

# The Bellows Bottom Line

## Practical advice on expansion joints

by Greg Perkins

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### This month - **Field Damage to Metal Bellows**

*Making level-headed replacement decisions*

#### Damaged relationships

Several years ago my wife put a dent in the side of my truck while negotiating a tight turn in a school parking lot. I have not had that dent fixed.

I could give lots of reasons for not fixing it: it doesn't affect the function of my truck, too costly to repair, or indifference. The real reason is I get to tell friends about my wife's accident in my truck over and over again for several years, which is fun for me. Young men, this is an example of what *not* to do in your marriages. Still...

#### Dents, and really big dents

The most common causes of mechanical damage to bellows are arc strikes or wrenches and hammers dropped from the deck above. Bellows material is thin and dents easily. Protective covers are meant to prevent such damage, but for many flanged designs they must be removed to install bolts – thus the occasional wrench slip dent. Everybody always blames the previous shift for such damage.



*Shallow dent - Unsightly, yes. Time to replace? No.*

Shallow dents do not cause a significant enough reduction in the bellows cycle life to require replacement. Don't accept them on a new part from a supplier, but live with them if they occur in the field.

Sharp dents will reduce the cycle life. The sharper the dent the sooner a fatigue crack will form as the bellows flexes. This could quickly lead to a failure.

#### Scratches and arc-strikes

As long as a scratch or arc strike does not remove more than 10% of the bellows material thickness (maybe even a little more, but you didn't hear it from me), you can just sand and buff it out. If you can catch your fingernail in a scratch, it should be sanded out. And sure, the QC guys will feel good by performing an LP exam after the repair but trust me, there won't be any cracks.



*Deep dent - This will not end well.*

#### The bottom Line

We have a saying in the industry – Dent shallow, let it fallow; Dent deep, don't keep. Just kidding, I just made that up. Our industry doesn't even allow sayings.

I still have that truck, and it still has that dent. My wife refuses to borrow my truck now, so I got that going for me. And this is why I don't write a marriage counseling newsletter.

A handwritten signature in black ink, appearing to read 'G. Perkins'. The signature is stylized and fluid, with a long horizontal line extending to the right.

Next Issue - Really? You think I plan that far out?