

PLASKOLITE

TUFFAK[®] CA PRODUCT
PORTFOLIO FABRICATION &
INSTALLATION GUIDELINES



INTRODUCTION / FABRICATION

The **TUFFAK CA** product portfolio is a range of polycarbonate sheet grades designed to meet the Class A flammability requirements of the International Building Code (IBC) for interior wall and ceiling finishes. TUFFAK CA grades feature outstanding impact strength, high temperature resistance and high clarity and pass the National Fire Prevention Association (NFPA) 286 flammability requirement.

TUFFAK CA optical grade polycarbonate sheet is UV stable, lightweight, thermoformable and easy to fabricate. It is offered with a 5-year limited warranty against breakage.

TUFFAK CA-UV is an optical grade polycarbonate sheet with enhanced UV resistance. It is offered with a 10-year limited warranty against breakage, yellowing and loss of light transmission.

TUFFAK CA-AR is an abrasion resistant, one or two side coated polycarbonate sheet. The proprietary hardcoat provides excellent chemical resistance and long lasting outdoor weathering performance. It is offered with a 7-year limited warranty against breakage, yellowing and loss of abrasion resistance.

TUFFAK CA grades are available in clear, standard colors, diffusing colors and a variety of textures. Custom colors are available with minimums.

As with all polycarbonate sheets, TUFFAK CA should be stored in a well-protected, ventilated area with no direct exposure to sunlight or harsh weather conditions.

TUFFAK CA grades should be cleaned with a microfiber cloth and a mild soap and water solution, followed by a thorough water rinse. For detailed information please refer to the cleaning instructions for polycarbonate located at www.plaskolite.com/resources

FABRICATION

TUFFAK CA sheet products easily fabricate using standard cutting tools. Always use properly sized, sharp cutting tools.

CIRCULAR SAWING

As shown in the accompanying illustration, use a carbide-tipped, circular saw blade with triple-chip tooth design, which cuts clean and lasts longer than high strength steel. Blade is hollow-ground and slotted for expansion and cooling.

The blade cutting speed should be 5000-6000 rpm, and the table saw setup gap (between saw blade and bed) must be kept to a minimum for clean cuts.

Circular saw blade and cutting

Cutting speed (rpm)	5000 - 6000
4"/101 mm Blade	8 - 10 teeth/inch/mm
8 - 10"/203- 254mm Blades	6 - 8 teeth/inch/mm

Circular saw troubleshooting

PROBLEM: Melting or Gummed Edges

SUGGESTED SOLUTIONS:

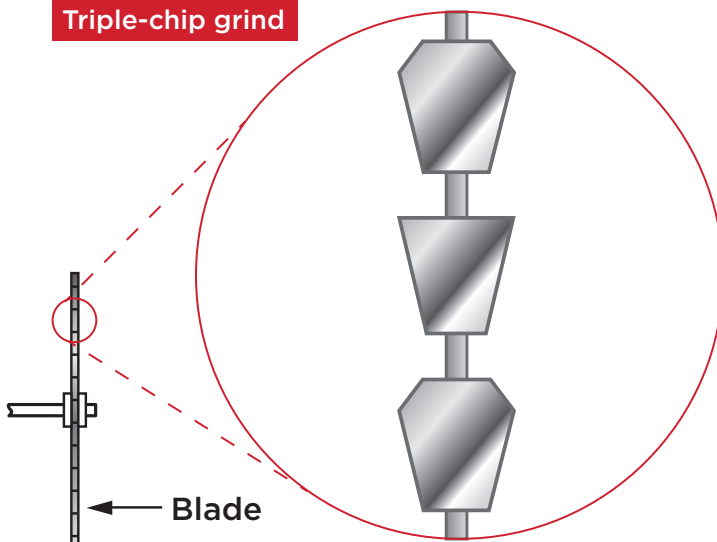
1. Increase blade tooth size
2. Reduce saw speed
3. Increase feed rate
4. Use compressed air to cool blade
5. Inspect blade for sharpness
6. Check blade-fence alignment
7. Reduce number of sheets in stack

PROBLEM: Chipping

SUGGESTED SOLUTIONS:

1. Decrease blade tooth size
2. Increase saw size
3. Provide better clamping/support for sheet stack
4. Reduce feed rate
5. Check blade and arbor for wobble
6. Inspect blade for sharpness

Triple-chip grind



FABRICATION

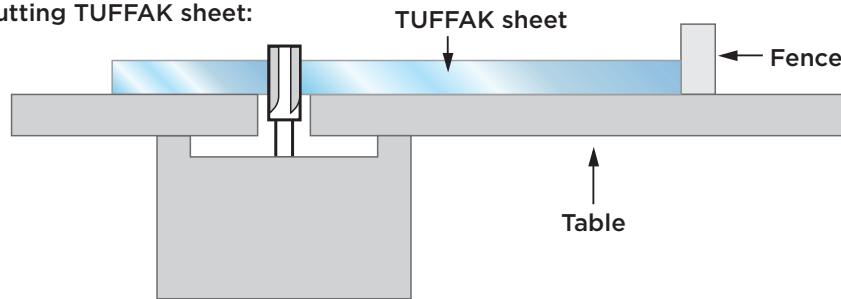
ROUTING

Router cutting produces a smooth edge on TUFFAK sheet and easily cuts curved or irregular shapes. Use a recommended router speed of 20,000-25,000 rpm, with straight 2- or 3-fluted carbide-tipped or high-speed bits with diameters 1/4 inch to 1/2 inch (6.35 to 12.7 mm).

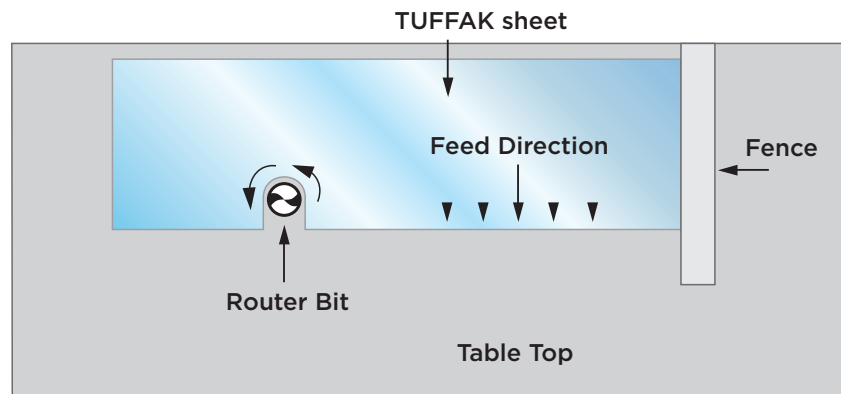
Router bit design	
Clearance angle	5 - 10°
Rake angle	0 - 10°
Cutting speed (rpm)	20,000 - 25,000

General guidelines for router cutting TUFFAK sheet:

Side View



Overhead View



Important: Feed the sheet against the router bit rotation and use a fence for sizing when making straight cuts

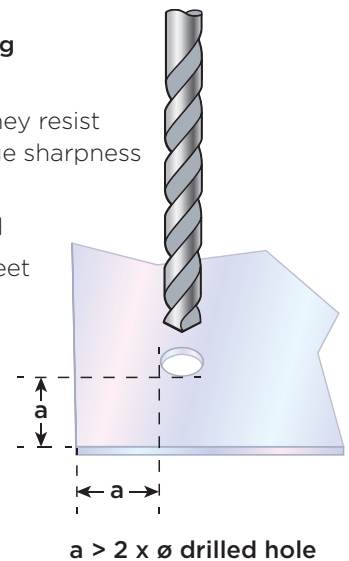
DRILLING

While standard drills and bits can be used with TUFFAK sheet, those specifically designed for plastics perform with greatest precision. They have wide, polished flutes to reduce friction, as well as spiral or helix designs to remove chips quickly.

- » Drill-point angles typically range between 60 and 90 degrees
 - Smaller angles for smaller holes and larger angles for larger holes
- » Drilling speeds range between 100 and 200 feet per minute, however feed rates can be increased under ideal conditions of proper cooling, sharp drills and efficient chip removal

General guidelines for drilling TUFFAK sheet:

- » Use carbide-tipped drills, they resist gumming and maintain edge sharpness longer than standard drills
- » Drill holes slightly oversized
- » Allow distance between sheet edge and drilled hole to be at least two times the diameter of hole
- » Do not use cutting fluids; use cool forced air
- » **Countersink is not recommended, counter-bore is acceptable**



INSTALLATION GUIDELINES

TUFFAK CA has been fire tested and certified in numerous installation configurations; both on and off wall, off ceiling and in canopy applications.

For maximum fire resistance, TUFFAK CA meets IBC code compliance for Class A performance when installed as outlined below.

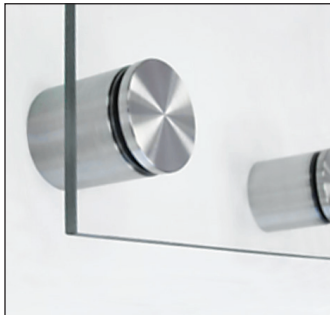
Grade	Location	Attachment	Gauge	Distance from Ceiling	Distance from Wall	Rating
TUFFAK CA		Ceiling Standoffs / Hanger Bars	0.118" - 0.500"/3 - 12.7mm	≥ 2"/50.8mm		Class A Equivalent
	Wall	On wall at corners	0.118" - 0.236"/3 - 6 mm		0"	Class A Equivalent
	Wall	Standoffs	0.118" - 0.236"/3 - 6 mm		≥ 0.5"/12.7 mm	Class A Equivalent
	Wall	Plastic Channels	0.118" - 0.236"/3 - 6 mm		0"	Class A Equivalent

INSTALLATION

WALL MOUNT

STAND-OFF INSTALLATION

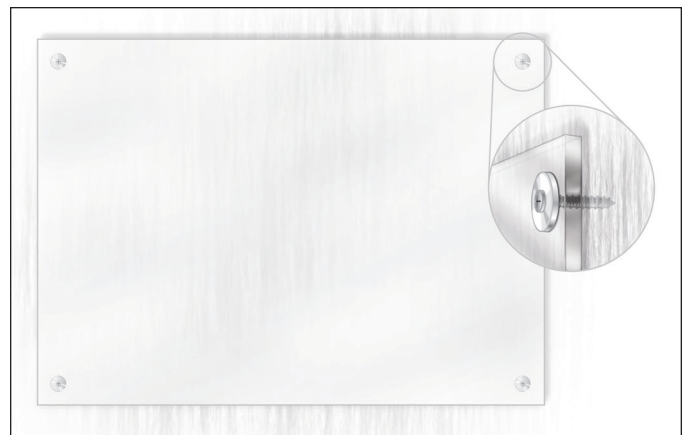
Stand-offs are a classic mounting option for wall guarding, custom artwork covering, signage or displays. They come in a variety of colors, sizes, and shapes, and can help create an attention grabbing 3-D effect for lighting and signage. TUFFAK CA has been tested using 0.5" to 6" (12.7 - 152.4 mm) stand-offs.



Cap / Barrel stand-off detail

ON-WALL INSTALLATION

TUFFAK CA panels can be mounted directly to the wall with a screw and washer located at each corner of the wall panel.

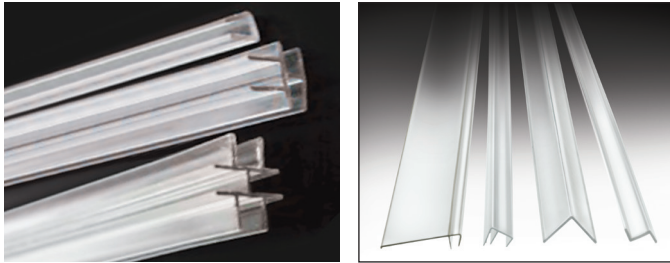


Screw / Washer detail

INSTALLATION

H-CHANNEL INSTALLATION

Wall mounted panels can be securely fastened to the wall using polycarbonate H-channels and finished with a range of plastic profiles for a seamless appearance. Fasten the H-channel with screws directly to the wall with TUFFAK CA inserted into each channel.



Rigid plastic H-channel detail

CEILING MOUNT INSTALLATION

Ceiling mounted panels can be attached using a T-bar stand-off or cable mounting suspension system.



Ceiling Stand-offs / Hanger bars



Ceiling Stand-offs / Cable for slanted ceilings or curved panels

OUTDOOR CANOPY INSTALLATION

Outdoor TUFFAK CA-UV canopy panels can be mounted using stand-offs or hanger bars, or it can be captured in a conventional channel frame.



PLASKOLITE

A GLOBAL LEADER IN THE PRODUCTION 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

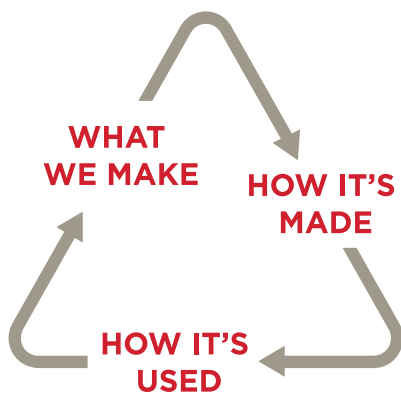
GLOBAL HEADQUARTERS: Columbus, OH

EMPLOYEES: 1800 Worldwide

MARKETS SERVED: Signage, Lighting, Retail Display, Construction, Transportation, Security, Bat & 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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