# FABRICATION TOOLS AND MATERIALS

**PRODUCT BULLETIN | FLEX-FOLD 2TM**

## WHERE TO USE

The Flex-Fold 2™ is highly recommended for bulk food bins, pastry cases, golf cart windshields, outdoor literature boxes, displays, safety shields, exhibits, laboratory apparatus plus a variety of other industrial and commercial applications.

## WHY CHOOSE THE FLEX-FOLD 2™

Most continuous plastic hinges are made from polypropylene or vinyl derivatives that oxidize, turn brittle, weaken and break when exposed to harsh environments or damaging sunlight. The Flex-Fold 2™ is co-extruded from high-impact acrylic and a tough urethane elastomer. Both quality materials are UV stable and provide excellent all-weather performance in extreme climates from tropical heat to artic cold. This insures you'll get long-lasting, reliable service life from the Flex-Fold 2™.

## TESTING

When first developed, Atohaas, the manufacture of Plexiglas evaluated the Flex-Fold at their Plastics Technology Center in Bristol, Pennsylvania. Test specimens were placed in a chamber and exposed to the equivalent of three years of weathering. After careful analysis, the only detectable change was a slight yellowing of the urethane center section. Most importantly, the strength and peak performance of Flex-Fold 2™ were not affected. The Flex-Fold 2™ was also subjected to an "open and close" test to determine the service life in situations that require continuous use. Since there was no evidence of failure, or fatigue, the test was stopped after two million cycles.

## LOOK AND FEEL

Flex-Fold 2™ offers a thin profile with elegant clarity and a tapered design to enhance its look and feel. When manufactured, special attention is given to the flatness of the cementing surfaces to make Flex-Fold 2™ easier and faster to solvent weld.

## HISTORY

Flex-Fold originally developed by Westedge, Inc. in the early-1980s and simply called The Flex-Fold", and was a three-part hinge with two acrylic sides and a "dog bone" shaped urethane strip for the center. These 3 parts where than assembled using a cleverly designed press. Small end caps could be added for a finished look. In the mid-1990s, in came the Flex-Fold 2™, a new design using the same quality materials now in a co-extrusion process. During the extrusion process, a chemical bond takes place ensuring the hinge will never separate.

In late 2001 Mr. Krolick, the founder of Westedge, felt it was time to retire. (FTM) Fabrication Tools and Materials, Inc. was giving the opportunity the purchase Westedge, Inc. and the Flex-Fold 2™. Since that time FTM has maintained the quality and craftsmanship of the Westedge product line including the Flex-Fold 2™.

## SOLVENT WELDING

When bonding to acrylic you will be bonding acrylic to acrylic. This is the recommended use for the Flex-Fold 2™. You can solvent welded to acrylic with standard acrylic solvents, for example IPS #3. You may also choose to use a gel, for example IPS #16. It is NOT recommended to use a mechanical fastener, such as screws. Acrylic materials are prone to breakage when holes are drilled through them.

## ACRYLIC

PLASKOLITE CA-927 Impact modified acrylic resin for injection molding with up to 7 times the strength of general purpose acrylic. Outstanding performance, surface gloss, optical clarity and light transmissions. Ideally designed for injection moldings of building decoration products such as window blocks, housewares products, and appliances such as display racks, etc. Practical toughness and excellent in blending with other resins and with colorant.

## THERMOPLASTIC POLYURETHANE ELASTOMER

Thermoplastic polyurethane (TPU) is a melt-processable thermoplastic elastomer with high durability and flexibility. It has the characteristics of both plastic and rubber and thus exhibit properties like durability, flexibility as well as excellent tensile strength. It fulfils needs of many demanding applications such as automotive, wires and cables, sports and textile coatings.

## CO-EXTRUSION

Co-extrusion is defined as **the process in which two or more plastic materials are extruded through a single die**. In this process, two or more orifices are arranged in such a manner that the conjoint merging and welding of the extrudates takes place and before chilling, a laminar structure form.

## WHAT TO EXPECT FROM THE FLEX-FOLD 2™

The Flex-Fold 2™ will provide many years of reliable service. Acrylic by nature has excellent UV stability, so this material will stay clear without yellowing. Thermoplastic polyurethane (TPU) will yellow over time, but this does NOT affect the flexibility or weaken the hinge,

**FABRICATION TOOLS AND MATERIALS, INC.**
**PLACERVILLE, CA 95667 USA**
**WWW.123FTM.COM • 530.626.1986**