

# REATEC Technical Information

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## Physical Description

REATEC is a durable, realistic and flexible architectural film backed by a pressure sensitive adhesive with an integrated air removal system, intended for applications to hard, non-porous surfaces.

## Material Standards

- Roll Width - 122cm (48") Roll Length: 50m (164') Cut meter lengths are available upon request.
- Nominal Thickness: approx. 0.2mm nominal (8.5 mils)
- Base Chemical Composition: Poly Vinyl Chloride (PVC)

## Installation Environment

- A. Lowest Acceptable Temperature for Installation  
12°C (54°F)
- B. Ideal Temperature for Installation  
20°C - 25°C (68°F - 77°F)
- C. Do Not Exceed Surface Temperature for Installation 29°C (85°F)

## Storage Conditions

Product should be stored immediately upon receipt, below 38°C (100°F), avoiding direct sunlight and high humidity. Use within 1 year of purchase.

## Fire Safety Criteria

**ASTM E-84** (Standard Method of Test for Surface Burning Characteristics of Building Materials) - All REATEC finishes meet Class A rating.

**ANSI/UL 10B**, "Fire Test of Door Assemblies." - Edition 10 - Revision Date 2009/04/13

**ANSI/UL 10C**, "Positive Pressure Fire Test of Door Assemblies." - Edition 2 - Issue Date 2009/01/26 CAN/ULC-S104, "Standard Method for Fire Tests of Door Assemblies." - Edition 3 - Issue Date 2010/07/01



Certificate Number 20150530-R27442

ARCHITECTURAL CLADDING FILM, REATEC DECORATIVE FILM WITH A PRESSURE SENSITIVE ADHESIVE BACKING, INTENDED FOR APPLICATION TO HOLLOW METAL AND METAL COMPOSITE FIRE DOOR SURFACES AS WELL AS DOOR FRAMES. THE REATEC DECORATIVE FILMS ARE ALSO INTENDED FOR APPLICATION TO WOOD COVERED COMPOSITE OR WOOD CORE TYPE FIRE DOORS SURFACES AS WELL AS DOOR FRAMES.

**ASTM E162-13** (Standard Method of Test for Surface Flammability of Materials Using a Radiant Heat Energy Source)  
- Radiant Panel Index,  $I_s = 0$

**ASTM E662-13** (Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials)  
- Average  $D_m = 58$  (Flaming) 64 (Non-Flaming)

**BSS 7239** (Toxic Gas Generation by Materials on Combustion Boeing Aircraft Standard)  
- Hydrogen Cyanide (HCN) = 4.5 ppm (Flaming) 0 ppm (Non-Flaming)  
- Carbon Monoxide (CO) = 75 ppm (Flaming) 40 ppm (Non-Flaming)  
- Nitrogen Oxides (NO+NO<sub>2</sub>) = 2 ppm (Flaming) 0 ppm (Non-Flaming)  
- Sulfur Dioxide (SO<sub>2</sub>) = 5 ppm (Flaming) 5 ppm (Non-Flaming)  
- Hydrogen Fluoride (HF) = 0 ppm (Flaming) 0 ppm (Non-Flaming)  
- Hydrogen Chloride (HCL) = 1.75 ppm (Flaming) 3 ppm (Non-Flaming)

## Dimensional Stability Test

**Test Methodology:** A single 150 x 150mm (5.90 x 5.90 inches) swatch of REATEC was applied to the center of a 200 x 200mm (7.87 x 7.87 inches) flat aluminum panel. One crossing surface cut was made in the center of the finish. After 2 days at 65°C (149°F), the maximum gap in the cut was measured.

**Test Result:** No gap greater than 0.3mm (0.012 inches)

## Thermal Durability Test

**Test Methodology:** A REATEC sample was applied to an aluminum panel which was then exposed to various temperatures for a 12 day period.

**Test Result:** No peeling or color change occurred between -30°C to +65°C (between -86°F to +149°F)

## Colorfastness to Light Test - Sunshine Carbon Arc Lighting Methodology

**REATEC & MIRACLEAN:** No change after 250 hours

**WEATHER RESISTANCE:** No Change after 10000hours

## Abrasion Test

**Test Methodology:** Final abrasion point by Taber testing machine (wheel: CS-17, 1kg weight)

**Test Result:** Greater than 7000 cycles without significant visible wear

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## High Temperature Durability Test

Test Methodology: A REATEC sample was applied to an aluminum panel and maintained for 28 days at a temperature of 65°C (149°F).

Test Result: No change in adhesion

## High Humidity Durability Test

Test Methodology: A REATEC sample was applied to an aluminum panel and maintained for 28 days at 40°C (104°F) and 90% relative humidity.

Test Result: No change to finish

## Low Temperature Impact Test

Test Methodology: DuPont Impact Tester 0°C 100g 1/2 inches diameter

Test Result: No change

## Adhesion Strength Test

Test Methodology: A 25.4mm (1 inch) by 180mm (7 inches) section of REATEC was applied to the surface of the test substrates. Some test surfaces were prepped by the application of primer at 20°C, and then left open for 1 hour prior to application of REATEC. The test panels were then stored for 48 hours at 20°C. The REATEC finish was the peeled off at 300mm (11-4/5 inches) per minute at a 180 degree angle by using Tensilon Tensile Testing Machine.

Substrate	Without Primer	With Primer
Plywood	11.4	34.7
Gypsum Board	—	5.9
Silicate Calcium Board	6.7	29.7
Melamine on Steel	23.3	30.3
PVC on Steel	31.2	36.5
Aluminum Plate	27.7	—
Stainless Steel	30.0	—
Acrylic Panel	24.4	34.1
Mortar	25.6	33.2
MDF	14.7	31.5
Electrogalvanized Sheet Steel	28.4	45.0
ABS	21.9	28.0
Melamine Panel	16.0	36.4
Polyester Panel	20.6	24.9
Glass	19.8	—

unit: N/25.4mm

## Solvent / Chemical Resistance Test

Test Methodology: Test chemicals were applied to the surface of REATEC and left to stand for 6 hours. The samples were then rinsed with water and left to air dry 24 hours.

Test Results	REATEC	WEATHER RESISTANCE	MIRACLEAN
Sodium Hypochlorite	●	●	●
Ethyl Alcohol	●	●	●
Ammonia	●	●	●
Hydrogen Peroxide Solution	●	●	●
Popidone Iodine	●	●	●
Hydrochloric Acid	●	●	●
Benzalkonium Aqueous Solution	●	●	●
Formalin	●	●	●
Saponated Cresol Solution	●	●	●
Lacquer Thinner	●	●	●
Lugol Solution(Iodine Glycerin)	●	●	●
Sodium Hydroxide(10%)	●	●	●
Acrinol	●	●	●
Caustic Soda	●	●	●
Petroleum Benzine	●	●	●
Methylethylketone	●	●	●
n-hexane	●	●	●
Toluene	●	●	●
Ethyl Acetate	●	●	●
Results Key	● No Changes	● Changes to Finish	● Material Lifting

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## Stain Resistance Test

**Test Methodology:** The surface of REATEC was wiped with a cloth dampened with either water, neutral detergent or ethyl alcohol after 24 hours of contact with the following materials:

Test Results	REATEC			WEATHER RESISTANCE			MIRACLEAN				
	Water	Neutral Detergent	Ethyl Alcohol	Water	Neutral Detergent	Ethyl Alcohol	Dry Cloth	Water	Neutral Detergent	Ethyl Alcohol	
Coffee	○	○	○	○	○	○	○	○	○	○	
Soysauce	○	○	○	○	○	○	○	○	○	○	
Sauce	○	○	○	○	○	○	○	○	○	○	
Orange Juice	○	○	○	○	○	○	○	○	○	○	
Marker (water based)	○	○	○	○	○	○	○	○	○	○	
Crayon	●	○	○	◐	○	○	○	○	○	○	
Marker (permanent)	●	●	◐	●	●	○	◐	◐	◐	○	
Lipstick	○	○	○	○	○	○	○	○	○	○	
Vinegar	○	○	○	○	○	○	○	○	○	○	
Ketchup	○	○	○	○	○	○	○	○	○	○	
Tea	○	○	○	○	○	○	○	○	○	○	
Red Wine	○	○	○	○	○	○	○	○	○	○	
Tabasco, Pepper Sauce	○	○	○	○	○	○	○	○	○	○	
Turmeric	◐	◐	○	○	○	○	○	○	○	○	
Hair Dye	◐	○	○	○	○	○	○	○	○	○	
Shoe Polish	◐	○	○	○	○	○	●	○	○	○	
Results Key	○ Excellent			○ Good			◐ Fair		● Poor		

## Anti-Bacterial Test

**Test Methodology:** JIS Z 2801, the bacteria were cultivated at 35°C±1°C (95.0°F±33.8°F) relative humidity 90% and above for 24 hours.

**Test piece:** Anti-Bacterial REATEC and standard REATEC, 50mm x 50mm each

Tested Bacteria	16 hours after soaking in room temperature water	10 hours after xenon weathering test
Colon Bacillus	Antibacterial Activity Value Greater than 2.0	
Staphylococcus Aureus		

\*Antibacterial Activity Value (R) = Ut - At ≥ 2.0

Ut: Average number of living bacteria (1cm<sup>2</sup>) on standard REATEC after 24 hours

At: Average number of living bacteria (1cm<sup>2</sup>) on Anti-Bacterial REATEC after 24 hours

## Anti-Mold Test

ASTM-G21 Test, at 28°C±2°C (82.4°F±35.6°F) and over 95% RH

**Test Methodology:** ASTM-G21, Preservation 28°C±2°C, relative humidity 95% and above

Tested Products	10 Days	14 Days	21 Days	28 Days
TA-4701 ~ 4801	0	0	0	0
Other REATEC	2	2	3	3

\*Tested by Tokyo Metropolitan Industrial Technology Research Institute.

Grade 0-4: 0: Mold not found 1: under 10% of surface area 2: 10-30% of surface area 3: 31-60% of surface area 4: 61-100% of surface area

**Test Molds:** Aspergillus niger, Penicillium funiculosum, Chaetomium globosum, Aureobasidium pullulans, and Trichoderma virens

## California Indoor Air Quality Specification 01350

The product meets all of the necessary qualifications to be certified for **Indoor Advantage™ Gold** by SCS Global Services.

Indoor Air quality Certified to SCS-EC 10.3-2014 v4.0

Conforms to the CDPH/EHLB Standard Method (CA 01350) v 1.2-2017 (effective January 2017) for the school classroom and private office parameters.

## Formaldehyde Emission Test

**Test Methodology:** JIS A6921:2003 with UV-2550 Ultraviolet Visible Light Spectrophotometer, 415mm, 23°C

**Test Result:** No Detection (less than 0.1mg/L)

Certification and Verifications Organizations that REATEC is listed by

