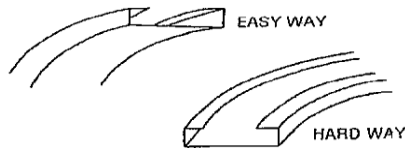


ARCHITECT'S MINI-GUIDE TO CURVING ALUMINUM

(Stretch forming lineal shapes)

Extrusions vs. formed break metal:

One should expect better results curving an extrusion vs. curving break metal, primarily because formed break metal can have dimensional inconsistencies. Critical factors in determining results of any material are the tightness of the radius and the shape's size and its orientation (hard way vs. easy way...see diagram). Then one must consider the alloy and temper (hardness). Sheet metal is often stocked in alloys and tempers that are difficult to curve with good results. Also, some stocked items are not heat treatable. The best alloy/temper in sheet metal for curving is 3003-H14.



Size of shape considerations:

Shapes of under a 10" circle size can be curved as a general rule. Always ask about larger sizes as press adjustments may be possible. With regard to length, we can best optimize pieces of 12' or 24'.

Note: 12" are lost on each end in the curving process.

Temper/Alloy considerations:

The end use of the curved metal is critical here. If it is a load-bearing or structural application, we MUST receive the aluminum in a soft temper (designated T1 or T4). We will temper it to a T5 or T6 as required after curving. If it is NOT a structural application, we can receive tempered metal and anneal it (soften using high heat).

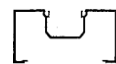
Caution: once aluminum is tempered and then annealed, it cannot cost-effectively be re-tempered.


Pre-finished or thermally-broken aluminum:


There is always less risk to finish after curving. If annealing is required, you MUST finish after curving except in cases of 1) some pre-anodized finishes, 2) if we receive the metal in a soft temper or 3) if the shape is small and the radius needed is open allowing us to curve it hard. Of course, if received in a soft temper (#2 above), we would not be able to age or temper the metal after curving as the heat would damage the paint or thermal material. For most applications however, work hardening is adequate.


Keep in mind that curving pre-finished material will most likely void any warranty on the finish.

Examples of minimum radii achievable with good results given low-temper aluminum:

 Typical storefront (2" x 4½" or smaller)
Easy way, 9" / Hard way (for curved glass), 17"

 Curtain wall, 2¾ x 5"
Easy way, 18" / Hard way, 30"

 3" round tube, 80"; 6" round tube, 100"

 6"x12" rectangular tube:
Easy way, 48" / hard way, 100"

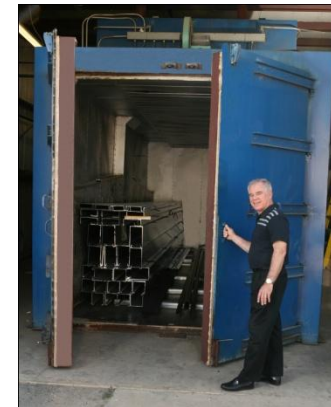
Send us the extrusion dimensions or a drawing and we will give you our estimate for a minimum radius and go over issues you might encounter.

Where to get it done:

 **Southern Stretch Forming**
With plants in CA, PA, TX and WI
Pho: (888) 308-0900 Fax: (888) 406-6248

Or email to: cherrys@southernstretch.com

www.southernstretch.com



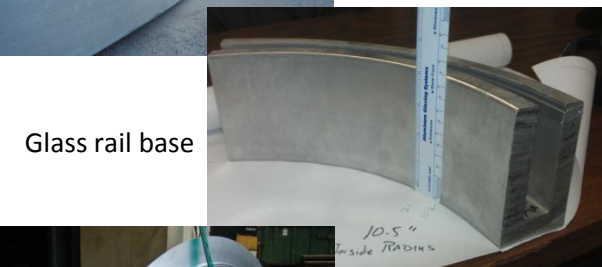
8' x 8' x 26' oven for annealing & tempering. Heats to 800°F (427°C).



Stretch form press curving a pre-anodized store front shape Capable of up to 200 degrees of arc.



6" x 12" serpentine for a canopy.



Glass rail base



Window panning

Jobs made possible because of stretch forming



Spertus Institute,
Chicago



Jacob's Medical
Center, San Diego



San Jose Civic
Center,
San Jose



Performing
Arts,
Santa Ana

Why would you need to curve metal using the stretch forming process?

The job requires consistent dimensions throughout the curve without twisting, distortion or waviness and/or has a tighter radius than achievable with other methods.

Why should you use Southern Stretch Forming for your curving needs?

- Plants in CA, PA, TX and WI to better serve you,
- 24-hr turnaround time for quotes, (or less if needed),
- 14-calendar day standard lead time (or usually less if needed),
- No aerospace work to demand priority and alter commitments,
- In-house annealing and tempering,
- Curving of aluminum as well as stainless steel, bronze, muntz, copper, etc.,
- Curving of spirals and serpentines,
- No die charge given 12' or 24' stock lengths and a true radius,
- Optimizing of 24' stock length material,
- Stocking option of parts curved most often,
- Finishing after curving available,
- Auto-cad plotting of templates if needed,
- ***AND*** our understanding of architectural requirements and drawings. This enables us to give an assessment of the design and its likelihood of success.



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Architect's Mini-Guide to Curving Aluminum

By Southern Stretch Forming

Southern Stretch Forming

9070 Teasley Ln.

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