

Segmented flame tubes SICAFLEX®

TECHNICAL INFORMATION

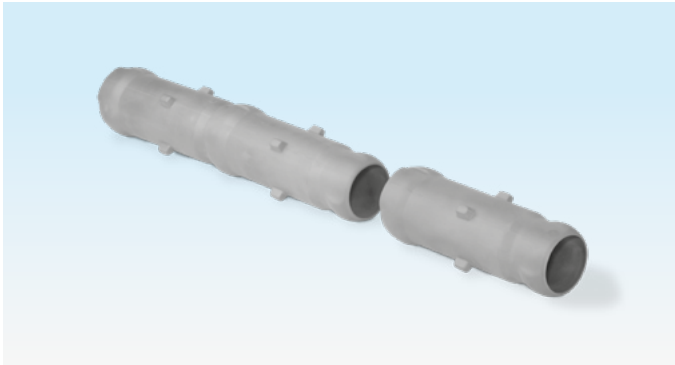
- Simple installation, even in existing radiant tube systems
- Flame tubes can be made to any length by combining individual flame tube segments
- Patented flame tube segment design allows flame tube to be bent
- Reduced strain on radiant tubes due to light-weight design
- Long service life due to ceramic material SiSiC which is resistant to high temperatures



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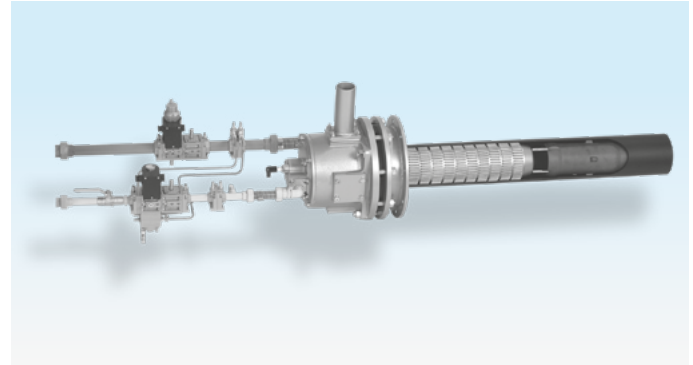
1 Application



The segments can be interconnected to make a flame tube of any length.



The bayonet joint of the individual segments allows adjustment to bent radiant tubes.

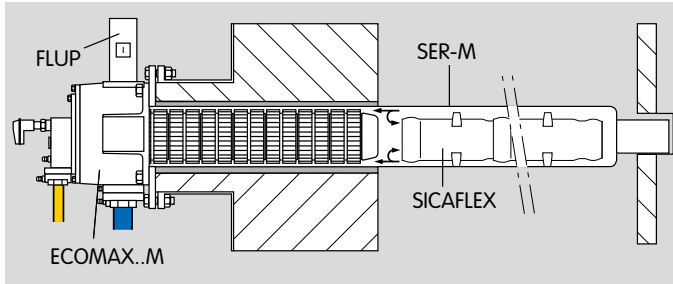


SICAFLLEX® in radiant tube on self-recuperative burner ECOMAX

SICAFLLEX® segmented flame tubes are used to guide hot flue gases in single ended radiant tubes in conjunction with a self-recuperative burner. The SICAFLLEX® segmented flame tubes are interconnected using a bayonet joint. This connection allows for adjustment to flexures in metal radiant tubes, and slits in the flame tube from the dislocation of flame tube parts are avoided. The low weight of the SICAFLLEX® segmented flame tubes places very little strain on the radiant tube.

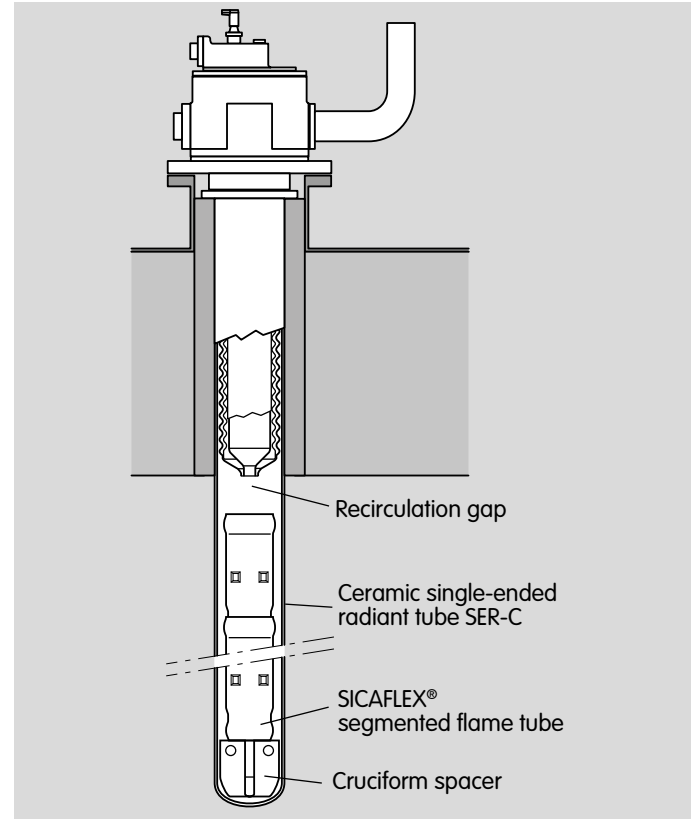
1.1 Application examples

1.1.1 SICAFLEX® in horizontally fitted single ended radiant tubes



The SICAFLEX® segmented flame tube is fitted inside the single ended radiant tube to guide the hot flue gases. The hot flue gases from the burner are routed through the internal SICAFLEX® segmented flame tube. The high outlet velocity of the combustion gases generates a pressure at the outlet of the ceramic burner tube, resulting in the recirculation of the flue gases between the segmented flame tube and the radiant tube. This results in a uniform radiant tube temperature and reduces the formation of NO_x in the flame.

1.1.2 SICAFLEX® in vertically fitted single ended radiant tubes



In vertically fitted single ended radiant tubes, a cruciform spacer ensures optimum sizing of the recirculation gap between the segmented flame tube and the burner, see page 9 (Cruciform spacer).

2 Selection

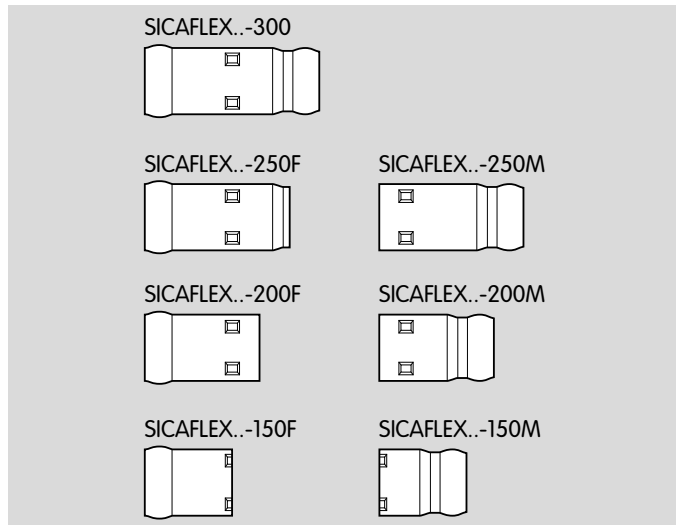
The dimensions of the SICAFLEX® segmented flame tube are adapted to the dimensions of the ceramic radiant tube SER-C as well as standard metallic radiant tubes.

2.1 ProFi

A web app for selecting the correct product is available at www.adlatus.org.

2.2 Versions

The standard length for SICAFLEX® is 300 mm. Shortened segments in 50 mm increments are available for length adjustment:



2.2.1 Standard combinations

Radiant tube	Segmented flame tube	Burner
SER-C 100/088	SICAFLEX 100/088/084	ECOMAX 0C
SER-C 142/128	SICAFLEX 142/127/123	ECOMAX 1C
SER-C 162/148	SICAFLEX 162/147/143	ECOMAX 2C
SER-C 202/188	SICAFLEX 202/186/182	ECOMAX 3C

Possible combinations SER / SICAFLEX

Radiant tube internal diameter	SICAFLEX
88 mm - 93 mm	100/88/84
94 mm - 126 mm	On demand
127 mm - 132 mm	142/127/123
133 mm - 146 mm	152/133/129
147 mm - 156 mm	162/147/143
157 mm - 166 mm	175/157/153
167 mm - 185 mm	On demand
186 mm - 200 mm	202/186/182
201 mm - 279 mm	On demand
280 mm - 300 mm	300/280/275
> 300 mm	On demand

2.3 Selection table

Option	SICAFLEX 100/088/084	SICAFLEX 142/127/123	SICAFLEX 152/133/129	SICAFLEX 162/147/143	SICAFLEX 175/157/153	SICAFLEX 202/186/182	SICAFLEX 300/280/275
Length [mm]	-300, -250, -200	-300, -250, -200, -150	-300, -250, -200	-300, -250, -200, -150	-300, -250, -200	-300, -250, -200, -150	-300, -200
Cut end	F, M	F, M	F, M	F, M	F, M	F, M	F, M
SICAFLEX® external diameter different from standard	D	D	D	D	D	D	D
Special version with 2 cams on the circumference for horizontal installation						H	H
Special version	Z	Z	Z	Z	Z	Z	Z

Order example

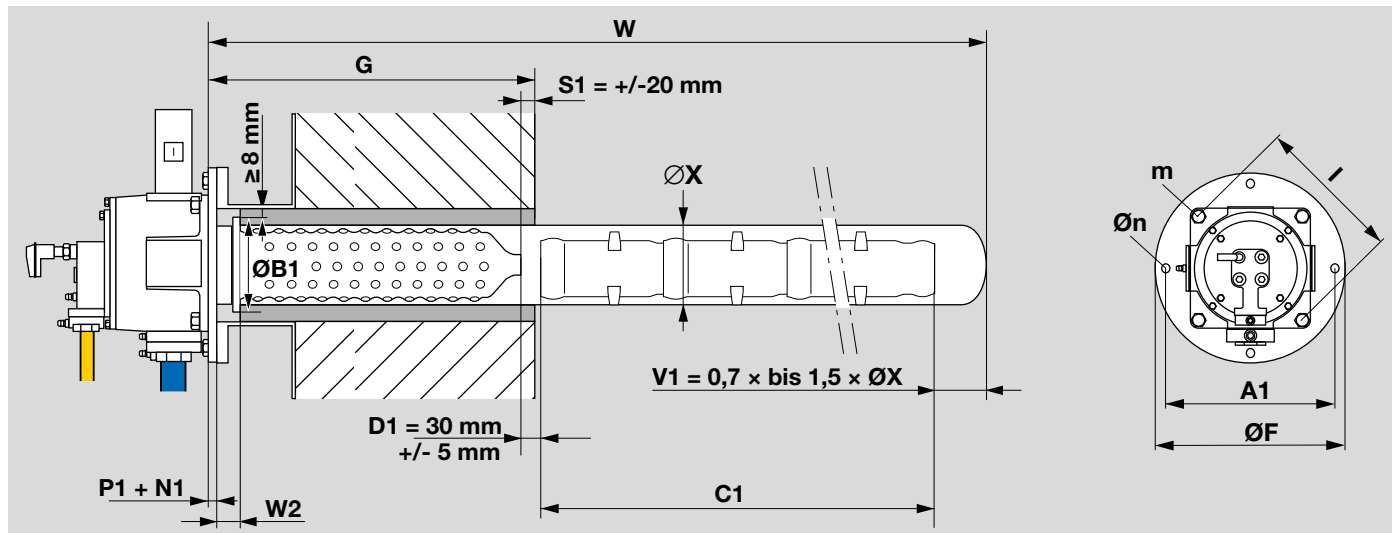
SICAFLEX 142/127/123-250M

2.4 Type code

SICAFLEX	Segmented flame tube
100-300	Size
/088-280	Min. radiant tube internal diameter [mm]
/084-275	SICAFLEX external diameter [mm]
-150-300	Length [mm]
F	Narrow end cut off
M	Wide end cut off
D	SICAFLEX® OD different from standard
H	Special version with 2 cams on the circumference for horizontal installation

3 Project planning information

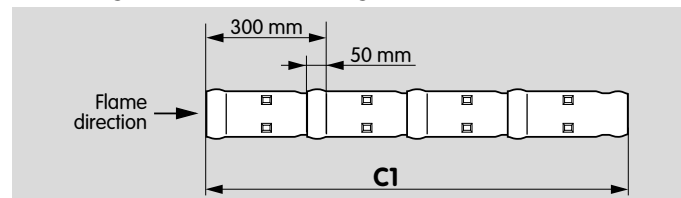
3.1 Flame tube length



Legend

- **W** = radiant tube length
- **G** = burner length
- **D1** = recirculation gap
- **V1** = deflector gap
- **C1** = flame tube length
- **n** = number of SICAFLEX® segments
- **d_i** = internal diameter of radiant tube

The individual SICAFLEX® segments are interconnected using bayonet joints. To avoid short-circuiting, the wide ends of the segments must be facing the burner.



Calculation

Flame tube length **C1** is the result of radiant tube length **W** minus burner length **G**, recirculation gap **D1** and deflector gap **V1**.

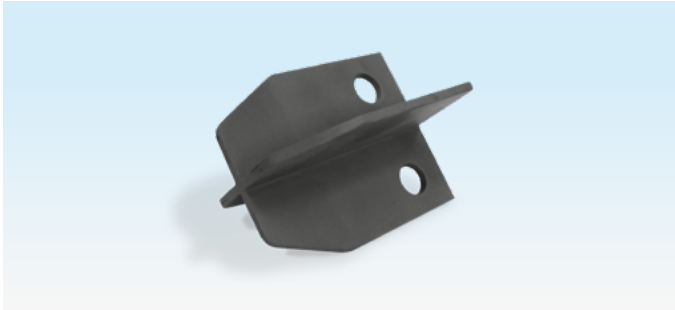
$$\mathbf{C1 = W - G - D1 - V1}$$

When using standard elements (300 mm), a flame tube length **C1** of $n \times 250 \text{ mm} + 50 \text{ mm}$ is possible. Other lengths are possible in 50 mm increments using shortened segments, see page 10 (Dimensions).

The deflector gap **V1** should equal 0.5 to 1.5 times the internal diameter **d_i** of the radiant tube. When using radiant tube SER-C, the size of the deflector gap **V1** should equal 0.7 to 1.5 times the internal diameter **d_i** of the radiant tube. If the deflector gap is too big, this can lead to cold radiant tube ends. If the gap is too small, this restricts the backflow.

4 Accessories

4.1 Cruciform spacer



For installation of the SICAFLEX® segmented flame tube in vertical radiant tubes, see page 4 (SICAFLEX® in vertically fitted single ended radiant tubes).

The cruciform spacer ensures optimum sizing of the recirculation gap between the segmented flame tube and the burner.

Material: refractory clay.

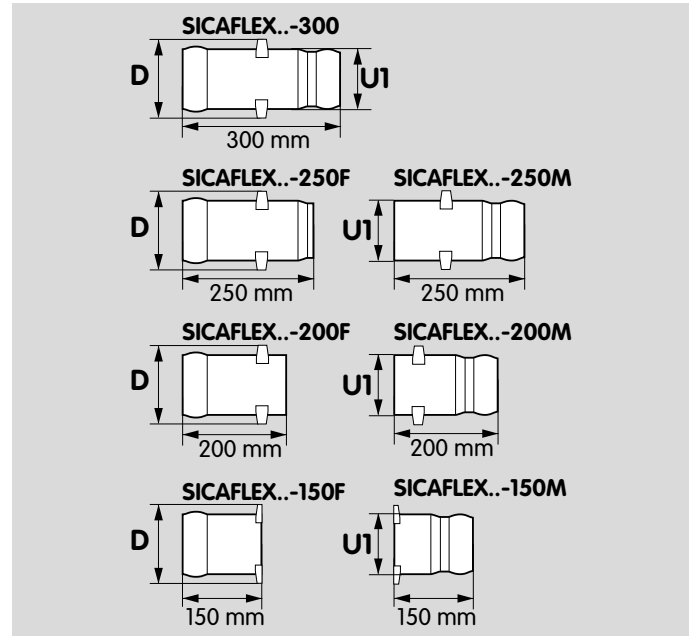
Available on request in different sizes depending on the SICAFLEX® sizes and different heights.

5 Technical data

Material: SiSiC

Max. application temperature: 1350°C.

5.1 Dimensions



	$\varnothing D$ [mm]	$\varnothing U1$ [mm]	Weight* [kg]
SICAFLEX 100/88/84	84 (± 1)	67	0.7
SICAFLEX 142/127/123	123 (± 1)	98	1.1
SICAFLEX 152/133/129	129 (± 1)	98	1.2
SICAFLEX 162/147/143	143 (± 1)	114	1.3
SICAFLEX 175/157/153	153 (± 1)	121	1.5
SICAFLEX 202/186/182	182 (± 1)	143	1.8
SICAFLEX 300/280/275	275 (+ 1/- 3.5)	208	3.0

* SICAFLEX..-300

Fore more information

The Honeywell Thermal Solutions family of products includes Honeywell Combustion Safety, Eclipse, Exothermics, Hauck, Kromschroder and Maxon. To learn more about our products, visit ThermalSolutions.honeywell.com or contact your Honeywell Sales Engineer.

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