



Product Description

3M FASARA Glass Finishes (the “Products”) are decorative glass and window films available in over 50 designs. These decorative Products can be used in vertical applications in commercial buildings to control both light and privacy through a building’s interior glass, including the interior of an outside glass wall (the “Interior Applications”). Two of the Product designs can be used on the exterior of an outside glass wall (the “Exterior Applications”). The current Product line is in the *3M™ FASARA™ Glass Finishes Product Catalog* (the “Catalog”).



Product Characteristics

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

Characteristics	Value
Material Type	Polyester
Thickness (Film + Adhesive)	Approximately 3 mil (75 microns) See Table A.
Release Liner	Silicone-coated polyester, 1 mil (25 microns)
Adhesive Type	Pressure-sensitive acrylic
Roll Size	50 inches x 98.4 feet (1270mm x 30m)

Product Performance

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

Characteristics	Value
Minimum Adhesion 24 hours after application	Glass: 0.45 lb./in. (0.08 kg/cm)
Fire Resistance	When used in Interior Applications on glass, most Products have the National Fire Protection Association Class A (as defined in NFPA 101 “Life Safety Code” Test Method ASTM E84).
Heat Transmission Coefficient	5.98 W/m2K, all products
UV Blocking	Blocks at least 99% of UV light to reduce the discoloring (fading caused by sunlight) of furniture and other items.

Optical Performance Characteristics Definitions

Shading coefficient: Measurement of sun-blocking effect, based on the percentage of sunlight entering a room when the Product is applied to 0.24 inches (6mm) thick transparent glass and the value “1” is used for the amount of sunlight passing through 0.12 inches (3mm) thick transparent glass.

Transmittance, reflectance and absorbcency: Measurement of the respective rates at which UV (ultraviolet), brightness (visible light), and heat (sunlight) are transmitted, reflected, or absorbed.



Heat transmission: Measurement of the ease of heat escape caused by a temperature difference between interior and exterior, based on the amount of heat that would escape in 1 hour from a surface area of 10.8 square feet (1m²) when there is a temperature difference of 34°F (1°C).

The values in these tables are typical, and are based on test data deemed reliable but are not warranted. The optical data are calculated as theoretical values and compiled with existing data.

Table A. Optical Performance Characteristics for All Product Designs

The optical data are calculated as theoretical values and compiled with existing data. In patterned Product designs, the value is an average across the pattern. The values in this table are typical, and are based on test data deemed reliable but are not warranted.

	Product Design	Film Thick-ness (microns) Excluding Liner	Shading Coefficient	Solar Heat (%)			Visible Light (%)		UV (%)
				Reflectance	Transmit-tance	Absorbance	Reflectance	Transmit-tance	Transmit-tance
Gradation	Illumina	83	0.72	16	53	31	20	51	0.0
	Illumina g	81	0.83	13	66	21	14	66	0.0
	Illumina-P	83	0.72	16	53	31	20	51	0.0
	Illumina Silver	77	0.44	50	33	17	59	36	0.0
	Aerina	81	0.91	12	76	13	13	79	0.0
	Venetian	85	0.73	18	55	27	23	54	0.0
	Robe	85	0.59	23	39	38	31	35	0.0
	Lontano	81	0.74	20	57	23	22	61	0.0
	Tsurugi	81	0.75	19	58	23	21	61	0.0
Stripe	Nokto	81	0.44	7	12	81	7	13	0.0
	Radius	71	0.40	7	7	86	7	6	0.0
	Shutie	81	0.77	17	60	24	22	59	0.0
	Shutie Black	81	0.70	21	53	26	29	51	0.0
	Arpa	79	0.78	17	61	22	22	67	0.1
	Arpa Black	81	0.54	8	25	67	8	22	0.0
	Seattle	81	0.85	16	70	14	22	74	0.0
	Seattle Fine	80	0.85	16	71	13	25	68	0.0
	Fine	81	0.65	22	46	32	27	48	0.0
Border / Horizontal	Lattice g	79	0.80	13	62	26	14	60	0.0
	Lattice	84	0.60	22	41	37	28	36	0.0
	Slat	88	0.60	22	41	37	28	36	0.0
	Slat g	83	0.77	14	58	28	16	56	0.0
	Pixela	81	0.78	16	62	22	18	60	0.0
	Paracell	80	0.71	17	53	30	20	50	0.0
	Leise	81	0.96	9	81	11	9	88	0.0

	Product Design	Film Thickness (microns) Excluding Liner	Shading Coefficient	Solar Heat (%)			Visible Light (%)		UV (%)
				Reflectance	Transmittance	Absorbance	Reflectance	Transmittance	Transmittance
Prism / Dot	Prism Noir	78	0.67	7	42	51	7	42	0.0
	Prism Silver	78	0.64	28	49	24	31	53	0.0
	Astral Silver	82	0.42	44	28	28	51	30	0.0
	Cielo	81	0.74	19	58	23	26	56	0.0
	Luna 6	76	0.68	17	48	34	22	46	0.0
	Vista	81	0.83	15	67	18	17	72	0.0
	Luna 9	83	0.63	19	43	39	24	39	0.0
	Aura 9	81	1.02	8	89	3	8	87	0.0
	SHIZUKU	81	0.84	13	68	19	16	71	0.0
	KANON	79	0.88	13	73	14	14	78	0.0
Fabric/Japan Paper	Linen	78	0.79	17	64	19	23	65	0.0
	Altair	86	0.77	17	60	22	23	60	0.0
	Vega	86	0.77	16	60	24	21	60	0.0
	SAGANO	89	0.83	14	66	20	18	68	0.0
	SAFU	95	0.89	12	74	14	15	79	0.0
	YAMATO	89	0.89	12	74	14	15	79	0.0
	KENUN	97	0.70	10	53	26	28	51	0.0
	RIKYU	103	0.86	7	67	26	8	72	0.0
Frost / Matte	ESSEN	120	0.67	23	50	27	26	55	0.1
	LAUSANNE	113	0.94	8	78	14	9	84	0.1
	OSLO	119	0.92	8	76	16	9	83	0.1
	OSLO-P	119	0.92	8	76	16	9	83	0.1
	CHAMONIX	120	0.67	26	51	23	35	47	0.0
	Opaque White	142	0.30	46	13	41	57	10	0.0
	Glace	85	0.77	14	58	28	18	56	0.0
	Fine Crystal	113	0.94	8	78	14	9	84	0.1
	Mat Crystal-i	95	0.94	8	78	14	9	85	0.1
	Mat Crystal 2	126	0.95	7	79	14	8	86	0.2
	Milky White (Milano)	77	0.75	17	57	26	21	29	0.0
	Milky Milky (San Marino)	105	0.44	34	25	41	43	21	0.0
	Milky Crystal	150	0.40	31	18	51	42	19	0.0
	Luce	85	0.59	26	39	38	31	34	0.0
Silver 1	74	0.08	78	0	21	91	0	(0.0)	
	Transparent Glass Substrate *	-	1.00	8	86	6	8	90	71

* All product designs were applied to a 3 mm transparent glass substrate to calculate the values in this table.

Product Use

For Exterior Applications Only

Anti-reflection effect: When used in Exterior Applications, the Mat Crystal 2 and Milky Crystal Product designs scatter sunlight to reduce reflected light. No other Product designs are recommended for an Exterior Application.

NOTE: When used for an Exterior Application, the Mat Crystal 2 and Milky Crystal Product designs are not warranted.

Application and Removal Guidelines

Avoid scratching, denting, or stretching the Product during installation. The values in these tables are typical, and are based on test data deemed reliable but are not warranted. See the 3M FASARA Glass Finishes Installation Guide for additional information.

Characteristic	Value
Application Surface Type	Flat
Application Surface Material	Use only glass substrates. Illumina-P (SH2FGIM-P) and OSLO-P (SH2EMOS-P) product designs are for use on plastic substrates on a user test and approve basis.
Application Location	Mat Crystal 2 and Milky Crystal Product designs can be applied to Exterior Applications. All other Product designs are only for Interior Applications.
Application Temperature	60°F - 100°F (16°C - 38°C) air and application surface
Application Method	Wet application
Applied Product Shrinkage	0.10 in. (0.3mm) maximum
Applied Product Exposure Temperature	Exterior Applications: -40°F - +149°F (-40°C - +65°C) Interior Applications: maximum 176°F (+80°C)
High Humidity Environments	Products are not recommended for Interior Applications where condensation consistently occurs.
Product Removal	Low heat or 3M Adhesive Remover Citrus Base and scraper

NOTE: Removing the Product too quickly can result in excessive adhesive left on the substrate. If necessary, heat a small section of the film with a heat gun to soften the adhesive, peel back slowly, then heat and remove the next section.

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 is 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.

Transportation and Storage

- Keep the film away from high temperatures, high humidity and direct sunlight.
- Store the film in the original container at 40°F - 90°F (4°C - 32°C).
- Apply the Product within one year of purchase.

Cleaning and Maintenance

NOTE: The Product may be cleaned beginning 30 days after installation.

Regular cleaning will help maintain the Product's appearance. Use only clean, nick-free tools and wipe gently only in one direction. Do not use ammonia, chlorine, or organic-based cleaning products, polishing or cleaning compound, sponges, brushes or electric polishing equipment

- If there is dust and grit, wipe it off with a soft, damp cloth.
- If it is soiled, but not gritty, use water and squeegee.
- If there is heavier soil, use a mild liquid detergent and water solution, then clear water, and wipe gently with a cloth wipe.

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/MSDS, 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.

CAUTION: Risk of Glass Breakage Due to Thermal Expansion

Glass surfaces exposed to sunlight will absorb heat. A glass surface covered by a film with high opacity or dark-colored ink, including films with small areas of high opacity or dark-colored ink, will absorb more heat. Heat absorption can create thermal stress that results in glass breakage, or thermal cracking. This can cause personal injury and property damage. 3M specifically does not recommend using a film with 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.

For more information or to order samples, please visit 3M.com/FASARA.

WARRANTY

Products

3M FASARA Glass Finishes ("Products") are decorative films for use only in vertical interior glass applications in commercial buildings ("Interior Applications"). Those Products identified in the FASARA Product Catalog ("Catalog") by ☀ may also be used in vertical exterior glass applications in commercial buildings, but 3M makes no Product warranty for those exterior applications.

Limited Warranty

1. For Products used in Interior Applications in the continental United States, 3M makes the following warranty (the "3M 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:
 - a. The Product will have no significant discoloration, peeling, swelling or other similar appearance defect that is caused by that Product's adhesion quality for the applicable time period below:

Warranty Period	Interior Application
Five Years	No Building Perimeter Glass
Three Years	Building Perimeter Glass

2. For a buyer's convenience, 3M may provide engineering or technical information, recommendations, installation instructions, and other information or materials relating to Product ("Other Product Information"), but 3M makes only the 3M Warranty and does not warrant any Other Product Information.
3. 3M has no obligation under the 3M 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 Technical Data Sheet 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; or (d) exposed to excessive heat, humidity, dirt or UV light.
4. EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, THE 3M WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES, RIGHTS OR CONDITIONS, EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY, SATISFACTORY QUALITY, FITNESS FOR A PARTICULAR PURPOSE AND THOSE ARISING FROM A COURSE OF DEALING, CUSTOM OR USAGE OF TRADE. THE BUYER IS RESPONSIBLE FOR DETERMINING IF A PRODUCT IS SUITABLE FOR ITS PARTICULAR PURPOSE AND ITS APPLICATION METHODS.

Limited Remedy

If any Product is proven not to have met the 3M Warranty on the buyer's receipt, then THE BUYER'S EXCLUSIVE REMEDY AND 3M'S SOLE OBLIGATION, WILL BE AT 3M'S OPTION, TO REPLACE THAT PRODUCT QUANTITY OR REFUND THE APPLICABLE PURCHASE PRICE.

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 A PRODUCT, THIS PRODUCT BULLETIN/TECHNICAL DATA SHEET, OR OTHER PRODUCT INFORMATION, REGARDLESS OF THE LEGAL OR EQUITABLE THEORY ON WHICH SUCH DAMAGES ARE SOUGHT.

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