



Honeywell Factory

SUSCON STACKS

Factory Fabricated Stacks & Exhaust Systems

Boilers, Incineration, Kilns, Fireplaces and Fume Exhausts



About Us

Established in 1969, **Suscon Products** is a highly respected manufacturing company located just north of Baltimore, Maryland. It is our mission to complete each project accurately and efficiently in order to meet specifications, while minimizing costs and ensuring on-time delivery. Our experienced engineering team offers decades of expertise in product design and manufacturing. Furthermore, our stringent quality guidelines during the design, manufacturing, and assembly phases are the hallmark of our outstanding reputation.

For the past four decades, **Suscon Stacks**, which is the product **Suscon Products** was founded upon, has specialized in the design and fabrication of factory built refractory lined chimneys. In fact, we are one of the few companies in the nation with an Underwriters Listing – UL-959: Medium Heat Appliance Factory Built Chimney. In addition, we have specially formulated refractories for flue gas temperatures ranging from 300° F to 3000° F.

Suscon Stacks are designed for each individual application and feature a high temperature refractory centrifugally cast within a structural steel shell.

Suscon Stacks are ideal for use on boilers, incineration, kilns, fireplaces and fume exhausts.

Suscon Stacks include a full line of stack components and accessories to form a complete exhaust system ranging from 6" to 60" inside diameter. Our stacks can be specially constructed and assembled in-house to any configuration to accommodate both shipping and installation.



Why Us?

Suscon Stacks longevity and ease of installation make them the industry favorite. They represent the concentrated end product of all the information, design expertise and operating experience of professional engineers. With a national distribution network and their staff of professional, reliable, and well trained personnel they will be happy to assist you in your combustion equipment project.

Suscon Stacks are generally lined with either SC-1 or SC-2 refractories. SC-1 is listed under UL-959 and is suitable for continuous temperatures of 1800° F and 2000° F intermittent.

SC-2 is suitable for a continuous temperature of 2600° F. Both proprietary refractories are resistant to chimney exhaust acids such as boiler fuels and for incineration uses up to their specified temperature. Should a client have a special requirement, our engineers will work to create a custom refractory for the project.



MIT Biotechnology Building
Filters Supported Through Roof



Services

- » Budget Pricing
- » Specification Writing
- » Stack Sizing
- » Free-Standing Stack Design
- » Design Analysis:
 - Thermal
 - Corrosion
 - Structural

Products

- » Free-Standing Steel Stacks
- » Refractory Lined & Unlined
- » Guyed or Laterally Braced Stacks
- » Breeching
- » Combustion Chambers

Refractories

- » Centrifugally Cast Refractories
- » Wet Cast Refractories
- » Custom Refractories
- » Acid Resistant Membranes

Market Sectors

- » Institutional
- » Power Plants
- » Heating Plants
- » Municipal Waste Incineration
- » Industrial Incineration
- » Medical Waste Incineration
- » High Rise Complexes
- » Diesel Engine Exhaust

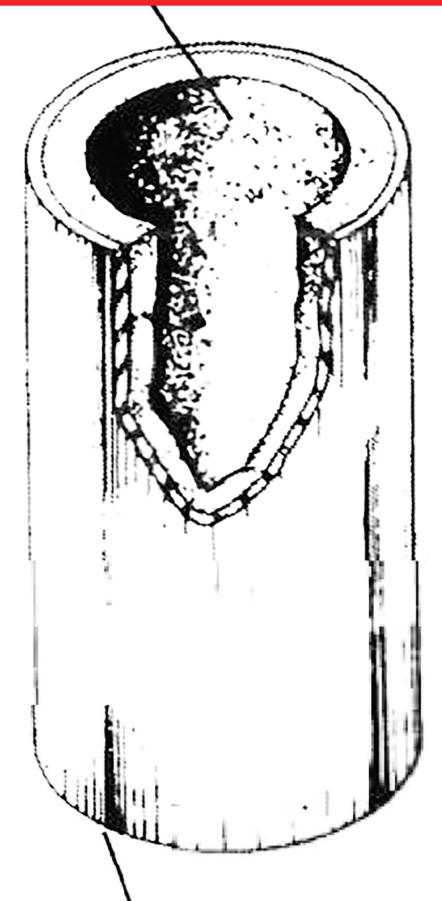


Mount Wachusett Community College
Freestanding Stacks

Code Approvals

- Building Officials Conference of America (BOCA)
- Uniform Building Code (UBC)
- National Building Code (NBC)
- Southern Building Code (SBC)
- American Society of Civil Engineers (ASCE) Minimum Design Loads for Buildings & Other Structures

Refractory Interior Lining



Welded steel casing forms continuous reinforcement (continuous lock-form used on 24 ga. casing)



University of Florida - Genetics Institute & Cancer Research Center
Generator Stack & Boiler Stack



UL stands for Underwriters Laboratories, an organization that has been around for more than 100 years. The UL Listing means that UL has tested representative samples of a product and determined that the product meets specific, defined requirements. These requirements are often based on UL's published and nationally recognized Standards for Safety.



**Building relationships.
One project at a time.**

Guyed/Laterally Supported Stack

Suscon Stacks are utilized where high temperatures, corrosive conditions or longevity of the product life are required. **Suscon Stacks** most produced design is a guyed or laterally supported stack that can be utilized for numerous applications, including exhausting boilers, diesel generators, incinerators, industrial furnaces and kilns.

It is usually constructed with the UL 959 components. Stacks of this construction can be fabricated in 4'-0" sections for use with joint bands for assembly or they can be welded in to lengths suitable for the client's requirements. The stack's component construction is a factory built, refractory-lined and steel jacketed design.

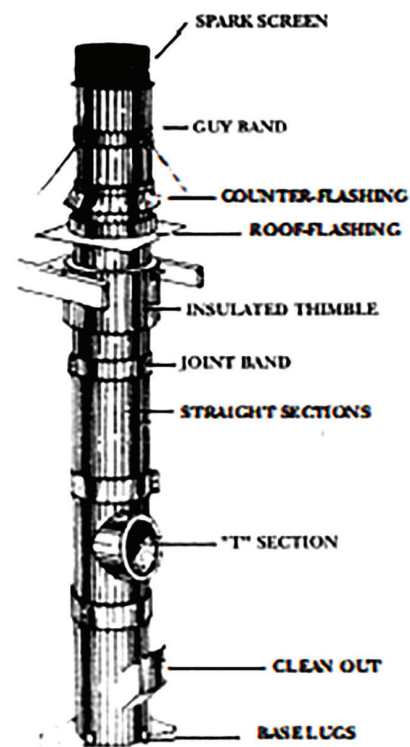
Supporting methods for this type of **Suscon Stack** can be one or a combination of the following; guy wires with the wires attached at the stack and running down to anchor points on the ground or to an adjacent building, or by the use of lateral braces which are attached to a building or supporting structure. We can provide supporting load information to assist the client in designing the supports.

The advantage of using this type of stack over an insulated double wall stack are easily recognizable; product life and economy or price. Our clients can be certain it will be performing long after the double wall stack must be replaced.

Our stack design is typically based

on UL 959 requirements, ensuring the client a proven design and product. When support requirements differ from the UL recommendations, **Suscon Stacks** engineers will lead the design efforts.

Suscon Stacks are available with a variety of refractory linings. The UL listed refractory is our SC-1, which is suitable for continuous temperatures of 1800° F. If requirements dictate a higher temperature, **Suscon Stacks** offers SC-2 suitable for 2,600° F continuous or our SC-3 which is capable of performing at 3,000° F. Steel jacket availability ranges from 24 gauge galvanized to various plate thicknesses using A-36, weathering or stainless steel. **Suscon Stacks** can be finished in a variety of ways, including shipped in primer only for field painting at the site or painted at our factory.



Engineered/Free-Standing Stack

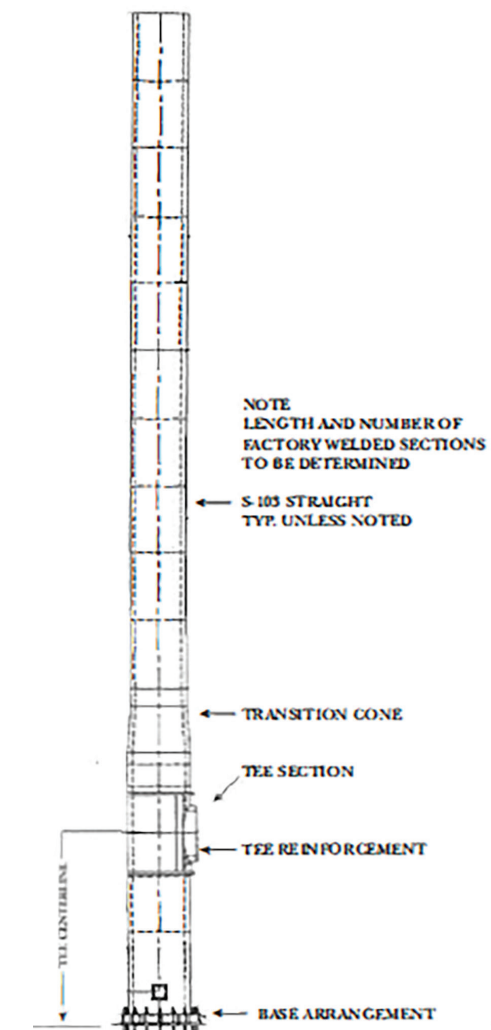


When aesthetics, quality and longevity are the main focus of your stack project, **Suscon Stacks** Engineered/Free-standing stacks are the industry standard. This type of stack does not require guy wires or lateral bracing and stands by itself. These **Suscon Stacks** are constructed of a high temperature refractory liner centrifugally cast in a steel outer jacket. This factory built, refractory lined, steel jacketed design offers distinct advantages over all other stack constructions.

Dual wall steel stacks do not have the temperature, wind, vibration integrities or acid-resistant qualities of **Suscon Stacks**. No steel, including stainless is acid proof. These inherent weaknesses could lead to the collapse of such stacks. **Suscon Stacks** steel-encased, refractory stacks have the weight and stiffness of masonry along with the strength of steel.

Gunite-lined stacks may have deficiencies due to the way they are installed. The gunite lining is sprayed after the steel shell of the stack is erected. Any movement or deflection of the shell before the gunite is completely cured can and will cause cracks in the lining. This action not only weakens the stack but creates a path for acids to reach the exterior steel shell of the stack.

Structurally, the design of the Suscon Engineered/Free-Standing Stack is based on the steel shell alone. The lining is taken into account only for ovaling and



deflection calculations. This provides for a conservative design, considering the refractory has a cold crushing strength of over 3,000 p.s.i.

Steel type based on requirements. Installed refractories include our proprietary SC-1 (UL 959 tested), our SC-2 which is suitable for temperatures to 2,600° F, our SC-3, which is suitable for temperatures to 3,000° F or a custom refractory.

Post fabrication, the A-36 stacks are sandblasted, primed and



painted. The Corten Stacks are sandblasted and left to weather to their natural finish. Finally the stainless stacks may be acid washed or sandblasted, pending the desired finish. **Suscon Stacks** are supplied in factory welded sections.

UL 959/SC-1 Tech Data

STANDARD MODEL UL 959 LISTED/SC-1 Sizes 6" I.D. to 60" I.D.

Inside Diameter of Stack Section	6"	8"	10"	12"	15"	18"	21"	24"	27"	30"
Outside Diameter (inches)	10	12	14	16	19.5	23	26.5	30	33.5	37
Wall Thickness (inches)	2	2	2	2	2.25	2.5	2.75	3	3.25	3.5
Diam. & Area	Flue Area (sq. inches)	28	50	79	113	177	254	346	452	573
	Bearing Square (sq. inches)	51	63	75	88	122	161	205	254	309
	Straight Section	48	48	48	48	48	48	48	48	48
	"T" Section	48	48	48	48	48	48	48	48	48
Section Length (inches)	Clean-out Section	48	48	48	48	48	48	48	48	48
	30° or 45° "Y" Section	48	48	48	48	48	48	72	72	72
	30° or 45° Elbow Min. Short Leg	4	4	4	4	4	4	4	4	4
	Max. Height Stack	220	220	220	240	235	210	190	165	165
Height Limit (feet)	Max. Height Above "T"	135	135	135	130	115	85	75	60	60
	Max. Height Above Clean Out	151	151	151	146	131	101	91	76	76
	Max. Height Above Heavy Duty "T"	—	—	—	—	—	210	190	175	175
	Max. Height Above Heavy Duty Clean Out	—	—	—	—	—	226	206	191	191
Approx Weight (lbs.)	Straight Section—Standard Casing	220	220	220	240	235	210	190	165	175
	"T" Section—Standard Casing	135	135	130	115	85	75	60	60	60
	Clean-Out Section—Standard Casing	201	251	295	354	407	601	696	938	1056
	Chute Section—Standard Casing	—	—	—	—	—	—	1113	1297	1546
	Straight Section—.122" Casing	236	292	343	404	488	704	804	1080	1472
	"T" Section—.122" Casing	268	331	393	464	563	797	912	1212	1659
	Clean-Out—.122" Casing	268	331	331	394	458	685	782	1055	1215
	30° or 45° "Y" Section—.122" Casing	296	367	431	522	636	945	1499	2021	2328
	30° or 45° Elbow Section—.122" Casing	60	70	105	127	161	271	407	488	562
90° Elbow Section	120	140	210	255	323	543	814	977	1125	

Note: 90 Elbow dimensions are equal to two 45 Elbows

LARGE DIAMETER STACK SECTIONS UL959 Not Applicable

Inside Diameter of Sections	66"	72"	78"	84"	90"	96"
Outside Diam. (inches)	Light Wall Sections	72	79	86	93	100
	Standard Wall	79	86	93	100	107
	Heavy Wall Sections	86	93	100	107	114
	Extra Heavy Wall	93	100	107	114	121

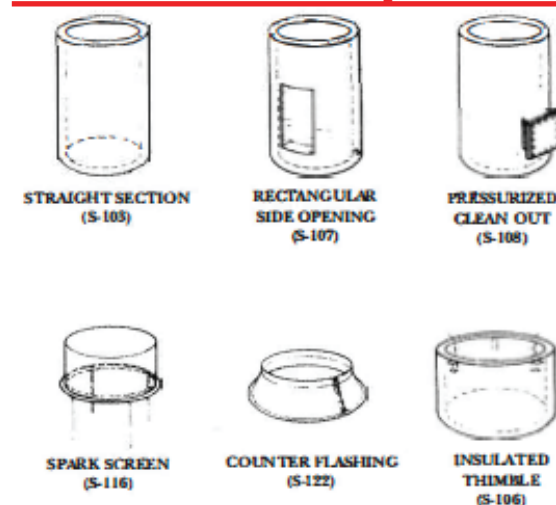
SUSCON SC-1 & SC-2 REFRACTORY DATA

	SC-1	SC-2
Maximum Service Temperature	2000°F	2600°F
Unit Weight Dried	120 lbs/cu. ft.	125 lbs/cu. ft.

THERMAL CONDUCTIVITY (k); Suscon SC-1 & SC-2

SC-1	F	k	SC-2	F	k
	400	4.32		400	4.40
	800	4.52		800	4.60
	1200	4.73		1200	4.80
	1600	4.94		1600	5.00

Standard Components

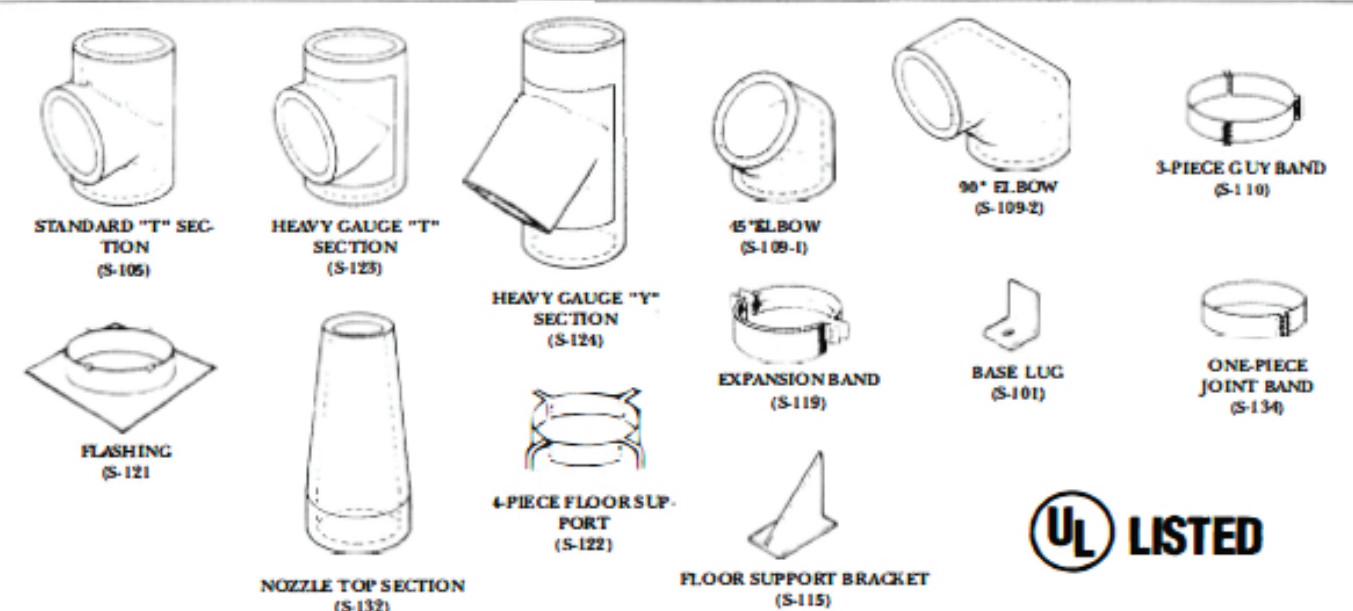


(k)=BTU/sq. ft./ Hr. /Degrees F / In. Thickness

STANDARD MODEL UL 959 LISTED/SC-1 Sizes 6" I.D. to 60" I.D. (cont'd) Consult Susquehanna Concrete Products for larger sizes

Inside Diameter of Stack Section	33"	36"	39"	42"	45"	48"	51"	54"	57"	60"
Outside Diameter (inches)	40.5	44	47.5	51	54.5	58	61.5	65	68.5	72
Wall Thickness (inches)	3.25	4	4.24	4.5	4.75	5	5.25	5.5	5.75	6
Diam. & Area	Flue Area (sq. inches)	855	1018	1195	1385	1590	1809	2042	2290	2552
	Bearing Square (sq. inches)	433	503	577	658	742	833	928	1028	1133
	Straight Section	48	48	48	48	48	48	48	48	48
	"T" Section	72	72	72	72	72	72	72	72	96
Section Length (inches)	Clean-out Section	48	48	48	48	48	48	48	48	48
	30° or 45° "Y" Section	96	96	96	96	96	96	—	—	—
	30° or 45° Elbow Min. Short Leg	4	4	4	4	4	4	4	4	4
	Max. Height Stack	155	155	155	155					
Height Limit (feet)	Max. Height Above "T"	25	25	25	25					
	Max. Height Above Clean Out	41	41	41	41	Consult Suscon Products				
	Max. Height Above Heavy Duty "T"	145	130	130	130					
	Max. Height Above Heavy Duty Clean Out	171	146	146	146					
Straight Section—Standard Casing	155	155	155	155						
Approx Weight (lbs.)	"T" Section—Standard Casing	—	—	—	—					
	Clean-Out Section—Standard Casing	1450	1796	—	—	—	—	—	—	—
	Chute Section—Standard Casing	1749	2168	—	—	—	—	—	—	—
	Straight Section—.122" Casing	1664	2048	2268	2572	2739	3234	3588	3968	4361
	"T" Section—.122" Casing	2678	3292	4609	5129	5462	6449	7155	7912	9768
	Clean-Out—.122" Casing	1630	1998	2200	2535	2699	3186	3534	3908	4295
	30° or 45° "Y" Section—.122" Casing	4157	5126	—	—	—	—	—	—	—
30° or 45° Elbow Section—.122" Casing	862	1703	—	—	—	—	—	—	—	
90° Elbow Section	1725	2206	—	—	—	—	—	—	—	

Note: 90 Elbow dimensions are equal to two 45 Elbows





Rocky Mountain Laboratories
Freestanding Stack

Our clients have come to depend on us.



UNITED STATES
POSTAL SERVICE



SAINT FRANCIS
Hospital and Medical Center



TEXAS
The University of Texas at Austin