Surfacequest
ARCHITECTURAL FUSIONS

Architectural Fusions Care & Maintenance

Includes Altyno, Belbien, Di-Noc, Reatec & LX (LG) Interior Films

In most all cases, the stains can be easily cleaned off by using a non-abrasive household cleaner such as dishwashing liquid. In other cases, a solution of denatured alcohol will generally remove the stain. For severe stains, it is possible to use lacquer thinner or acetone in some instances.

> **Note:** It is highly advisable to test any strong solvent's compatibility with the fusion in an inconspicuous area prior to applying the solvent to a visible area. Read the following topics for solvent resistance. **It is important to refrain from using abrasive cleaners on any vinyl fusion because it could damage the surface.**

Custom Printed Graphic Architectural Fusions

It is recommended to clean printed films with a damp rag using water. If a cleaning solution is needed, a non-abrasive cleaner such as Windex or dishwashing liquid should be used. **Use of harsh or abrasive chemicals such as denatured alcohol may damage the printed image.**

Solvent Resistance

The exterior series is more resistant to strong solvents than the Interior series. This is because of an anti-corrosive film layer that is incorporated with the exterior series.

The anti-corrosive film layer is comparable in nature to the makeup of fluoride or Teflon. However, it is important to refrain from making a "direct comparison" because they are somewhat different.

The following solvents were exposed to the exterior series and appreciable change was observed.

- Toluene
- MEK (Methyl Ethyl Ketone)
- Acetone

If you have any questions regarding care or maintenance of the Fusions product, please contact Surfacequest Solutions at 952-835-2880

REATEC Technical Information

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 20200417-R27442
ARCHITECTURAL CLADDING FILM, REATEC DECORATIVE FILM WITH A PRESSURE SENSITIVE ADHESIVE BACKING, INTENDED FOR APPLICATION TO HOLLOW METAL AND METAL COMPOSITE 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.

IMO (International Maritime Organization) Certified SURFACE MATERIALS AND FLOOR COVERINGS WITH LOW FLAME-SPREAD CHARACTERISTICS: DECORATIVE VENEER

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

ASTM E662-13 (Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials)
- Average Dm = 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+NO2) = 2 ppm (Flaming) 0 ppm (Non-Flaming)
- Sulfur Dioxide (SO2) = 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

INTERIOR FILMS: No change after 250 hours
WEATHER RESISTANCE: No Change after 10,000 hours

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

REATEC Technical Information

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 then 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: The 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 Wood (TC, BC)	REATEC Wood (RW)	REATEC COAT	REATEC EXTERIOR	REATEC COLOR	REATEC DRY-ERASE	REATEC DOOR SKIN	MELAMINE BOARD	VYNYL WALLPAPER	WOOD VENEER
Sodium Hypochlorite	6%	◎	◎	◎	◎	◎	◎	◎	○	○	◑
Ethyl Alcohol	99.5vol%	◎	○	◎	◎	◎	◎	◎	◎	◎	◎
Ammonia	29%	◎	◎	◎	◎	◎	◎	◎	◎	◎	◑
Hydrogen Peroxide Solution	3.5 w/v%	◎	◎	◎	◎	◎	◎	◎	◎	◎	◑
Povidone Iodine	7%	◎	◑	◑	◎	◎	◎	◎	◎	●	◑
Hydrochloric Acid	10%	◎	○	◎	◎	◎	◎	◎	◑	○	◑
Benzalkonium Aqueous Solution	10%	◎	○	◎	◎	◎	◎	◎	◎	○	◑
Formalin	35%	◎	◎	◎	◎	◎	◎	◎	◎	◎	◑
Saponated Cresol Solution	3%	◑	◑	◑	◎	◑	◎	○	◎	◎	◑
Lacquer Thinner	undiluted	○	●	●	◎	○	◎	◎	◎	○	◎
Lugol Solution (Iodine Glycerin)	undiluted	○	◑	◑	◎	○	◎	◎	◎	●	◑
Acrinol	undiluted	○	◎	◎	◎	○	◎	◎	◎	●	◑
Sodium Hydroxide	10%	◎	◎	◎	◎	◎	◎	◎	○	○	◑
Petroleum Benzine	undiluted	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
Methylethylketone	undiluted	●	◑	●	●	●	◎	◎	◎	●	◎
n-hexane	undiluted	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
Toluene	undiluted	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
Ethyl Acetate	undiluted	◎	◎	◎	◎	◎	◎	◎	◎	○	◎

Results Key ◎ No visible changes ○ Slight deterioration observed ◑ Apparent deterioration observed ● Deterioration observed

REATEC Technical Information

Stain Resistance Test

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

Test Results	REATEC Wood (TC, BC)			REATEC Wood (RW)			REATEC COAT			REATEC EXTERIOR			REATEC COLOR			REATEC DRY-ERASE			REATEC DOOR SKIN		
	Water	Neutral Detergent	Ethyl Alcohol	Water	Neutral Detergent	Ethyl Alcohol	Water	Neutral Detergent	Ethyl Alcohol	Water	Neutral Detergent	Ethyl Alcohol	Water	Neutral Detergent	Ethyl Alcohol	Water	Neutral Detergent	Ethyl Alcohol	Water	Neutral Detergent	Ethyl Alcohol
Coffee	◎	◎	◎	◎	◎	◎	○	○	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
Soysauce	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	○	◎	◎	◎	◎	◎	◎	◎	◎	◎
Worcester Sauce	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
Orange Juice	◎	◎	◎	◎	◎	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	○
Marker (water based)	○	○	○	◑	○	○	○	○	○	◑	◑	◑	○	○	○	◎	◎	◎	●	◑	●
Crayon	●	●	◎	●	●	◎	●	●	◎	◑	○	◎	●	●	◎	●	◑	◎	●	●	○
Marker (permanent)	●	●	○	●	●	○	●	●	◑	●	●	◎	●	●	○	●	●	◎	●	●	◎
Lipstick	◎	◎	◎	◑	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	○	◎	◎	○	○	◎
Vinegar	◎	◎	◎	◑	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
Ketchup	◎	◎	◎	●	◎	◎	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
Tea	◎	◎	◎	◑	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◑
Red Wine	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
Pepper sauce	○	○	◎	○	○	◎	○	○	○	◎	◎	◎	○	○	◎	◎	◎	◎	○	◎	◎
Turmeric	○	◎	◎	◑	○	◎	◑	○	○	◎	◎	◎	○	◎	◎	◎	◎	◎	○	◎	◎
Hair Dye	○	○	○	●	◑	○	●	●	●	◎	◎	◎	○	○	○	◎	◎	◎	○	◎	◎
Shoe Polish	○	◑	◎	●	◑	○	◑	◎	◎	○	○	○	○	◑	◎	○	◎	◎	●	●	●

MELAMINE BOARD			VYNYL WALLPAPER			WOOD VENEER		
Water	Neutral Detergent	Ethyl Alcohol	Water	Neutral Detergent	Ethyl Alcohol	Water	Neutral Detergent	Ethyl Alcohol
◎	◎	●	◑	◑	◑	◑	◑	◑
◎	◎	○	●	◑	◑	◑	◑	●
◎	◎	◎	●	●	●	◎	◎	○
◎	◎	◎	○	◎	◎	○	○	○
○	◎	◑	●	●	●	●	●	◑
○	○	○	●	●	●	●	●	◎
●	●	◎	●	●	●	●	●	●
◎	◎	○	●	●	●	◑	○	◎
◎	◎	◎	◎	◎	◎	○	○	○
◎	◎	◎	○	○	○	○	◎	◎
◎	◎	◑	◑	◑	◑	○	○	○
◎	◎	◎	○	○	○	●	●	●
◎	◎	◎	◑	◑	◑	◑	◑	◑
◎	◎	◎	◑	○	○	○	○	○
◎	◎	◎	●	●	●	●	●	●
◎	◎	◎	●	◑	●	●	●	○

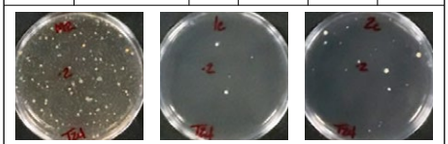
Results Key ◎ Excellent ○ Good ◑ Fair ● Poor

Anti-Bacterial Test

Test Methodology: ISO 22196: 2011 (E) Plastic - Measurement of Antibacterial Activity on Plastics and Other Non-Porous Surfaces
Photos show Serial Dilutions 1:100 (-2) Photos of other diluentions and complete test report are available from our website.
Tested By: The MicroStar Lab, Crystal Lake, IL

S. aureus

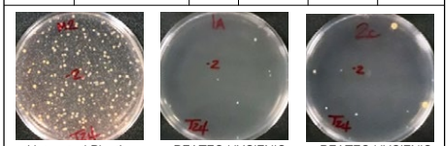
Contact Time (Hours)	Sample	Average CFU/cm²	Average $\log_{10}$ (U_0, U_t, A_t)	Value of Antimicrobial Activity®	Percent Reduction
0	Untreated Plastic Control	1.5×10^4	4.18 (U_0)		
24	Untreated Plastic Control	1.5×10^5	5.17 (U_t)		
	REATEC HYGIENIC FILM TA4748 (SOLID Color)	5.5×10^2	2.74 (A_t)	2.43	99.6
	REATEC HYGIENIC FILM TC5120 (Wood Grain)	8.7×10^2	2.92 (A_t)	2.25	99.4



Untreated Plastic Control 24 hours | REATEC HYGIENIC TA4748 24 hours | REATEC HYGIENIC TC5120 24 hours

MRSA

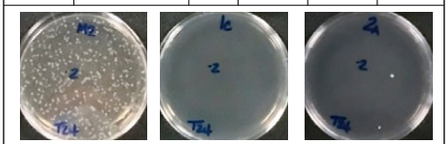
Contact Time (Hours)	Sample	Average CFU/cm²	Average $\log_{10}$ (U_0, U_t, A_t)	Value of Antimicrobial Activity®	Percent Reduction
0	Untreated Plastic Control	1.4×10^4	4.14 (U_0)		
24	Untreated Plastic Control	3.1×10^5	5.48 (U_t)		
	REATEC HYGIENIC FILM TA4748 (SOLID Color)	6.5×10^2	2.81 (A_t)	2.67	99.8
	REATEC HYGIENIC FILM TC5120 (Wood Grain)	3.7×10^2	2.54 (A_t)	2.94	99.8



Untreated Plastic Control 24 hours | REATEC HYGIENIC TA4748 24 hours | REATEC HYGIENIC TC5120 24 hours

E. coli

Contact Time (Hours)	Sample	Average CFU/cm²	Average $\log_{10}$ (U_0, U_t, A_t)	Value of Antimicrobial Activity®	Percent Reduction
0	Untreated Plastic Control	1.0×10^4	4.01 (U_0)		
24	Untreated Plastic Control	1.0×10^6	6.00 (U_t)		
	REATEC HYGIENIC FILM TA4748 (SOLID Color)	<10	-0.20 (A_t)	6.2	99.99994
	REATEC HYGIENIC FILM TC5120 (Wood Grain)	5.5×10^1	1.74 (A_t)	4.26	99.994



Untreated Plastic Control 24 hours | REATEC HYGIENIC TA4748 24 hours | REATEC HYGIENIC TC5120 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
REATEC Color TA Series	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, Penicillum 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

CERTIFIED INDOOR AIR QUALITY SCS GLOBAL SERVICES
INDOOR ADVANTAGE GOLD BUILDING MATERIALS

CLASSIFIED C UL US