



Stars Management DMCC

SUBMITTAL

ROOFDX COPPER
(Premium Waterproofing Coating)

ROOFDX COPPERTM

Premium Waterproofing Coating



DESCRIPTION

ROOFDX COPPER is an extremely tough, metallic, rubber-like, waterproofing coating that, being made with copper flakes, has a very attractive copper finish that will actually patina. This remarkable "liquid copper" coating can be used over all common roofing substrates and will give the appearance of copper sheet roofing at a fraction of the cost. Just like copper sheet, ROOFDX COPPER will develop a classic green patina, or may be sealed with Clearcoat 44 to maintain its new appearance.

OUTSTANDING FEATURES

- Can be used over BUR, rubber, copper, aluminum, tin, concrete, wood, masonry and others
- Produces a fully adhered, seamless, high density, waterproofing membrane
- Prevents water soluble ionic transfer that causes corrosion
- Accommodates rapid movement caused by sudden temperature changes
- Totally watertight and unaffected by ponding water
- May be applied to vertical, pitched and horizontal surfaces

APPLICATION

All surfaces to be treated must be clean, dry and free of loose debris

that may interfere with proper bond. Surfaces that have previously been coated should be examined carefully and tested for adhesion to the substrate. This can be accomplished by applying a strip of scotch tape to the coated surface, thoroughly pushed into full contact, then pulled away at a 90° angle. Observe the adhesive surface for any dislodged coating particles. If the tape has pulled away a significant quantity of coating, or if it has loosened the coating from the substrate, the coating should be removed. Loose coating should be thoroughly removed by abrasion, water jetting or other available technique. Some coatings that are firmly bonded but have reticulated (mud cracked) and the edges lifted will need abrading to present a uniform, smooth surface for coating. Some very inert surfaces, such

as epoxy, will require abrading and/or a special primer coat. ROOFDX COPPER is applied straight out of the can after 2 minutes of low speed mechanical stirring. Apply the product using brush, roller or airless spray technique. The product should be applied in 2 coats at an overall rate of 50 square feet per gallon, achieving a wet film thickness of 30 mils or 15 mils per coat. Clean tools and equipment with xylene or toluene before ROOFDX COPPER begins to dry.

PRECAUTIONS

READ THE ENTIRE ROOFDX COPPER M.S.D.S. BEFORE APPLICATION.

Wear safety equipment, such as splash goggles and rubber gloves, when handling this product. Hands should be protected with a barrier

SPECIFICATIONS	
Coating	Ethylene Elastomer
VOC	300 gms/liter
Pot Life	Not applicable
Shelf Life	24 months
Recommended Thickness	20 mils dry film thickness
Coverage	50 square feet per gallon
Packaging	5 U.S. gallon pails
Color	Copper

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cream and cleaned with a proprietary hand cleaner. Avoid contact with skin and eyes. In case of contact with eyes, seek immediate medical attention in addition to flushing. Do not ingest. In case of ingestion, contact a physician immediately.

LIMITATIONS

Do not apply to frozen or saturated Surfaces. Cold temperature will slow down The drying time. Do not apply if precipitation is forecast within 4 hrs after application

For more information, call our Technical Department

Keep out of reach of children and pets.

TECHNICAL DATA		
Moisture Vapor Transmission	0.12 gms/M2/24 hours (0.01 perms)	ASTM E-96
Tensile Strength	700 psi	ASTM D-412
Elongation at Break	300%	ASTM D-412
Flexibility at Low Temperature	180 deg. bend @ 20°F	ASTM C-711
Flashpoint	105°F	FTMS 141A(M4293)
Shore 'A' Hardness	65	ASTM D-2240
Solids Content	60% (B.W.); 55% (B.V.)	ASTM D-1044
Viscosity Average @ 70°F	4,500 cps	ASTM D-446
Impact Resistance 4mm Indent.	No cracking or loss of adhesion	BS3900 Part 3
VOC Content	300 grams/liter	ASTM D-1044

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

ROOFDX COPPER

SECTION 1 - IDENTIFIERS

MANUFACTURER: Andek Corporation
TRADE NAME: RoofdX Copper
CHEMICAL FAMILY: Copper Extended Ethylene-Styrene Copolymer Solution

SECTION 2 – HAZARD IDENTIFICATION & EMERGENCY OVERVIEW

Emergency Overview: Particulates, ashes and soot may be emitted during burning or incomplete combustion. Closed container may rupture under extreme heat.

Effects of Overexposure:

SKIN: May irritate skin.
EYES: Contact may cause severe damage. Vapor may irritate.
BREATHING: Inhalation may cause headache, dizziness, nausea and irritation.
SWALLOWING: Harmful or fatal if swallowed.

SECTION 3 - COMPOSITION

<u>COMPONENT</u>	<u>CAS #</u>	<u>APPROX %</u>	<u>TLV</u>
Copper Powder	7440-50-8	10.0	
Barium Sulfate	7727-43-7	18.0	
Aluminum Silicate	1332-58-7	0.7	
Cyclic Hindered Phenylamine	6683-19-8}	0.2	
Antioxidant Blend	84633-54-5}		
Naphtha, Light Aromatic Solvent	64742-95-6	41.5	
White Mineral Oil	8042-47-5	5.2	
Hydrocarbon Resin	8020-83-5	6.4	
Ethylene-Styrene Copolymer	100-42-5	18.0	

KNOWN CARCINOGENS OR MUTAGENS - TYPE & DEFINITION – None known

SECTION 4 – FIRST AID MEASURES

SKIN: Clean thoroughly with pumice-based hand cleaner, followed by soap and water.
EYES: Flush with clear water for 15 minutes and seek immediate medical attention.
BREATHING: Move victim to fresh air. If asthmatic conditions occur, seek medical attention.
SWALLOWING: Do NOT induce vomiting. Seek medical attention immediately.

SECTION 5 – FIRE & EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED): 108°F. Closed Cup (ASTM D50).
FLAMMABLE LIMITS: Lel 0.9 , Uel 6.0.
EXTINGUISHING MEDIA: Carbon dioxide; dry chemical; foam.
SPECIAL FIRE FIGHTING PROCEDURES: If excessive fumes or smoke is encountered, wear self-contained respiratory equipment and full protective clothing.
UNUSUAL FIRE & EXPLOSION HAZARDS: Sealed containers may build up pressure if exposed to heat (fire). Water can be used to cool the exterior of the containers.
DECOMPOSITION PRODUCTS: Oxides of carbon, nitrogen, aluminum, barium, and copper, possible HCN and polyurethane combustion compounds.

SECTION 6 – SPILL OR LEAK PROCEDURES

Cover with a layer of sand or other suitable absorbent. Use protective measures as outlined under Section 8 below. Avoid contact with eyes, skin and clothing.

SECTION 7 – HANDLING & STORAGE

Avoid prolonged or repeated contact with skin. Avoid contact with moisture. Do not use in confined areas without adequate ventilation.

SECTION 8 – PERSONAL PROTECTION/EXPOSURE CONTROLS

RESPIRATORY PROTECTION (SPECIFY TYPE): In confined spaces, use fresh air hood or NIOSH certified organic vapor canister unit.

EYE PROTECTION: Safety goggles or face shield.

SKIN PROTECTION: Nitrile rubber gloves.

OTHER PROTECTIVE EQUIPMENT: Coveralls and/or rubber apron, rubber shoes or boots.

PERSONAL HYGIENE: Wash thoroughly after using.

SECTION 9 – PHYSICAL DATA

BOILING POINT (F)	312°	SPECIFIC GRAVITY (H ₂ O=1)	1.05
VAPOR PRESSURE	10	PERCENT, VOLATILE BY VOLUME	41.5
VAPOR DENSITY (AIR=1)	<4.8	EVAPORATION RATE (N.B.A.=1)	0.2
SOLUBILITY IN WATER	Insoluble	pH (5% SLURRY)	Neutral
APPEARANCE & ODOR - Bronze liquid with aromatic solvent odor.			

SECTION 10 - REACTIVITY DATA

STABILITY: Stable.

INCOMPATABILITY (MATERIALS TO AVOID): Water (moisture); alcohols; amines; strong acids and bases.

HAZARDOUS DECOMPOSITION PRODUCTS: Possible HCN.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Acids, strong oxidizers.

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE ORAL TOXICITY	Minimal
ACUTE INHALATION TOXICITY	Minimal
ACUTE DERMAL TOXICITY	Minimal
SENSITIZATION	Non Sensitizing
MUTAGENICTY	Negative
CARCINOGENICITY	Not Classifiable

SECTION 12 ECOLOGICAL INFORMATION

BIODEGRADATION	Not Biodegradable
TOXICITY TO FISH	Moderate
TOXICITY TO AQUATIC INVERTEBRATES	Moderate
TOXICITY TO MICRO ORGANISMS	Moderate
ATMOSPHERIC OXIDATION OF VOLATILES	Degrades Rapidly
BIOACCUMULATION	Not Expected
TOXICITY TO PLANTS	Moderate

SECTION 13 – DISPOSAL CONSIDERATIONS

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

SECTION 14 – TRANSPORT INFORMATION

PROPER SHIPPING NAME:	Paint
HAZARD CLASS:	3
PACKING GROUP:	III
ID #:	UN 1263
RQ:	None

TRANSPORT LABELS REQUIRED: Flammable liquid. (In the U.S., this material may be re-classified as a combustible liquid and is not regulated in containers less than 119 gallons via surface transportation.)

SECTION 15 – REGULATORY INFORMATION

See reference data for individual components.

MATERIAL SAFETY DATA SHEET
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Occupational Safety & Health Administration

ROOFDX COPPER







SECTION 16 – OTHER INFORMATION (HMIS RATING)

Health	1
Flammability	2
Physical Hazard	0
Personal Protection	G

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

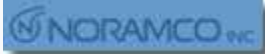
Polaroof SP

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

APPLICATION OF ROOFDX COPPER



Roofdx Copper can be applied in various ways. These photos illustrate the process of applying Roofdx Copper in a fully reinforced project.

The customer received a weatherproofed copper roof with a 10 year warranty against leakage.



Using a pressure washer and clorox bleach, the work area is thoroughly cleaned.





Andek Roofab is embedded into Roofdx Copper to increase strength on seams and penetrations.



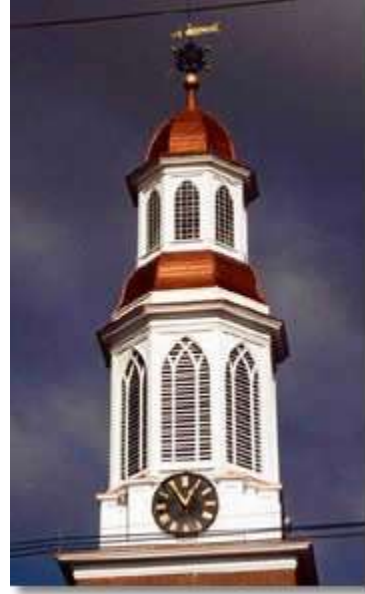
Properly stir coating before application.





Roofdx Copper will patina as does copper sheeting, but if preferred the new appearance can be preserved by a subsequent coating of Clearcoat 44.

PHOTOS WITH ROOFDX COPPER MATERIAL



Restoration of church steeple with Roofdx Copper. Rahway, NJ



Work in progress - Home in Grand Blanc, MI



Roofdx Copper over a dormer.



Roofdx Copper over a shelf.



Application of Roofdx Copper on flower pot



The Painted Lady Coffee House, Phillipsburg, NJ. The ceiling, pipes and radiators were painted with Roofdx Copper for a stately appearance