

Brake Forming KYDEX® Thermoplastic Sheet

For information applicable to KYDEX® FST please refer to 300 series technical briefs.

TB - 142

General Information

KYDEX® sheet can be brake formed with ordinary sheet metal cornice brakes. Brake forming is limited to 3.18mm (0.125") thicknesses or less.

The clearance between the brake arm and the brake finger should be equal to the thickness of the KYDEX® sheet being brake formed. The radius of the brake fingers should be equal to or greater than the thickness of the KYDEX® sheet. It should be brake formed at a temperature of greater than 23°C (75°F) to prevent cracking. Care must be taken during forming operation not to shear the material.

Because the KYDEX® sheet has a tendency to spring back, the sheet must be over bent to obtain the final angle necessary to give a 90-degree bend in unrestrained material. The amount of over bend needed should be adjusted to fit the requirements of each fabricator because of such variables as dwell time in the brake, the temperature of the KYDEX® sheet, and the elapsed time after bending.

All blanks should be cut with the same sheet orientation to insure uniform outside curvature from part to part. The internal radius at the bend should be at least equal to the thickness of the KYDEX® sheet. Bending to sharper internal radii stretches the material excessively. When greater definition is desired, however, it is possible to strip heat the KYDEX® sheet and then brake form along the heated line. Dwell times in the brake will be much longer when this is done.

Brake formed parts are highly stressed and are unsuitable for applications in which they will be exposed to high service temperatures. The outer surface of the part may show some stress whitening in the brake formed area. To remove this stress, a flameless heat source should be passed over the line, but please note that care must be taken to avoid causing localized distortions in the KYDEX® sheet.

Degree overbend past 90 degrees *

| Brake Finger Radius (KYDEX® Sheet Thickness) | Sharp | 1.60mm (0.063") | 3.18mm (0.125") |
|--|-------|-----------------|-----------------|
| 0.17mm (0.028") | 35 | 50 | 85 |
| 1.02mm (0.040") | 35 | 45 | 70 |
| 1.52mm (0.060") | 35 | 35 | 60 |
| 2.03mm (0.080") | NR | 35 | 50 |
| 2.36mm (0.093") | NR | NR | 50 |
| 3.18mm (0.125") | NR | NR | 45 |

NR = Not Recommended

* Ten Seconds Holding time in brake

Overbend for Brake Forming KYDEX® Sheet

KYDEX, LLC
ISO 9001 and 14001 Certified

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