

SUBMITTAL RECORD \_\_\_\_\_  
 JOB \_\_\_\_\_  
 LOCATION \_\_\_\_\_  
 SUBMITTED TO \_\_\_\_\_  
 SUBMITTAL PREPARED BY \_\_\_\_\_  
 APPROVED BY \_\_\_\_\_  
 DATE \_\_\_\_\_



# Specification Form DDIF Insulation Fastener

**DESCRIPTION:** When liner is placed inside air conditioning or heating duct work, the movement of air could cause the insulation to delaminate. To prevent this, SMACNA Specifications call for the use of fasteners in addition to adhesive to secure the liner.

The fasteners may be of three types:

**A. ADHESIVE:** This fastener is bonded to the ductwork with an appropriate adhesive and allowed to set up. After sufficient drying time the liner is impaled on the pin and a washer added to retain the liner.

**B. MECHANICAL:** This type of fastener mechanically attaches itself to the duct work. The most popular style is a hardened nail with an attached washer. This fastener is impact driven through the liner and forms a positive mechanical grip with the metal.

**C. WELD:** This fastener forms a permanent bond to the duct work by becoming part of it as in any weld. Two styles are currently in use. The first fastener is a mechanical fastener which is driven through the liner and welded to the duct work underneath. The second fastener is a pin which is welded to the duct work prior to the insulation. The liner is then impaled (much like the adhesive fastener) over the pin and secured by a washer.

### SPECIFICATIONS

All Duro Dyne Insulation Fasteners are designed to meet SMACNA HVAC Duct Construction Standard for Mechanical Fasteners.

All steel used in Duro Dyne Insulation Fasteners meets ASTM-A591.

All dimensions used in pin length are from bottom of head or base of fastener.

**ALL PINS AND WASHERS ARE ZINC PLATED CRS UNLESS OTHERWISE STATED.**

## - MECHANICAL FASTENERS -

### TBG Tripod Bangers

Pin: .136" Diameter  
 Washer: Diameter - 1.0"  
 Thickness: - .015"



Item#	Description	Approx. Length		Use
		Before Setting	After Setting	
26129	TBG-12	.475	.375	1/2" insulation
26130	TBG-100	.625	.525	1" 1-2# density
26135	TBG-10H	.750	.650	1" 3# density
26138	TBG-IVH	.900	.800	1" 4-6# density
26181	TBG-118	1.250	1.150	1 1/2" 1 1/2# density
26182	TBG-150	1.500	1.400	2" insulation

### BGT Bangers

Pin: .136" Diameter  
 Washer: Diameter - 1.0"  
 Thickness: - .015"



Item#	Description	Approx. Length		Use
		Before Setting	After Setting	
26033	BGT12	.475	.375	1/2" insulation
26044	BGT100	.625	.525	1" 1-2# density

## - WELDED FASTENERS -

### Diamond Point Pins

Pin: .130" Diameter  
 Washer: Diameter - 1.0"  
 Thickness: - .015" - .017"



Item#	Description	Nominal Length	Use
		After Setting	
26200	DDP12	.365	1/2" insulation
26201	DDP34	.531	1" 1-2# density
26202	DDP100	.781	1" 2-3# density
26203	DDP118	1.000	1" 3# density
26204	DDP150	1.365	1 1/2" insulation
26205	DDP200	1.781	2" insulation

## - WELDED FASTENERS -

### SSP Gold Seal Pins

Pin: .130 Diameter  
 Washer: Diameter - 1.0"  
 Thickness: - .015" - .017"  
 Washer Adhesive: Petaflex Pressure Sensitive Adhesive



Item#	Description	Nominal Length	Use
		After Setting	
26197	SSP12	.365	1/2" insulation
26194	SSP34	.531	1" 1-2# density
26195	SSP100	.781	1" 2-3# density
26196	SSP200	1.78	2" insulation
26198	SSP38	.250	3/8" insulation
26199	SSP1F	.905	1" Foam Insulation

### CP Rib Pins

Pin: .15" Diameter  
 Washer: Diameter - 1.0"  
 Thickness: - .015" - .017"



Item#	Description	Nominal Length	Use
		After Setting	
26023	CP12	.365	1/2" insulation
26024	CP34	.531	1" 1-2# density
26025	CP100	.781	1" 2-3# density
26032	CP118	1.000	1" 3# + density
26026	CP150	1.365	1 1/2" insulation
26027	CP200	1.781	2" insulation

### FTC Econo Pins

Pin: .130" Diameter  
 Washer: Diameter - 1.0"  
 Thickness: - .015" - .017"



Item#	Description	Nominal Length	Use
		After Setting	
26072	FTC12	.365	1/2" insulation
26073	FTC34	.531	1" 1-2# density
26074	FTC100	.781	1" 2-3# density
26131	FTC118	1.000	1" 3# density
26226	FTC150	1.365	1 1/2" insulation
26227	FTC200	1.781	2" insulation

### BDEP Aerodynamic Target Washer Weld Pins

Pin: .130" Diameter  
 Washer: Diameter - 1.0"  
 Thickness: - .015" - .017"



Item#	Description	Nominal Length	Use
		After Setting	
26220	BDEP12	.365	1/2" insulation
26221	BDEP34	.531	1" 1-2# density
26222	BDEP100	.781	1" 2-3# density
26217	BDEP118	1.000	1" 3# density
26218	BDEP150	1.365	1 1/2" insulation
26219	BDEP200	1.781	2" insulation

### CTC Sloped Washer Weld Pins

Pin: .130" Diameter  
 Washer: Diameter - 1.0"  
 Thickness: - .015" - .017"



Item#	Description	Nominal Length	Use
		After Setting	
26228	CTC12	.365	1/2" insulation
26229	CTC34	.531	1" 1-2# density
26230	CTC100	.781	1" 2-3# density
26231	CTC118	1.000	1" 3# density
26232	CTC150	1.365	1 1/2" insulation
26233	CTC200	1.781	2" insulation

## - ADHESIVE FASTENERS -

### SAH

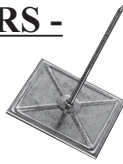
Self Adhesive Hangers

Pin: min. 12 Gauge Zinc Plated

Base dimension: 2" x 2" galvanized 28 Gauge steel

Adhesive: Polyethylene foam impregnated with rubber based adhesive.

Item#	Description	Approx Length	Use
26067	SAH34	.75	1/2" insulation
26068	SAH114	1.25	1" insulation
26069	SAH134	1.75	1 1/2" - 1 1/2# density
26070	SAH200	2.00	1 1/2" - 2# + density
26071	SAH250	2.5	2" insulation



### STIK-TAC™

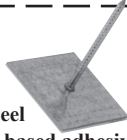
Self Adhesive Hangers

Pin: min. 12 Gauge Zinc Chromate

Base dimension: 1 3/8" x 1 3/8" galvanized 28 Gauge steel

Adhesive: Polyethylene foam impregnated with rubber based adhesive.

Item#	Description	Approx Length	Use
26192	STK134B	1.75	1 1/2" - 1 1/2# density
26193	STK250B	2.5	2" insulation



### FLIP-STIX

Self Adhesive Hangers

Galvanized - 24 Gauge

Aluminum - .032 nominal Type 5052-H34

Stainless Steel - 24 Gauge Type 301

Adhesive: Polyethylene foam impregnated with rubber base adhesive.

Item#	Description	Approx Length	Use
26055	FSG-250 Galvanized	2.5	1/2" to 2" insulation
26056	FSA-250 Aluminum	2.5	1/2" to 2" insulation
26057	FSS-250 Stainless Steel	2.5	1/2" to 2" insulation
26061	FSG-E Galvanized Extension	5.752	1/2" to 5" insulation
26062	FSA-E Aluminum Extension	5.75	2 1/2" to 5" insulation
26063	FSS-E Stainless Steel Extension	5.75	2 1/2" to 5" insulation



### PBH

Perforated Base Adhesive Hangers

Pin: min. 12 Gauge Zinc Plated

Base dimension: 2" x 2" 28 Gauge Galvanized.

Item#	Description	Approx Length	Use
26075	PBH34	.75	1/2" insulation
26076	PBH114	1.25	1" insulation
26077	PBH134	1.75	1 1/2" - 1 1/2# density
26078	PBH200	2.00	1 1/2" - 2# + density
26079	PBH250	2.5	2" insulation

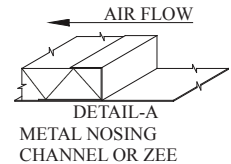


## - WASHERS FOR SPOTTER PINS -

Item#	Description	Approx Length	Area
26017	PC1 - for use w/PN (30 gauge galvanized)		1 1/4" x 1 1/4"
26145	LC1 - for use w/LN (30 gauge galvanized)		1 1/4" x 1 1/4"
26021	NC1 - for use w/PN (nylon)		1 3/16" dia.
26161	NC2 - for use w/LN (nylon)		1 3/16" dia.
26115	LPC - for use w/SAH & PBH		1 1/4" x 1 1/4"
26051	FSW-A for use w/Flipstix		1 1/4" x 1 1/4"
26050	FSW-G for use w/Flipstix		1 1/4" x 1 1/4"
26052	FSW-S for use w/Flipstix		1 1/4" x 1 1/4"

## - DUCT LINER INSTALLATION -

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.

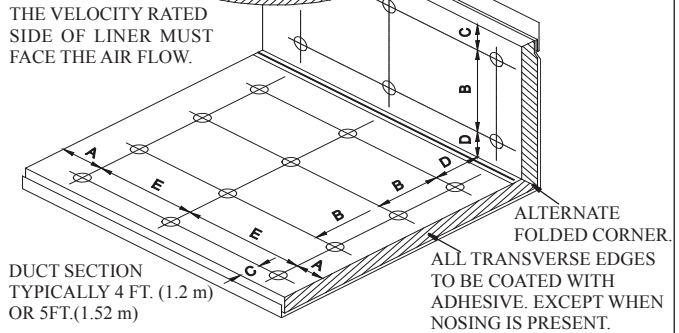


INTERIOR WIDTH OF 8" (200 mm) AND LESS DOES NOT REQUIRE PINS

LAPPED AND BUTTED CORNER.

PLACE PINS 3" (76 mm) ALONG EACH SIDE OF A BUTTED LONGITUDINAL LINER SEAM THAT IS AWAY FROM A CORNER

THE VELOCITY RATED SIDE OF LINER MUST FACE THE AIR FLOW.



DUCT SECTION TYPICALLY 4 FT. (1.2 m) OR 5 FT. (1.52 m)

MAXIMUM SPACING FOR FASTENERS. ACTUAL INTERVALS ARE APPROXIMATE

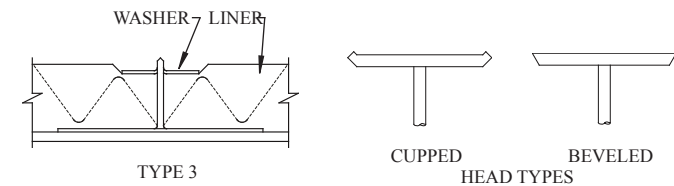
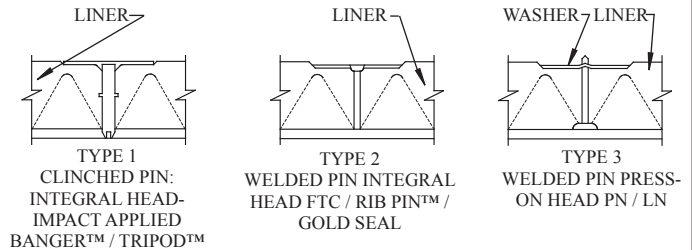
"A" PIN ROW MAY BE OMITTED WHEN METAL NOSING IS USED. "E" THEN STARTS FROM THE NOSING.

LINER ADHERED TO THE DUCT WITH 90% MIN. AREA COVERAGE OF ADHESIVE

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

## - LINER FASTENERS -



TYPE 3 ADHERED PIN PRESS-ON HEAD SAH / PBH / STK / FLIPTIX

INSTALLED PINS AND WASHERS SHALL NOT COMPRESS LINER MORE THAN THE CORRECT LENGTH SPECIFIED FOR THE LINER THICKNESS USED.

## SUGGESTED SPECIFICATIONS

All duct liner shall be secured to the duct work in accordance with SMACNA HVAC Duct Construction Standards. Fasteners shall be \_\_\_\_\_ (mechanical, adhesive, weld) type Fastener Code \_\_\_\_\_ as manufactured by Duro Dyne Corporation, Bay Shore, N.Y. Washers, when necessary, shall be either of the steel type 30 gauge galvanized Code PC-1/LC-1/LPC-1/FSW or of the nylon type Code NC-1/NC-2 as manufactured by Duro Dyne Corporation, Bay Shore, N.Y.

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