

PROFLECTIVE 600PM

POLYCARBONATE

MIRROR

APPLICATIONS

- Correctional Facilities
- Hospitals & Psychiatric Units
- Recreational Facilities
eg. Swimming Pools & Gyms
- Public Amenities
- Traffic & Driveway Mirrors



PROFLECTIVE 600PM

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ADVANTAGES

- Unbreakable, Shatterproof, Durable & Economical
- Protects against vandalism
- Increased Safety
- Increases durability
- Easily maintained & removed
(eg. Anti-Graffiti applications)

ProFlective 600PM is an unbreakable mirror and the best choice if you are looking for a mirror to excel in the most demanding and harshest environments.

So what is an unbreakable **ProFlective 600PM** and why is it a better alternative than an acrylic mirror? Our mirror measures up to acrylic mirrors as far as clarity, UV stability and outdoor ratings. The **ProFlective 600PM** is an ideal alternative to standard glass mirror.

The **ProFlective 600PM** will not shatter, crack, break or fail – even under extreme punishment. From a true cost of ownership perspective, you will find the **ProFlective 600PM** will actually save you money over time. It will cut down on replacement costs because of its unparalleled strength.

The **ProFlective 600PM** mirror with weather resistant coating can be used indoor or outdoors. If you are tired of replacing mirror after mirror due to breakage, vandalism, UV break down, or yellowing, then the **ProFlective 600PM** mirror is what you've been searching for.

Do you need a mirror to excel in the most harshest and demanding environments? The **ProFlective 600PM** with Hard-Coat technology will exceed your expectations. It will perform outdoors in extremely hot or cold temperatures, in heavy precipitation, high winds and is highly UV and chemical resistant.



CHEMICAL RESISTANCE*

CHEMICAL TESTED	RESISTANCE TIME
Acetone	> 24 hrs
Ethylene Dichloride	> 24 hrs
Unleaded Gasoline	> 24 hrs
Hydrochloric Acid (10%)	> 24 hrs
Isopropyl Alcohol (IPA)	> 24 hrs
Kerosene	> 24 hrs
Methyl Alcohol	> 24 hrs
Methylene Chloride	> 24 hrs
Methyl Ethyl Ketone	> 24 hrs
Nitric Acid (100%)	> 1 hr but < 24 hrs
Sodium Hydroxide (10%)	> 1 hr but < 24 hrs
Sulfuric Acid (1%)	> 24 hrs
Toluene	> 24 hrs

* Tested in accordance to ASTM D1308

PROFLECTIVE 600PM

PRODUCT DATA

TYPICAL PROPERTIES

PROPERTY	TEST METHOD	UNITS	VALUES
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PHYSICAL

Specific Gravity	ASTM D79	-	1.2
Water Absorption, 24 hrs	ASTM D570	%	0.15
Poisson's Ratio	ASTM E132	-	0.38
Chemical Resistance	ASTM D1308	-	pass

MECHANICAL

Tensile Strength, Ultimate	ASTM D638	psi	9,500
Tensile Strength, Yield	ASTM D638	psi	9,000
Tensile Modulus	ASTM D638	psi	340,000
Elongation	ASTM D638	%	110
Flexural Strength	ASTM D790	psi	13,500
Flexural Modulus	ASTM D790	psi	345,000
Compressive Strength	ASTM D695	psi	12,500
Compressive Modulus	ASTM D695	psi	345,000
Izod Impact Strength, Notched @ 0.125"	ASTM D256	ft-lbs/in	18
Izod Impact Strength, Unnotched @ 0.125"	ASTM D256	ft-lbs/in	60 (no failure)
Instrumented Impact, 0.125"	ASTM D3763	ft-lbs	>45
Shear Strength @ Yield	ASTM D732	psi	6,000
Shear Strength, Ultimate	ASTM D732	psi	10,000
Shear Modulus	ASTM D732	psi	114,000
Rockwell Hardness	ASTM D785	-	M70/R118
Taber Abrasion, 100 Cycles, CS10F wheel	ASTM D1044	%	2

THERMAL

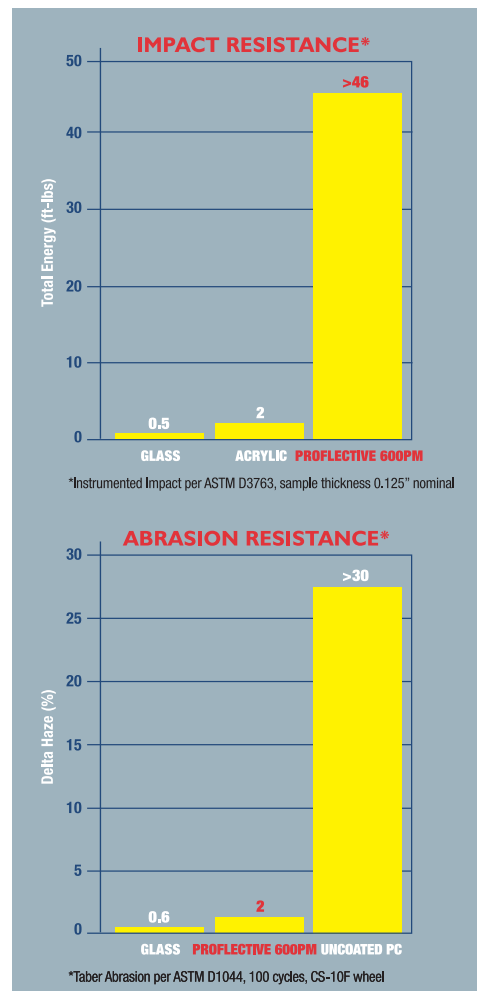
Coefficient of Thermal Expansion	ASTM D696	in/in/°F	3.75 x 10 ⁻⁵
Heat Deflection Temperature @ 264 psi	ASTM D648	°F	270
Heat Deflection Temperature @ 66 psi	ASTM D648	°F	280
Brittleness Temperature	ASTM D746	°F	-200

ELECTRICAL

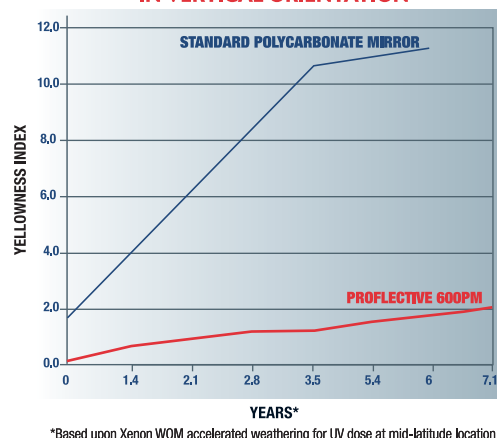
Dielectric Constant, @10Hz	ASTM D150	-	2.96
Dielectric Constant @ 60Hz	ASTM D150	-	3.17
Volume Resistivity	ASTM D257	Ohm-cm	8.2 x 10 ¹⁶
Dissipation Factor @ 60 Hz	ASTM D150	-	0.0009
Arc Resistance Stainless Steel Strip electrode	ASTM D495	Seconds	10-11
Tungsten Electrodes	ASTM D495	Seconds	120
Dielectric Strength, in air @ 0.125"	ASTM D149	V/mil	380

FLAMMABILITY

Horizontal Burn, AEB	ASTM D635	inch	<1
Ignition Temperature, Self	ASTM D1929	°F	1070
Ignition Temperature, Flash	ASTM D1929	°F	870
Flame Class, Clear @ 0.060"	UL 94	-	HB
Flame Class, Clear @ 0.236"	UL 94	-	V1



WEATHERING BEHAVIOUR OF PROFLECTIVE 600PM IN VERTICAL ORIENTATION



DISCLAIMER

The manner in which you use and the purpose to which you put and utilize our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether our products, technical assistance and information are suitable for your intended uses and applications. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by us. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale which are available upon request. All information and technical assistance is given without warranty or guarantee and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance, and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with any claim of any patent relative to any material or its use. No license is implied or in fact granted under the claims of any patent.

PROFLECTIVE 600PM

PRODUCT DATA: PROFLECTIVE 600PM ENVIRONMENTAL RESISTANCE

ProFlective 600PM polycarbonate sheet may be used in a diverse range of environmental conditions. However, as with any thermo-plastic, some environmental conditions have proven to be detrimental to ProFlective 600PM sheet. Varying degrees of stress, strain and temperature may also alter the resistance of ProFlective 600PM sheet; consequently fabricated parts should be tested thoroughly under actual in-service conditions prior to final design.

PROFLECTIVE 600PM IS RESISTANT TO:

CHEMICALS:

Amyl Alcohol	Heptane	Potassium Perchlorate
Aluminum Chloride	Hydrochloric Acid 10%	Potassium Permanganate
Aluminum Sulphate	Hydrogen Peroxide 30%	Potassium Persulphate
Ammonium Chloride	Hydrofluoric Acid 10%	Potassium Sulphate
Ammonium Nitrate	Isopropanol	Silicone Oil
Ammonium Sulphate	Lactic Acid 20%	Silver Nitrate
Antimony Trichloride	Magnesium Chloride	Sodium Bicarbonate
Arsenic Acid 20%	Magnesium Sulphate	Sodium Bisulphate
Butyl Alcohol	Manganese Sulphate	Sodium Carbonate
Calcium Nitrate	Mercuric Chloride	Sodium Chlorate
Chlorinated Lime Paste	Nickel Sulphate	Sodium Chloride
Chrome Alum	Nitric Acid 10%	Sodium Hypochlorite
Chromic Acid 20%	Nitric Acid 20%	Sodium Sulphate
Citric Acid 40%	Oleic Acid	Stannous Chloride
Copper Chloride	Oxalic Acid	SulfurSulfuric Acid
Copper Sulphate	Pentane	10%*Sulfuric Acid
Cuprous Chloride	Phosphoric Acid 10%	50%Tartaric Acid 30%
Formic Acid 10%	Potassium Bromate	Zinc Chloride
Formalin 30%	Potassium Bromide	Zinc Sulphate
Glycerine	Potassium Nitrate	

COMMON HOUSEHOLD MATERIALS:

Beer	Gypsum	Rum
Borax	Joy Liquid Detergent	Salad Oil
Cocoa	Insulating Tape	Salt Solution 10%
Cement	Linseed Oil	Soap (soft and hard)
Chocolate	Liquor	Table Vinegar
Cod Liver Oil	Milk	Tincture of Iodine 5%
Cognac	Mineral Water	Tomato Juice
Coffee	Mustard	Vodka
Detergents (nonionic and anionic)	Olive Oil	Washing Soap
Fish Oil	Onions	Water
Fruit Syrup	Orange Juice	Wine
Grapefruit Juice	Paraffin Oil	Sulfuric acid 1% attacks polycarbonate
	Rapeseed Oil	

INDUSTRIAL PETROLEUM PRODUCTS:

Axle Oil
Compressor Oil
Diesel Oil
Kerosene
Refined Oil
Spindle Oil
Transformer Oil
Vacuum Pump Oil

PROFLECTIVE 600PM HAS LIMITED RESISTANCE TO:

Anti-freeze
Calcium Chloride
Cyclohexanol
Ethylene Glycol
Hydrochloric Acid (concentrate)
Milk of lime (CaOH)
Nitric Acid (concentrate)
Sulfuric Acid (concentrate)

PROFLECTIVE 600PM IS NOT RESISTANT TO:

Acetaldehyde	Caustic Potash Solution 5%	Methyl Alcohol
Acetic Acid (concentrate)	Caustic Soda Solution 5%	Nitrobenzene
Acetone	Chloroethene	Nitrocellulose Lacquer
Acrylonitrile	Chlorobenzene	Ozone
Ammonia	Cutting Oils	Phenol
Ammonium Fluoride	Cyclo Hexanone	Phosphorous Hydroxy
Ammonium Hydroxide	Cyclohexene	Chloride
Ammonium Sulfide	Dimethyl Formamide	Phosphorous Trichloride
Benzene	Ethane Tetrachloride	Propionic Acid
Benzoic Acid	Ethylamine	Sodium Sulfide
Benzyl Alcohol	Ethyl Ether	Sodium Hydroxide
Brake Fluid	Ethylene Chlorohydrin	Sodium Nitrate
Bromobenzene	Formic Acid (concentrate)	Tetradyronaphthalene
Butyric Acid	Freon (refrigerant & propellant)	Thiophene
Carbon Tetrachloride	Gasoline	Toluene
Carbon Disulfide	Lacquer Thinner	Turpentine
Carbonic Acid		Xylene

In general, ProFlective 600PM sheet has good resistance to water, organic and inorganic acids, neutral and acidsalts and aliphatic and cyclic hydrocarbons. Alkalines, amines, ketones, esters and aromatic hydrocarbons attack ProFlective 600PM. Solvents for ProFlective 600PM are: methylene chloride, ethylene dichloride and dioxane. This chemical and solvent resistant listing is intended to assist designers in determining whether ProFlective 600PM sheet can be used in certain environments. It is very important to test prototype parts under end-use conditions for final verification of performance. All data is based on 700F and 0% strain. ProFlective 600PM sheet has good resistance to water up to approximately 1500F. Above this temperature, the effect of moisture is time-temperature related. Exposing ProFlective 600PM sheet to repeated steam cleaning or dish washing can create hydrolytic crazing. The result can be a clouding of the surface and ultimately a loss of physical strength properties.

PROFLECTIVE 600PM CLEANING INSTRUCTIONS

The following techniques for cleaning ProFlective 600PM polycarbonate sheet are based on standard industry practice. To ensure acceptability of the results, always test a sample of the material with the cleaner and technique to be used.

GUIDELINES:

- DO rinse the sheet with warm water prior to cleaning process.
- DO follow the application with a lukewarm water rinse.
- DON'T use abrasives or high alkaline cleaners.
- DON'T leave cleaners on sheet for long periods, wash immediately.
- DON'T apply cleaners in direct sunlight or at elevated temperatures.
- DON'T use scrapers, squeegees or razors.
- DON'T clean with gasoline.

COMPATIBLE CLEANERS AND DETERGENTS:

Joy¹, Windex with Ammonia D², Palmolive³, Naphtha VM&P Grade, Isopropyl Alcohol

TO MINIMIZE FINE OR HAIRLINE SCRATCHES:

Plastic Polishes applied and removed per manufacturer instructions.

SUGGESTED POLISHES:

Mirror Glaze Clear Plastic Polish, Cleaner & Detailer (by Meguiars 800-347-5700 or Meguiars.com)
Novus Plastics Polish #1, #2 (by Novus Inc. 800-NOVUS60 or noscratch.com)
Plexus Plastic Cleaner and Polish (by BTI Chemical Co. PlexusPlasticCleaner.com)

TO REMOVE MASKING ADHESIVE AND GLAZING COMPOUND:

Apply Naphtha VM&P grade, Kerosene or Isopropyl Alcohol with clean soft cloth. Wash immediately with soap and lukewarm water and rinse with thoroughly with clean water.

TO REMOVE GRAFFITI:

Naphtha VM&P grade, Isopropyl Alcohol or Butyl Cellosolve removes paint, marker ink. (Do not use in direct sunlight).

Isopropyl Alcohol, Naphtha VM&P grade or Kerosene will help lift stickers and other adhesive backed labels. Wash immediately with soap and lukewarm water and rinse with thoroughly with clean water.

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PROFLECTIVE 600PM IS DISSOLVED BY:

Chloroform	Ethylene Dichloride
Cresol	Methylene Chloride
Dioxane	Pyridine

PROFLECTIVE 600PM

INSTALLATION / APPLICATION PROCEDURE

Progard Plastics ProFlective 600PM Polycarbonate Mirrors.

Progard Plastics use and recommend the use of Novatio “Seal & Bond MS50” for the installation of their Polycarbonate Mirrors.

The Novatio “Seal & Bond MS50” has been selected as it meets all the technical and safety requirements required, and it can be used as both the installation adhesive and sealant.

TOOLS / ITEMS REQUIRED >	
x1 (one) Standard 310ml Caulking Gun Roll of Paper or a Clean Soft Cloth x1 (one) Plastic Spatula or similar	Novatio “Seal & Bond MS50” 310ml Cartridge Novatio “Two Way Tape” 12mm x 10 metre Novatio “Safety Clean” 500ml aerosol Novatio “Multifoam” 500ml aerosol

INSTALLATION PROCEDURE:

- ➊ Remove the Polycarbonate mirror from its packaging and then remove any protective film or paper from the rear side of the mirror. Take the Multifoam cleaner and spray onto the rear surface of the mirror, this is the side that will be glued to the wall, wait a few seconds for the Multifoam to lift any dirt and residue from the surface and then wipe clean and dry with the paper towel or cloth.
- ➋ Cut four 50mm lengths of the Novatio “Two Way Tape” attach a piece of tape in each corner of the mirror at approximately 25mm in from the edge.
- ➌ Spray the wall / surface that the mirror is to be glued to with the Novatio Multifoam, wait a few seconds for the Multifoam to lift any dirt or residue from the surface then wipe clean with the paper towel or cloth.
- ➍ On the back of the mirror place two beads of Seal & Bond MS50 adhesive vertically 25mm in from each side edge of the mirror (taking care to keep clear of the Two Way Tape) then put more vertical beads of adhesive at approximately 100mm to 150mm spacing's across the mirror.
- ➎ Remove the backing from the 4 pieces of adhesive tape and push the mirror firmly back onto the cleaned wall / surface.
- ➏ To seal around the outside edge of the mirror take the Seal and Bond MS50 and run a suitably sized bead of Seal & Bond MS50 ensuring that it comes into contact with both the edge of the polycarbonate mirror and the wall surface.
- ➐ To finish the sealed edge around the mirror, use a spatula or suitable tool to shape the joint and remove any excess Seal & Bond MS50, then use the Novatio “Safety Clean” to clean any unwanted residual product, spray a small amount of Safety Clean onto the area that requires cleaning use the paper towel or cloth to remove and clean away unwanted Seal & Bond MS50.
- ➑ Any tools used during the installation process can be cleaned with Novatio “Safety Clean”.

Please Note:

- Novatio “Seal & Bond MS50” will adhere to most common surfaces without the requirement of any sealers or primers, the use of any sealers or primers on the surface of the Progard polycarbonate mirrors is not recommended.
- Novatio “Seal & Bond MS50 does not require the use of primers or sealers for substrates such as Copper, Stainless or Galvanised metals and or Thermo Plastic materials.
- Novatio “Seal & Bond MS50 does not require a primer when used in horizontal applications.

PROFLECTIVE 600PM



VOC Requirements - Adhesives and Sealants

The GBCA Green Star IEQ-13 credit requires adhesives and sealants to be tested according South Coast Air Quality Management District (California) Rule 1168. This requires the indoor adhesive to have less than 50g of VOCs per litre.

An outdoor adhesive must emit less than 150g/L of VOCs.

In the near future this requirement may be changed to determine the chemical emission rate.