

FILLET WELD SIZE & LENGTH FOR DUCT RESTRAINT

Table A3.5-1; Horizontal Seismic Force Class System Designations

| Horizontal Force Class | Horizontal Seismic Force Range per Force Class (lbs) |
|------------------------|--|
| I | $0 \leq F_P \leq 250$ |
| II | $250 < F_P \leq 500$ |
| III | $500 < F_P \leq 1,000$ |
| IV | $1,000 < F_P \leq 2,000$ |
| V | $2,000 < F_P \leq 5,000$ |
| VI | $5,000 < F_P \leq 10,000$ |

Table A3.5-2; Fillet Weld Size and Length Required for Seismic Attachment to Duct and Supports

| Fillet Weld Leg Size (in) | | 1/32 | 1/16 | 3/32 | 1/8 | 3/16 | 1/4 |
|---------------------------|--------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| Horizontal Force Class | Allow. Weld Shear (LRFD) (psi) | Total Weld Length Req'd (in) | Total Weld Length Req'd (in) | Total Weld Length Req'd (in) | Total Weld Length Req'd (in) | Total Weld Length Req'd (in) | Total Weld Length Req'd (in) |
| I | 26,040 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| II | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| III | | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| IV | | 4.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 |
| V | | 9.00 | 5.00 | 3.00 | 3.00 | 2.00 | 2.00 |
| VI | | 18.00 | 9.00 | 6.00 | 5.00 | 3.00 | 3.00 |

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KINETICS™ Pipe & Duct Seismic Application Manual

Notes:

- 1.) The weld lengths shown in Table A3.5-2 are the minimum total length of weld required to resist the maximum horizontal seismic load for each Horizontal Force Class at each restraint location. The welds must be balance vertically around, and side-to-side across the duct at each restraint location to prevent twisting and warping of the duct. Use the total weld length from Table A3.5-2 for each restraint location plus enough extra weld to balance the amount of weld vertically around, and side-to-side across the duct.
- 2.) Select Weld leg size based on the thickness of the thinnest member in the weld joint.
- 3.) Make sure to use the lowest possible current setting that will produce a good weld joint to prevent “burn through” in the duct sheet metal.
- 4.) The allowable weld shear is based on E60XX weld material.

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