3M™ DI-NOC™ Architectural Finishes

E-Series

Technical Data Sheet
Revision H, September 2020

Product Description

3M™ DI-NOC™ Architectural Finishes E-Series (the "Product") is a line of decorative surface finishes available from 3M. Using non-vinyl films, these Products offer customers a more environmentally sustainable solution, and are available in select patterns (see below). For further information on 3M's commitment to sustainability, please go to 3M.com/sustainability.

Featured Benefits of 3M™ DI-NOC™ Architectural Finishes E-Series

- Applications — Ideal for casework, doors, columns, walls and more.
- Application Surfaces — Use on metal, wood, glass and more.
- Aesthetics — Designs resemble many types of surfaces to deliver the look you want.
- Remodel and Reuse — Goes up fast, with less likelihood of error and waste, and bring life to existing assets. The architectural finishes refresh wood or metallic spaces to reflect an entirely new design aesthetic.
- Easy Application — 3M™ Comply™ Adhesive technology virtually eliminates air bubbles, simplifying and speeding application. It also bonds powerfully to many substrates.
- Expected Performance Life of 8 years for interior vertical applications.

NOTE: 3M™ DI-NOC™ Architectural Finishes E-Series are not intended for applications with compound curves, though applications with simple curves and around straight edges are possible. If this capability is required, please consider the other 3M™ DI-NOC™ Architectural Finish alternatives.

Product Characteristics

The values in these tables are typical, and based on test data deemed reliable but are not warranted.

Characteristic		Value
Material	Film	Polyolefin
	Adhesive	Pressure-sensitive acrylic, permanent
	Release Liner	Silicone-coated poly paper
Thickness	Film + Adhesive	7 mils (180 microns) not including release liner Some designs vary slightly in thickness due to embossing.
	Release Liner	6.2 mils (157 microns)
Maximum Roll Size		48 in. X 164 ft. (1,220 mm x 50 m) roll
Maximum Weight		55 lb. (25 kg) (approx.) for a 164 ft. (50m) roll

Product Line

The following 3M™ DI-NOC™ Architectural Finishes E-Series designs are available by special order with a minimum order quantity of 20 rolls. Please contact the 3M Help Center at 1-888-364-3577 for assistance.

Fine Wood			Wood Grain	2018 New Patterns	
FW-1129E FW-1130HE FW-1138E FW-1139HE FW-1211E FW-1212E FW-1213E FW-1217E FW-1218E FW-1255E FW-1256E FW-1257E	FW-1261E FW-1262E FW-1271E FW-1272E FW-1273E FW-1274E FW-1275E FW-1276E FW-1277E FW-1278E FW-1293E	FW-1294E FW-1296E FW-1297E FW-1300E FW-1301E FW-1302E FW-1304E FW-1306E FW-1307E FW-1801E FW-7007E	WG-1052E WG-1140E WG-1141E WG-1143E WG-1376E	AE-1880E* AE-1926E* AE-1929E* AE-1930E* CN-1958E DW-1876E* DW-1877E* DW-1878E* DW-1879E* DW-1881E* DW-1882E* DW-1889E* DW-1890E* DW-1891E*	FW-1976E FW-1977E FW-1980E FW-1981E FW-1982E FW-1988E WG-2070E WG-2071E WG-2072E WG-2073E WG-2074E WG-2075E WG-2078E WG-2079E

* Only the pattern is available; does not include MT matte surface.

Product Performance

The values in these tables are typical, and based on test data deemed reliable but are not warranted.

Characteristic	Evaluation	Results
Dimensional Stability*	4 in. x 4 in. (100mm x 100mm) crosscut in film, after 2 days at room temperature	Largest gap: under 0.06" (1.5mm)
Heat Resistance*	Aged at 150°F (65°C) for 28 days	No delamination or visible change
Thermal Cycle Resistance*	Cycled between -22°F and 150°F (-30°C and 65°C) for 14 days	No delamination or visible change
Moisture Resistance*	Aged at 104°F (40°C) and 95% humidity for 28 days	No delamination or visible change
Ultraviolet Light Exposure	Exposed to carbon arc accelerated weathering for 250 hours	No visible change
Abrasion Resistance	Taber® CS-17 Abrasion wheel: 1 Kg loading weight, 4,000 cycles	No wear-through surface finish
Fire Resistance	When used in Interior Applications as defined by NFPA 101 “Life Safety Code”, Test Method ASTM E84	Class A
VOC Emission Testing	CA Specification 01350 tested per CDPH Standard Method v1.1.	Compliant as low-emitting

* Product applied to an aluminum plate

Stain Resistance

Contaminant was in contact with the film surface for 24 hours and then removed using water or mild detergent. Dilute Isopropyl alcohol may be used for more difficult stains. Results may vary.

Contaminant	Results
Coffee	●
Tea	●
Cola	●
Milk	●
Red Wine	●
Ketchup	●
Soy Sauce	●
Cooking Oil	●
Vinegar	●
Water	●
Mustard	●
Betadine iodine	●
Salt Solution (1%)	●
Soap Solution (1%)	●
Ammonia Solution (10%)	●
Citrate Solution (10%)	●
Ethyl Alcohol (50%)	●

● Removed with water

Product Performance (continued)

Resistance to Solvents, Cleaners, and other Chemicals

Film was applied to an aluminum plate, left for 72 hours, then immersed in the following chemicals:

Classification	Solvent	Immersion Time	Result
Water	Water	24 hours	No visible change
Acid	Chloride (10%)	24 hours	No visible change
	Hydrogen Peroxide	72 hours	No visible change
Base (Alkali)	Sodium Hydroxide (10%)	24 hours	No visible change
Alcohol	Ethanol	24 hours	No visible change
	Isopropyl Alcohol	72 hours	No visible change
Ester	Ethyl Acetate	5 minutes	Deterioration observed
Ketone	Methyl Ethyl Ketone	5 minutes	Deterioration observed
	Acetone	72 hours	Deterioration observed
Aromatic	Toluene	5 minutes	Deterioration observed
Cleaners, Disinfectants & other Chemicals	2 in 1 Carbona® cleaner	72 hours	No visible change
	Accel® TB Disinfecting wipes	72 hours	No visible change
	Guardsman® AFTA	72 hours	No visible change
	Asepticare™ TB+II	72 hours	No visible change
	Birex® Disinfectant	72 hours	No visible change
	Bleach-Rite® Disinfectant	72 hours	No visible change
	Caltech Precise® hospital cleaner	72 hours	No visible change
	CaviWipes™	72 hours	No visible change
	Cidex® OPA	72 hours	No visible change
	Citrace® Germicide	72 hours	No visible change
	Citrace® II hospital germicidal deodorizing cleaner	72 hours	No visible change
	Clorox® Bleach - 50% bleach/50% water	72 hours	No visible change
	Clorox® Broad Spectrum Quaternary Disinfectant	72 hours	No visible change
	Clorox® germicidal bleach spray with bleach	72 hours	No visible change
	Discide® Ultra disinfectant spray	72 hours	No visible change
	Ecolab® TB disinfectant cleaner	72 hours	No visible change
	Envirocide® Disinfectant decontaminating cleaner	72 hours	No visible change
	Fade-A-Dyne® blood remover	72 hours	No visible change
	Fantastik® Spray Cleaner	72 hours	No visible change
	Formula 409®	72 hours	No visible change
	Harvard Chemical 625® hospital grade neutral disinfectant	72 hours	No visible change
	Healthlink Citriguard® II Hard Surface Cleaner	72 hours	No visible change
	Husky® 891	72 hours	No visible change
	K2R®	72 hours	No visible change
	Lysol®	72 hours	No visible change
	Microquant® Quanternary detergent disinfectant - Ecolab	72 hours	No visible change
	Misty® disinfectant & deodorant	72 hours	No visible change

Product Performance (continued)

Resistance to Solvents, Cleaners, and other Chemicals (continued)

Classification	Solvent	Immersion Time	Result
Cleaners, Disinfectants & other Chemicals	Oxivir® TB - Diversey	72 hours	No visible change
	Oxivir® TB Wipes - Diversey	72 hours	No visible change
	Oxivir® TB ready to use wipes - Diversey	72 hours	No visible change
	QD-64® lemon Disinfectant - Quest	72 hours	No visible change
	3M™ Quat Disinfectant #5 - 3M	72 hours	No visible change
	Quest 256® Neutral Disinfectant - Butchers	72 hours	No visible change
	Resolve® Spot & Stain cleaner	72 hours	No visible change
	SaniZide Plus® germicidal solution	72 hours	No visible change
	SaniZide Plus® germicidal wipes	72 hours	No visible change
	3M™ Sharpshooter™ - 3M	72 hours	No visible change
	Simply Green®	72 hours	No visible change
	Spartan® Clean by Peroxy®	72 hours	No visible change
	Spartan® Green Solutions® Neutral Disinfectant cleaner	72 hours	No visible change
	Spray Nine®	72 hours	No visible change
	Tide™ Powder Detergent	72 hours	No visible change
	TechniSat® TX1067 (70/30 IPA)	72 hours	No visible change
	Ivory® Ultra	72 hours	No visible change
	Virex® 256 cleaner	72 hours	No visible change
	Virox®	72 hours	No visible change

Product Use

The user is solely responsible for evaluating and determining whether these 3M Products are suitable and appropriate for any particular use or manufacturing process in which they may be used.

Consider These Factors in Determining the Suitability of the Product

Be sure you understand the unique characteristics of these Products and consider them in determining whether the Product is suitable for your use. Please refer to the 3M™ DI-NOC™ Installation Guide for additional information.

1. Substrate texture affects Product adhesion and application ease.
   - ❑ Unless the substrate is very smooth, its texture may be visible through the Product.
   - ❑ Compounds used to smooth a textured substrate permanently change that substrate.
   - ❑ Product removal may damage the substrate or its finish.
2. Application surface conditions affect Product adhesion.
   - ❑ Ensure that the existing paint, surface finish, or wall covering has excellent bond to the substrate area where the Product will be applied.
   - ❑ Repair, prime and paint the substrate, as needed.
   - ❑ An adhesion promoter may be required to increase Product adhesion.
3. Human and environmental conditions
   - ❑ Temperature and humidity in recommended range
   - ❑ Direct UV light (sunlight)
   - ❑ Heating or cooling ducts in close proximity.
   - ❑ Unsealed substrates in front of water sources.
   - ❑ People or equipment that will be in contact with the Product.
4. The Product may contain a splice. The location of the splices is marked with a tab along the edge of the Product. The installer will need to determine the impact of the splice and work around it to make the best use of the material layout.

Factors That Affect Performance Life

The actual performance life of the Product is affected by:

- selection, condition and preparation of the application surface.
- application surface texture.
- application technique.
- angle and direction of sun exposure.
- environmental conditions.
- cleaning or maintenance methods.

Application and Removal Guidelines

The values in these tables are typical, and are based on test data deemed reliable but are not warranted. See the 3M™ DI-NOC™ Installation Guide for additional information.

Characteristic	Value
Application Surface Type	Smooth, hard, non-porous (sealed) material
Application Location	Interior
Application Temperature	54 °F - 100 °F (12 °C - 38 °C) air and application surface
Application Method	Dry application
High Humidity Environments	Products are not recommended for Interior Applications where condensation consistently occurs.
Product Removal	Heat at 176 °F - 212 °F (80 °C - 100 °C)

Adhesion Compatibility with Application Surfaces

The following table contains peel adhesion information for the Product peeled from various surfaces. A number of surfaces have acceptable adhesion without the use of adhesion promoter. Examples of increased adhesion with adhesion promoters on certain surfaces is presented. Surfaces vary widely, so adhesion should be assessed for each customer substrate. Some surfaces are porous and must be sealed before application of DI-NOC to prevent outgassing of the surface over time.

Test specimens were applied to the substrate and conditioned at 68 °F (20 °C) for 48 hours, then peel tested at 180 degrees at a tensile speed of 12 inches (300 mm) per minute.

Substrate	Application Surface	Adhesion Promoter		
		NO ADHESION PROMOTER lb./in. (N/25mm)	WP-2000 (water-based) lb./in. (N/25mm)	Primer 94 (solvent-based) lb./in. (N/25mm)
Wood	**MDF (w/ sealer)**	● 2 (8)[3]	● 11 (51)	● 4 (18)
	Painted MDF	● 4 (20)	● 12 (52)	● 7 (31)
Boards	**Gypsum Board (w/skim coat & sealer)**	● 2 (8)[3]	● 8 (35)	● 4 (19)
Metals	**Aluminum**	● 11 (47)	● 11 (48)	● 11 (47)
	Anodized Aluminum	● 5 (23)	● 13 (56)	● 11 (49)
	Stainless Steel	● 6 (26)	● 13 (56)	● 6 (28)
Glass	**Glass**	● 6 (26)	● 13 (58)	● 6 (26)
Plastics[1]	**ABS**	● 6 (28)	● 13 (56)	● 10 (44)
	Acrylic	● 5 (22)	● 12 (54)	● 10 (43)
	Polyester (PETG)	● 7 (29)	● 11 (51)	● 10 (45)
	Polypropylene	O 1 (2)	● 4 (17)	● 4 (20)
	Polyethylene	O 1 (3)	● 5 (21)	O 1 (3)
	Polycarbonate	● 6 (28)	● 12 (53)	● 10 (44)
	DI-NOC™ Film	● 5 (24)[2]	● 11 (49)	● 9 (42)

WP-2000 undiluted for testing
● Acceptable adhesion
O Fails in adhesion
1 Bubbles may appear under film due to outgassing if plastic substrate is not fully cured before application.
2 If DI-NOC™ is wrapped and overlapped around edges, use of an adhesion promoter is highly recommended due to additional stress from wrapping DI-NOC™.
3 Sealer was wiped with Isopropyl alcohol to improve adhesion. Adhesion was tested using a spring scale per the DI-NOC Installation Guide and passed at 800-1000 g/in.

Processing Options

Processing of the Product is on a user test and approve basis only. The user is responsible for results in all processing applications.

Printing

The Products are not designed for surface printing and have various surface textures. Printing is on a user test and approve basis only. No warranty is made for the quality or durability of printed Product.

Cutting

Electronic cutting, weeding and application tape with the Product must be used only on a user test and approve basis. The user should consider the following: (1) the type of liner used for the Product is not intended for electronic cutting; (2) there is currently no recommended application tape that adheres properly to the face of the Product to hold cut shapes in place.

Shelf Life and Storage

Shelf Life

Apply the Product within 2 years of the date of purchase. The storage conditions specified in this document must be maintained for full shelf life.

Storage Conditions

- 40°F - 90°F (4°C - 32°C)
- Away from direct sunlight and high humidity
- Clean, dry area
- Original container with end caps, in the plastic sleeve, stored horizontally, a maximum of 6 cartons high
- Bring the Product to room temperature before application

Cleaning and Maintenance

Regular cleaning will help maintain the appearance of the finish. Use mild detergent and water, and a soft cloth or sponge without abrasives. For difficult stains, spot clean with a diluted Isopropyl Alcohol solution and a soft cloth. Avoid using strong solvents or detergents that are either highly alkaline (pH>11) or acidic (pH<3). Do not use ammonia, chlorine, or strong organic-based cleaning products, polishing or cleaning compound, hard-bristle brushes or electric polishing equipment. Use only clean, nick-free tools and wipe gently.

Problem	Solution
Dust and grit	Wipe with a soft, damp cloth.
Soiled (but not gritty)	Use water and a soft cloth
Heavily Soiled	Clean first using a solution of mild liquid detergent and water, then use clear water. Wipe gently with a soft cloth.
Difficult Stains	Spot clean with 70/30 IPA (70% Isopropyl Alcohol/ 30% Water) cleaning solution

Type of Surface Damage	Appearance of Surface Damage	Method to Reduce Visibility
Mar	Dragging an item, such as a colored briefcase, across the film and leaving a deposit of color on the surface.	Rub with a soft cloth and warm soapy water to remove the mar.
Indentation	Pressing into the film surface without breaking the surface, such as pressure from a chair.	Carefully heat the indentation with a heat gun, which allows the film surface to rebound and reduce visibility.
Scratch	Breaking the surface layer of film leaving a slightly jagged whitish mark on the surface, such as by dragging a sharp rivet from a purse.	Rub with a surface restorer such as 3M™ Marine Vinyl Cleaner & Restorer to reduce the visibility of scratches.
Gouge	Breaking though the entire film, such as severe impact from sharp chairs or carts.	Repair by cutting out the damaged film and replac-ing that piece with the same pattern of film or remove and replace an entire panel of film.

Health and Safety

⚠ CAUTION

When handling any chemical products, read the manufacturers' container labels and the Safety Data Sheets (SDS) for important health, safety and environmental information. To obtain SDS sheets for 3M products go to 3M.com/SDS, or by mail or in case of an emergency, call 1-800-364-3577 or 1-651-737-6501.

When using any equipment, always follow the manufacturers' instructions for safe operation.

⚠ WARNING

To reduce the risks of personal injury and/or property damage associated with glass breakage:

A glass surface covered by a film with areas of high opacity or dark-colored ink will absorb more heat than other glass surfaces when exposed to sunlight. Heat absorption can create thermal expansion that could result in glass breakage or cracking. Do not use a film with areas of high opacity or dark-colored ink on glass surfaces with significant exposure to sunlight.

Technical Information

Technical information and data, recommendations, and other statements provided by 3M are based on information, tests, or experience which 3M believes to be reliable, but the accuracy or completeness of such information is not guaranteed. Such technical information and data are intended for persons with knowledge and technical skills sufficient to assess and apply their own informed judgment to the information. The typical values shown should not be used for the purpose of specification limits. If you have questions about this Product, contact the Technical Service helpline at 1-888-650-3497.

LEEDv4 CREDITS

This section describes some of the options for acquiring LEED credits using 3M™ DI-NOC™ Architectural Finishes E-Series.

NOTE: Each application is different. It is the sole responsibility of the end user to evaluate and determine whether LEED credits can be applied.

ID+C MR Credit, Interiors Life-Cycle Impact Reduction

- Option 1: Interior Reuse - Product can be used to refinish salvaged, refurbished, or reused nonstructural materials.
- Option 2: Furniture Reuse - Product can be used to refinish salvaged, refurbished, or reused furniture and furnishings.

ID+C, BD+C MR Credit, Construction and Demolition Waste Management

- Option 2: Product can be used to refinish salvaged, refurbished, or reused interior materials minimizing overall construction waste.

BD+C MR Credit, Building Life-Cycle Impact Reduction

- Option 3: Building and Material Reuse - Product can be used to refinish permanently installed interior elements (e.g. walls, doors).

BD+C MR Credit, Furniture and Medical Furnishings

- Option 3: Multi-attribute assessment of products - Product can be used to refinish permanently installed interior elements (e.g. walls, doors).

O+M MR Credit, Purchasing - Facility Maintenance and Renovation

- Product can be used to refinish permanently installed interior elements (e.g. walls, doors)
- Product has been tested to and is in compliance with the General Emissions Evaluation (California Department of Public Health (CDPH) Standard Method V1.1-2010)

BUILDING PRODUCT DISCLOSURE AND OPTIMIZATION INFORMATION

Environmental Product Declaration (EPD) or Life Cycle Analysis (LCA)

EPD and/or LCA information not available.

Raw Material Source and Extraction Reporting

Raw Material source and extraction information for this product is considered to be 3M confidential and is therefore not available.

Extended producer responsibility

Take-back or recycling program for this product is not available.

Bio-based materials

Product have not been tested to ASTM D6866.

Wood products

Product does not contain wood-based materials.

Materials reuse

Product can be used to refinish salvaged, refurbished, or reused materials and furniture.

Recycled content

Product does not contain pre- or post-consumer recycled content.

Material Ingredient Reporting

Product ingredient information for this product is considered to be 3M confidential and is therefore not available .

GreenScreen Benchmark or Cradle to Cradle Certification

Assessment or Certification not available on this product.

REACH Optimization

REACH Substance of Very High Concern certifications are on 3M.com/Regs (US) or 3M.com/SVHC (Europe).

Product Manufacture Supply Chain Optimization

Based on our analysis, 3M meets required process and safety requirements as outlined in the criteria.

Location Valuation Factor

Based on supply chain, this product would not meet location valuation factor requirements of being extracted, manufactured, and purchased within 100 miles.

Phthalate Statement

This product does not contain intentionally-added phthalates.

WARRANTY

Product

3M™ DI-NOC™ Architectural Finishes E-Series (the “Product”).

3M Basic Product Warranty

The Product(s) specified in this document are warranted to be free of defects in materials and manufacture (“3M Basic Product Warranty”) for three years from the date of shipment (“Warranty Period”) by 3M or its authorized distributor and to meet the specifications as stated in the applicable technical data sheet.

Limited Warranty

1. For Products used in Interior Applications in the continental United States, 3M makes the following warranty (the "3M Limited Warranty") for the applicable time period stated below ("Warranty Period"), which will begin on the earlier of: (a) Product installation date; or (b) six months after 3M's Product shipment date.
   The Product will have no significant discoloration, cracking or other similar visual defects for the applicable time period below:

Application	Warranty Period
Interior Applications	3 years
Exterior application surfaces[1]	Use a 3M™ DI-NOC™ EX Series Product[1]

1 - Application of the Product to exterior application surfaces is not warranted.

2. For a buyer’s convenience, 3M may provide engineering or technical information, recommendations, installation instructions or guides, and other information or materials relating to a Product (“Other Product Information”), but 3M makes only the 3M Basic Product Warranty and 3M Limited Warranty, and does not warrant any Other Product Information.
3. 3M has no obligation under the 3M Basic Product Warranty or the 3M Limited Warranty as to Product that has been: (a) modified, altered or processed in any manner; (b) stored, applied, installed, or used in a manner other than that 3M recommends in this document and in all Other Product Information; (c) damaged through contact with a person or thing, misuse, accident, neglect, or other action by anyone other than 3M; (d) improperly installed, including, without limitation, installation after the expiration the Product’s shelf life or installation without proper surface preparation, or (e) exposed to excessive heat, humidity, dirt or UV light.
4. 3M must receive any 3M Warranty claim in writing no later than 10 business days after (a) the end of the Warranty Period or (b) the discovery of the 3M Warranty claim, whichever is earlier.

Limited Remedy

IF ANY PRODUCT IS PROVEN NOT TO HAVE MET THE 3M BASIC PRODUCT WARRANTY OR THE 3M LIMITED WARRANTY DURING THE WARRANTY PERIOD, THEN THE BUYER’S EXCLUSIVE REMEDY, AND 3M’S SOLE OBLIGATION, WILL BE, AT 3M’S OPTION, TO REPLACE THE NONCONFORMING PRODUCT OR TO REFUND THE NONCONFORMING PRODUCT’S PURCHASE PRICE.

No Extension of Warranty

In the case of an approved warranty claim, the replacement Product will carry only the remaining term of the original warranty period.

Limitation of Liability

3M WILL NOT UNDER ANY CIRCUMSTANCES BE LIABLE TO A BUYER FOR DIRECT (other than the Limited Remedy stated above), SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES (INCLUDING, WITHOUT LIMITATION, LOSS OF PROFITS) IN ANY WAY RELATED TO THE PRODUCT, THE TECH DATA SHEET OR OTHER PRODUCT INFORMATION, REGARDLESS OF THE LEGAL OR EQUITABLE THEORY ON WHICH SUCH DAMAGES ARE SOUGHT.

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Revision H, September 2020 Please recycle.