



Stars Management DMCC

SUBMITTAL

COCOON 550
(Flexible Anti-Fungal Coating)



COCOON 550 TM

Flexible Anti-Fungal Coating

COCOON 550 is formulated for protection of exterior surfaces subject to mechanical stresses, impact, and harsh climatic conditions. COCOON 550 is a liquid polyvinyl chloride coating which can be sprayed on any clean, dry building surface. Wherever it is sprayed, COCOON 550 will form a tough, flexible, waterproof skin that will withstand the extremes of temperature, thermal shock, differential substrate movement, and impingement. COCOON 550 is used extensively on promenade decks, traffic bearing roof decks and mechanical room floors where excellent abrasion, waterproof, scuffing and traction enhancement properties are important.

Outstanding Features:

Excellent protection to exterior surfaces, including roofing and structural decks, to effectively waterproof and seal against moisture presentation

Tested by Factory Mutual for combustibility and found to be a fire retardant coating that will inhibit the progress of combustion

Cocoon has been in practical architectural use for over fifty years

Approved by the Board of Standards and Appeals of New York City (795-57-SM) for use as a roof covering on hospitals, schools, institutions, commercial and industrial buildings

Unaffected by intermittent exposure to dilute solutions of alkalis including sodium hydroxide, sodium carbonate, and ammonium hydroxide

Resistant to exposure to most strengths of mineral acids at ambient temperatures and to all concentrations of salt solutions, alcohols, and greases

Weathering characteristics permit the use of many different pigments and pigment blends to produce a wide variety of colors possessing excellent stability

Chemical structure permits infinite touch-up and recoating window (new Cocoon coat softens the old coat and "bites in" to offer provision for future maintenance work)

SPECIFICATIONS:

Coating Type	Polyvinyl Chloride solution
VOC	254 grams/liter
Pot Life	Not applicable (single component)
Shelf Life	24 months
Recommended Thickness	3 to 5 mils dry film thickness/coat
Coverage	1 gallon per 100 sq ft per coat x 4 coats
Packaging	1 gal, 5 gal
Color	Clear or white, and other normal colors



Application:

Caution! READ THIS ENTIRE DATA SHEET BEFORE CONTINUING.

All surfaces must be dry, free of dirt, loose debris, oils, grease, or any substance that could interfere with adhesion. All masonry, cement and concrete must be allowed to cure for 30 days or measure 15% maximum on the moisture meter. Ambient temperature in the work area must be at least 55°F. Additionally, all surfaces should be modified in a manner to make them as smooth as possible by removing sharp projections and filling gaps and voids. A minimum surface profile of 1/mm should be maintained for maximum adhesion. After proper masking, prime the entire surface to be coated with Vinyl Bond B, directly from the can by spray or roller, and allow the primer to dry. Close all penetrations through the surface by using a webbing coat. Webbing solution is made by mixing 1 part webbing agent with 3 parts Cocoon 550 to produce a milky, white solution that will support the following coats. Mix ½ gallon of Cocoon Pigment into a 5 gallon can of Cocoon 550 and mix until the color is uniform. Spray apply the mixed Cocoon 550 in multiple overlapping passes until a 20 mil dry film thickness has been achieved. Properly applied, the coating should be free of voids and pinholes. Voids and pinholes must be re-sprayed to achieve a complete seal. Prior to the removal of any protection or equipment, a thorough inspection of the entire area should be completed and all damage or deficiencies must be repaired and re-sprayed. All termination joints should be sealed with a polyurethane sealant. For recommendations regarding equipment, contact our Technical Department

Limitations:

Cocoon 550 must be protected from inclement weather during application. Application should cease upon commencement of precipitation.

Maintenance:

Damaged areas may be repaired by cleaning surface and application of Cocoon 550 as described in the Application section.

Precautions:

Read and understand the M.S.D.S. thoroughly. Make sure that all involved parties are familiar with the M.S.D.S. Cocoon 550, in its liquid state, is flammable; proper safety precautions against exposure to open flame, sparks, or other sources of ignition must be taken and strict safety rules enforced.

Keep out of reach of children and pets.



Technical Data

Moisture Vapor Transmission	0.06 perms	ASTM E-96
Tensile Strength	900 psi	ASTM D-412
Elongation	150%	ASTM D-412
Flexibility @ Low Temperatures	180 deg.bend@-35°F	ASTM C-711
Shore 'A' Hardness	75 degrees	ASTM D-2240
Weatherometer (1,000 hours)	85 gloss	ASTM G-23
Viscosity	55 ku	ASTM D-446
Total Solids	34% (B.W.); 28% (B.V.)	ASTM D-1044
Flashpoint	+0°F	FTMS 141A (M4293)
Fire Resistance	Self Extinguishing	ASTM D-568-56T
Abrasion Resistance	36.5 mg loss (T.W @ 1000 g/100-rev)	
Drying Time	5 minutes per coat	
Cleaning of Equipment	M.E.K. or Acetone	

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

COCOON 550

SECTION 1 - IDENTIFIERS

MANUFACTURER: Andek Corporation
 TRADE NAME: Cocoon 550

SECTION 2 – HAZARD IDENTIFICATION & EMERGENCY OVERVIEW

Emergency Overview: Toxic gases may be given off during burning or thermal decomposition. Closed containers may forcibly rupture under extreme heat.

Effects of Overexposure:

SKIN: Frequent or prolonged contact may irritate and cause dermatitis. Low order toxicity.

EYES: Irritating and will injure eye tissue if not removed promptly; vapors may irritate eyes.

BREATHING: High vapor concentrations are irritating to the eyes and the respiratory tract, may cause headaches, drowsiness, and dizziness; are anesthetic or narcotic and may have other central nervous system effects.

SWALLOWING: Minimal toxicity. Small amounts of the liquid aspirated into the respiratory system during ingestion, or from vomiting, may cause bronchopneumonia or pulmonary edema; no hazards anticipated from ingestion incidental to industrial exposure.

SECTION 3 - COMPOSITION

<u>COMPONENT</u>	<u>CAS #</u>	<u>APPROX %</u>	<u>TLV</u>
Toluene	108-88-3	28.0	
Butene Dioic Acid Polymer w/Chloroethene and Ethenyl Acetate	9005-09-8	29.6	
Acetone	67-64-1	42.0	
Vinyl Acetate	108-06-4	0.2	
Methyl Isobutyl Ketone	108-10-1	0.2	

KNOWN CARCINOGENS OR MUTAGENS: Vinyl Acetate – IARC possible carcinogen; 2B

SECTION 4 – FIRST AID MEASURES

SKIN: Immediately flush with large amounts of water; use soap if available; remove contaminated clothing, including shoes, after flushing has begun.

EYES: Immediately flush eyes with large amounts of water for at least 15 minutes; get prompt medical attention.

BREATHING: Using proper respiratory protection, immediately remove the affected victim from exposure; administer artificial respiration if breathing has stopped; keep at rest; get prompt medical attention.

SWALLOWING: First aid is not normally required; induce vomiting if large quantity is ingested; call a physician.

SECTION 5 – FIRE & EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED) : 0°F. TCC

FLAMMABLE LIMITS: None LEL: 3% UEL: 12%

EXTINGUISHING MEDIA: Carbon dioxide or dry chemical

SPECIAL FIRE FIGHTING PROCEDURES: Do not use water or soda acid. Use respiratory protection.

UNUSUAL FIRE & EXPLOSION HAZARDS: Explosion limits approximately 3% to 12%. Handle similar to fighting Toluene or Ketone fire.

SECTION 6 – SPILL OR LEAK PROCEDURES

Clean up immediately. If spill is excessive, ventilate area. No smoking, open flame, sparks, etc.

SECTION 7 – HANDLING & STORAGE

Store in cool place in closed containers away from fire hazards. Post NO SMOKING, NO WELDING, NO OPEN FLAME signs in work area.

SECTION 8 – PERSONAL PROTECTION/EXPOSURE CONTROLS

RESPIRATORY PROTECTION: Organic vapor respirator or fresh air hood. Ventilate work area properly.

VENTILATION: Portable explosion proof fans. No smoking, open flame, sparks, or excessive heat.

PROTECTIVE GLOVES: Not required. Non-static, chemical resistant, if desired.

EYE PROTECTION: Not required. Goggles or safety glasses, if desired.

PROTECTIVE CLOTHING: Non-static clothing and shoes.

WORK/HYGIENIC PRACTICES: Wash with soap and water.

SECTION 9 - PHYSICAL DATA

BOILING POINT (F)	149°F	SPECIFIC GRAVITY (H ₂ O=1)	.91
VAPOR PRESSURE	N/A	MELTING POINT	N/A
VAPOR DENSITY (AIR=1)	Heavier	EVAPORATION RATE (N.B.A.=1)	4.5
SOLUBILITY IN WATER	Slight	V.O.C.	2.12 lb/gal - 254 g/l
APPEARANCE & ODOR - Lacquers, Ketone Solvents (nail polish)			

SECTION 10 - REACTIVITY DATA

STABILITY: Stable.

HAZARDOUS DECOMPOSITION OR BY- PRODUCTS: Unknown. Possibly slight amounts of HCL, carbon dioxide, and some carbon monoxide.

HAZARDOUS POLIMERIZATION: Will not occur.

CONDITIONS TO AVOID: Keep away from oxidizing agents and open flame when containers are open.

MATERIALS TO AVOID: Oxidizing agents.

SECTION 11 – TOXICOLOGICAL INFORMATION

See reference data for individual components.

SECTION 12 – ECOLOGICAL INFORMATION

See reference data for individual components.

SECTION 13 – DISPOSAL CONSIDERATIONS

Dispose of in accordance with existing federal, state and local environmental laws.

SECTION 14 – TRANSPORT INFORMATION

PROPER SHIPPING NAME:	Paint
HAZARD CLASS:	3
PACKING GROUP:	2
ID #:	UN 1263
RQ:	None
TRANSPORT LABELS REQUIRED: Flammable liquid	

SECTION 15 – REGULATORY INFORMATION

See reference data for individual components.

SECTION 16 – OTHER INFORMATION (HMIS RATING)

Health	2
Flammability	3
Physical Hazard	1
Personal Protection	H

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.

COCOON USES

MOTHBALLING

Originally formulated in 1946 by R.M. Hollingshead of Camden, NJ, Cocoon was used to mothball ships and aircraft after World War II. Many of the mothballed aircraft were stripped of Cocoon and used again in the Korean War. The mothballed ships that have not been scrapped, remain intact after over 60 years of exposure to all weather conditions in shipyards all over the country.

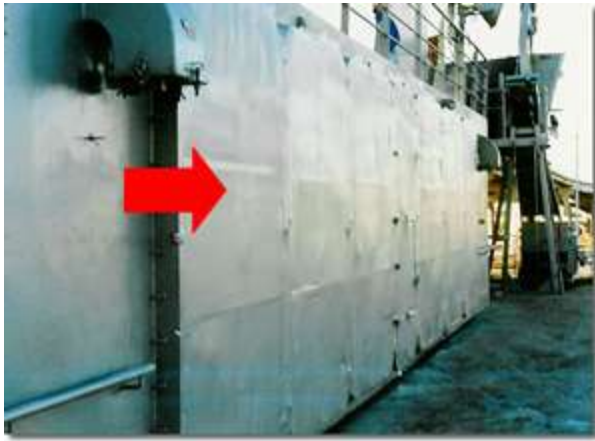
Cocoon sprayable vinyl plastic coating will conform to the contour of any surface to provide a tough, flexible monolithic seal. This hermetic seal is possible due to Cocoon's unique ability to bridge openings.



Preparing a grid of paper masking tape before mothballing.



An open hatchway area is closed in with Cocoon.



A close up of the same wall.



A funnel is sealed with Cocoon.



Enclosing a deck-mounted rocket launcher.
This tubular steel framework is being sealed
with Cocoon.



Finished product is tested under 3
inches of negative water column. It
held for the 8 hour test.

VERSATILITY

Cocoon is an extremely versatile sprayable vinyl plastic coating. Sunlight, rain, wind and marine atmosphere have little or no effect on Cocoon. Cocoon coatings prevent water and moisture vapor penetration and protects walls, both interior and exterior, from structural damage brought about by the presence of excessive moisture.

Because Cocoon is a true PVC, it also has excellent chemical resistance. Cocoon coatings resist a wider range of chemicals than any other single generic type coating. The outstanding advantage of Cocoon is the ease of maintenance and its longevity.



Cracked plaster walls sealed with light rose tinted Cocoon



Waterproofing of exterior walls for the US Coast Guard.



A hospital Operating Room has Cocoon walls for ease of sterilization.



Chemistry lab floor is sealed to contain any spillage.



Sealed decorative metal dome conforming to multi-faceted surface.



A Catholic church with a fluted roof.



A lighthouse with a metal roof & brick walls with Cocoon.



Applying Cocoon to the Vertical Assembly Building and Launch Control Center - NASA



Plywood apple storage facility sealed with Cocoon.



Cocoon coated large swimming pools to reduce state park maintenance costs.



Dolphin show pool coated with tinted Cocoon



Tabacco fumigrant barn has a leak



Priming and finishing the repair



Smoke testing and a finished product.

PLENUMS

Cocoon is a permanent positive seal for use in plenums due to its ability to bridge openings and to conform to any surface. Cocoon's tough flexible membrane creates a moisture vapor barrier that is able to maintain specified operating pressures. Cocoon eliminates the necessity of using gaskets, sealants or mortar. The Cocoon applicator is solely responsible for the creation and integrity of the seal.



Webbing a block wall to the underside of a corrugated metal deck.



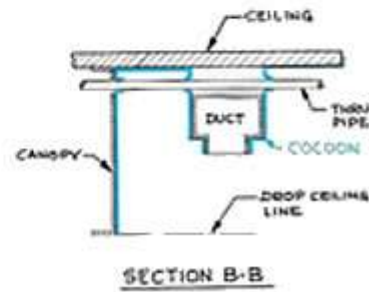
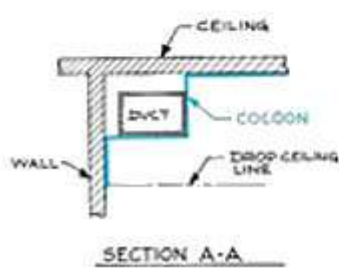
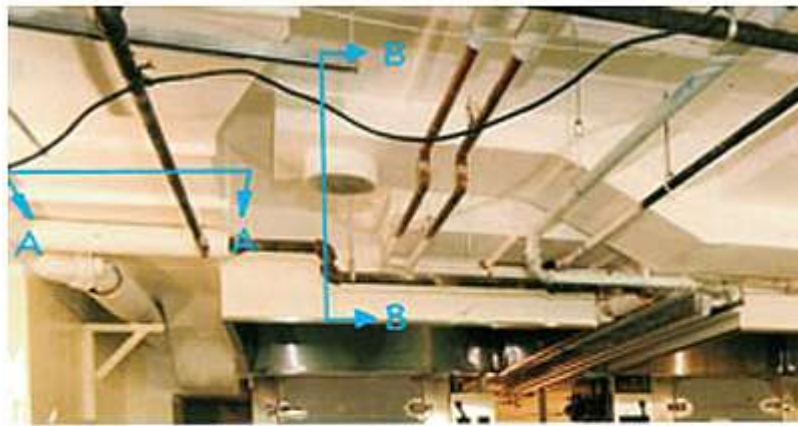
Piping through plenum wall to be sealed.



The same pipes have been masked and webbed in preparation for Cocoon coating.



Sheet metal dust isolation plenum - note pipes



Cocoon's ability to bridge gaps and voids effectively puts pipes and ductwork outside of the cleanable seal. Necessary penetrations into the space can be sealed to prevent cross contamination.

CLEAN ROOMS

Cocoon is a monolithic finish is extremely washable and is resistant to most chemicals and cleaning agents. Cocoon will not chip, crack or peel due to impact. Should the coating be damaged, repairs can be effected and the seal restored in a matter of minutes. It is available in hospital white or color of your choice through custom color match.



Cocoon conforms to any substrate, even dissimilar surface (block to drywall illustrated on the right)



Surface preparation is very important for a smooth finish.



Priming the walls prior to Cocoon finish coat



Attention to corner detail.



Overlapping Cocoon onto floor ensures a complete seal.



Pharmaceutical manufacturing area.









A dedicated sterile pharmaceutical manufacturing facility.

As illustrated, Cocoon has provided monolithic seals for most major pharmaceutical manufacturerers in plenums, clean rooms, manufacturing areas, aseptic areas, sterile facilities, animal facilities, containment areas and bio-safety areas.

Food or milk processors and brewers have used Cocoon's unique abilities under harsh conditions as a cleanable, long lasting alternative to paint with USDA acceptance.



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, Polarof RAC, Roofab, Polarof AC, Polarof NW, Clearcoat 44



The Moshulu

Philadelphia, PA

Polaprime 21, Roofab, Polarof RAC



Interstate 78

Pennsylvania

Polagard AG



Veteran's Administration Hospitals

Delaware & Palo Alto, CA

Polarof RAC, Polarof SP



Jazzland Amusement Park

New Orleans, LA

Polagard AG



NASA Goddard Space Flight Center

Greenbelt, MD

Polarof 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

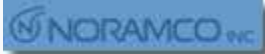
Polaroof SP

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