

# TECH SHEET

PEM® REF/ C/L TO EDGE

## SUBJECT: MINIMUM DISTANCE HOLE C/L TO EDGE



The term “minimum distance hole-centerline-to-edge” is defined as the minimum distance the mounting hole centerline may be to **one** edge of a panel to still allow the proper clinching of a fastener into the sheet. When a fastener is close to more than one edge, the published performance data for the fastener will no longer be applicable.

When the hole-centerline-to-edge distance does not meet the minimum required, visible bulging of the edge of the panel may occur with installation. Bulging of the edge of a panel indicates a possible problem with the clinched fastener. Bulging is a result of the clinch feature not being completely filled since the material that was meant to flow into the clinch feature is now moving away from the fastener, displacing the edge material.

While a support against the edge of the panel during fastener installation may prevent bulging and help to better clinch the fastener, achieving 100% of our catalog value can not be guaranteed. In any case, testing of the fastener in the panel is recommended to determine what performance range can be expected.

Furthermore, while added sheet thickness does have a limited positive effect on the performance, no sheet thickness is large enough to guarantee 100% of our catalog values once the minimum centerline-to-edge distance has been violated.

Another aspect concerning proper performance occurs when the fastener is installed close to a bend rather than an edge. Three factors must be considered when one is installing a fastener close to a bend. The first is that all holes should be punched after bending to prevent the hole from becoming out-of-round and therefore outside our catalog specified values. Secondly (see drawing to right), our self-clinching fasteners are designed to be installed into flat sheets. The fastener must be located outside the bend radius, so that the sheet is flat. Once the first two criteria are met, the fastener may be installed as close to the bend as the installation tooling will allow.

