

# R-Cast™ sheet



## Applications

- Aquariums
- Displays
- Fountains
- Projection screens
- Furniture
- Optical lenses
- Port hole windows
- Sight glass
- Scientific applications
- Point of purchase
- Hyperbaric chambers
- Vacuum chambers
- Bio-safety chambers
- and more...

## Benefits

- Outstanding optical clarity
- Excellent UV properties
- High impact resistance - 17x greater than glass and 4x greater than concrete
- Superb weatherability - won't yellow or show signs of aging
- Structural & can be engineered to support weight
- UVT available

## Color Availability

- Clear
- Standard colors stocked (thin gauge only)
- Custom colors available

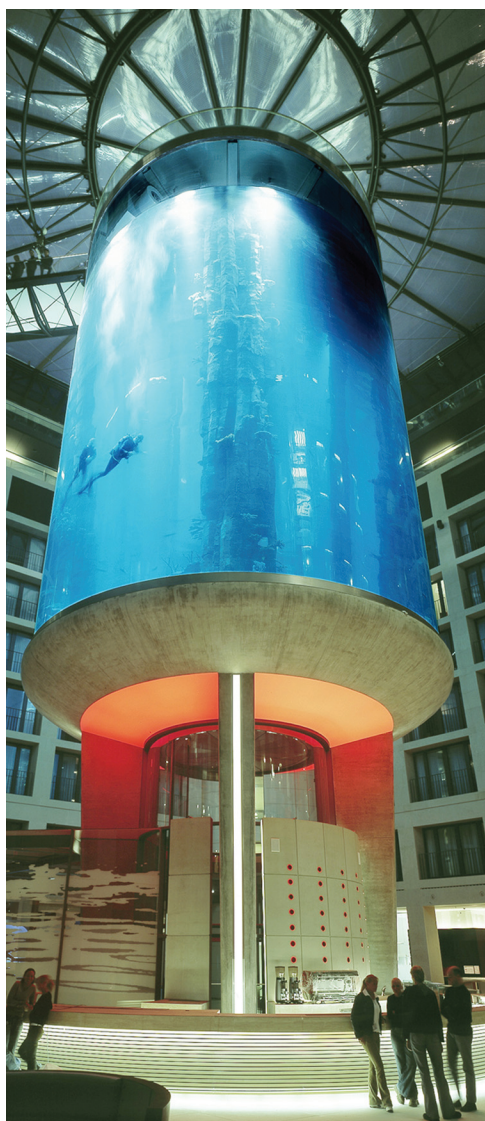
## Surface Finishes

- Frosted finish
- Gloss finish
- Etched finish

## Edge Finishes

- Saw Cut
- Polished edge
- Radius
- Chamfer
- Beveled

# R-Cast™ sheet



## Fabrication Options

- Formable
- Bondable
- Drillable
- Paintable
- Various surface finishes

## Warranty

10 years

## Care & Cleaning

To polish out scratches and restore original lustre, we recommend our R-Cast™ Care Kit to maintain your acrylic panels.

Avoid using alcohol-based solvents to clean the acrylic.

We recommend using standard soap and water.

Please contact us with any questions regarding cleaners.



# R-Cast™ sheet

## Thick Gauge

R-Cast™ acrylic thick gauge sheet is available trimmed or untrimmed and is oversized. Many cast acrylic users prefer oversized sheet because it allows for maximum yield.

## Standard Sheet

**48" x 96"** (1.22m x 2.44m)

**72" x 96"** (1.83m x 2.44m)

Thickness in (mm)	Tolerance in (mm)
<b>1.00</b> (25)	<b>0.888 - 1.048</b> (23 - 27)
<b>1.25</b> (32)	<b>1.156 - 1.302</b> (29 - 33)
<b>1.50</b> (38)	<b>1.341 - 1.577</b> (34 - 40)
<b>1.75</b> (45)	<b>1.552 - 1.824</b> (39 - 46)
<b>2.00</b> (51)	<b>1.798 - 2.108</b> (46 - 54)
<b>2.50</b> (64)	<b>2.319 - 2.579</b> (59 - 66)
<b>3.00</b> (76)	<b>2.792 - 3.102</b> (71 - 79)
<b>3.50</b> (89)	<b>3.261 - 3.621</b> (83 - 92)
<b>4.00</b> (102)	<b>3.732 - 4.142</b> (95 - 105)

## Oversize Sheet

**96" x 128"** (2.44m x 3.25m)

**72" x 186"** (1.83m x 4.72m)

Thickness in (mm)	Tolerance in (mm)
<b>1.00</b> (25)	<b>0.900 - 1.100</b> (23 - 28)
<b>1.25</b> (32)	<b>1.125 - 1.375</b> (29 - 35)
<b>1.50</b> (38)	<b>1.350 - 1.650</b> (34 - 42)
<b>1.75</b> (45)	<b>1.575 - 1.925</b> (40 - 49)
<b>2.00</b> (51)	<b>1.800 - 2.200</b> (46 - 56)
<b>2.50</b> (64)	<b>2.250 - 2.750</b> (57 - 70)
<b>3.00</b> (76)	<b>2.700 - 3.300</b> (69 - 84)
<b>3.50</b> (89)	<b>3.150 - 3.850</b> (80 - 98)
<b>4.00</b> (102)	<b>3.600 - 4.400</b> (91 - 112)

Special order sizes are also available in:

**60" x 96"** (1.52m x 2.44m)

**48" x 128"** (1.22m x 3.25m)

**72" x 120"** (1.83m x 3.05m)

- Custom gauges and sheet sizes available upon request
- Custom colors available upon request

# R-Cast™ sheet

## Thin Gauge

## Standard Sheet

**48" x 96"** (1.22m x 2.44m)

**51" x 100"** (1.30m x 2.54m)

Thickness		Tolerance	
in	(mm)	in	(mm)
<b>0.060</b>	(1.5)	<b>.040 - .072</b>	(1.0 - 1.8)
<b>0.080</b>	(2.0)	<b>.060 - .093</b>	(1.5 - 2.4)
<b>0.100</b>	(2.5)	<b>.079 - .121</b>	(2.0 - 3.1)
<b>0.118</b>	(3.0)	<b>.095 - .132</b>	(2.4 - 3.4)
<b>0.177</b>	(4.5)	<b>.145 - .194</b>	(3.7 - 4.9)
<b>0.236</b>	(6.0)	<b>.201 - .254</b>	(5.1 - 6.5)
<b>0.354</b>	(9.0)	<b>.314 - .367</b>	(8.0 - 9.3)
<b>0.472</b>	(12.0)	<b>.420 - .496</b>	(10.7 - 12.6)
<b>0.708</b>	(18.0)	<b>.639 - .735</b>	(16.2 - 18.7)
<b>0.985</b>	(25.0)	<b>.869 - .972</b>	(22.1 - 24.7)

## Special Order Sheet\*

**48" x 120"** (1.22m x 3.05m)

**60" x 120"** (1.52m x 3.05m)

Thickness		Tolerance	
in	(mm)	in	(mm)
<b>0.060</b>	(1.5)	<b>N/A</b>	
<b>0.080</b>	(2.0)	<b>N/A</b>	
<b>0.100</b>	(2.5)	<b>N/A</b>	
<b>0.118</b>	(3.0)	<b>.122 - .138</b>	(3.1 - 3.5)
<b>0.177</b>	(4.5)	<b>.144 - .201</b>	(3.7 - 5.1)
<b>0.236</b>	(6.0)	<b>.199 - .260</b>	(5.1 - 6.6)
<b>0.354</b>	(9.0)	<b>.309 - .382</b>	(7.9 - 9.7)
<b>0.472</b>	(12.0)	<b>.408 - .508</b>	(10.4 - 12.9)
<b>0.708</b>	(18.0)	<b>.634 - .744</b>	(16.1 - 18.9)

\*minimum required.

- Custom gauges and sheet sizes available upon request
- Custom colors available upon request



# R-Cast™ sheet



## Thin Gauge Sheet Colors Stocked

- Clear
- Colors below
- Custom colors available by special order

### Standard



Black  
2025



Blue  
2114



Lt Blue  
2648



Green  
2108



Red  
2157



White  
2447  
7328  
7420



Yellow  
2037

### Transparent



Gray



Bronze

### Fluorescent



Fl Red  
9095



Fl Blue  
9092



Fl Amber  
2422



Fl Green  
53200

# R-Cast™ sheet

## R-Cast™ Average Physical Properties

Property	ASTM Method	US Customary Units	Average Value	Metric Units	Average Value
<b>MECHANICAL</b>					
Tensile Strength	ASTM-D638	psi	10800	Kg/cm <sup>2</sup>	759
Tensile Modulus	ASTM-D638	psi	450000	Kg/cm <sup>2</sup>	31 x 10 <sup>3</sup>
Tensile Elongation	ASTM-D638	%	4.0	-	-
Flexural Strength	ASTM-D790	psi	16000	Kg/cm <sup>2</sup>	1125
Compression Strength	ASTM-D695	psi	17500	Kg/cm <sup>2</sup>	1230
Shear Strength	ASTM-D732	psi	10000	Kg/cm <sup>2</sup>	703
IZOD Impact Strength, notched @ 1/8"	ASTM-D256	ft-lbs/inch	0.414	J/m	22.1
Rockwell Hardness (M Scale)	ASTM-D785	-	103	-	-
Deformation Under Load @ 4,000 psi @ 73°F	ASTM-D621	%	0.85	-	-
<b>OPTICAL</b>					
Light Transmittance (0.1" nominal thickness)	ASTM-D1003	%	92	-	-
Haze	-	%	< 1	-	-
Refractive Index @ 77°F	ASTM-D542	-	1.49	-	-
<b>THERMAL</b>					
Heat Deflection Temperature	ASTM-D648	°F	226	°C	108
Coefficient of Expansion @ 60°F	ASTM-D696	in/in/°F	4.0 x 10 <sup>-5</sup>	mm/mm/°C	7.2x10 <sup>-5</sup>
<b>MISCELLANEOUS</b>					
Water Absorption, Equilibrium, 24 hrs @ 73°F	ASTM-D570	%	0.2	-	-
Specific Gravity	ASTM-D792	-	1.19	-	-

# R-Cast™ sheet



## **Manufacturing**

R-Cast™ sheet is monolithically cast from polymethyl methacrylate (PMMA) resin to strict internationally accepted structural standards.

## **Short Term Loading**

Impact, live, and seismic loading conditions are short term and infrequent loading conditions. However, all R-Cast™ sheet panels can be designed to handle these conditions.

## **Safety Glazing**

Meets ANSI Z 97.1 for safety glazing material used in buildings.  
Approved for safety glazing according to model building codes.  
Suitable for use in Consumer Products Safety Commission, Safety Standard for Architectural Glazing Material under 16 CFR 1201, Categories 1 & 11.

## **Hockey Rink Glazing**

Acrylic is suitable for use as a glazing material for hockey rinks per ASTM F-1703 (Standard Guide for Ice Hockey Playing Facilities). Thickness should be 0.50" (12.7mm) for sides of rink, 0.625" (15.88) for ends of rink.

## **FDA Approval**

R-Cast™ sheet is approved by the U.S. Food and Drug Administration for use as a surface suitable for food preparation.

# R-Cast™ sheet

## R = Resistant

R-Cast™ acrylic withstands this substance for long periods and at temperatures up to 120 degrees F (49 degrees C).

## LR = Limited Resistance

R-Cast™ acrylic only resists the action of this substance for short periods at room temperature. The resistance for a particular application must be determined.

## N = Non Resistant

R-Cast™ acrylic is not resistant to this substance. It is either swelled, attached, dissolved or damaged in some manner.

Plastic materials can be attacked by chemicals in several ways. The methods of fabrication and/or conditions of exposure of R-Cast™ acrylic as well as the manner in which the chemicals are applied, can influence final results even for "R" coded chemicals. Some of these factors are listed below.

**Fabrication** - Stress generated while sawing, sanding, machining, drilling, polishing, and/or forming.

**Exposure** - Length of exposure, stresses induced during the life of the product due to various loads, changes in temperatures, etc.

## Chemical

Acetic Acid (5%)	R
Acetic Acid (Glacial)	N
Acetic Anhydride	LR
Acetone	N
Acrylic Paints & Lacquers	LR
Ammonia (aqueous solution)	R
Ammonium chloride (Saturated)	R
Ammonium Hydroxide (10%)	R
Butyl Acetate	N
Calcium Chloride (Saturated)	R
Calcium Hypochlorite	R
Carbon Tetrachloride	N
Cement	R
Chlorine Water	LR
Chloroform	N
Chromic Acid (40%)	N
Citric Acid (10%)	R
Cottonseed Oil (Edible)	R
Detergent Solution	R
Diesel Oil	R
Diethyl Ether	N
Dimethyl Formamide	N
Dioctyl Phthalate	N
Ethyl Acetate	N
Ethyl Alcohol (50%)	LR
Ethyl Alcohol (95%)	N
Ethylene Dichloride	N
Ethylene Glycol	R
2-Ethylhexyl Sebacate	R
Formaldehyde (40%)	R
Formic Acid (2%)	R
Formic Acid (40%)	LR
Gasoline (Regular, Leaded)	LR
Glycerine	R
Glycerol	R
Olive Oil	R
Oxygen	R
Ozone	R
Phenol Solution (5%)	N
Phosphoric Acid (10%)	R
Plaster of Paris	R
Soap Solution (Ivory)	R
Sodium Carbonate (2%)	R
Sodium Carbonate (20%)	R
Sodium Chloride (10%)	R
Sodium Hydroxide (1%)	R
Sodium Hydroxide (10%)	R

## Code

## Chemical

Ammonium Hydroxide (Conc.)	R
Aniline	N
Battery Acid	R
Benzaldehyde	N
Benzene	N
Bituminous Emulsion	N
Bromine	N
Butanol	LR
Glycol	R
Heptane	R
Hexane	R
Hot Bitumen	LR
Hydrochloric Acid	R
Hydrofluoric Acid (40%)	N
Hydrogen Peroxide (3%)	R
Hydrogen Peroxide (28%)	N
Isocotane	R
Isopropyl Alcohol	LR
Kerosene	R
Lacquer Thinner	N
Lactic Acid (80%)	LR
Methane	R
Methyl Alcohol (50%)	LR
Methyl Alcohol (100%)	N
Methyl Ethyl Ketone (MEK)	N
Methylene Chloride	N
Mineral Oil	R
Mortar	R
Motor Fuel (benzene-free)	R
Motor Fuel (with benzene)	N
Muriatic Acid (20%)	R
Nitric Acid (10%)	R
Nitric Acid (40%)	LR
Nitric Acid (Conc.)	N
Oil Paints (pure)	R
Sodium Hydroxide (60%)	R
Stearic Acid	R
Sulfuric Acid (3%)	R
Sulfuric Acid (30%)	R
Sulfuric Acid (Conc.)	N
Thinners (general)	N
Toluene	N
Trichloroethylene	N
Turpentine	LR
Urine	R
Water (Distilled)	R
Xylene	N

## Code