

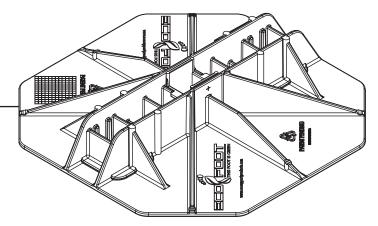
Support Systems for Rooftop Building Services



ENGINEERING TABLES



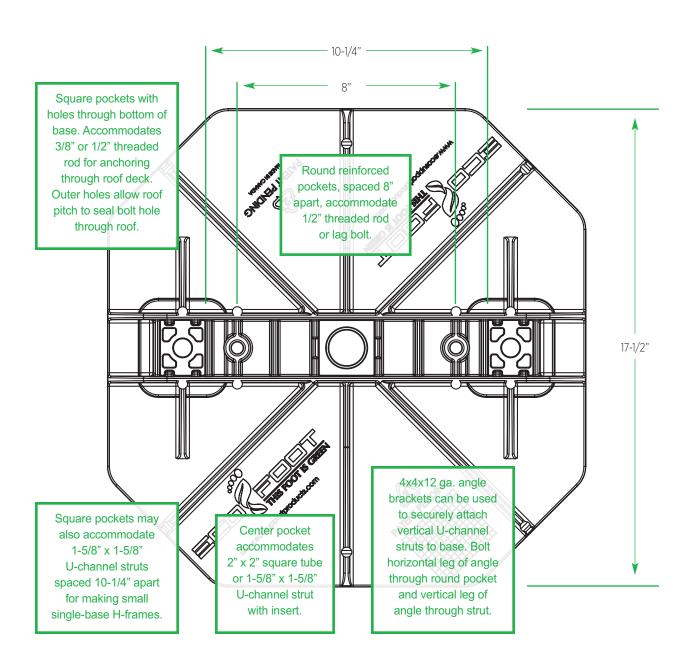
Chemical Properties



	Typical Value (English)	Typical Value (SI)	Test Base
GENERAL			
Density	0.0349 lb/in3	0.965 g/cm ³	ASTM D4883
Melt Index (190C/2, 16gk)	0.2829oz/10 min	8.2 g/10 min	ASTM D1238
THERMAL			
Deflection Temp. Under Load (66PSI) - Unannealed	181°F	83°C	ASTM D648
Deflection Temp. Under Load (264PSI) - Unannealed	119°F	48°C	ASTM D648B
Peak Melting Temperature	275°F	135°C	ASTM D3418
MOULDED PROPERTIES			
Tensile Strength at Yield	4,200 psi	29 MPa	ASTM D3638
Elongation at Break	50%	50%	ASTM D638
Flexural Modulus – 1% secant	170,000 psi	1,200 MPa	ASTM D790B
Environmental Stress-Crack Resistance 10% Igepal, F50	2h	2h	ASTM D1693B
IMPACT			
Notched Izod Impact (-40°C)	1.0 ft-lb/in	55 J/m	ASTM D256
LOADING			
Refer to EcoFoot Engineering Tables			



EcoFoot - Dimensions





EcoFoot - Quick Frame

for supporting cable tray, pipework systems and ductwork runs

DESCRIPTION:

The Quick Frame is designed with simplicity in mind. It's built to accommodate standard 1/2" threaded rod, or 1-5/8" strut off the shelf. Installers can customize their required support on site. This allows for the most flexible solutions and ease of setup.

The non-penetrative design spreads out the weight load, keeping the roofing membrane safe and decking/insulation below free of damage.

For installations requiring seismic bracing or extreme wind loading, the EcoFoot Seismic Kit can be used to secure the base safely to the rooftop while satisfying requirements and producing a safe, secure water-tight seal to avoid roof leaks

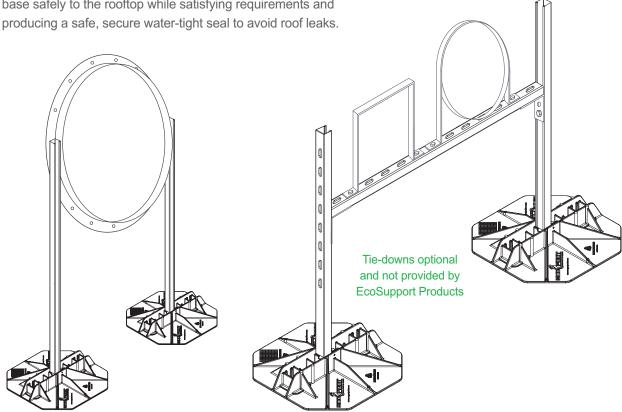
EACH KIT INCLUDES:

- (2) Injection moulded feet
- (2) Anti-vibration mats
- (2) Strut base caps
- (2) 90° strut brackets
- (4) Spring nuts
- (4) 1/2' bolts

(Strut not included)

DIMENSIONS:

17-1/2" x 17-1/2" x 3" (L x W x H)





Introduction to Support Calculations

The primary purpose of Eco Support Products is the distribution of the weight of mechanical and electrical equipment on flat roofs. Example equipment to be supported are ducts, piping, cable trays, condensing units, compressors, energy recovery units and air handling units. They are also used to support walkways and step-overs for worker access on rooftops. Where design conditions allow, it is preferred that these be "non-penetrating" systems. The EcoFoot base is designed to evenly distribute equipment weight across a large "footprint" on the roof surface without the need to rest directly on the underlying building structure. The compressive strength of the underlying roof deck insulation material normally defines the maximum recommended load per base (see Max Loading Tables). The EcoFoot base has been designed so it can be anchored to the building structure when conditions such as wind force and seismic activity must be considered. However, it is our position that such use be restricted only to the amount necessary to satisfy performance in those design circumstances. Each penetration of the roof surface to anchor the EcoFoot base requires measures to be taken to restore the watertight integrity of the roof. We have designed effective measures for sealing in such instances, but anchoring all bases without regard to actual wind or seismic forces may cause unnecessary labor, cost and risk.

The EcoFoot base is part of a support system that includes other components, some of which may be furnished by the customer, and the ultimate strength is generally limited by the weakest component. The supported equipment itself may be a structural component since ducts and piping perform as "beams" and are often "fixed" at connections to other equipment and at roof penetrations. The following pages show the capacities of components commonly used with our QuickFrame products. All maximum loads are given with the assumption that QuickFrames are assembled rigidly. Following those are information on wind/seismic applications and tables showing weights of piping and ducts typically installed on QuickFrame systems.

Most calculations involving non-penetrating duct/piping supports involve determining the number of supports needed to distribute the weight and those tables should prove very useful. Regardless of the ability of the QuickFrame support to support and distribute such weight, there may be overriding support spacing requirements based upon the rigidity of the equipment. Those are not addressed in this guide and we encourage our customers to investigate and determine which codes and standards may apply.

Recommended Maximum EcoFoot Base Loads for Commercial Low-Slope Membrane Roof Systems

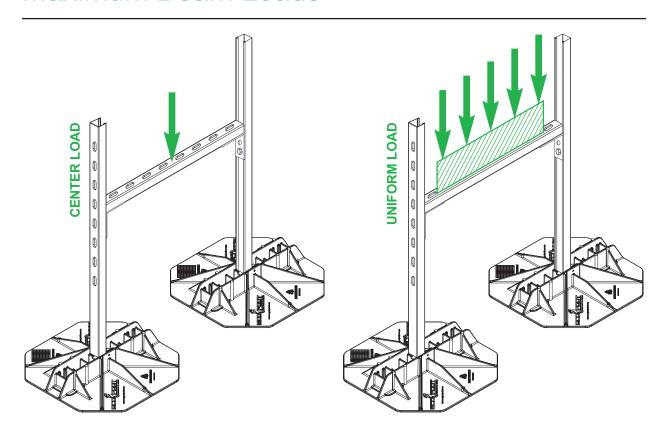
Roof Deck Insulation Type	ASTM Standard	ASTM C578 classification	Density (pcf)	Minimum Compressive Strength (psi)	Recommended Maximum Load per EcoFoot Base (lbs)
	C578	Type I	1.00 pcf	10 psi	900 lbs
Expanded Polystyrene (EPS)	C578	Type VIII	1.25 pcf	13 psi	1,190 lbs
Expanded Folystyrene (EFS)	C578	Type II	1.50 pcf	15 psi	1,375 lbs
	C578	Type IX	2.00 pcf	25 psi	2,290 lbs
	C578	Type IV	1.55 pcf (min.)	25 psi	2,290 lbs
Extruded Polystyrene (XPS)	C578	Type VI	1.80 pcf (min.)	40 psi	3,650 lbs
Extraded Polystyrene (XP3)	C578	Type VII	2.20 pcf (min.)	60 psi	5,500 lbs
	C578	Type V	3.00 pcf (min.)	100 psi	9,150 lbs
Perlite			20 - 24 pcf	80 psi	7,300 lbs
refile			24 - 28 pcf	140 psi	12,800 lbs
	C1289	Grade 1	-	16 psi	1,460 lbs
Polyisocyanurate (PIC)	C1289	Grade 2	-	20 psi	1,830 lbs
	C1289	Grade 3	-	25 psi	2,290 lbs
High-Density Polyisocyanurate	C1289		-	120 psi	11,000 lbs

EcoFoot bases have a base area of 275 square inches. Recommended maximum loads are based on a safety factor of 3 against published minimum compressive strengths. Those for EPS, XPS and PIC are published in the National Roofing Contractors Association Roofing Manual: Membrane Roof Systems – 2011. Perlite values are from The Perlite Institute. Other roof deck insulation materials such as glass fiber, mineral fiber, cellular glass and fiberboard appear in earlier and current NRCA manuals but no longer list minimum compressive strengths. It is recommended that insulation manufacturers be contacted for product-specific information.

Recommended maximum loads for EcoFoot bases are a function on the suface area of the base and the compressive strength of the roof deck insulation. Actual maximum loads for a frame assembly may be less. Frame assemblies are rated based upon not only the ability of the base to distribute weight, but also the column strength of the structural member inserted into the base, allowable deflection in attached horizontal components, and the rated strength of attachment devices. Finished supports should be designed so that weights do not exceed 50% of the capacity of the lowest value component.



Maximum Beam Loads

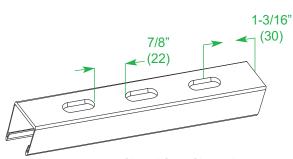


	1-5/8" x 1-5/8" x 1	12 ga Slotted Strut	1-5/8" x 3-1/4" x 12 g	a Back-to-Back Strut
Beam Width (in.)	Center Concentrated Load (lbs.)	Uniformly Distributed Load (lbs.)	Center Concentrated Load (lbs.)	Uniformly Distributed Load (lbs.)
12"	1,445	2,890	2,606	3,500
24"	721	1,436	2,401	3,500
36"	479	960	1,598	3,190
48"	358	646	1,195	2,390
60"	257	408	952	1,910
72"	179	289	790	1,600
84"	131	212	674	1,240
96"	100	161	586	950
108"	79	127	474	750
120"	64	102	384	610

 $Maximum\ beam\ loads\ are\ calculated\ based\ upon\ a\ maximum\ deflection\ of\ \emph{I}/240\ or\ maximum\ allowable\ stress\ of\ 25\ Ksi.$







Slotted Strut Channel

Slots are:

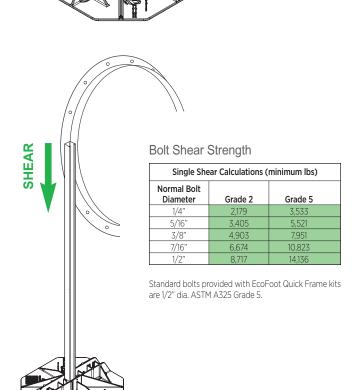
1-1/8" (29) x 9/16" (14) 2" (51) on center

Wt/100 Ft: 185 lbs (275 kg/100m)



Column Height (in)	Maximum Column Loading at Slot Face (lbs)
120"	1,150
108"	1,258
96"	1,391
84"	1,550
72"	1,733
60"	1,983
48"	2,308
36"	2,658
24"	2,958
12"	3,293

Maximum column loads at slot face are eccentric loads and are based upon 1-5/8" x 1-5/8" x 1 2 ga slotted galvanized strut with bottom secured in an EcoFoot base and column attached to either a horizontal beam (H-frame) or an angle ring (Bulls-Eye support).



MAX. LOAD 2,000 LBS.

4" x 12 gauge 4-bolt angle

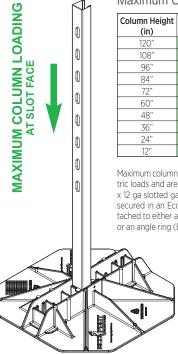
bracket in 12 ga. strut

(Ultimate load strength will depend on type and tightness of bolts)

0

0

0





EcoFoot - Seismic Kit

the solution for seismic and wind loading installations

DESCRIPTION:

The EcoFoot Seismic Kit is designed for installations that cannot accommodate non-penetrative supports to satisfy code. The design creates a protective seal in 3 points – the perimeter, the bottom and the penetration. Using 4 steps, a safe, simple, leak free seismic solution can be achieved.

EACH KIT INCLUDES:

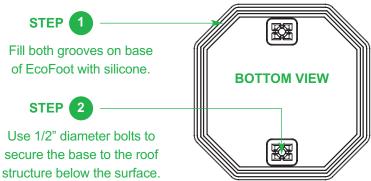
- (2) Injection moulded feet
- (2) Strut base caps
- (2) 90° strut brackets
- (4) Spring nuts
- (1) Rubber sealant pack

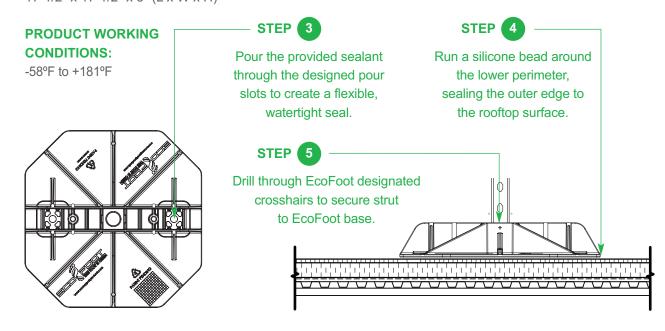
DIMENSIONS:

17-1/2" x 17-1/2" x 3" (L x W x H)

SPECIFICATION INSTRUCTIONS:

The kit is designed to be secured to the structure in **5 simple steps** to create a safe and leak-free solution.







Seismic and Wind Design

While EcoSupport Products generally address supporting rooftop equipment against the vertical force of gravity, many applications also require that seismic and wind forces also be addressed. Information on the design requirements for seismic and wind applications can be found in the 2011 ASHRAE Handbook — HVAC Applications, Chapter 55 "Seismic-and Wind-Resistant Design" and in the Standard ASCE 7-05 (American Society of Civil Engineers). Both situations require consideration of potential forces beyond gravity. Wind design must address both the horizontal force and vertical uplift of wind. Seismic design must account for potential forces along all axis.

EcoSupport Products are sold as a component of a rooftop system. They are not the entire system, nor is the company normally informed of the details of any particular application. The EcoFoot base has been designed so that it can be rigidly attached (if necessary) to the building structure and the equipment support frame. We provide information on the mechanical properties of the base, provided structural steel components and typical steel components provided by others. No project-specific certification of seismic or wind conformance is implied from the purchase of EcoSupport Products. That requires the evaluation of project-specific conditions for location, building type and the characteristics of the supported components. It is the responsibility of the installer or a qualified design professional to perform design calculations specific to these and determine if the product characteristics are sufficient to the application. Those services may be obtained through EcoSupport Products, but additional charges and fees will apply.

Chilled Water Piping Weights

Schedule 40 Chilled Water Steel Pipe Weights

ID	Pipe, lb/ft	Water, lb/ft	Total, lb/ft	Total weight with insul & jacket
2.0	3.65	1.45	5.10	6.435
2.5	5.79	2.07	7.86	9.330
3.0	7.57	3.20	10.77	12.410
4.0	10.78	5.51	16.29	18.201
6.0	18.96	12.50	31.46	35.956
8.0	28.53	21.65	50.18	55.596
10.0	40.45	34.12	74.57	80.791
12.0	53.48	48.44	101.92	108.978
14.0	63.25	58.56	121.81	129.391



Rectangular Duct with 2" Internal Insulation

														HEI	GHT													
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60
	8	4.6	5.0	5.4	5.8	6.2	6.6	6.9	7.3	9.4	9.8	12.1	12.7	13.2	15.9	16.5	17.2	17.8	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1
	10	5.0	5.4	5.8	6.2	6.6	6.9	7.3	7.7	9.8	10.3	12.7	13.2	13.8	16.5	17.2	17.8	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8
	12	5.4	5.8	6.2	6.6	6.9	7.3	7.7	8.1	10.3	10.8	13.2	13.8	14.4	17.2	17.8	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4
	14	5.8	6.2	6.6	6.9	7.3	7.7	8.1	8.5	10.8	11.2	13.8	14.4	14.9	17.8	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0
	16	6.2	6.6	6.9	7.3	7.7	8.1	8.5	8.9	11.2	11.7	14.4	14.9	15.5	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7
	18	6.6	6.9	7.3	7.7	8.1	8.5	8.9	9.2	11.7	12.2	14.9	15.5	16.0	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3
	20	6.9	7.3	7.7	8.1	8.5	8.9	9.2	9.6	12.2	12.7	15.5	16.0	16.6	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0
	22	7.3	7.7	8.1	8.5	8.9	9.2	9.6	10.0	12.7	13.1	16.0	16.6	17.1	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6
	24	9.4	9.8	10.3	10.8	11.2	11.7	12.2	12.7	13.1	13.6	16.6	17.1	17.7	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2
	26	9.8	10.3	10.8	11.2	11.7	12.2	12.7	13.1	13.6	14.1	17.1	17.7	18.2	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9
	28	12.1	12.7	13.2	13.8	14.4	14.9	15.5	16.0	16.6	17.1	17.7	18.2	18.8	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5
	30	12.7	13.2	13.8	14.4	14.9	15.5	16.0	16.6	17.1	17.7	18.2	18.8	19.3	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1
	32	13.2	13.8	14.4	14.9	15.5	16.0	16.6	17.1	17.7	18.2	18.8	19.3	19.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8
	34	15.9	16.5	17.2	17.8	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4
	36	16.5	17.2	17.8	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0
	38	17.2	17.8	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7
	40	17.8	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3
	42	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9
	44	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6
_	46	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2
WIDTH	48	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8
>	50	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5
	52	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1
	54	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1	38.8
	56	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1	38.8	39.4
	58	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1	38.8	39.4	40.0
	60	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1	38.8	39.4	40.0	40.7
	62	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1	38.8	39.4	40.0	40.7	41.3
	64	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1	38.8	39.4	40.0	40.7	41.3	41.9
	66	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1	38.8	39.4	40.0	40.7	41.3	41.9	42.6
	68	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1	38.8	39.4	40.0	40.7	41.3	41.9	42.6	43.2
	70	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1	38.8	39.4	40.0	40.7	41.3	41.9	42.6	43.2	43.8
	72	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1	38.8	39.4	40.0	40.7	41.3	41.9	42.6	43.2	43.8	44.5
	74	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1	38.8	39.4	40.0	40.7	41.3	41.9	42.6	43.2	43.8	44.5	45.1
	76	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1	38.8	39.4	40.0	40.7	41.3	41.9	42.6	43.2	43.8	44.5	45.1	45.7
	78	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1	38.8	39.4	40.0	40.7	41.3	41.9	42.6	43.2	43.8	44.5	45.1	45.7	46.4
	80	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1	38.8	39.4	40.0	40.7	41.3	41.9	42.6	43.2	43.8	44.5	45.1	45.7	46.4	47.0
	82	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1	38.8	39.4	40.0	40.7	41.3	41.9	42.6	43.2	43.8	44.5	45.1	45.7	46.4	47.0	47.7
	84	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1	38.8	39.4	40.0	40.7	41.3	41.9	42.6	43.2	43.8	44.5	45.1	45.7	46.4	47.0	47.7	48.3
	86	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1	38.8	39.4	40.0	40.7	41.3	41.9	42.6	43.2	43.8	44.5	45.1	45.7	46.4	47.0	47.7	48.3	48.9
	88	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1	38.8	39.4	40.0	40.7	41.3	41.9	42.6	43.2	43.8	44.5	45.1	45.7	46.4	47.0	47.7	48.3	48.9	49.6
	90	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1	38.8	39.4	40.0	40.7	41.3	41.9	42.6	43.2	43.8	44.5	45.1	45.7	46.4	47.0	47.7	48.3	48.9	49.6	50.2



Rectangular Duct with 2" Internal Insulation

														HEI	GHT													
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60
	8	5.6	6.1	6.6	7.0	7.5	8.0	9.9	10.5	11.0	11.6	12.1	12.7	13.2	13.8	14.4	14.9	17.8	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1
	10	6.1	6.6	7.0	7.5	8.0	8.4	10.5	11.0	11.6	12.1	12.7	13.2	13.8	14.4	14.9	15.5	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8
	12	6.6	7.0	7.5	8.0	8.4	8.9	11.0	11.6	12.1	12.7	13.2	13.8	14.4	14.9	15.5	16.0	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4
	14	7.0	7.5	8.0	8.4	8.9	9.4	11.6	12.1	12.7	13.2	13.8	14.4	14.9	15.5	16.0	16.6	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0
	16	7.5	8.0	8.4	8.9	9.4	9.8	12.1	12.7	13.2	13.8	14.4	14.9	15.5	16.0	16.6	17.1	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7
	18	8.0	8.4	8.9	9.4	9.8	10.3	12.7	13.2	13.8	14.4	14.9	15.5	16.0	16.6	17.1	17.7	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3
	20	9.9	10.5	11.0	11.6	12.1	12.7	13.2	13.8	14.4	14.9	15.5	16.0	16.6	17.1	17.7	18.2	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0
	22	10.5	11.0	11.6	12.1	12.7	13.2	13.8	14.4	14.9	15.5	16.0	16.6	17.1	17.7	18.2	18.8	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6
	24	11.0	11.6	12.1	12.7	13.2	13.8	14.4	14.9	15.5	16.0	16.6	17.1	17.7	18.2	18.8	19.3	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2
	26	11.6	12.1	12.7	13.2	13.8	14.4	14.9	15.5	16.0	16.6	17.1	17.7	18.2	18.8	19.3	19.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9
	28	12.1	12.7	13.2	13.8	14.4	14.9	15.5	16.0	16.6	17.1	17.7	18.2	18.8	19.3	19.9	20.4	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5
	30	12.7	13.2	13.8	14.4	14.9	15.5	16.0	16.6	17.1	17.7	18.2	18.8	19.3	19.9	20.4	21.0	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1
	32	13.2	13.8	14.4	14.9	15.5	16.0	16.6	17.1	17.7	18.2	18.8	19.3	19.9	20.4	21.0	21.5	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8
	34	13.8	14.4	14.9	15.5	16.0	16.6	17.1	17.7	18.2	18.8	19.3	19.9	20.4	21.0	21.5	22.1	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4
	36	14.4	14.9	15.5	16.0	16.6	17.1	17.7	18.2	18.8	19.3	19.9	20.4	21.0	21.5	22.1	22.6	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0
	38	14.9	15.5	16.0	16.6	17.1	17.7	18.2	18.8	19.3	19.9	20.4	21.0	21.5	22.1	22.6	23.2	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7
	40	17.8	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3
	42	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9
	44	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6
₌	46	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2
WIDTH	48	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8
>	50	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5
	52	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1
	54	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1	38.8
	56	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1	38.8	39.4
	58	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1	38.8	39.4	40.0
	60	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1	38.8	39.4	40.0	40.7
	62	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1	38.8	39.4	40.0	40.7	41.3
	64	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1	38.8	39.4	40.0	40.7	41.3	41.9
	66	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1	38.8	39.4	40.0	40.7	41.3	41.9	42.6
	68	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1	38.8	39.4	40.0	40.7	41.3	41.9	42.6	43.2
	70	34.5	35.3	36.1	36.9	37.7	38.5	39.3	40.1	40.9	41.7	42.5	43.3	44.1	44.9	45.7	46.5	47.3	48.1	48.9	49.7	50.5	51.3	52.1	52.9	53.7	54.5	55.3
	72	35.3	36.1	36.9	37.7	38.5	39.3	40.1	40.9	41.7	42.5	43.3	44.1	44.9	45.7	46.5	47.3	48.1	48.9	49.7	50.5	51.3	52.1	52.9	53.7	54.5	55.3	56.1
	74	36.1	36.9	37.7	38.5	39.3	40.1	40.9	41.7	42.5	43.3	44.1	44.9	45.7	46.5	47.3	48.1	48.9	49.7	50.5	51.3	52.1	52.9	53.7	54.5	55.3	56.1	56.9
	76	36.9	37.7	38.5	39.3	40.1	40.9	41.7	42.5	43.3	44.1	44.9	45.7	46.5	47.3	48.1	48.9	49.7	50.5	51.3	52.1	52.9	53.7	54.5	55.3	56.1	56.9	57.7
	78	37.7	38.5	39.3	40.1	40.9	41.7	42.5	43.3	44.1	44.9	45.7	46.5	47.3	48.1	48.9	49.7	50.5	51.3	52.1	52.9	53.7	54.5	55.3	56.1	56.9	57.7	58.5
	80	38.5	39.3	40.1	40.9	41.7	42.5	43.3	44.1	44.9	45.7	46.5	47.3	48.1	48.9	49.7	50.5	51.3	52.1	52.9	53.7	54.5	55.3	56.1	56.9	57.7	58.5	59.3
	82	39.3	40.1	40.9	41.7	42.5	43.3	44.1	44.9	45.7	46.5	47.3	48.1	48.9	49.7	50.5	51.3	52.1	52.9	53.7	54.5	55.3	56.1	56.9	57.7	58.5	59.3	60.2
	84	40.1	40.9	41.7	42.5	43.3	44.1	44.9	45.7	46.5	47.3	48.1	48.9	49.7	50.5	51.3	52.1	52.9	53.7	54.5	55.3	56.1	56.9	57.7	58.5	59.3	60.2	61.0
	86	40.9	41.7	42.5	43.3	44.1	44.9	45.7	46.5	47.3	48.1	48.9	49.7	50.5	51.3	52.1	52.9	53.7	54.5	55.3	56.1	56.9	57.7	58.5	59.3	60.2	61.0	61.8
	88	41.7	42.5	43.3	44.1	44.9	45.7	46.5	47.3	48.1	48.9	49.7	50.5	51.3	52.1	52.9	53.7	54.5	55.3	56.1	56.9	57.7	58.5	59.3	60.2	61.0	61.8	62.6
	90	42.5	43.3	44.1	44.9	45.7	46.5	47.3	48.1	48.9	49.7	50.5	51.3	52.1	52.9	53.7	54.5	55.3	56.1	56.9	57.7	58.5	59.3	60.2	61.0	61.8	62.6	63.4



Rectangular Duct with 2" Internal Insulation Approximate Duct Weights (a) The composition of the compositi

(sizes shown are ID "air-size")

		•																						(5	izes sn	OWITAI		ir-size)
														HEI	GHT													
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60
	8	6.6	7.2	7.7	8.3	8.8	9.4	9.9	12.1	12.7	13.3	14.0	14.6	15.2	15.9	16.5	17.2	17.8	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	29.7	30.5
	10	7.2	7.7	8.3	8.8	9.4	9.9	10.5	12.7	13.3	14.0	14.6	15.2	15.9	16.5	17.2	17.8	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	30.5	31.3
	12	7.7	8.3	8.8	9.4	9.9	10.5	11.0	13.3	14.0	14.6	15.2	15.9	16.5	17.2	17.8	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	31.3	32.1
	14	8.3	8.8	9.4	9.9	10.5	11.0	11.6	14.0	14.6	15.2	15.9	16.5	17.2	17.8	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	32.1	32.9
	16	8.8	9.4	9.9	10.5	11.0	11.6	12.1	14.6	15.2	15.9	16.5	17.2	17.8	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	32.9	33.7
	18	9.4	9.9	10.5	11.0	11.6	12.1	12.7	15.2	15.9	16.5	17.2	17.8	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	33.7	34.5
	20	9.9	10.5	11.0	11.6	12.1	12.7	13.2	15.9	16.5	17.2	17.8	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	34.5	35.3
	22	12.1	12.7	13.3	14.0	14.6	15.2	15.9	16.5	17.2	17.8	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	35.3	36.1
	24	12.7	13.3	14.0	14.6	15.2	15.9	16.5	17.2	17.8	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	36.1	36.9
	26	13.3	14.0	14.6	15.2	15.9	16.5	17.2	17.8	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	36.9	37.7
	28	14.0	14.6	15.2	15.9	16.5	17.2	17.8	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	37.7	38.5
	30	14.6	15.2	15.9	16.5	17.2	17.8	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	38.5	39.3
	32	15.2	15.9	16.5	17.2	17.8	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	39.3	40.1
	34	15.9	16.5	17.2	17.8	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	40.1	40.9
	36	16.5	17.2	17.8	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	40.9	41.7
	38	17.2	17.8	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	41.7	42.5
	40	17.8	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	42.5	43.3
	42	18.4	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	43.3	44.1
	44	19.1	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	44.1	44.9
	46	19.7	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	44.9	45.7
WIDTH	48	20.3	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	45.7	46.5
₹	50	21.0	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	46.5	47.3
	52	21.6	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	47.3	48.1
	54	22.2	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	48.1	48.9
	56	22.9	23.5	24.1	24.8	25.4	26.0	26.7	27.3	28.0	28.6	29.2	29.9	30.5	31.1	31.8	32.4	33.0	33.7	34.3	34.9	35.6	36.2	36.8	37.5	38.1	48.9	49.7
	58	29.7	30.5	31.3	32.1	32.9	33.7	34.5	35.3	36.1	36.9	37.7	38.5	39.3	40.1	40.9	41.7	42.5	43.3	44.1	44.9	45.7	46.5	47.3	48.1	48.9	49.7	50.5
	60	30.5	31.3	32.1	32.9	33.7	34.5	35.3	36.1	36.9	37.7	38.5	39.3	40.1	40.9	41.7	42.5	43.3	44.1	44.9	45.7	46.5	47.3	48.1	48.9	49.7	50.5	51.3
	62	31.3	32.1	32.9	33.7	34.5	35.3	36.1	36.9	37.7	38.5	39.3	40.1	40.9	41.7	42.5	43.3	44.1	44.9	45.7	46.5	47.3	48.1	48.9	49.7	50.5	51.3	52.1
	64	32.1	32.9	33.7	34.5	35.3	36.1	36.9	37.7	38.5	39.3	40.1	40.9	41.7	42.5	43.3	44.1	44.9	45.7	46.5	47.3	48.1	48.9	49.7	50.5	51.3	52.1	52.9
	66	32.9	33.7	34.5	35.3	36.1	36.9	37.7	38.5	39.3	40.1	40.9	41.7	42.5	43.3	44.1	44.9	45.7	46.5	47.3	48.1	48.9	49.7	50.5	51.3	52.1	52.9	53.7
	68	33.7	34.5	35.3	36.1	36.9	37.7	38.5	39.3	40.1	40.9	41.7	42.5	43.3	44.1	44.9	45.7	46.5	47.3	48.1	48.9	49.7	50.5	51.3	52.1	52.9	53.7	54.5
	70	34.5	35.3	36.1	36.9	37.7	38.5	39.3	40.1	40.9	41.7	42.5	43.3	44.1	44.9	45.7	46.5	47.3	48.1	48.9	49.7	50.5	51.3	52.1	52.9	53.7	54.5	55.3
	72	35.3	36.1	36.9	37.7	38.5	39.3	40.1	40.9	41.7	42.5	43.3	44.1	44.9	45.7	46.5	47.3	48.1	48.9	49.7	50.5	51.3	52.1	52.9	53.7	54.5	55.3	56.1
	74	36.1	36.9	37.7	38.5	39.3	40.1	40.9	41.7	42.5	43.3	44.1	44.9	45.7	46.5	47.3	48.1	48.9	49.7	50.5	51.3	52.1	52.9	53.7	54.5	55.3	56.1	56.9
	76	36.9	37.7	38.5	39.3	40.1	40.9	41.7	42.5	43.3	44.1	44.9	45.7	46.5	47.3	48.1	48.9	49.7	50.5	51.3	52.1	52.9	53.7	54.5	55.3	56.1	56.9	57.7
	78	37.7	38.5	39.3	40.1	40.9	41.7	42.5	43.3	44.1	44.9	45.7	46.5	47.3	48.1	48.9	49.7	50.5	51.3	52.1	52.9	53.7	54.5	55.3	56.1	56.9	57.7	58.5
	80	38.5	39.3	40.1	40.9	41.7	42.5	43.3	44.1	44.9	45.7	46.5	47.3	48.1	48.9	49.7	50.5	51.3	52.1	52.9	53.7	54.5	55.3	56.1	56.9	57.7	58.5	59.3
	82	47.5	48.4	49.4	50.4	51.3	52.3	53.3	54.2	55.2	56.2	57.2	58.1	59.1	60.1	61.0	62.0	63.0	63.9	64.9	65.9	66.8	67.8	68.8	69.7	70.7	71.7	72.7
	84	48.4	49.4	50.4	51.3	52.3	53.3	54.2	55.2	56.2	57.2	58.1	59.1	60.1	61.0	62.0	63.0	63.9	64.9	65.9	66.8	67.8	68.8	69.7	70.7	71.7	72.7	73.6
	86	49.4	50.4	51.3	52.3	53.3	54.2	55.2	56.2	57.2	58.1	59.1	60.1	61.0	62.0	63.0	63.9	64.9	65.9	66.8	67.8	68.8	69.7	70.7	71.7	72.7	73.6	74.6
	88	50.4	51.3	52.3	53.3	54.2	55.2	56.2	57.2	58.1	59.1	60.1	61.0	62.0	63.0	63.9	64.9	65.9	66.8	67.8	68.8	69.7	70.7	71.7	72.7	73.6	74.6	75.6
	90	51.3	52.3	53.3	54.2	55.2	56.2	57.2	58.1	59.1	60.1	61.0	62.0	63.0	63.9	64.9	65.9	66.8	67.8	68.8	69.7	70.7	71.7	72.7	73.6	74.6	75.6	76.5



Double-Wall Rectangular Duct with 2" Internal Insulation & Perforated Inner Liner

	_	•				110	Па	- 1110	Juic	ltioi	1 0	1 61	1011	atct	J 1111	1101								(3	izes sii	OWITAI	5 ID all	r-size)
														HEI	GHT													
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60
	8	8.2	8.9	9.6	10.3	11.0	11.7	12.3	13.0	15.4	16.1	18.7	19.6	20.4	23.4	24.3	25.3	26.2	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5
	10	8.9	9.6	10.3	11.0	11.7	12.3	13.0	13.7	16.1	16.9	19.6	20.4	21.3	24.3	25.3	26.2	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5
	12	9.6	10.3	11.0	11.7	12.3	13.0	13.7	14.4	16.9	17.7	20.4	21.3	22.2	25.3	26.2	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4
	14	10.3	11.0	11.7	12.3	13.0	13.7	14.4	15.1	17.7	18.4	21.3	22.2	23.0	26.2	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3
	16	11.0	11.7	12.3	13.0	13.7	14.4	15.1	15.8	18.4	19.2	22.2	23.0	23.9	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3
	18	11.7	12.3	13.0	13.7	14.4	15.1	15.8	16.4	19.2	20.0	23.0	23.9	24.7	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2
	20	12.3	13.0	13.7	14.4	15.1	15.8	16.4	17.1	20.0	20.8	23.9	24.7	25.6	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2
	22	13.0	13.7	14.4	15.1	15.8	16.4	17.1	17.8	20.8	21.5	24.7	25.6	26.4	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1
	24	15.4	16.1	16.9	17.7	18.4	19.2	20.0	20.8	21.5	22.3	25.6	26.4	27.3	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0
	26	16.1	16.9	17.7	18.4	19.2	20.0	20.8	21.5	22.3	23.1	26.4	27.3	28.1	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0
	28	18.7	19.6	20.4	21.3	22.2	23.0	23.9	24.7	25.6	26.4	27.3	28.1	29.0	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9
	30	19.6	20.4	21.3	22.2	23.0	23.9	24.7	25.6	26.4	27.3	28.1	29.0	29.8	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8
	32	20.4	21.3	22.2	23.0	23.9	24.7	25.6	26.4	27.3	28.1	29.0	29.8	30.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8
	34	23.4	24.3	25.3	26.2	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7
	36	24.3	25.3	26.2	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6
	38	25.3	26.2	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6
	40	26.2	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5
	42	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4
	44	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4
	46	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4	53.3
WIDTH	48	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4	53.3	54.2
⋝	50	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4	53.3	54.2	55.2
	52	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4	53.3	54.2	55.2	56.1
	54	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4	53.3	54.2	55.2	56.1	57.1
	56	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4	53.3	54.2	55.2	56.1	57.1	58.0
	58	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4	53.3	54.2	55.2	56.1	57.1	58.0	58.9
	60	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4	53.3	54.2	55.2	56.1	57.1	58.0	58.9	59.9
	62	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4	53.3	54.2	55.2	56.1	57.1	58.0	58.9	59.9	60.8
	64	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4	53.3	54.2	55.2	56.1	57.1	58.0	58.9	59.9	60.8	61.7
	66	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4	53.3	54.2	55.2	56.1	57.1	58.0	58.9	59.9	60.8	61.7	62.7
	68	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4	53.3	54.2	55.2	56.1	57.1	58.0	58.9	59.9	60.8	61.7	62.7	63.6
	70	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4	53.3	54.2	55.2	56.1	57.1	58.0	58.9	59.9	60.8	61.7	62.7	63.6	64.5
	72	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4	53.3	54.2	55.2	56.1	57.1	58.0	58.9	59.9	60.8	61.7	62.7	63.6	64.5	65.5
	74	45.1	46.1	47.1	48.1	49.1	50.1	51.1	52.1	53.1	54.1	55.1	56.1	57.1	58.1	59.1	60.1	61.1	62.1	63.1	64.1	65.1	66.1	67.1	68.1	69.1	70.1	71.1
	76	46.1	47.1	48.1	49.1	50.1	51.1	52.1	53.1	54.1	55.1	56.1	57.1	58.1	59.1	60.1	61.1	62.1	63.1	64.1	65.1	66.1	67.1	68.1	69.1	70.1	71.1	72.1
	78	47.1	48.1	49.1	50.1	51.1	52.1	53.1	54.1	55.1	56.1	57.1	58.1	59.1	60.1	61.1	62.1	63.1	64.1	65.1	66.1	67.1	68.1	69.1	70.1	71.1	72.1	73.1
	80	48.1	49.1	50.1	51.1	52.1	53.1	54.1	55.1	56.1	57.1	58.1	59.1	60.1	61.1	62.1	63.1	64.1	65.1	66.1	67.1	68.1	69.1	70.1	71.1	72.1	73.1	74.1
	82	49.1	50.1	51.1	52.1	53.1	54.1	55.1	56.1	57.1	58.1	59.1	60.1	61.1	62.1	63.1	64.1	65.1	66.1	67.1	68.1	69.1	70.1	71.1	72.1	73.1	74.1	75.2
	84	50.1	51.1	52.1	53.1	54.1	55.1	56.1	57.1	58.1	59.1	60.1	61.1	62.1	63.1	64.1	65.1	66.1	67.1	68.1	69.1	70.1	71.1	72.1	73.1	74.1	75.2	76.2
	86	51.1	52.1	53.1	54.1	55.1	56.1	57.1	58.1	59.1	60.1	61.1	62.1	63.1	64.1	65.1	66.1	67.1	68.1	69.1	70.1	71.1	72.1	73.1	74.1	75.2	76.2	77.2
	88	52.1	53.1	54.1	55.1	56.1	57.1	58.1	59.1	60.1	61.1	62.1	63.1	64.1	65.1	66.1	67.1	68.1	69.1	70.1	71.1	72.1	73.1	74.1	75.2	76.2	77.2	78.2
	90	53.1	54.1	55.1	56.1	57.1	58.1	59.1	60.1	61.1	62.1	63.1	64.1	65.1	66.1	67.1	68.1	69.1	70.1	71.1	72.1	73.1	74.1	75.2	76.2	77.2	78.2	79.2



Double-Wall Rectangular Duct with 2" Internal Insulation & Perforated Inner Liner

	_					TILC	1110		-		1 0	1 61	1011	aici	<i>a</i>	1101		-						(3	izes sn	OWIT GIT	TID all	r-size)
														HEI	GHT													
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60
	8	9.2	10.0	10.8	11.5	12.3	13.1	15.3	16.2	17.0	17.9	18.7	19.6	20.4	21.3	22.2	23.0	26.2	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5
	10	10.0	10.8	11.5	12.3	13.1	13.8	16.2	17.0	17.9	18.7	19.6	20.4	21.3	22.2	23.0	23.9	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5
	12	10.8	11.5	12.3	13.1	13.8	14.6	17.0	17.9	18.7	19.6	20.4	21.3	22.2	23.0	23.9	24.7	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4
	14	11.5	12.3	13.1	13.8	14.6	15.4	17.9	18.7	19.6	20.4	21.3	22.2	23.0	23.9	24.7	25.6	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3
	16	12.3	13.1	13.8	14.6	15.4	16.1	18.7	19.6	20.4	21.3	22.2	23.0	23.9	24.7	25.6	26.4	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3
	18	13.1	13.8	14.6	15.4	16.1	16.9	19.6	20.4	21.3	22.2	23.0	23.9	24.7	25.6	26.4	27.3	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2
	20	15.3	16.2	17.0	17.9	18.7	19.6	20.4	21.3	22.2	23.0	23.9	24.7	25.6	26.4	27.3	28.1	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2
	22	16.2	17.0	17.9	18.7	19.6	20.4	21.3	22.2	23.0	23.9	24.7	25.6	26.4	27.3	28.1	29.0	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1
	24	17.0	17.9	18.7	19.6	20.4	21.3	22.2	23.0	23.9	24.7	25.6	26.4	27.3	28.1	29.0	29.8	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0
	26	17.9	18.7	19.6	20.4	21.3	22.2	23.0	23.9	24.7	25.6	26.4	27.3	28.1	29.0	29.8	30.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0
	28	18.7	19.6	20.4	21.3	22.2	23.0	23.9	24.7	25.6	26.4	27.3	28.1	29.0	29.8	30.7	31.5	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9
	30	19.6	20.4	21.3	22.2	23.0	23.9	24.7	25.6	26.4	27.3	28.1	29.0	29.8	30.7	31.5	32.4	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8
	32	20.4	21.3	22.2	23.0	23.9	24.7	25.6	26.4	27.3	28.1	29.0	29.8	30.7	31.5	32.4	33.2	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8
	34	21.3	22.2	23.0	23.9	24.7	25.6	26.4	27.3	28.1	29.0	29.8	30.7	31.5	32.4	33.2	34.1	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7
	36	22.2	23.0	23.9	24.7	25.6	26.4	27.3	28.1	29.0	29.8	30.7	31.5	32.4	33.2	34.1	34.9	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6
	38	23.0	23.9	24.7	25.6	26.4	27.3	28.1	29.0	29.8	30.7	31.5	32.4	33.2	34.1	34.9	35.8	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6
	40	26.2	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5
	42	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4
	44	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4
	46	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4	53.3
王	48	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4	53.3	54.2
WIDTH	50	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4	53.3	54.2	55.2
	52	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4	53.3	54.2	55.2	56.1
	54	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4	53.3	54.2	55.2	56.1	57.1
	56	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4	53.3	54.2	55.2	56.1	57.1	58.0
	58	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4	53.3	54.2	55.2	56.1	57.1	58.0	58.9
	60	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4	53.3	54.2	55.2	56.1	57.1	58.0	58.9	59.9
	62	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4	53.3	54.2	55.2	56.1	57.1	58.0	58.9	59.9	60.8
	64	37.4	38.3	39.3	40.2	41.2	42.1	43.0		44.9	45.8	46.8	47.7	48.6		50.5	51.4	52.4	53.3	54.2	55.2	56.1		58.0	58.9	59.9	60.8	61.7
	66	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.0	45.8	46.8	47.7	48.6	49.6	49.6 50.5	51.4	52.4	53.3	54.2	55.2	56.1	57.1	57.1 58.0	58.9	59.9	60.8	61.7	62.7
	68	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4	53.3	54.2	55.2	56.1	57.1	58.0	58.9	59.9	60.8	61.7	62.7	63.6
	70	47.4	48.5	49.6	50.7	51.8	52.9	54.0	55.1	56.2	57.3	58.4	59.5	60.6	61.7	62.8	63.9	65.0	66.1	67.2	68.3	69.4	70.5	71.6	72.7	73.8	74.9	76.0
	72	48.5	49.6	50.7	51.8	52.9	54.0	55.1	56.2	57.3	58.4	59.5	60.6	61.7	62.8	63.9	65.0	66.1	67.2	68.3	69.4	70.5	71.6	72.7	73.8	74.9	76.0	77.1
	74	52.6	53.8	54.9	56.1	57.3	58.4	59.6	60.8	61.9	63.1	64.3	65.4	66.6	67.8	69.0	70.1	71.3	72.5	73.6	74.8	76.0	77.1	78.3	79.5	80.6	81.8	83.0
			54.9			58.4		60.8	61.9		64.3												78.3		80.6			84.1
	76 78	53.8 54.9	56.1	56.1 57.3	57.3 58.4	59.6	59.6 60.8	61.9		63.1	65.4	65.4 66.6	66.6	67.8 69.0	69.0 70.1	70.1	71.3 72.5	72.5 73.6	73.6 74.8	74.8 76.0	76.0 77.1	77.1 78.3	79.5	79.5 80.6	81.8	81.8	83.0	
	80	56.1	57.3	58.4		60.8	61.9	63.1	63.1	65.4	66.6	67.8		70.1	71.3			74.8		77.1	78.3		80.6	81.8	83.0	84.1	85.3	85.3 86.5
		57.3	58.4	59.6	59.6 60.8	61.9		64.3	64.3	66.6		69.0	69.0	71.3		72.5	73.6 74.8	76.0			79.5	79.5 80.6			84.1		86.5	
	82	57.5					63.1		65.4		67.8		70.1		72.5	73.6			77.1	78.3			81.8	83.0	85.3	85.3		87.7
	84	59.6	59.6	60.8	61.9	63.1	64.3	65.4	66.6	67.8 69.0	69.0	70.1	71.3	72.5 73.6	73.6 74.8	74.8 76.0	76.0	77.1 78.3	78.3 79.5	79.5 80.6	80.6	81.8 83.0	83.0	84.1	86.5	86.5 87.7	87.7 88.8	90.0
	86	60.8	60.8	63.1	63.1	65.4	65.4	66.6	67.8 69.0	70.1	70.1	71.3 72.5	72.5 73.6	74.8	76.0		77.1 78.3	79.5	80.6	81.8	81.8	84.1	85.3	85.3 86.5	87.7	88.8	90.0	91.2
	90	61.9	63.1	64.3		66.6	67.8	69.0		71.3	72.5	73.6	74.8	76.0	77.1	77.1 78.3	79.5	80.6	81.8	83.0	84.1	85.3	86.5	87.7	88.8	90.0	91.2	92.3
	30	01.9	03.1	04.5	65.4	00.0	07.0	03.0	70.1	71.3	72.3	73.0	74.0	70.0	77.1	70.5	13.5	60.0	01.0	63.0	04.1	03.3	00.5	07.7	00.0	30.0	31.Z	32.3



Double-Wall Rectangular Duct with 2" Internal Insulation & Perforated Inner Liner

						1110	ma	11110	Juic	ltioi	1 0	1 6	101	ato	J 111	HIGI								(3	izes sn	OWITAR	e ID al	r-size)
														HEI	GHT													
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60
	8	10.2	11.1	11.9	12.8	13.6	14.5	15.3	17.8	18.7	19.6	20.6	21.5	22.4	23.4	24.3	25.3	26.2	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	40.8	41.9
	10	11.1	11.9	12.8	13.6	14.5	15.3	16.2	18.7	19.6	20.6	21.5	22.4	23.4	24.3	25.3	26.2	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	41.9	43.0
	12	11.9	12.8	13.6	14.5	15.3	16.2	17.0	19.6	20.6	21.5	22.4	23.4	24.3	25.3	26.2	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	43.0	44.1
	14	12.8	13.6	14.5	15.3	16.2	17.0	17.9	20.6	21.5	22.4	23.4	24.3	25.3	26.2	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	44.1	45.2
	16	13.6	14.5	15.3	16.2	17.0	17.9	18.7	21.5	22.4	23.4	24.3	25.3	26.2	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	45.2	46.3
	18	14.5	15.3	16.2	17.0	17.9	18.7	19.6	22.4	23.4	24.3	25.3	26.2	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	46.3	47.4
	20	15.3	16.2	17.0	17.9	18.7	19.6	20.4	23.4	24.3	25.3	26.2	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	47.4	48.5
	22	17.8	18.7	19.6	20.6	21.5	22.4	23.4	24.3	25.3	26.2	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	48.5	49.6
	24	18.7	19.6	20.6	21.5	22.4	23.4	24.3	25.3	26.2	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	49.6	50.7
	26	19.6	20.6	21.5	22.4	23.4	24.3	25.3	26.2	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	50.7	51.8
	28	20.6	21.5	22.4	23.4	24.3	25.3	26.2	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	51.8	52.9
	30	21.5	22.4	23.4	24.3	25.3	26.2	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	52.9	54.0
	32	22.4	23.4	24.3	25.3	26.2	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	54.0	55.1
	34	23.4	24.3	25.3	26.2	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	55.1	56.2
	36	24.3	25.3	26.2	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	56.2	57.3
	38	25.3	26.2	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	57.3	58.4
	40	26.2	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	58.4	59.5
	42	27.1	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	59.5	60.6
	44	28.1	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	60.6	61.7
王	46	29.0	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	61.7	62.8
WIDTH	48	29.9	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4	62.8	63.9
	50	30.9	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4	53.3	63.9	65.0
	52	31.8	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4	53.3	54.2	65.0	66.1
	54	32.7	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4	53.3	54.2	55.2	66.1	67.2
	56	33.7	34.6	35.5	36.5	37.4	38.3	39.3	40.2	41.2	42.1	43.0	44.0	44.9	45.8	46.8	47.7	48.6	49.6	50.5	51.4	52.4	53.3	54.2	55.2	56.1	67.2	68.3
	58	40.8	41.9	43.0	44.1	45.2	46.3	47.4	48.5	49.6	50.7	51.8	52.9	54.0	55.1	56.2	57.3	58.4	59.5	60.6	61.7	62.8	63.9	65.0	66.1	67.2	68.3	69.4
	60	41.9	43.0	44.1	45.2	46.3	47.4	48.5	49.6	50.7	51.8	52.9	54.0	55.1	56.2	57.3	58.4	59.5	60.6	61.7	62.8	63.9	65.0	66.1	67.2	68.3	69.4	70.5
	62	43.0	44.1	45.2	46.3	47.4	48.5	49.6 50.7	50.7	51.8 52.9	52.9	54.0	55.1	56.2 57.3	57.3	58.4 59.5	59.5	60.6	61.7	62.8	63.9	65.0	66.1	67.2	68.3	69.4	70.5 71.6	71.6
	64	44.1	45.2	46.3	47.4	48.5	49.6	51.8	51.8		54.0	56.2	56.2	58.4	58.4		60.6	61.7	62.8	63.9	65.0	66.1	67.2	68.3	69.4	70.5	72.7	73.8
	66 68	45.2 46.3	46.3	47.4	48.5	49.6 50.7	50.7 51.8	52.9	52.9 54.0	54.0 55.1	55.1 56.2	57.3	57.3 58.4	59.5	59.5	60.6	61.7	62.8	63.9	65.0	66.1	67.2	68.3	69.4 70.5	70.5 71.6	71.6 72.7	73.8	74.9
	70	47.4	48.5	49.6	50.7	51.8	52.9	54.0	55.1	56.2	57.3	58.4	59.5	60.6	61.7	62.8	63.9	65.0	66.1	67.2	68.3	69.4	70.5	71.6	72.7	73.8	74.9	76.0
	72	48.5	49.6	50.7	51.8	52.9	54.0	55.1	56.2	57.3	58.4	59.5	60.6	61.7	62.8	63.9	65.0	66.1	67.2	68.3	69.4	70.5	71.6	72.7	73.8	74.9	76.0	77.1
	74	52.6	53.8	54.9	56.1	57.3	58.4	59.6	60.8	61.9	63.1	64.3	65.4	66.6	67.8	69.0	70.1	71.3	72.5	73.6	74.8	76.0	77.1	78.3	79.5	80.6	81.8	83.0
	76	53.8	54.9	56.1	57.3	58.4	59.6	60.8	61.9	63.1	64.3	65.4	66.6	67.8	69.0	70.1	71.3	72.5	73.6	74.8	76.0	77.1	78.3	79.5	80.6	81.8	83.0	84.1
	78	54.9	56.1	57.3	58.4	59.6	60.8	61.9	63.1	64.3	65.4	66.6	67.8	69.0	70.1	71.3	72.5	73.6	74.8	76.0	77.1	78.3	79.5	80.6	81.8	83.0	84.1	85.3
	80	56.1	57.3	58.4	59.6	60.8	61.9	63.1	64.3	65.4	66.6	67.8	69.0	70.1	71.3	72.5	73.6	74.8	76.0	77.1	78.3	79.5	80.6	81.8	83.0	84.1	85.3	86.5
	82	65.4	66.8	68.1	69.4	70.8	72.1	73.4	74.8	76.1	77.4	78.8	80.1	81.5	82.8	84.1	85.5	86.8	88.1	89.5	90.8	92.1	93.5	94.8	96.1	97.5	98.8	100.2
	84	66.8	68.1	69.4	70.8	72.1	73.4	74.8	76.1	77.4	78.8	80.1	81.5	82.8	84.1	85.5	86.8	88.1	89.5	90.8	92.1	93.5	94.8	96.1	97.5	98.8	100.2	101.5
	86	68.1	69.4	70.8	72.1	73.4	74.8	76.1	77.4	78.8	80.1	81.5	82.8	84.1	85.5	86.8	88.1	89.5	90.8	92.1	93.5	94.8	96.1	97.5	98.8	100.2	101.5	102.8
	88	69.4	70.8	72.1	73.4	74.8	76.1	77.4	78.8	80.1	81.5	82.8	84.1	85.5	86.8	88.1	89.5	90.8	92.1	93.5	94.8	96.1	97.5	98.8	100.2	101.5	102.8	104.2
	90	70.8	72.1	73.4	74.8	76.1	77.4	78.8	80.1	81.5	82.8	84.1	85.5	86.8	88.1	89.5	90.8	92.1	93.5	94.8	96.1	97.5	98.8	100.2	101.5	102.8	104.2	105.5
	50	7 0.0	72.1	, 3.4	7 7.0	7 0.1	77.7	70.0	00.1	01.5	02.0	7.1	03.3	00.0	-00.1	03.3	33.0	-5Z.1	33.3	J 1.0	55.1	37.3	.55.0	100.2	101.3	102.0	10 1.2	103.3



Round Spiral Duct Weights for Rooftop Applications

Insulated Supply Air Duct

SMACNA Gauges / Double-Wall with 2" Insultation (per ASHRAE 90.1)

Pounds per Lineal Foot* No Flanges Diameter T-25 Flanges Angle Iron Rings 3" Ø i.d. 4" Ø i.d 3.44 4.01 3.99 4.62 5" Ø i.d. 4.63 4.54 5.24 5.30 6" Ø i.d. 7" Ø i.d 5.90 5.64 8" Ø i.d. 6.48 9" Ø i.d. 6.19 7.09 7.26 10" Ø i.d. 6.74 11" Ø i.d. 9.85 12" Ø i.d. 8.78 7.85 13" Ø i.d. 8.40 9.39 10.46 14" Ø i.d. 9.99 8.95 11.69 15" Ø i.d. 9.50 16" Ø i.d. 10.31 11.47 12.69 12.71 13.95 18" Ø i.d. 11.44 14.13 15.44 20" Ø i.d. 19.72 22" Ø i.d. 24" Ø i.d. 16.87 18.60 26" Ø i.d 19.42 24.42 28" Ø i.d 30" Ø i.d. 20.70 22.78 26.32 32" Ø i.d. 21.97 34" Ø i.d. 25.57 29.37 36" Ø i.d. 24.52 26.96 30.96 38" Ø i.d. 25.79 28.35 40" Ø i.d. 34.51 38.96 42" Ø i.d. 44" Ø i.d. 33.14 36.05 40.82 34.56 37.59 39.13 46" Ø i.d. 42.56 35.98 44.33 48" Ø i.d. 37.40 41.29 46.05 50" Ø i.d. 52" Ø i.d 42.86 47.79 44.42 49.54 56" Ø i.d. 41.66 45.98 51.29 58" Ø i.d. 44.70 49.17 54.65 60" Ø i.d. 46.18 50.78 56.45 61.10 62" Ø i.d. 64" Ø i.d. 56.19 61.08 67.09 62.91 66" Ø i.d. 69.10 59.56 64.73 70" Ø i.d. 61.25 66.56 72" Ø i.d. 62.93 68.39 75.11 74" Ø i.d. 76" Ø i.d 66.31 78" Ø i.d. 67.99 73.88 81.14 80" Ø i.d 69.68 75.71 77.53 83.13 85.14 82" Ø i.d. 71.36 84" Ø i.d. 73.05 79.36 87.15 92.54 86" Ø i.d 86.09 94.64 88.04 90" Ø i.d. 89.99 96.73 105.06 91.94 92" Ø i.d. 98.82 107.33

Single Wall Spiral Duct

				Pounds per	Lineal Foot	*		
Diameter	28 ga.	26 ga.	24 ga.	22 ga.	20 ga.	18 ga.	16 ga.	14 ga.
3" Ø	0.73	0.87	1.10	1.35	1.63	_	_	_
4" Ø	0.98	1.16	1.46	1.80	2.17	_	_	_
5" Ø	1.22	1.45	1.83	2.25	2.71	_	_	_
6" Ø	1.47	1.74	2.20	2.70	3.25	4.25	5.33	_
7" Ø	1.71	2.03	2.56	3.15	3.80	4.96	6.22	_
8" Ø	1.96	2.32	2.93	3.60	4.34	5.67	7.11	_
9" Ø	2.20	2.61	3.30	4.05	4.88	6.38	7.99	_
10" Ø	2.45	2.90	3.66	4.50	5.42	7.09	8.88	_
11" Ø	2.69	3.19	4.03	4.95	5.97	7.80	9.77	_
12" Ø	2.94	3.48	4.39	5.40	6.51	8.51	10.66	_
13" Ø	3.18	3.77	4.76	5.85	7.05	9.21	11.55	_
14" Ø	3.43	4.06	5.13	6.30	7.59	9.92	12.43	_
15" Ø	3.67	4.35	5.49	6.75	8.14	10.63	13.32	_
16" Ø	3.92	4.65	5.86	7.20	8.68	11.34	14.21	_
18" Ø	4.41	5.23	6.59	8.10	9.76	12.76	15.99	_
20" Ø	4.90	5.81	7.32	9.00	10.85	14.18	17.76	24.22
22" Ø	5.38	6.39	8.06	9.90	11.93	15.59	19.54	26.64
24" Ø	5.87	6.97	8.79	10.80	13.02	17.01	21.32	29.06
26" Ø	6.36	7.55	9.52	11.69	14.10	18.43	23.09	31.49
28" Ø	6.85	8.13	10.25	12.59	15.19	19.85	24.87	33.91
30" Ø	7.34	8.71	10.99	13.49	16.27	21.26	26.65	36.33
32" Ø	7.83	9.29	11.72	14.39	17.36	22.68	28.42	38.75
34" Ø	8.32	9.87	12.45	15.29	18.44	24.10	30.20	41.17
36" Ø	8.81	10.45	13.18	16.19	19.53	25.52	31.97	43.60
38" Ø	9.30	11.03	13.92	17.09	20.61	26.93	33.75	46.02
40" Ø	9.79	11.61	14.65	17.99	21.70	28.35	35.53	48.44
42" Ø	10.28	12.19	15.38	18.89	22.78	29.77	37.30	50.86
44" Ø	10.20	12.77	16.11	19.79	23.87	31.19	39.08	53.28
46" Ø		13.36	16.85	20.69	24.95	32.60	40.86	55.71
48" Ø		13.94	17.58	21.59	26.04	34.02	42.63	58.13
50" Ø		14.52	18.31	22.49	27.12	35.44	44.41	60.55
52" Ø		15.10	19.04	23.39	28.21	36.86	46.19	62.97
54" Ø		15.68	19.78	24.29	29.29	38.27	47.96	65.39
56" Ø		16.26	20.51	25.19	30.38	39.69	49.74	67.82
58" Ø	_	16.84	21.24	26.09	31.46	41.11	51.51	70.24
		17.42		26.99	32.55	42.53	53.29	
60" Ø		17.42	21.97			42.55	55.29	72.66
62" Ø			22.71	27.89	33.63			75.08
64" Ø	_		23.44	28.79	34.72	45.36	56.84	77.50
66" Ø	_		24.17	29.69	35.80	46.78	58.62	79.93
68" Ø	_		24.90	30.59	36.89	48.20	60.40	82.35
70" Ø	_	_	25.64	31.49	37.97	49.61	62.17	84.77
72" Ø		_	26.37	32.39	39.06	51.03	63.95	87.19
74" Ø		_	27.10	33.28	40.14	52.45	65.73	89.61
76" Ø	_	_	27.83	34.18	41.23	53.87	67.50	92.04
78" Ø	_	_	28.57	35.08	42.31	55.28	69.28	94.46
80" Ø	-	-	29.30	35.98	43.40	56.70	71.05	96.88
82" Ø	-	_	30.03	36.88	44.48	58.12	72.83	99.30
84" Ø	_	_	30.76	37.78	45.57	59.54	74.61	101.72
86" Ø	_	-	31.50	38.68	46.65	60.95	76.38	104.15
88" Ø	=	-	32.23	39.58	47.74	62.37	78.16	106.57
90" Ø	-	-	32.96	40.48	48.82	63.79	79.94	108.99
92" Ø	_	-	33.69	41.38	49.91	65.21	81.71	111.41

^{*} Nominal spiral ducts system weights are based on the following: 1.80% of duct surface area is spiral pipe versus 20% of duct surface area to be fittings. 2. Fittings are one even gauge heavier than spiral pipe. 3. Standard duct lengths of 10'-0" are used. 4. Double-wall insulated duct will have a minimal-gauge ribbed inner liner that is perforated with 23% open area. Spiral duct manufacturers utilize a wide range of material/gauge options for their products. There is even some variance in seam spacing from different brands of spiral tubeformers. This chart is simply intended to be a guide for the designer in determining the type and spacing of rooftop support products. Duct manufacturers should be consulted to supply actual weight of their duct system.