



witt lining systems

WE CAN LINE ANYTHING

Technical Paper

When Cheaper Is Not Less Expensive

Premise

A recent article in the *Journal of Consumer Research*¹ highlighted the issue of “naïve theory” with regards to inferences consumers make when filling in gaps of product knowledge. When someone is not completely familiar with all aspects of a product, they make guesses or assumptions when comparing quality and value in competing products. This inference can result in product dissatisfaction when the reality does not meet perception.

With regards to flexible PVC liners, most end users aren’t familiar with all parameters involved in their fabrication. A supplier using inferior fabrication techniques may be the low cost bidder but the resulting product may be more difficult to install, perform poorly in service, and shorten service life. The end result is a cheaply made product that ends up costing more in the long run, even when using identical material formulations.

Packaging

One of the very first indications of a liner made with poor fabrication techniques is found in the packaging of the liner. The packaging itself is a reflection of the supplier’s commitment to quality and detail.

Liners should be packaged in a triple wall cardboard box constructed with adhesive rather than staples that could damage the liner. Sharp objects can easily come in contact with the liner and tear or slice it.

Large liners may even require a wooden crate to provide adequate protection during shipment. Simply wrapping liners in a tarp and banding them to pallets leaves a high probability for damage and lost shipping documents.

Liners should not extend past the frame of the pallet. This could create serious damage to the liner from neighboring crates.



Packaging style of cheap liner.



Packaging of a high quality Witt Liner.



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Creased Corners

In order to fit properly, liners must have dielectric creases on vertical and horizontal corners.

Liners manufactured without creases can cause the bottom of the liner to sit improperly on the bottom of the tank. When a liner gets caught on the sidewalls of the tank, even just one inch from the bottom, it forces the corners and sidewalls to push inward. This results in extra material bunching down the length of the liner making it appear too long. The result is that process equipment in the tank may interfere with the liner which can have a devastating effect on the liner's service life.

Proper creasing eliminates costly puckers or sharp wrinkles. Areas of a liner that wrinkle or don't lay flat when pressure is applied cause a stress point on the material. This is likely to result in a stress fracture at that point of the liner well before the rest of the material has surpassed its service life.



Pucker caused by uncreased corner



Perfectly formed corner with creases

Fully Fabricated Top Corners

Quality fabrication techniques also involve fabricating a full top corner when the liner is intended to come across a flange or horizontal edge. Where the sidewalls meet, an additional corner should be welded into the liner allowing it to flare out across the top of the lined structure, also covering that section.

Without a fabricated top corner the liner has to be split to allow the material to come across the top of the flange or top wall. This can cause the liner to not sit properly along the top corner of the sub structure and will greatly affect the quality of the fit.

Without fully formed top corners, the use of stainless steel Wittclips™ for fastening is very difficult. Instead, a drawstring rope may need to be employed. The rope will not lock the liner to the top flange of the tank. Material will then slip inside of the tank, interfering with process equipment which can damage the liner.



Liner without fabricated corners must be cut to fit.



Fabricated top corner secured with Wittclips™.

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Fully Fabricated Top Corners (continued)

Properly formed top corners allow for the use of Wittclips™ to securely fasten the liner into place, holding the liner securely against the sidewalls of the tank where it will not interfere or become damaged by process equipment or parts.

Conclusion

When purchasing flexible PVC liners, focus should be given to operating cost as opposed to simply purchase price. It is not enough to simply specify the type of material. Consideration to fabrication techniques must be given. Inferior fabrication techniques will result in a liner that fits poorly. A poorly fitting liner will add to installation costs, be subject to pre-mature stress, develop puckers that will cause failure, may be damaged by heaters, mixers, process work, and have a shorter service life forcing the end user to incur replacement costs sooner than a properly fabricated liner. By understanding all of the aspects of a flexible liner the end user can specify a liner not just by material type but also by fabrication techniques and eliminate suffering from the effects of "naïve theory".

Bibliography

¹Deval, Helene, Susan P. Mantel, Frank R. Kardes, and Steven S. Posavac. "Inferences from the Same Information." *Journal of Consumer Research*. ITHAKA, n.d. Web. <<http://www.jstor.org/discover/10.1086/668086?uid=3739848&uid=2&uid=4&uid=3739256&sid=21102272146201>>.

About Witt Lining Systems

Witt Lining Systems is an industrial lining company founded in 1972. The foundation of our success as a family owned company has been our fundamental belief to ensure the continuous observance of integrity - our very purpose is about service; about exceeding customer expectations with valued products and services that go beyond the mark.

For over 40 years Witt Lining Systems has remained a leader in developing innovative lining solutions to corrosion problems. Witt has partnered with Fortune 500 companies, municipalities, military, and international sales in solving complex containment solutions. Put our expertise to work for you!

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