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Comfort Systems USA (Arkansas), Inc. P.O. Box 16620 Little Rock, AR 72231 Phone 501-834-3320 Fax 501-834-5416

Date: 2/4/2025

Return Request: 2/14/2025

**Project:** City Of Sherwood Public Works (Administration Building)

**Supplier:** Dollar Sheet Metal **Manufacturer:** Various

**Submittal:** HVAC Ducts & Casings **Submittal Number:** 23 31 00-01

**Drawing # and Installation:** Mechanical Drawings

#### **ARCHITECT**

Cromwell 1300 East 6<sup>th</sup> Street Little Rock, AR 72202 501-372-2900

#### **GENERAL CONTRACTOR**

Baldwin & Shell 1000 W. Capitol Ave. Little Rock, AR 72201 501-374-8677

#### **ENGINEER**

Cromwell 1300 East 6<sup>th</sup> Street Little Rock, AR 72202 501-372-2900

#### **MECHANICAL SUBCONTRACTOR**

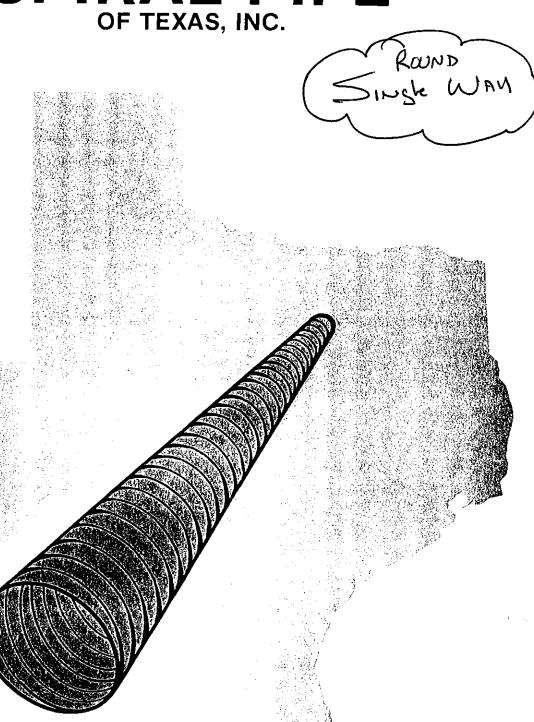
Comfort Systems USA (Arkansas), Inc. 9924 Landers Rd. N. Little Rock, AR 72117 501-834-3320

Notes:				

CSUSA PROJECT NO. 24-6084

sean@comfortar.com

# SPIRAL PIPE OF TEXAS, INC.



#### Spiral Pipe of Texas, Inc. Single Wall Round Standard Gauge Chart

2	57	1 / /	•	$\sim$
		W	٠.	U.

Diameter	Spiral Pipe	Long Seam Pipe	Fittings
3" - 13"	28	26	26
14" - 17"	26	24	24
18" - 20"	24	22	22
21" - 23"	24	20	20
24" - 26"	22	20	20
27" - 30"	22	18	18
31" - 34"	20	18	18
35" - 48"	20	18	18
49" - 60"	18	16	16
61" - 72"	16	14	14

#### +2 " W.G.

Diameter	Spiral Pipe	Long Seam Pipe	Fittings
3" - 14"	28	26	26
15" - 26"	26	24	24
27" - 36"	24	22	22
37" - 50"	22	20	20
51" - 60"	20	18	18
61" - 84"	18	16	16

#### +10" W.G.

Diameter	Spiral Pipe	Long Seam Pipe	Fittings
3" - 10"	28	26	26
11" - 14"	26	24	24
15" - 26"	24	22	22
27" - 36"	22	20	20
37" - 50"	20	20	20
51" - 60"	18	18	18
61" - 84"	18	16	16

Spiral Pipe of Texas' Round Ductwork is available in the following materials:

Galvanized G60 and G90

Phosphatized ("Paint-Grip")

304L Stainless Steel

316L Stainless Steel

**Polyvinyl Coated** 

Aluminum

Special materials are available. Please contact your nearest representative for details.

Spiral Pipe of Texas' products are manufactured in accordance with applicable SMACNA, ASHRAE and SPIDA standards.

Spiral Pipe of Texas, II		<del></del>		
Sin	gle Wall Round Spiral	Pipe and Fitting Stand	ards	
SP	B1	PP FF	EC EF	
Length    A	A  *   *	PIPE FITTING TO TO PIPE FITTING	A H H TH 2"  A A A A A A A A A A A A A A A A A A A	
Spiral Pipe	Bellmouth	Couplings	Caps & Plugs	
SE45	SE90	EV90	ET90 - C -	
A R	R	A 2" J	2 TR	
A = 3" Thru 10"	A = 3" Thru 10"	A = 3" Thru 60"	A = 3" Thru 60"	
Stampe	d Elbows	Mitered Elbow	Elbow w/Tap	
E1 Th	ru E36	E37 T	hru E71	
AR	ARR	A	A R	
A = 3" Thru 24"	A = Greater than 24"	A = 3" Thru 24"	A = Greater than 24"	
	Elbows	3 Gore Elbows		
E72 TI	hru E90	R1	ER1	
A T	A T	X 2" X 1 2 1 2	X Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z	
A ≈ 3" Thru 24"	A = Greater than 24"			
	Elbows	·	ucers	
Dimensions:	K = 5 1/4"	•	2x1.414)+((C+2)/2)+6	
A = Inlet Size L = Offset Length		•	+2)x1.414+4  R (with 4" minimum)	
B = Outlet Size O = Offsetting Am C = Branch Size R = 1.5 x A		mount $X = A - B$ (with 4" minimum) Y = (1.414xC) + 4		
D = Branch Size R = 1.5 x A  D = Branch Size S = 2		Z = C+	-	
H = 3" if C = 3" to 8"	T = A/4+2		nsult Factory	
6" if C = 9" to 16" 9" if C = 17" to 24"	U = Ax2+2	93.	,	
12" if C = 25" & Up				

Sin	gle Wall Round Spiral	Pipe and Fitting Stand	ards
LT	T1	T1R	Y2
- C - 2	C + 2" A C + 4 -	2"-  C  - A   B   T	A A A A A A A A A A A A A A A A A A A
	Straight 90 Degree Tees		"Y" Fittings
LL	L1	L1R	Y2R
C 2"	C 2"	2" C	2" Z" D 2" Z"
	45 Degree Laterals	<del></del>	Reducing "Y" Fittings BT
LCT	CT1    C + C + C + C + C + C + C + C + C + C	CT1R  C   2   2   2   3   4   4   4   4   4   4   4   4   4	2 J A A A
	Conical 90 Degree Tees	T	Bullhead Tee
4" - 2" C	CL1 2"  4"  C  T  A  H  W  H  W  H	CL1R  2" C A B T B T C A C A C C C C C C C C C C C C C C C	2"   X + A + 4 + X +   2"  1
	onical 45 Degree Lateral Te		Reducing Bullhead
1 C F 2 F 2	LL1	LL1R  T C F 2  T T F 2  B  T F Z F X F F	2" - 1 - 2"
	Low Loss 90 Degree Tees		Offset

## SUBMITTAL

Product:

Ductwork (G-90)

Manufacturer:

Dollar Sheet Metal, Inc.

Job Name:

Sherwood Public Works

Location:

N. Little Rock, AR

Date:

January 24, 2025

# HVAC DUCT CONSTRUCTION STANDARDS

**METAL AND FLEXIBLE** 



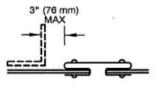


SHEET METAL AND AIR CONDITIONING CONTRACTORS'
NATIONAL ASSOCIATION, INC.
www.smacna.org

2 in. wg Static Pos. or Neg.	No Poinforment		Reint	forcemen	nt Code f	or Duct	Gage Nı	ımber		
Duct	Reinforcement Required	Reinforcement Spacing Options								
Dimension		10 ft	8 ft	6 ft	5 ft	4 ft	3 ft	2½ ft	2 ft	
1	2	3	4	3	6	7	8	9	10	
10 in. and under	26 ga.				Not R	equired				
11 – 12 in.	26 ga.									
13 - 14 in.	24 ga.		B-26	B-26	B-26	B-26	B-26	B-26	B-26	
15 - 16 in.	24 ga.		C-26	C-26	C-26	C-26	C-26	B-26	B-26	
17 – 18 in.	22 ga.		C-26	C-26	C-26	C-26	C-26	C-26	B-26	
19 – 20 in.	20 ga.	C-22	C-24	C-26	C-26	C-26	C-26	C-26	C-26	
21 – 22 in.	18 ga.	D-22	D-24	D-26	D-26	C-26	C-26	C-26	C-26	
23 - 24 in.	18 ga.	E-22	E-24	D-26	D-26	D-26	C-26	C-26	C-26	
25 - 26 in.	18 ga.	E-22	E-22	E-24	D-26	D-26	C-26	C-26	C-26	
27 - 28 in.	18 ga.	F-20	E-20	E-22	E-24	D-26	D-26	C-26	C-26	
29 - 30 in.	18 ga.	F-20	F-20	E-22	E-24	E-26	D-26	D-26	C-26	
31 – 36 in.	16 ga.	G-18	G-20	F-22	F-24	E-24	E-26	D-26	D-26	
37 – 42 in.		H-16	H-18	G-20	G-22	F-24	E-24	E-26	E-26	
43 – 48 in.	1		I-18	H-20	H-22	G-22	F-24	F-24	E-24	
49 - 54 in.			I-16G	I-18G	H-20G	H-20G	G-24	F-24	F-24	
55 - 60 in.				I-18G	I-20G	H-20G	G-22	G-24	F-24	
61 – 72 in.	Not De	Not Designed		J-16H	J-18H	I-20G	H-22G	H-22G	H-24	
73 – 84 in.	1				J-16H	I-20G	I-20G	I-22G	I-22G	
85 – 96 in.	1					J-18H	I-18H	I-20H	I-22H	
97 – 108 in.	1					K-16I	K-18H	J-18H	I-18H	
109 - 120 in.	1						K-16I	K-18I	J-181	

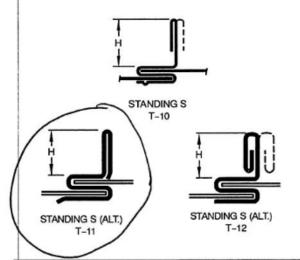
Table 2-3 Rectangular Duct Reinforcement



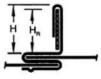


T-8 DOUBLE "S" SLIP (T-8a REINFORCED)

- · 24 ga for 30 inch width or less
- 22 ga over 30 inch width
- Fasten to each section of the duct within 2 in. from corners and at 6 in. maximum intervals
- 5/8 in. minimum tabs to close corners

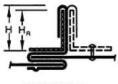


- When using S on all four sides, fasten slip to duct within 2 in. of the corner and at 12 in. maximum intervals
- Any length at 2 in. wg
- · 36 in. maximum length at 3 in. wg
- 30 in. maximum length at 4 in. wg
- · Not allowed above 4 in. wg



STANDING S (BAR REINFORCED) T-13

- Fasten as per Joint T-10
- Standing portion as per T-10 or T-11 to hold Flat Bar
- Fasten bar stock to the connector within 2 in. of the corner and at 12 in. maximum intervals
- · Any length at 2 in. wg
- · 36 in. maximum length at 3 in. wg
- . 30 in. maximum length at 4 in. wg
- · Not allowed above 4 in. wg

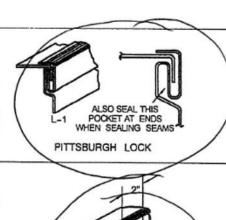


STANDING S (ANGLE REINFORCED) T-14

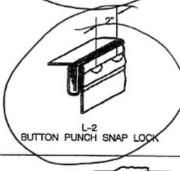
- Fasten as per Joint T-10
- Fasten angle to the connector or duct wall within 2 in. of the corner and at 12 in. maximum intervals
- · Any length at 2 in. wg
- 36 in. maximum length at 3 in. wg
- · 30 in. maximum length at 4 in. wg
- · Not allowed above 4 in. wg

FIGURE 2-1 RECTANGULAR DUCT/TRANSVERSE JOINTS (CONTINUED)





- Pocket depth from ¼ in. to 5/8 in.
- Use on straight duct and fittings
- To ± 10 in. wg



- 5/8 in. pocket depth for 20, 22, and 24 ga
- ½ in. pocket depth for 24 and 26 ga
- To ± 4 in. wg
- Screws must be added at the ends of all duct of 4 in. wg and at the ends of 3 in. wg when the duct is over 48 in. width



L-3 GROOVED SEAM ALSO CALLED FLAT LOCK AND PIPE LOCK

To ± 10 in. wg



SEE FIG. 2-7 ALSO

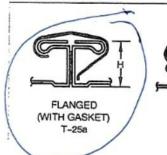
L-4 STANDING SEAM

- To ± 10 in. wg
- I in. seam up to duct width of 42 in.
- 1 ½ in. seam for larger ducts
- · May be used on duct interiors
- Fasten at 2 in. maximum from ends and at 8 in. maximum intervals



L-5 SINGLE CORNER SEAM

- To ± 10 in. wg
- Fasten as per L-4





FLANGED (WITH GASKET) T-25b

- Assemble per Figure 2-17
- Ratings may be adjusted with EI-rated bar stock or members from Tables 2-29 and 2-30
- Supplemental members may be attached to the duct wall on both sides of the joint
- Single members may be used if they are fastened through both mating flanges
- Gasket to be located to form an effective seal

FIGURE 2-2 RECTANGULAR DUCT/LONGITUDINAL SEAMS



			<b>∫</b> •	H	<u>{</u>	H		H (		T-13	
	einf. lass	T-2 Standing I Slip	Drive	T-10 Standing	, S	T-11 Standing	, S	T-12 Standing	g S	T-14 Standing	s
	EI*	H×T	KG	H×T	KG	H×T	KG	H×T	KG	H×T+HR	KG
_		(mm)	LM	(mm)	LM	(mm)	LM	(mm)	LM	(mm)	LM
Α	0.12	Use B	-	Use B		12.7 × 0.55	0.74	Use B	-	Use D	
В	0.29	28.6 × 0.55	0.6	25.x 0.55	0.9	12.7 × 0.85 25 × 0.55	0.9	25 × 0.55	1.0	Use D	
С	0.55	28.6 × 0.85	0.9	25 × 0.85	1.2	25 × 0.85	1.2	25 × 0.70	1.2	Use D	
D	0.78	28.6 × 1.31	1.2	28.6 × 1.00 25 × 0.85 (+)	1.3	25 × 1.00 25 × 0.85 (+)	1.3	Use E	1.5	41.3 × 0.70 38.1 × 3.2 Bar	2.1
Е	1.9		•	28.6 × 1.31	1.5	25 × 1.31 (+)	1.3	25 × 1.31 38.1 × 1.00	1.8	Use F	
F	3.7			Use G				Use G		41.3 × 0.85 38.1 × 3.2 Bar	2.2
G	4.5			41.3 × 1.31	1.9			38.1 × 1.00	1.9	41.3 × 1.00 38.1 × 3.2 Bar	2.6
Н	7.6	NOT CO	EN							41.3 × 1.31 38.1 × 3.2 Bar	3.0
I	20	NOT GIVEN				NOT GIVEN					4.3
J	23			NOT GIV	EN			NOT GIVEN		54 × 1.00 51 × 51 × 4.76 Angle	5.5
K	30									NOT GIVE	N
L	60										

Table 2-31M Transverse Joint Reinforcement

See Section 2.1.4. \*Effective EI is number listed times 10<sup>5</sup> before adjustment for bending moment capacity. T-2 and T-10 through T-14 are restricted to 750 mm length at 1000 Pa, to 914 mm length at 750 Pa and are not recommended for service above 1000 Pa. (+) indicates positive pressure use only.

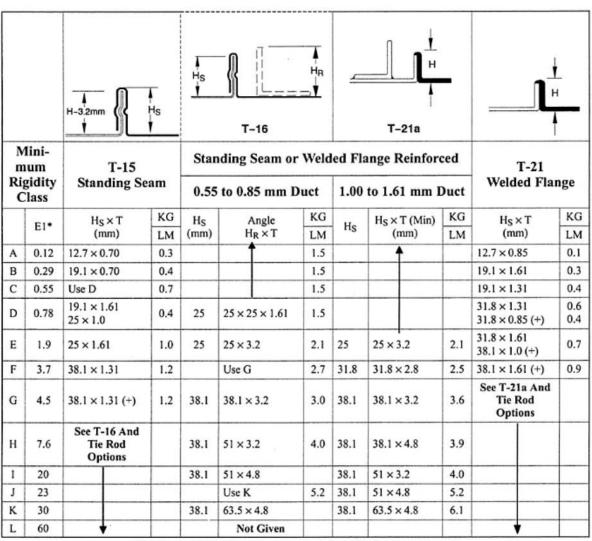


Table 2–33M Transverse Joint Reinforcement

See Section 2.1.4. \*Effective EI is number listed times 10<sup>5</sup> before adjustment for bending moment capacity. See tie rod options elsewhere. (+) indicates positive pressure use only.

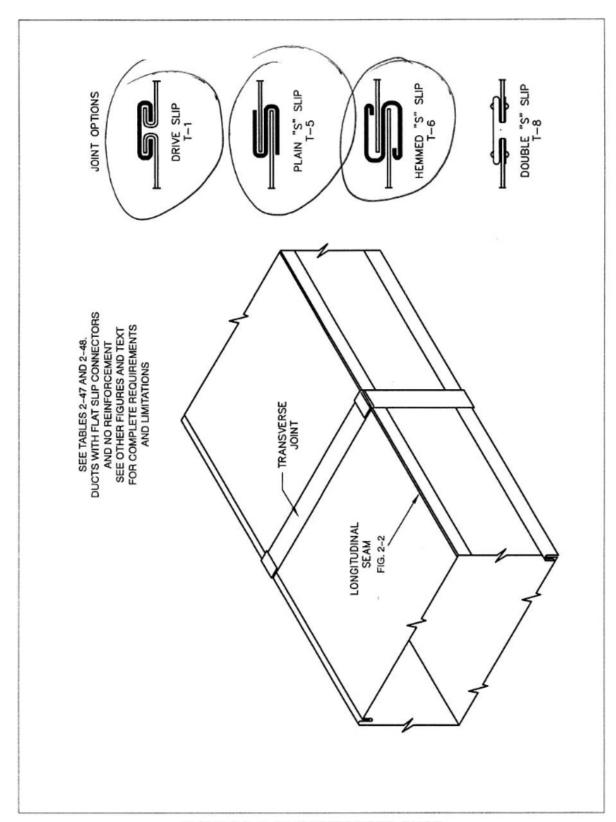


FIGURE 2-8 UNREINFORCED DUCT



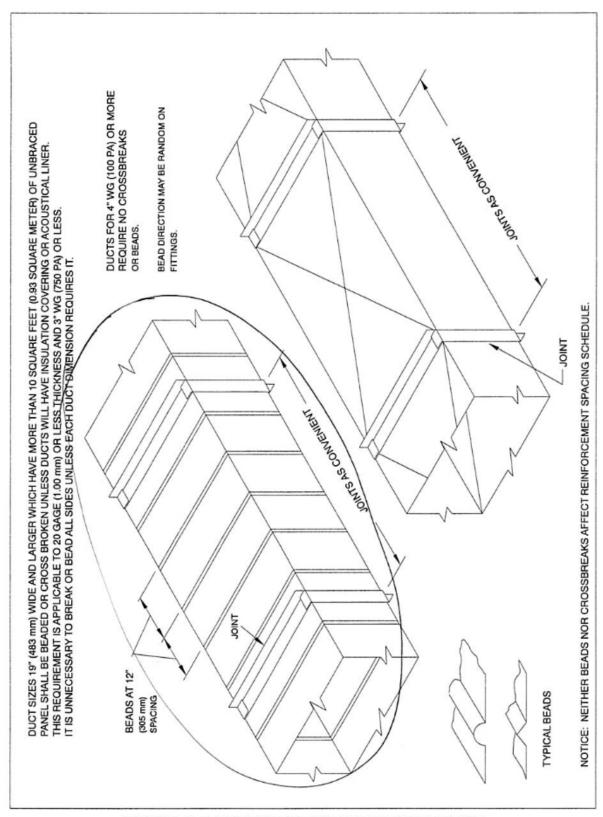


FIGURE 2-9 CROSSBROKEN AND BEADED DUCT



## **SUBMITTAL**

Product: Duct Sealant and Tape

Manufacturer: Hardcast, Inc.

Job Name: Sherwood Public Works

Location: N. Little Rock, AR

Date: January 24, 2025





#### **OVERVIEW**

Foil-Grip 1402 is a pressure-sensitive, 40-year cycle, duct joint and general purpose rolled mastic sealant. It provides an instant water-resistant air-tight grip to most surfaces including sheet metal, flex duct, and PVC-coated duct. Foil-Grip 1402 is suitable for subgrade application on PVC-coated duct and is ideal for replacement applications.

#### PART NUMBERS

304093	1 Case w/ (24) 2" x 100' Rolls (Non-printed)
304094	1 Case w/ (16) 3" x 100' Rolls (Non-printed)
304095	1 Case w/ (12) 4" x 100' Rolls (Non-printed)
304096	1 Case w/ (8) 6" x 100' Rolls (Non-printed)
304083	1 Roll 36" x 100' (Non-printed)
304099	1 Case w/ (24) 2" x 100' Rolls (Printed)
304100	1 Case w/ (16) 3" x 100' Rolls (Printed)

#### **FEATURES AND BENEFITS**

- Instant Adhesion
- Indoor/Outdoor
- · True Zero VOC
- · Metal & Subgrade PVC Ductwork
- All Pressure Classes Up To 20 inches W.C.
- 17-Mil Thickness

#### SPECIFICATIONS/STANDARDS COMPLIANCE

Property	Method	Results
Color	Visual	Mil Finish Aluminum Printed/Non-Printed With Gray Butyl Sealant
Backing	Visual	2 mils Aluminum
Thickness	ASTM D3652	17 mils nominal
Peel Strength	ASTM D3330-83	>10 llbs/linear inch
Tensile Strength	ASTM D412	955 psi avg.
Elongation	ASTM D412	500%
Flexibility	ASTM C765	Excellent/No Cracking
Water Resistance	CSTM. RA 8.0	Pass
VOC	EPA Method # 2	0 g/l
Flame	ASTM E84/UL 723	20
Smoke	ASTM E84/UL 723	40
Service Temperature	ASTM D2485/D2243	-20°F to 200°F (-28.8°C to 93.3°C)
Pressure Test	Independent 24 Hour Test up to 5/8-inch Diameter	20 inch w.c.
Weather Resistance	ASTM G53	Passes 2,000 QUV
Bond Time		Immediate/Full Bond: 15 Minutes
UL Rating	UL 723	Passes/Classified
VOC Limitation	SCAQMD Rule 1168	Pass
NFPA	90A & 90B	Class 1

#### STORAGE

Temperature	35°F to 110°F (1.7°C to 44°C) DO NOT FREEZE				
Shelf Life	24 months				
Flammability	Non-flammable				

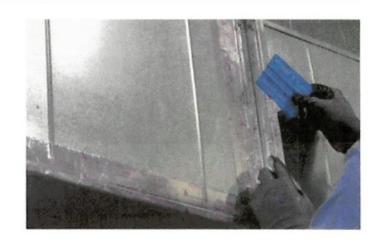






#### APPLICATION

Temperature	35°F to 110°F (1.7°C to 44°C)
Preparation	Surface must be dry and free of dirt, oil and grease.
Method	Cut desired length, peel off release liner, apply. Removal or repositioning may damage Foil-Grip 1402 and surface.  Overlap at ends. Use squeegee with heavy pressure to assure complete contact.
Clean Up	UN-TACK™ or Solvent (Use safe handling practices.)
Painting	Use paint appropriate for aluminum



#### **PRECAUTIONS**

Surfaces must be clean and free of moisture and contamination. Do not apply this product in areas where temperatures will exceed 200°F. Keep out of the reach of children. DO NOT use where acidic or alkaline chemicals are present (ie., lab fume hood, vents, etc.).

For Industrial Professional Use Only.

#### LEED

Post-industrial Recycled Content	0%
Pre-consumer Recycled Content	0%
VOC Content	0 g/L
Manufacturing Location(s)	Wylie, TX



















Indoor/Outdoor Water Based Duct Sealant

PART NUMBER	S
304142	1 Case w/ (25) 11 oz. Cartridges (White)
304146	1 Case w/ (25) 11 oz. Cartridges (Gray)
304144	1 Case w/ (4) 1-Gallon Pails (White)
304148	1 Case w/ (4) 1-Gallon Pails (Gray)
304143	1 - 2-Gallon Pail (White)
304147	1 - 2-Gallon Pail (Gray)
304145	1 - 5-Gallon Pail (White)

#### **TECHNICAL DATA**

LECHNICAL DATA		
Color	White & Gray	
Consistency	Heavy textured	
Base	Synthetic latex	
Solvent	Water	
Weight per Gallon	11.6 lbs.	
Solids Content	73.4%	
Viscosity	Thixotropic	
Coverage (UL 181 A-M)	Apply 18 mil, scrim, addt. 18 mil	
Coverage (UL 181 B-M)	Approximately 214 to 320 lin. ft. per gal. at 20 to 30 mil wet film thickness at 3" width	
Shore A Hardness	>20	
Flexibility	Passes ¼ inch mandrel bend	
Time to Test	48 hours*	
Service Temperature	-20°F to 200°F	
Mildew Resistance	Mold & Mildew resistant	
voc	Exempt: 0 g/l Non Exempt: 38 g/l (less water)	
Surface Burning	Flame Spread - 0, Smoke Developed - 0 (When tested in accordance with ASTM E84, UL 723)	
Pressure Classes	SMACNA ½, 1, 2, 3, 4, 6 and 10 inches w.g.	
Seal Class	Meets Seal Class A	
Packaging	11 oz. cart.; 1, 2 & 5 gal. pails	
Freeze/Thaw Stability	Passed 5 Cycles	

<sup>\*</sup>May vary according to temperature and humidity

#### SPECIFICATION/STANDARDS COMPLIANCE

Property	Method	Results
Freeze Thaw & Heat Cycling	ASTM C-731	Pass
Slump Test	ASTM D-2202	Pass
VOC Limitation	SCAQMD Rule 1168	Pass
	USDA	Pass
	FDA	Pass
	EPA	Pass
	City of Los Angeles Approval RR#8427	Pass

A versatile, all purpose duct sealant for use on all types of metal duct, fiberglass duct board, duct fabric and flex duct. CCWI- 181 incorporates a built-in polyester reinforcement for exceptional strength, with UV inhibitors for outdoor use. UL 181A-M listed / UL 181B-M listed.

#### APPLICATION

Temperature	35°F to 110°F (1.7°C to 44°C)
Method	Brush, putty knife, caulk gun
Preparation	Surface must be dry, dirt, oil, and grease free.
Rate (UL 181 A-M)	Apply 18 mil, scrim and 18 mil over scrim.
Rate (UL 181 B-M)	Approx. 214 to 320 lin. ft. per gal. at 20 to 30 mil wet film thickness at 3" width.
Clean Up Wet	Soap and water
Clean Up Dry	UN-TACK™ or Solvent (Use safe handling practices.)
Painting	Only latex or epoxy paints
Ductboard	Scrim required for UL 181A-M

#### STORAGE

Temperature	35°F to 110°F (1.7°C to 44°C) DO NOT FREEZE	
Shelf Life	One year (unopened)	
Flammability	Non-flammable	

#### Underwriters Laboratories Inc.®

LISTED



17NF UL 181A-M

FOR USE WITH U.L. LISTED RIGID FIBERGLASS AIR DUCTS OR CONNECTORS.

**UL 181B-M** 

FOR USE WITH U.L. LISTED FLEXIBLE AIR DUCTS OR CONNECTORS

#### **PRECAUTIONS**

Surface must be clean and free of moisture, contamination and foreign matter. Do not allow this product to freeze. Apply when temperatures will not fall below freezing for at least 36–48 hours, depending on temperature and humidity. Do not apply this product where temperatures will exceed 200°F. Keep out of the reach of children. Review MSDS for complete safety information prior to use. DO NOT use where acidic or alkaline chemicals are present (ie., lab fume hood, vents, etc.)

For Industrial Professional Use Only.













# PHP-D

SPECIFICATION & TECHNICAL INFORMATION SHEET



The PHP-D, is designed to support ducting, cable tray and piping at any specified height or width. The support is designed for installation without roof penetrations, flashings, or damage to the roofing material. The support can be used for virtually any roofing system from flat roofs to roofs sloped up to 2 in 12. The supports should be spaced according to the specifications. Seismic and High-Wind applications are available for the system.

#### **INSTALLATION PROCEDURE:**

- Layout isolation pads, (provided by contractor), according to the design and layout.
- Place bases on isolation pads.
- Insert the legs of the duct support into bases and attach with 2-1/2" bolt and 1/2" nut).
- Space out pipe supports according to specifications. This should be done before any weight is supported.
- IF BRACING IS REQUIRED, attach horizontal bracing to legs of pipe supports, (approximately 3/4 of the way up the height of the support), with 3" bolts and 1/2" nut.

NOTE: If double or triple bracing is required, designated locations will be marked on support legs.

- Adjust width up to bottom of ducting.
- Make sure supports are level, vertically and horizontally, and proper spacing is maintained per design specifications.
- Check that the weight of the duct is distributed evenly throughout the system.



#### **STORAGE:**

Store in the original, unopened containers, under cover, until needed for installation.

#### **LEED INFORMATION:**

Frame/Steel

Post Consumer Recycled Content: 0% Post Industrial Recycled Content: 25%

#### **BASE MATERIAL:**

Post Consumer Recycled Content: 80% Post Industrial Recycled Content: 20% Manufacturing Location: Houston, TX

#### **PRODUCT DATA:**

Property: Base:	Minimum Performance:
Size:	18" x 18" x 3" or 18" round 7 lbs and 10-1/2 lbs
Base Weight: Base Material:	Injection molded high density/high impact polypropylene with UV-inhibitors and Antioxidants Black
Base Color: Base Density:	55.8 lb/cu ft (894 kg/cu m)

#### Carbon Steel and 304 Stainless Steel Framing: 1-5/8" (41.3 mm) or 1-7/8"

0.101.11.01	. 0, 0 (0 , 0
	(47.6 mm) as required by loading
Form:	Roll-formed 3-sided tubular
	shape, perforated with 9/16"
	(14.3 mm) holes at 1-7/8" (47.6
	mm) centers on three sides

12 gauge (2.7 mm)

Carbon Steel Finish: Hot dip galvanized per ASTM A 123

Stainless Steel Finish: Mill Finish

Hardware:

Thickness:

Channel Types:

Nuts and Washers: Hot Dip Galvanized or 304 Stainless Steel