

FLEXIBAR®

Flexible Insulated Busbar

General Design Guide - Fabricated Parts

Custom part fabrication with FLEXIBAR is relatively easy and can be accomplished with standard tools. When fabricating small quantities, ordinary hand tools are adequate. When fabricating large quantities, dedicated production tooling is more cost effective.

The finished part will conform to your specified dimensions when installed, but may vary slightly when loose. This is due to FLEXIBAR's inherent flexibility; its shape may be altered slightly during handling and shipment. This will quickly be remedied as the parts are placed into their application (or on their respective QC fixtures at receiving inspection).

Recommended General Fabricating Practices**Safety**

- Observe common safety precautions when working with FLEXIBAR. For example, wear safety glasses and gloves when machining and/or working material.

Hole Diameters & Slots

- Generally, holes are punched and diameters have a tolerance of $\pm 0.015"$. The tolerance may be less depending on application material.
- The edge-of-hole to edge-of-part minimum distance is 0.188" or 1.5 times the total laminate thickness.
- Slotted holes generally will have the same tolerances as round holes and are recommended in applications where additional forming is anticipated during installation.

Hole Centers - Multiple Holes

- Punching with individual setups:
 - Linear positions: $\pm 0.030"$
- Punching with dedicated die sets:
 - Linear positions: $\pm 0.015"$
 - Edge to C/L positions: $\pm 0.030"$
- For applications requiring closer tolerances, please consult your ERICO sales representative.

Cut Lengths

- Generally $\pm 0.060"$ on straight lengths. Contact ERICO for length tolerances on parts with multiple bends and/or twists.

**Bending Radii**

- Consult your ERICO Sales Representative for specific details on your application.
- Where possible, it is preferred that all radii be consistent on each part. That is, all are 0.50" or all are 0.75".
- FLEXIBAR must not be formed over sharp edges.

Twists

- FLEXIBAR can be twisted along its length. The best results are obtained when the twists are 90 degrees or less and the material allowance for the twists is a minimum of three times the width (including insulation-0.079" per side).

Cut Finishes

- Die cut shapes can be specified by the customer and will have the best tolerances as well as the best appearances.

Finishing

- Finishing of ends, if required, is done by hand; this is not normally necessary with production tooling.

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Insulation Stripping Tolerances

- Allow a tolerance of ± 0.060 " on **straight** and **flat** lengths without **bends** or **twists**, with a generally square and even insulation cut on all sides.
- On ends near a bend or twist, the insulation will move and be pulled into various shapes due to the forces placed on it. As a result, the distance from the end of the part may vary between the top and bottom surfaces. With thicker material (more laminates), this effect is more pronounced. A tolerance of ± 0.060 " is achievable on either the top or bottom surface, but not both because of this effect. A minimum length of 0.50" from the end of the insulation to the start of any bend is recommended.

QC Fixtures for ERICO Fabricated Parts

- Typically, a matched set of QC Fixtures will be made for each part ordered so it can be checked quickly and accurately by both ERICO and the customer. These fixtures are inexpensive and save a great deal of time and money.
- The fixtures will be inspected and calibrated by ERICO's QC Department once a year. Records of calibration will be kept by ERICO for a period of one year per ISO 9001 requirements.

Handling

- To avoid damage to insulation, FLEXIBAR should not be handled when it has been exposed to temperatures of 30° F or less for any length of time. During forming operations, it is imperative that FLEXIBAR not be struck with hammers or other objects. When forming FLEXIBAR in vise-like tooling, pad sharp edges or protrusions.

Samples/Short Run Production Parts

- These parts are made by hand and, therefore, will vary slightly from production parts made with dedicated tooling. These parts are typically close to print, but require some relaxed tolerances.



First Article Production Parts

- First run parts from new, dedicated tooling will be provided for customer approval. These parts must be approved by an authorized customer agent before final production can begin.

Allow Time For . . .

- Customer drawing review and specification revision by ERICO (if necessary).
- Tool design and fabrication (both QC and production tooling).
- First article part approval by both ERICO and customer QC/Engineering.
- Production run, including QC.

ERICO solicits your suggestions and comments. Please contact your Sales Representative for more information.

ERICO reserves the right to revise this document as necessary.



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