

## Product Range

**Specialists in**  
**Expansion Elements**

MADE IN  
GERMANY



**Semmler**  
EXPANSION ELEMENTS

# Semmler Expansion Elements

Semmler produces ready-for-installation expansion elements, which effectively compensate for expansion and/or contraction of practically all types of gutters; water gutters, inserted box-type gutters, parapets, coping, flat roof skirting, wall joints and for metal roofing.

Our elements are made of EPDM rubber compounds bonded with metals; all our materials are of the highest quality and of a durability which has been proven over many years.

The term EPDM is commonly used to mean a rubber compound based on an Ethylene-Propylene-Dien-Methylene whose positive physical properties make it particularly suitable for usage in metal roofing and roof drainage systems.

The expansion elements are available in all the standard metals generally used for roofing, for example:

- Titanium zinc
- Copper
- Aluminium
- Stainless Steel V2A (CrNi)
- Uginox FTE
- Uginox FME
- Roofinox
- Ugitop
- mattplus
- RZ zinc, pre-weathered, prePatina blue grey
- RZ zinc, pre-weathered, prePatina graphite grey
- VM Zinc QUARTZ
- VM Zinc ANTHRA
- NedZinc Nova brushed
- Galvanised
- Lead

## Materials

### Why use expansion elements?

All roofing materials are exposed to extreme fluctuations in temperature. A sudden rise or drop in temperature can occur within minutes, as caused by approaching thunderstorms or when the bright spring sunlight turns quickly to night frost. Building components expand or contract; each material reacts differently according to its natural physical properties. The location of the building also plays a vital part.

Materials expand at different rates. The average expansion per metre at a difference in temperature of 100°C is as follows:

Concrete	1,2 mm
Sheet steel	1,2 mm
Copper	1,7 mm
Titanium zinc	2,2 mm
Aluminium	2,4 mm

How much sunshine and how much shade are the building materials being subjected to? The elements of nature change the natural make-up of the building components.

Practical experience has shown that soldered joints or bonded bitumen roof-sheeting are especially vulnerable to such expansion and/or contraction. The use of expansion elements, which have an elastic central part, can systematically compensate for all undesired changes in length or shape.

## Quality

### Outstanding properties.

Semmler's many years of experience and the use of high-quality materials is a combination which offers numerous advantages:

- Durability.
- Our rubber compound has proven to be highly resistant to UV radiation, ozone, the effects caused by extreme weather conditions, alkaline and/or acid rain over long periods of time.
- Rubber compounds of this type have been used in the building trade for over 50 years. They are particularly well-suited for parts exposed to extreme fluctuations in temperature.
- Economical and easy to install.
- Easily installed as an invisible, flat expansion compensating element.
- Competent technical advice resulting from over 40 years of experience.

### Machining and installation guidelines for Semmler Expansion Elements

Semmler Expansion Elements can be bent to the exact profile needed by using any kind of canting or folding equipment. They can be fitted into any existing profile simply by soldering or welding.

Please take care to observe the following points:

- The bending rail should have a radius of at least 2mm.
- When bending material of over 1 mm in thickness, a bending radius of 5 mm is needed.
- In order to avoid a shearing effect, the bending cheek must be lowered by approximately 3-4 mm (dependent upon the thickness of the rubber at its centre point).
- Be careful not to squash or damage the rubber part. It is advisable to make a metal shoe to cover the bending rail; this can be

done by bending a 2-5 mm thick strip of aluminium sheeting so that it fits over the rail, thus providing a larger bending radius and preventing damage to the rubber part of the element.

- Be careful to cover the metal strips adjacent to the rubber/metal joint as well as the actual rubber part with a wet cloth before beginning any soldering or welding work. This prevents heat affecting the rubber part. A minimum of 6 cm should be allowed between the rubber part and the soldering or welding joint. At no time should the rubber be exposed to a naked flame.

Being subjected to heat for short periods of time – for example while hot bitumen is being used to bond the element to the roof sheeting by its flange – will have no negative effects on the element.

## Guidelines

### Guidelines for the maximum distance between expansion elements

#### Guttering hung from eaves<sup>1</sup>:

semicircular or box-type gutters

	aluminium	copper, zinc, stainless steel
gutters up to 500 mm in size <sup>2</sup>	12 m	15 m
gutters over 500 mm in size <sup>2</sup>	8 m	10 m

#### Inlet type gutters<sup>1</sup>:

box-type gutters, water gutters, coping – not bonded

	aluminium	copper, zinc, stainless steel
gutters up to 500 mm in size <sup>2</sup>	8 m	10 m
gutters over 500 mm in size <sup>2</sup>	6 m	8 m

#### Single-Head Elements:

for roof-skirting or wall joints on flat roofs

	aluminium	copper, zinc, stainless steel
	5 m	6 m

At the outside corners or at adjoining/the beginning of roof sheeting the given distance has to be divided by **two**; at the inside corners the given distance has to be divided by **four**.

Single-Head Elements must be at least 50 cm longer than the width of the adjoining wall plate or roof-sheeting, i.e. for 30 cm wide adjoining wall-plating you will need an 80 cm Single-Head Element.

#### 5-Year Warranty

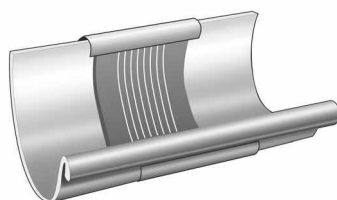
Semmler Expansion Elements have a five-year warranty. The warranty does not cover damage caused by incorrect installation, by incorrect use, or by abnormal strain. In such cases the warranty is rendered void. Please see our 'Machining and Installation Guidelines'.

# Types and installation examples

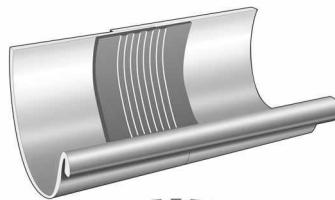
## Semmler Gutter Elements

are produced in the standard sizes used by the building trade for semicircular and box-type gutters, and are available with either double-sided vulcanisation or single-sided vulcanisation.

**Types A and K** are gutter expansion elements with **double-sided** vulcanisation and a metal covering plate.



Type A; semicircular



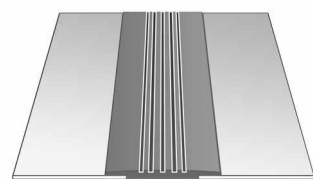
Type AS; semicircular

**Types AS and KS** are metal-covered gutter expansion elements with **single-sided** vulcanisation.

## Semmler Expansion Band

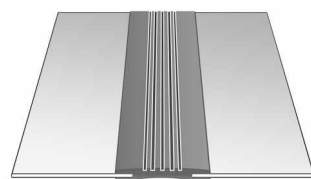
is available in two widths and has double-sided vulcanisation.

**Expansion Band Type C**  
with double-sided vulcanisation



Expansion Band type C is 26 cm wide, and is mainly used for parapets and coping. It is also used for custom-made inlet box-type guttering (water gutters).

**Expansion Band Type D**  
with double-sided vulcanisation

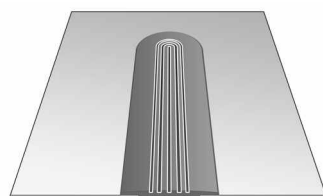


Expansion Band type D with a width of 39 cm has a wide bonding flange (sheet metal flange) and is mainly used for metals which need to be welded.

## Semmler Head Elements

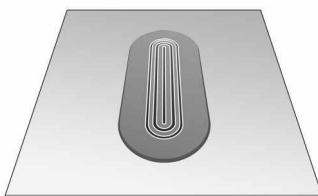
Single-Head and Double-Head Elements are 39 cm wide expansion compensating elements and are available in an assortment of lengths.

**Single-Head Element**  
double-sided vulcanisation

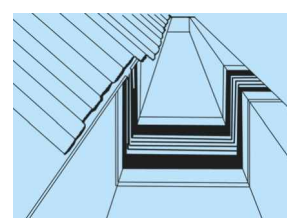
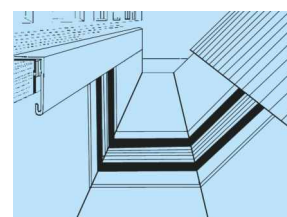


Single-Head Elements are designed for use on flat roof skirting, wall junction plates and metal-covered eaves.

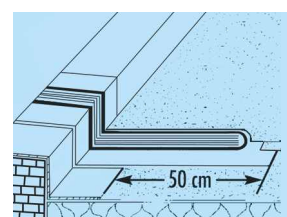
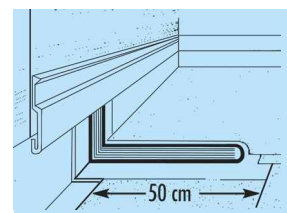
**Double-Head Element**  
double-sided vulcanisation



Double-Head Elements are especially designed for bonded inlet type gutters and for buildings where there is a graduation in levels.



Please note:  
We strongly recommend Expansion Band with double-sided vulcanisation for larger gutters (water gutters).



Please note:  
Single-Head Elements must be at least 50 cm longer than the width of the adjoining wall plate or roof-sheeting.

# Semmler Expansion Elements



... professional competence gained in **over 40 years of experience.**

## Experience

We are now able to look back on over four decades of experience in manufacturing and distributing Semmler Expansion Elements. We pride ourselves on having continually developed and improved the quality of our products and of our manufacturing process. Our wide range of state-of-the-art products is designed to meet the most demanding requirements and demands of national and international customers alike.

## Quality

Our company's philosophy is built around one primary principle, which is to maintain the outstanding quality of our products. Production and processing at our own works and the choice of prefabricated components are all monitored scrupulously and ceaselessly to ensure the high standard of our expansion compensating elements. Speedy and efficient handling of orders goes without saying.

You will find more information along with an overview of various projects at [www.semmler.com](http://www.semmler.com)



... customers and projects worldwide  
in **over 40 countries.**



**Semmler**  
EXPANSION ELEMENTS

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