



Our experience, your benefit

SANICOMP™



WHY SANICOMP™?



Does this sound familiar:

“We have previously used expansion joints, but they were impossible to keep clean. Why should we use compensators again?” This assertion can be frequently heard.

It is a fact that a process pipe exposed to temperature fluctuations will contract or expand due to thermal expansion. If it is not compensated for

these movements will lead to damaged pipelines and pipe components, with costly downtime as a further consequence. It is possible to absorb limited movements in a loop expansion joint, but Belman offers a more effective solution: **SaniComp™**

An expansion joint which is specially developed for sanitary productions in national and international sanitary industries.

ADVANTAGES

- Easy to clean
- Flexible
- Compact
- Easy replacement
- Resistant towards temperatures up to 200°C (80°C as standard)
- Withstands pressure up to 25 barG (10 barG as standard)

APPLICATIONS

SaniComp™ is specially developed for sanitary and antiseptic industries; and used in primary and secondary pipelines as well as CIP/SIP systems:

- Breweries
- Food and dairy industry
- Dairy industry
- Medical industry
- Cosmetic industry



DEFINITION

- | | |
|-----------------|---------------------------|
| 1. Steel bellow | W.1.4404 |
| 2. Cover | W.1.4404 |
| 3. O-Ring | NBR |
| 4. Seal ring | POM |
| 5. Connection | Clamps, Flanges and pipes |
| - Optional | Cover drain |



Hygienic design and function

SaniComp™ is characterised by a completely hygienic, patent-pending design. SaniComp™ is easy to clean and therefore especially suitable for hygienic production.

It's not just our belief...

Tests demonstrate, among other things, that SaniComp™ is easier to clean than a reference pipe with the same dimensions and under the same conditions.

The installed position of SaniComp™ whether horizontal or vertical has no influence on the cleaning result.

The bellows

The bellows are supplied with the chosen connecting ends. A cover protects the internal

THE DESIGN

parts. The cover is "floating" mounted on O-rings and seals.

To ensure that no dirt can accumulate between the bellows and cover, a seal ring is mounted between the cover and the end. The cover can be equipped with drain plugs, which, if vented can serve as an indicator for leaks as a control in the daily inspection.

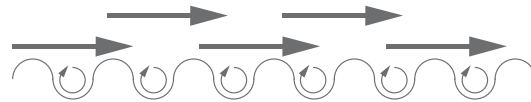
The placement of these drain vents is optional, depending on where it is best suited in the SaniComp™ fitted pipe.

SaniComp™ is available in two different design versions:

- SaniComp™ in stainless steel and with sealings made from POM/PTFE
- SaniComp™ manufactured completely from stainless steel

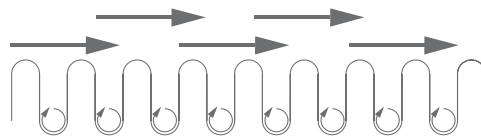


THE BELLOW IS THE UNIQUE PART



THE SANICOMP™ BELLOW

SaniComp™ fulfils both demands for cleanliness and flexibility. This is due to the optimum depth of the convolutions of the bellows combined with a specific distance between these convolutions. With this construction, optimum turbulence between each convolution is achieved which cleans the convolutions. The bellows geometry and the cleaning ability of the expansion joint is tested and verified.



THE ORDINARY BELLOW

An ordinary steel bellows typically has a number of convolutions placed close to each other with a significant height, that absorbs predefined movements. An expansion joint installed in hygienic productions must fulfil a number of demands. The compensator must be cleanable and for that reason residues from the process medium must not remain in the convolutions of the bellows after the cleaning of the pipeline. An ordinary bellows is therefore inappropriate in this environment as its convolutions are too deep to provide the required turbulence.



MOVEMENT & POSITIONING

Because of its unique design SaniComp™ can absorb movements in more directions, as axial or lateral movements. At the same time it is cleanable. Therefore the expansion joint has many installation options, and hence more possible ways of absorbing the lengthwise expansion.

Axial movement

Temperature fluctuations result in the pipe construction expanding in an axial direction. To absorb the movements SaniComp™ can be placed in the longitudinal direction of the pipeline. In that way the movements are absorbed axially in the compensator. Axial movement is an expansion or contraction of the expansion joint.

Lateral movement

The axial expansions of the pipeline can also be absorbed laterally in SaniComp™, SaniComp™ is more flexible laterally than axially. To save space and to deliver better drainage SaniComp™ is mounted vertically. Lateral movement is absorbed in the expansion joint as a parallel displacement of the expansion joint.

SaniComp™ can absorb twice as much lateral movement as it can axially. The best use of the expansion joints results from the installation to absorb lateral movement. It is however possible to install SaniComp™ horizontally, but the drainage is not optimum in that position. For that reason vertical installation is recommended.



AXIAL MOVEMENT



LATERAL MOVEMENT

PRODUCT PROGRAMME

Pipe dim.	Length mm	Movement		Service life # Movements
		Axial mm	Lateral mm	
2"	450	10	20	10.000
2½"	450	10	20	10.000
3"	450	10	20	10.000
3½"	450	10	20	10.000
4"	450	10	20	10.000
5"	450	10	20	10.000
6"	450	10	20	10.000
2"	300	2	4	10.000
2½"	300	2	4	10.000
3"	300	2	4	10.000
4"	300	2	4	10.000

Standard design

SaniComp™ is as standard designed in W.1.4404 material for process temperatures of up to max. 85°C and pressure up to 10 barG. Other materials are available upon request. According to the choice of material the expansion joint can be cleaned with both CIP and SIP. In addition SaniComp™, can be constructed if required for process temperatures of up to 200°C, and pressure of up to 25 barG.

Service life of SaniComp™

Like all expansion joints SaniComp™

is considered a wearing part. The service life is primarily dependent on the size and the frequency of the movements. The service life of SaniComp™ is determined by the movements shown in the table.

The movements; axial and lateral are not calculated in combination. If the actual movements are less or greater, the service life will likewise become longer or shorter.

If longer pipelines or temperature fluctuations are a factor then the installation of more compensators, for the absorption of all movements could be the solution. If you do not find the suitable SaniComp™ required

in the product programme, please contact Belman and we will design and manufacture it for you – as a "customised solution".

Excellent price performance ratio...

SaniComp™ may not be cheaper than its alternatives; an ordinary compensator and/or a loop expansion joint, but SaniComp™ is compact consuming less space and is cleanable. It is easy to install and to replace which results in minimizing expensive downtime. Please refer to the next page for more information and connection ends.

SANICOMP™, IT IS SO EASY

Installation & replacement

As described in the service life SaniComp™ – like all other expansion joints – has a limited service life. SaniComp™ should therefore be regarded as a wearing part. SaniComp™ is designed for 10,000 cycles (10,000 movements). After this number of cycles the expansion joint reaches the end of its service life and it may be necessary to replace it. There is a big difference in the frequency and size of movements between industrial applications. Therefore there is a difference in the active lifespan of SaniComp™ in each industry before it needs replacement.

The installation, but particularly the

replacement, of SaniComp™ is very easy and fast. Especially SaniComp™ with flanges and clamps can be installed/replaced in a relatively short time, thus causing minimal downtime. The installation and replacement of SaniComp™ with pipe ends can, however take a little longer as welding is required.

With a SaniComp™ with flanges the screws are removed from the flanges, the expansion joint removed, the new SaniComp™ fitted and the screws tightened. With a SaniComp™ with clamps the clamp ring is removed and the SaniComp™ is removed. The new SaniComp™ is fitted and the clamp ring fitted around it and tightened.

The easy installation and replacement make SaniComp™ a profitable solution by saving labour time and downtime.

Installation, handling and storage of SaniComp™ should follow the guidelines set out by Belman in the installation guide for steel expansion joints.

The customer chooses which connecting ends to use.

Means of connection

SaniComp™ is available with a number of different connection ends, please see below. The expansion joint is also available with other types of connection ends upon request.





REFERENCES

SaniComp™ is installed globally and in all industries.

Selected references of SaniComp™ can be found here:




Type of plant	Country	Dimension	Build-in length mm	Design parameters
Manufacturer of potato flour	Denmark	1 pcs. DN 65 (1½")	300	80°C, 10 bar, AX: +/-2 mm, LA: +/-4 mm
Manufacturer of Mozzarella	Denmark	10 pcs. DN 100 (4")	450	80°C, 10 bar, AX: +0/-10 mm
Wholesaler	Norway	11 pcs. DN 80-150	450	80°C, 10 bar, AX: +10/-0 mm
Brewery	New Zealand	1 pcs. DN 80 (3")	470	85°C, 10 bar, AX: +/-2 mm, LA: +4/-0 mm
Dairy	New Zealand	1 pcs. DN 150 (6")	450	85°C, 10 bar, AX: +/-2 mm, LA: +4/-0 mm
Dairy	Holland	2 pcs. DN 100 (4")	300	90°C, 10 bar, LA: +0/-5 mm
Manufacturer of juice concentrate	Holland	1 pcs. DN 100 (4")	300	90°C, 10 bar, LA: +0/-5 mm
Wholesaler	Norway	1 pcs. DN 100 (4")	450	85°C, 10 bar, AX: +/-10 mm
Manufacturer of ammonium mixture	Denmark	1 pcs. DN 70 (2")	450	85°C, 10 bar, AX: +2/-0 mm, LA: +4/-0 mm
Manufacturer of soft drinks	Denmark	2 pcs. DN 80 (3")	300	80°C, 10 bar, AX: +2/-0 mm. LA: +4/-0 mm
Dairy	New Zealand	1 pcs. DN 80 (3")	450	80°C, 10 bar, AX: +/- 10 mm, LA: +/-20 mm
Manufacturer of liquid cleaning materials and disinfectants	Germany	22 pcs. DN 80 (3")	433	80°C, 10 bar, AX: +/-2 mm
Worldwide supplier of turnkey breweries	Worldwide	In total more than 2000 pcs., DN 32 / DN 80 (3")	52 /120	85°C, 6 bar, AX: +/- 1,5 mm/ 85°C, 6 bar LA: +4/-0 mm
Dairy	Belgium	47 pcs. DN 100 (4") /450 mm / 8 St. DN 65 (1½")	450	80°C, 10 bar, LA: +/- 20 mm/ 80°C, 10 bar LA: +/-20 mm



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