

## Rules for Sheet Metal Curbs in Seismic Applications

1. The seismic load carrying capability of a sheet metal roof curb is greatly improved with the addition of sufficient vertical reinforcement to the curb walls to carry the weight load of the equipment. Reinforcement in the form of treated wooden 2 X 2's is adequate. A minimum of three per side is required: one at each end and one in the middle. More reinforcement may be required for tall, narrow equipment particularly in conjunction with high seismic loads.
2. Provisions must be made to transfer vertical uplift loads produced by seismic or wind forces directly to the roof structure without producing excess bending in the curb wall.
3. For light-gage curbs, horizontal loads may be transmitted only in the plane of the curb walls. Opposite curb walls will carry similar loads.
4. For design purposes, the short sides of the curb must be able to carry the entire horizontal seismic or wind load.
5. If the Center of Gravity (CG) of the equipment is more than 10% off of the geometric center of the plan view of the curb special attention must be given to more heavily loaded portions of the curb. CG variation greater than that mentioned above causes high stresses and possible local buckling of the curb in the corner carrying the highest weight.
6. Large penetrations (larger than a screw or bolt hole) of the curb walls for ductwork, piping, and power cable conduits are not to be permitted unless the penetration has been adequately reinforced. Adequate reinforcement shall consist of enough treated wood 2 X 2's to carry the weight load of the equipment across the penetration, see Document 6.2.3. Also, the curb wall is to be reinforced with sheet metal of a thickness equal to that of the curb wall. The width of this reinforcement is to be not less than 2 inches, see Document 6.2.3. This is necessary to transfer the horizontal seismic force around the penetration. The allowable seismic load of the side with the penetration and its opposite side should also be reduced by 50%.

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