TEST METHODS AND PROCEDURES (cont'd)

Near-Normal Emittance for the client's specimens was calculated from Kirchhoff's Relationship where:

$$\rho + \alpha + \tau = 1, \alpha = \varepsilon$$

Since the specimens have no transmittance in the far infrared, the preceding equation reduces to

$$\rho + \varepsilon = 1 \text{ and } 1 - \rho = \varepsilon$$

3.0 OBSERVATIONS, DEVIATIONS, AND WAIVERS

The measurements were performed on the coated side of the specimens. The values reported represent the average of at least four measurements.

ANDEK CORPORATION

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Date: November 7, 2007

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TOTAL EMITTANCE TEST REPORT

4.0 RESULTS

<u>Specimen Code</u>	<u>Far IR Reflectance (ρ) Measured</u>	<u>Near Normal Emittance (ϵ) Calculated</u>
Polaroof NW	.07	.93
Polaroof RAC	.41	.59
Silver Film	.57	.43
Wearcoat 66	.08	.92
Wearcoat 44	.07	.93
Andek Firegard	.06	.94
Polaroof SP	.06	.94
Flashband Aluminum	.99	.01
Polaroof AC	.06	.94