

LAMINAT BELLOWS

LAMINAT Bellows are characterized by several layers of foil bonded together. The LAMINAT bellows are used where flexible designs and inherent rigidity are important.



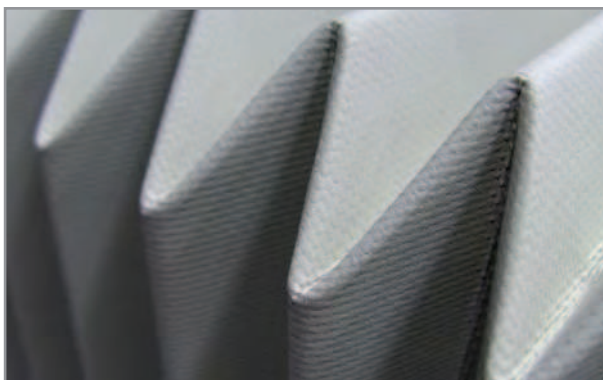
LAMINAT Bellows with octagon section and strap retainer

Application

LAMINAT Bellows are nowadays deployed in spindle-type lifting gear, for cameras, measuring and music instruments as well as for medicine and food technologies. They are used to protect columns, spindles and shafts.

All LAMINAT Bellows can be used vertically or horizontally, including hybrid forms. They allow smooth and very quiet running properties.

The surface structure and the regularity of contours present an appealing overall appearance.



Perfect surface of LAMINAT Bellows for medical devices

LAMINAT Bellows are not suited to applications with high temperatures and humidity. If these criteria should be relevant, models from our other lines may be considered, such as Rubber Disk Bellows or Fabric Bellows (see Special Bellows section).

Material

LAMINAT Bellows can be adapted through the choice of basic components, materials, shape, colours, and dimensions. The basic design concept of the LAMINAT Bellows is based on a two-component material.

A manufacturing technique developed to perfection combines the outer material requested by the customer with the appropriate interior material selected by the HEMA designer. For additional stability PVC or metal frames can be added.

Maintenance

A further benefit of these bellows comes in the form of their segmented design. Damaged parts of the LAMINAT Bellows can be easily replaced, reducing significantly the costs for maintenance.

Design

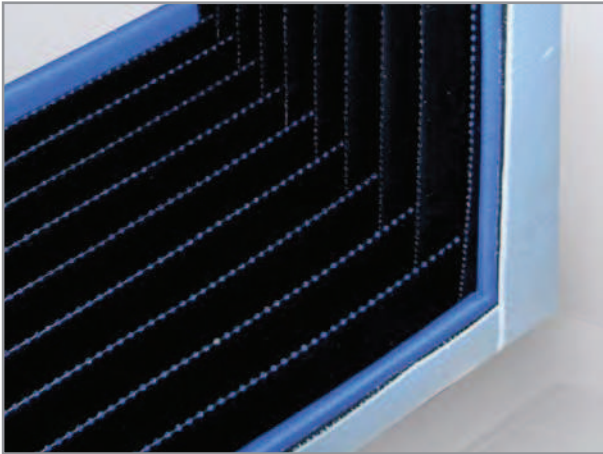
Like the ELASTIC Bellows LAMINAT Bellows can also be designed and produced in a variety of forms.

LAMINAT Bellows are primarily used to cover and protect columns and spindles. Rectangular, hexagonal, octagonal and twelve-sided sections are available as well as roof and inclined shapes and Venetian blind style standards.



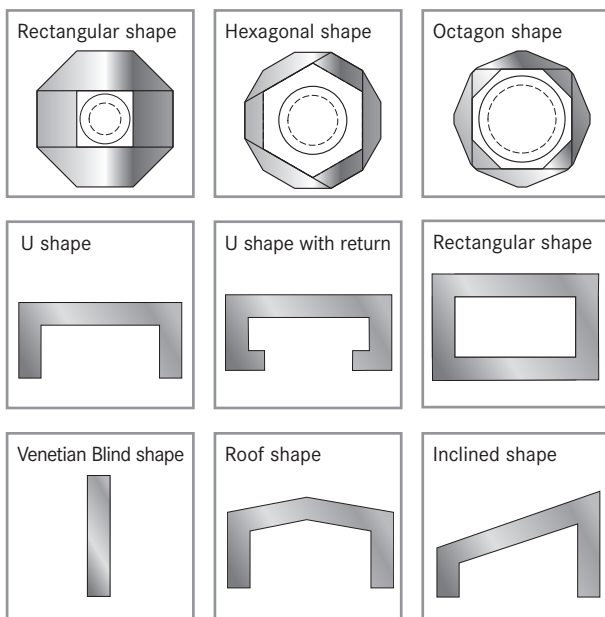
LAMINAT Bellows with intermediate frames

LAMINAT BELLOWS



LAMINAT Bellows, view of interior

LAMINAT Bellows are available as split designs as well. The split type facilitates bellow replacement and maintenance, and so is perfect as a retrofit on machines. The bellows can afterwards be closed with adhesive tape, Velcro tape or bonding. The higher compression of these types must be taken into consideration.



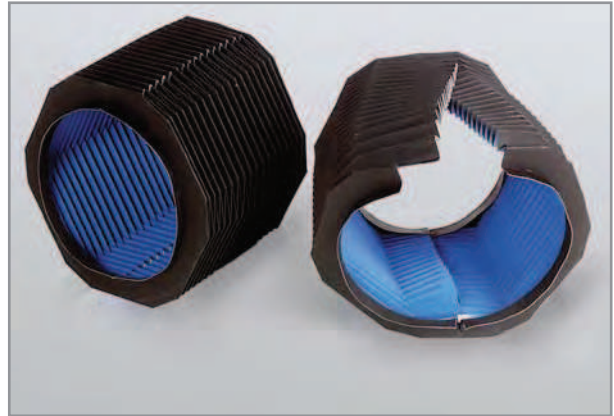
Range of available shapes

Polygonal section with support elements

This sectional view shows an example of a design solution for horizontal applications.

Sub frames with guides or guide rings are used here to support the shaft or spindle.

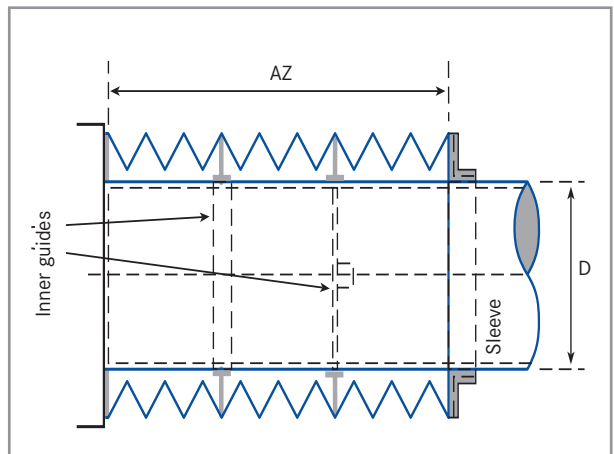
These additional guiding elements ensure that the LAMINAT bellows run smoothly and with less friction



Split version for fast mounting or retrofitting

Characteristic

The stiffness of LAMINAT Bellows (standard designs) can be enhanced with an optional PVC frame or wire hoop in every second or third fold.



Sectional view of bellows with support elements

Furthermore they can be supported on special gliders or roller systems, recommend at speeds higher than 30 m/min. On the polygon sections, spacers and circular guide/support systems ensure the optimum gliding efficiency on columns, spindles and shafts.

Also extension limiters assure consistent extension after high acceleration impacts.

Mounting

LAMINAT Bellows can be easily mounted with metal end frames, clip fasteners, velcro tapes, or sleeves with strap retainer (for polygonal sections only).

Closed designs require adequate ventilation. We offer optional punching with or without filter.

LAMINAT BELLOWS

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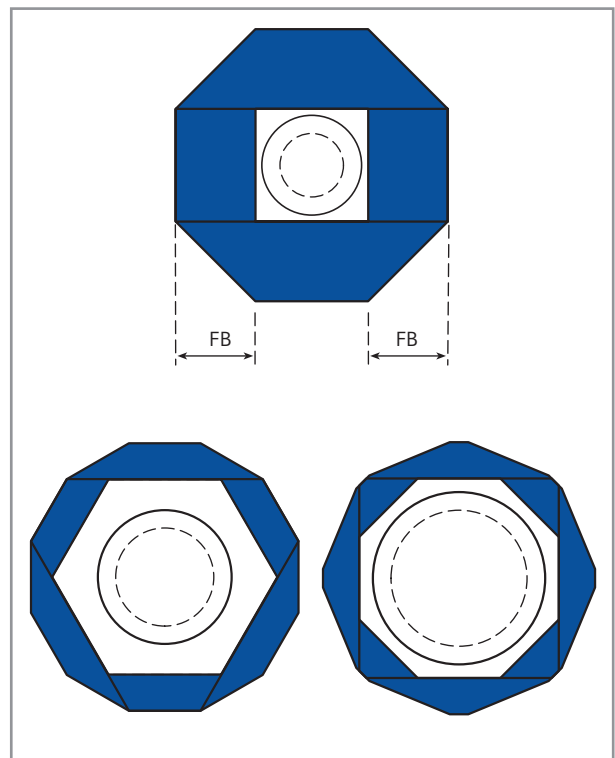
Legend	
FB	Width of the fold
FZD	Compression per fold, depending on material
FAZ	Extension per fold

FB	FAZ	FZD
7,5	9	3
10	15	3
12.5	18	3
15	20	3
17.5	25	3
20	30	3
25	37	3.5
30	45	3.5
35	55	4
40	60	4
45	65	4
50	70	4

Standard folds

FB	FAZ	FZD
7,5	8	3
10	13	3
12.5	15	3
15	20	3
17.5	23	3
20	25	3
25	30	3.5
30	35	3.5
35	40	4
40	45	4
45	50	4
50	55	4

Alternating folds



Alternating folds