



## Liner Installation

### BASED ON 3<sup>rd</sup> Edition 2005 SMACNA STANDARDS

1/2" - 2 lb. density liner

1"-1 1/2 lb. density liner

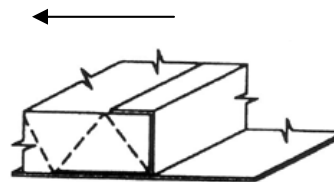
Other thicknesses and densities available upon request.

**Notes:** metal nosing must be used wherever liner is preceded by unlined metal: otherwise when velocity exceeds 4000 FPM (20.3 MPS) use metal nosing on every leading edge. Nosing may be formed on duct or be channel or zee attached by screws, rivets, or welds.

Interior width of 8" (200 mm) and less does not require pins.

The velocity rated side of liner must face the air flow.

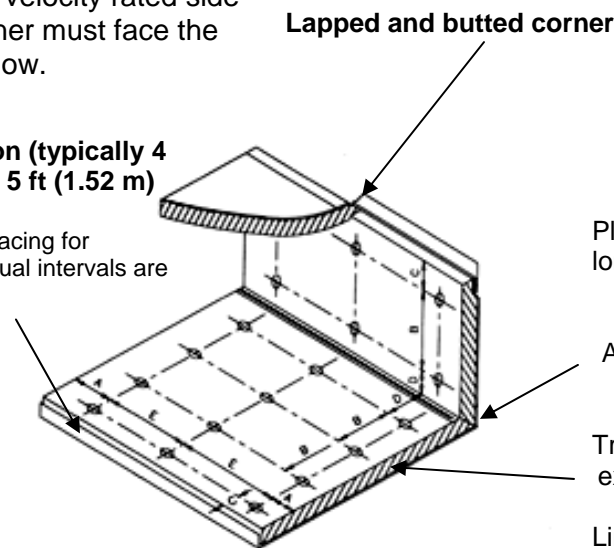
Air Flow



Detail – A  
Metal Nosing Channel or Zee

Duct section (typically 4 ft (1.2m) or 5 ft (1.52 m))

Maximum spacing for fasteners actual intervals are approximate.



Place pins 3" (76 mm) along each side of a butted longitudinal liner seam that is away from a corner.

Alternate folded corner

Transverse edges to be coated with adhesive except when nosing is present.

Liner adhered to the duct with 90% min. area coverage of adhesive.

"A" pin row may be omitted when metal nosing is used. "E" then starts from nosing.

Velocity*	Dimensions				
	A	B	C	D	E
0 – 2500 FPM (0 --12.7 MPS)	3" (76.2)	12" (305)	4" (102)	6" (152)	18" (457)
2501 – 6000 FPM (12.7 – 30.5 MPS)	3" (76.2)	6" (152)	4" (102)	6" (152)	16" (406)

\*Unless a lower level is set by manufacturer or listing agency.

**Sales & Estimating:** Drew McCaffrey • [Drew.McCaffrey@ZENIndustries.com](mailto:Drew.McCaffrey@ZENIndustries.com) • 877-600-0274 • Fax: 877-826-7952

**Regional Sales Manager:** Al Burling • [al.burling@zenindustries.com](mailto:al.burling@zenindustries.com) • 517-290-1050

**Accounting & Billing:** Kim Zenisek • [Kim@ZENIndustries.com](mailto:Kim@ZENIndustries.com) • 888-415-4822 • Fax: 216-432-3241

ZEN Industries, Inc. • 2340 East 69th Street, Unit #2 • P.O. Box 604394 • Cleveland, OH 44104