

# The Bellows Bottom Line

## Practical advice on expansion joints

by Greg Perkins

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### This month - **Better Expansion Joints for Pulp & Paper Services**

*Titanium to the rescue in the bleaching plant*

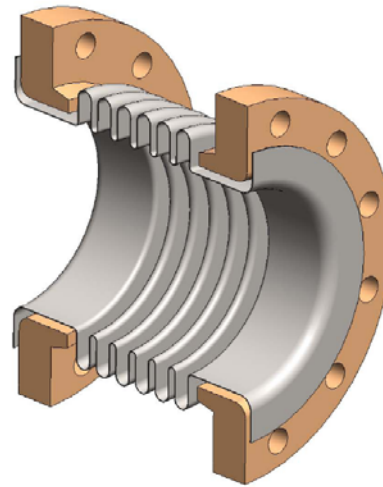
#### Pulp & Paper Challenges To 317L

The bleaching service in pulp & paper plants has always been tough on expansion joints. Stainless steels such as 316L and 317L have held up as the go-to material for years.

Changes in the bleaching concentrations and increased temperatures have created corrosives that have shortened the service lives of those bellows. Material engineers then sought a better material; they found it in titanium.



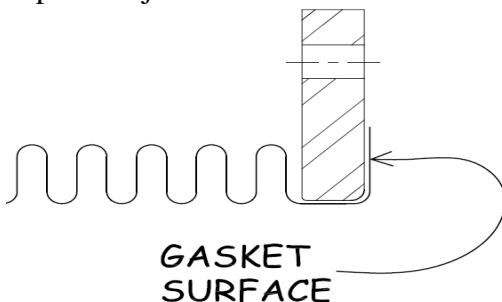
The titanium bellows cuffs are formed around the face of the mating flanges, a process known as van-stoning. This ensures that all wetted surfaces are titanium, but the flanges can be carbon or stainless steel.



This method is used because titanium does not weld well to steels. Welding aside, the van-stone flange also has the benefit of allowing a better fit-up to the mating flanges because they can rotate.

#### Titanium? Really? Really.

Titanium is a great material for the corrosive environment of the bleaching equipment; significantly extending the service life of the piping expansion joints.



#### The Bottom Line

A titanium expansion joint will significantly increase the service life over that of other stainless steels or alloys in the bleaching piping of pulp & paper plants.



Next month - How to protect piping from anchor failures

Link to our video on van-stone flanges - <http://www.oakridgebellows.com/metal-expansion-joints/technical-videos/van-stone-flanges.html>

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