

# PLASKOLITE

**OPTIX<sup>®</sup> DA - DIGITAL  
ACRYLIC**

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FABRICATION GUIDE



## STORAGE

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OPTIX-DA should be stored horizontally on a flat surface. The sheet should remain well-wrapped in plastic at all times in order maintain cleanliness and to avoid moisture absorption. OPTIX-DA should never be stored outdoors or in areas of high heat or moisture. Improperly stored sheet may lead to warpage or bow.

## CLEANING

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The printable surface of OPTIX-DA should not require additional cleaning or treatment prior to printing. Cleaning agents may ultimately affect ink adhesion and appearance. If minor cleaning is necessary, a mixture of water and isopropyl alcohol (IPA) (30% max.) may be used, taking care to minimize the contact time with the sheet. To avoid scratching the surface, use a soft lint-free cloth or sponge for cleaning.

## ADHESION PROMOTERS

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Adhesion promoters are not necessary and should not be used on OPTIX-DA.

## STATIC CONTROL

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There are many different ways in which static electricity can be minimized prior to printing.

1. Relative humidity levels should ideally be greater than 50% in the area of printing.
2. Place the sheet on the printer bed or some other grounded surface before removing the masking film.
3. Use active ionizing wands, bars, or air blowers to dissipate static.
4. Position passive static control methods, including Static String™ or tinsel, at the inlet of the printer.
5. Wiping the sheet surface with a soft rag and a mixture of water/IPA (30% max.) may also reduce static. Avoid using commercial cleaners or anti-static solutions, as these may affect ink adhesion and print quality.

## SAW CUTTING

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OPTIX-DA can be saw cut using the same parameters for standard acrylic. Commercially available saw blades designed for cutting plastics are recommended. Alternate-tooth or triple-chip (carbide-tip) blades generally work best. When saw cutting, the blade should protrude approximately ¼” above the sheet. For best results, the printed surface should face upwards on table saws to avoid potential chipping of the ink.

## ROUTER CUTTING

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OPTIX-DA can be router cut using the same routing parameters suggested for standard OPTIX acrylic. Single “O-flute” (straight) carbide bits work well at feed rates of 180 - 300 in/min and spindle speeds of 18,000 - 24,000 RPM.

## LASER CUTTING

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OPTIX-DA can be laser cut using parameters typical for extruded acrylic sheet. Although laser cutting provides great convenience and highly-polished edges, the process also induces higher stress levels in the acrylic substrate. If possible, an annealing cycle may be beneficial to reduce stress levels after laser cutting. If laser cut edges are not annealed, special precaution must be used to prevent chemical exposure along the edges of the sheet. When possible, it’s best to avoid printing directly to the edge of a laser cut sheet.

## DRILLING

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Modified drill bits, or drill bits designed for drilling plastics, are recommended. Rotational speeds of 500 - 2,000 RPM should provide acceptable results. To prevent chipping or cracking, it is recommended that a backing material, such as another piece of acrylic, be used at the exit side of the drilled hole.

## POLISHED & EDGE FINISHING

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Flame polishing is not recommended, but other mechanical edge finishing equipment can be used to create clean or polished edge surfaces. The sheet edges can also be hand sanded and buffed.

## LINE BENDING

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OPTIX-DA can be line bent similarly to standard acrylic sheet. For best results, use a heat strip that is at least as wide as the bending radius and keep the bending length no longer than 24-inches to avoid potential bowing. When using strip heaters, the majority of the heat should be focused on the non-printable side.

## THERMOFORMING

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OPTIX-DA can be thermoformed, but large draw ratios or excessive stretching should be avoided. The sheet should be formed within the recommended temperature range of 270°F - 350°F.

## EXPANSION & CONTRACTION

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Dimensional changes to the sheet may occur due to both temperature change and moisture absorption. It is advised to allow for at least 0.3% expansion for interior applications in order to avoid bow or warp.

## MOUNTING

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There are a variety of methods for mounting OPTIX-DA. If using adhesives, it is imperative to test the compatibility of the product to both the ink and the acrylic substrate. When mechanically fastening OPTIX-DA, allow for expansion and contraction and make sure that fasteners are not over-tightened. For screw/bolt mountings, soft washers are recommended.

For stand-off mounting, thicker gauges of OPTIX-DA provide better rigidity and can help reduce undesirable movement in the material. Holes for stand-offs should be oversized so that there is room for the sheet to expand.

## CEMENTING

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Traditional solvent cements, including Weld-on #4 (Sci-Grip #4), may be used to bond OPTIX-DA. However, the printable surface will not bond in the same way as standard acrylic, so solvent cementing the printable surface is not recommended.

## SCRATCH REMOVAL

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Minor scratches in the non-printable surface of OPTIX-DA can be often be removed using commercially available plastic polishes.

## OUTDOOR USE

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Due to the unique polymer formulation of OPTIX-DA, outdoor use is generally not recommended. However, in situational short-term applications, OPTIX-DA may be used with precautions to minimize exposure to sunlight.

# TROUBLESHOOTING SUGGESTIONS

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Poor Ink Adhesion	Verify that the printing is on the indicated “printable” side.
	Adjust printer settings for optimal curing (airflow, head gap, number of passes, ink density etc.).
	Verify that UV output is sufficient and that lamps are clean and properly maintained.
	Clean or remove surface dust, oils, and fingerprints. A mixture of water/isopropyl alcohol should provide adequate cleaning. Avoid using commercial cleaners or other products that may leave subtle residues.
	Check with ink supplier for proper ink chemistry. An alternate ink set may be required.
Ink Cracking	Replace old or poor quality inks
	Ink is over-cured. Reduce UV intensity or increase speed.
Misting/Overspray	Reduce static levels on the sheet prior to printing.
Warping/Bowing in the Field	Adjust mounting method to allow for more expansion due to temperature or moisture absorption.

# PLASKOLITE

## NORTH AMERICA'S LEADING MANUFACTURER OF THERMOPLASTIC SHEET

FOUNDED IN 1950

Our Mission: to deliver superior thermoplastic sheet, coatings and polymers to the world, through long-lasting customer relationships and hands-on customer service.

### MANUFACTURING LOCATIONS



From our founding, PLASKOLITE strives to treat our employees, our customers, our community and the world, with kindness, dignity and respect. This drives our continuing effort to create sustainable products, in a sustainable manner, for future generations. This on-going commitment is expressed in the

#### PLASKOLITE Sustainable Ecosystem:

#### QUICK FACTS

**STATUS:** Privately held

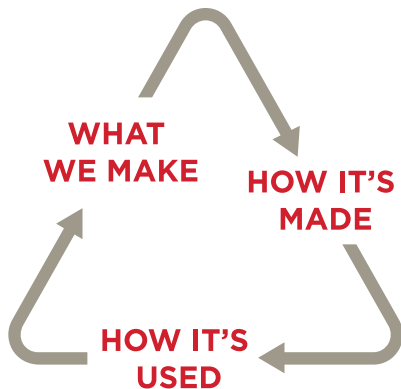
**GLOBAL HEADQUARTERS:** Columbus, OH

**EMPLOYEES:** 2200 Worldwide

**MARKETS SERVED:** Signage, Lighting, Retail Display, Construction, Transportation, Security, Bath & Spa, Industrial, Architecture, & Green Houses

## OUR PILLARS OF SUSTAINABILITY

### EACH CONTRIBUTES TO MAKING THE WORLD A BETTER PLACE



#### WHAT WE MAKE

Versatile, high-quality, durable thermoplastic materials...not single-use plastics

#### HOW IT'S MADE

How we make our products reflects our overall philosophy of continuous environmental improvement

#### HOW IT'S USED

Our thermoplastics play an important role in advancing human well-being, energy conservation and quality of life

These suggestions and data are based on information we believe to be reliable. They are offered in good faith, but without guarantee, as conditions and methods of use are beyond our control. We recommend that the prospective user determines the suitability of our materials and suggestions before adopting them on a commercial scale.

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