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GENERAL SPECIFICATIONS BENDS & CURVES

At PEI, we develop bends by machining a relief on the underside of the material and applying heat along the bend line to allow the plastic to be formable. Once the proper angle is achieved, the joint is cooled and the bend is set in place.

For 90 degree bends, the outside radius will be approximately the same as the thickness of the material. As an example, a 90 degree bend using 0.125" thick material will have a 1/8" outside radius. It should be noted here that the shrinkage of the material during the cooling stage is minimized using this process because the amount of BTUs (heat) absorbed by the plastic and the square surface area targeted are minimized as much as possible. Therefore, the less heat going into the plastic, the less heat that must be dissipated which is the root cause of shrinkage and distortion.

For bends less than 90 degrees, the actual outside radius will still be equal to the thickness of the material, however, visually, the radius will appear to be greater. This is because an arc of less than 90 degrees appears to follow a curve rather than pivoting at a point.

For true curves (not bends), we can form the material to follow an arc of up to 180 degrees of rotation. We achieve this using a proprietary cold bending method that eliminates the typical distortion of the plastic caused by shrinkage during the cooling phase. In order to accomplish this, there is special machining and structural support involved that may affect other features of the enclosure.

Finally, it should be understood that developing bends and curves for a particular enclosure design is done within the constraints of our process and the configuration of that design. As such, there may be times when a particular bend or curve is not achievable due to adjacent components, cutouts, or similar details. During the design stage, such constraints would be addressed and if a design conflict arises alternatives would always be presented to the customer for their approval.

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