SUBMITTAL RECORD_____
JOB _____
LOCATION_____
SUBMITTED TO_____
SUBMITTAL PREPARED BY_____
APPROVED BY_____
DATE_____

Submittal 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 as per SMACNA HVAC Duct Construction Standards - Third Edition Section S2.11.
All steel used in Duro Dyne Insulation Fasteners meets ASTM-A653.
All dimensions used in pin length are from bottom of head or base of fastener.

- SPOTTER PINS -

PN Pins



Pin Diameter: 14 Gauge Galvanized

	Item#	Bulk#	Code/Bulk Code	Approx Pin Length	Use
■	26001	***26005***	PN34/***PNB34***	.75	1/2" insulation
■	26002	***26006***	PN114/***PNB114***	1.25	1" insulation
■	26004	***n/a***	PN250/***n/a***	2.5	2"- 3" insulation

- WELDED FASTENERS -

SSP Gold Seal Pins



Pin: .130 Diameter
Washer: Diameter - 1.0"
Thickness: - .015" - .017"
Acrylic PSA
Do not store at or above 110 degrees or pins may stick together.

	Item#	Bulk#	Code/Bulk Code	Nominal Length After Setting	Use
■	n/a	***26297***	n/a/***SSPB12***	.365	1/2" insulation
■	26194	***26294***	SSP34/***SSPB34***	.531	1" 1-2# density
■	26195	***26295***	SSP100/***SSPB100***	.781	1" 2-3# density
■	n/a	***26293***	n/a/***SSPB1F***	.905	1" Foam Insulation
■	n/a	***26299***	n/a/***SSPB118***	1.000	2-3# density
■	n/a	***26300***	n/a/***SSPB150***	1.365	1-1/2" insulation
■	26196	***26296***	SSP200/***SSPB200***	1.780	2" insulation
■	n/a	***26305***	n/a/***SSPB250***	2.196	2-1/2" insulation
■	26303	***n/a***	SSP300/***n/a***	2.875	3" insulation
■	26304	***n/a***	SSP400/***n/a***	3.875	4" insulation

CWFTC Cupped Washer Weld Pins



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

	Item#	Pail#	Code/Pail Code	Nominal Length After Setting	Use
■	26286	***26389***	CWFTC12/***CWFTC12P***	.365	1/2" insulation
■	26287	***26390***	CWFTC34/***CWFTC34P***	.531	1" 1-2# density
■	26288	***26391***	CWFTC100/***CWFTC100P***	.781	1" 2-3# density
■	26289	***26392***	CWFTC118/***CWFTC118P***	1.000	1" 3# density
■	26290	***26393***	CWFTC150/***CWFTC150P***	1.365	1-1/2" insulation
■	26291	***26394***	CWFTC200/***CWFTC200P***	1.781	2" insulation
■	26292	***26395***	CWFTC218/***CWFTC218P***	1.780	2" HD insulation
■	n/a	***26396***	n/a/***CWFTC250***	2.196	2-1/2" insulation
■	n/a	***26397***	n/a/***CWFTC300***	2.875	3" insulation
■	n/a	***26398***	n/a/***CWFTC400***	3.875	4" insulation

CDSSP Capacitor Discharge Gold Seal Pins



Pin: .105 (+/-.005) Diameter
Washer: Diameter - 1.0"
Thickness: - .015" - .017"
Acrylic PSA
Do not store at or above 110 degrees or pins may stick together.

	Item#	Bulk#	Code/Bulk Code	Nominal Length After Setting	Use
■	26376	***26382***	CDSSP12/***CDSSPB12***	.365	1/2" insulation
■	26377	***26383***	CDSSP34/***CDSSPB34***	.531	1" 1-2# density
■	26378	***26384***	CDSSP100/***CDSSPB100***	.781	1" 2-3# density
■	26379	***26385***	CDSSP118/***CDSSPB118***	1.000	1" 3# + density
■	26380	***26386***	CDSSP150/***CDSSPB150***	1.365	1-1/2" insulation
■	26381	***26387***	CDSSP200/***CDSSPB200***	1.781	2" insulation

CP Rib Pins®



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

	Item#	Bulk#	Code/Bulk Code	Nominal Length After Setting	Use
■	26023	***26028***	CP12/***CPB12***	.365	1/2" insulation
■	26024	***26029***	CP34/***CPB34***	.531	1" 1-2# density
■	26025	***26030***	CP100/***CPB100***	.781	1" 2-3# density
■	26032	***26035***	CP118/***CPB118***	1.000	1" 3# + density
■	26026	***26031***	CP150/***CPB150***	1.365	1-1/2" insulation
■	26027	***26038***	CP200/***CPB200***	1.781	2" insulation

FTC Econo-Point Pins



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

	Item#	Code	Nominal Length After Setting	Use
■	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#	Bulk#	Code/Bulk Code	Nominal Length After Setting	Use
■	n/a	***26220***	n/a/***BDEP12***	.365	1/2" insulation
■	n/a	***26221***	n/a/***BDEP34***	.531	1" 1-2# density
■	n/a	***26222***	n/a/***BDEP100***	.781	1" 2-3# density
■	n/a	***26217***	n/a/***BDEP118***	1.000	1" 3# density
■	n/a	***26218***	n/a/***BDEP150***	1.365	1-1/2" insulation
■	n/a	***26219***	n/a/***BDEP200***	1.781	2" insulation
■	n/a	***26216***	n/a/***BDEP218***	2.00	2" HD insulation

CTC Sloped® Washer Weld Pins



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

	Item#	Code	Nominal Length After Setting	Use
■	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

- MECHANICAL FASTENERS -

BGT Bangers®

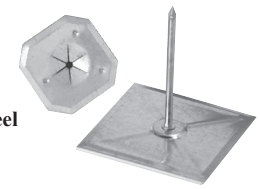


Pin: .136" Diameter
Washer: Diameter - 1.0"
Thickness: - .015"

Item#	Bulk#	Code/Bulk Code	Approx. Length Before Setting	Approx. Length After Setting	Use
■ 26033	***26095***	BGT12/***BGB12***	.475	.375	1/2" insulation
■ 26044	***26096***	BGT100/***BGB100***	.625	.525	1" 1-2# density

- ADHESIVE FASTENERS -

SAH



Self Adhesive Hangers with Washer
Pin: min. 12 Gauge Zinc Plated
Base dimension: 2" x 2" galvanized 28 Gauge steel
Adhesive: Polyethylene double coated foam tape
Shelf Life: 2 years @ 70° and 50% humidity

Item#	Bulk#	Code/Bulk Code	Approx Length	Use
■ 26067	***26036***	SAH34/***SAHB34***	.75	1/2" insulation
■ 26068	***26037***	SAH114/***SAHB114***	1.25	1" insulation
■ 26069	***26040***	SAH134/***SAHB134***	1.75	1-1/2"- 1-1/2# density
■ 26070	***26041***	SAH200/***SAHB200***	2.00	1-1/2"- 2# + density
■ 26071	***26047***	SAH250/***SAHB250***	2.5	2" insulation
■ n/a	***26126***	n/a/***SAHB350***	3.5	3" insulation
■ n/a	***26127***	n/a/ ***SAHB450***	4.5	4" insulation

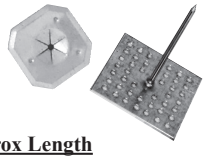
FLIP-STIX®



Self Adhesive Hangers with Washer
Galvanized - 24 Gauge
Aluminum - .032 nominal Type 5052-H34
Stainless Steel - 24 Gauge Type 301
Adhesive: Polyethylene double coated foam tape
Shelf Life: 2 years @ 70° and 50% humidity

Item#	Code	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

PBH



Perforated Base Adhesive Hangers with Washer
Pin: min. 12 Gauge Zinc Plated
Base dimension: 2" x 2" 28 Gauge Galvanized.

Item#	Bulk#	Code/Bulk Code	Approx Length	Use
■ n/a	***26097***	n/a/***PBHB34***	.75	1/2" insulation
■ n/a	***26098***	n/a/***PBHB114***	1.25	1" insulation
■ n/a	***26099***	n/a/***PBHB134***	1.75	1-1/2"- 1-1/2# density
■ n/a	***26100***	n/a/***PBHB200***	2.00	1-1/2"- 2# + density
■ 26079	***26101***	PBH250/***PBHB250***	2.5	2" insulation
■ n/a	***26128***	n/a/***PBHB350***	3.5	3" insulation
■ n/a	***26112***	n/a/***PBHB450***	4.5	4" insulation

- WASHERS -

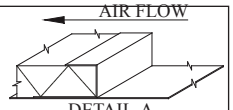


Item#	Bulk#	Code/Bulk Code	Area
■ 26017	***26019***	PC1/***PCB1*** - for use w/PN (30 gauge galvanized)	1-1/4"x 1-1/4"
■ 26115	***26093***	LPC-1/***LPC-1B*** - for use w/SAH & PBH	1-1/4"x 1-1/4"
■ 26050	***n/a***	FSW-G for use w/Flipstix (galvanized)	1-1/4"x 1-1/4"
■ 26052	***n/a***	FSW-S for use w/Flipstix (stainless)	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

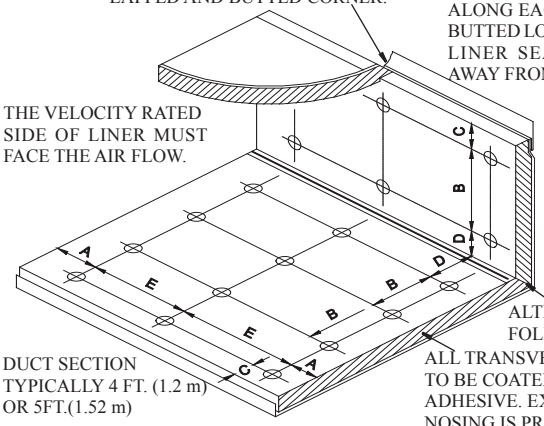


DETAIL-A
METAL NOSING
CHANNEL OR ZEE

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.



ALTERNATE FOLDED CORNER.

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

ALL TRANSVERSE EDGES TO BE COATED WITH ADHESIVE. EXCEPT WHEN NOSING IS PRESENT.

MAXIMUM SPACING FOR FASTENERS. ACTUAL INTERVALS ARE APPROXIMATE

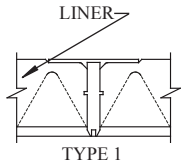
"A" PIN ROW MAY BE OMITTED WHEN METAL NOSING IS USED. "E" THEN STARTS FROM THE NOSING.

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

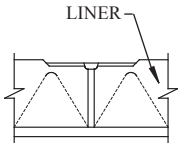
LINER ADHERED TO THE DUCT WITH 90% MIN. AREA COVERAGE OF ADHESIVE

*UNLESS A LOWER LEVEL IS SET BY MANUFACTURER OR LISTING AGENCY

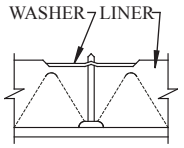
- LINER FASTENERS-



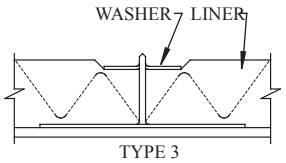
TYPE 1
CLINCHED PIN: INTEGRAL HEAD-IMPACT APPLIED BANGER ® / TRIPOD ®



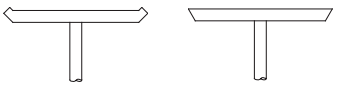
TYPE 2
WELDED PIN INTEGRAL HEAD FTC / RIB PIN ® / GOLD SEAL/TARGET PIN ®/ SLOPE PINS ®



TYPE 3
WELDED PIN PRESS-ON HEAD PN / LN



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



CUPPED HEAD TYPES

BEVELED

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

Drawings and installation standards are excerts from SMACNA HVAC Duct Constructions Standards - Third Edition. Page 7.14, section S2.11:
Liners shall also be installed with mechanical fasteing devices that:
A. Are spaced in accordance with Figure 7-11,
B. When installed, are as corrosion resistant as G60 coated galvanized steel,
C. Will not adversely affect the fire resistance classification of liner and adhesives,
D. Do not damage the liner when applied as receommended by manufacturer,
E. Do not cause leakage in the duct,

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 Code _____ as manufactured by Duro Dyne Corporation, Bay Shore, N.Y.

Duro Dyne Corporate Headquarters, Bay Shore, NY • 631-249-9000 • Fax: 631-249-8346
Duro Dyne Midwest • Duro Dyne West • Duro Dyne Canada
www.durodyne.com • E-mail: durodyne@durodyne.com

©2021 Duro Dyne Corporation
Printed in USA 4/2021
BO026402

DURO DYNE®