

Water Tank Fabric Liners

Factors Influencing Longterm Fabric Water Tank Lining Solutions



Water Tank Liners

Tim Clark- Technical Sales and Support



Water Tank Liners

- An independent fabric (flexible plastic) lining that is positively attached to the internal of a tank shell or structure to provide waterproof containment
- Supplied either as a component of a flat pack tank or to refurbish existing structures that are no longer watertight

Water Tank Liners

- **Generally prefabricated in a shop/ factory to ensure regulated and controlled environment that is not achieved with onsite manufacture**
- **Provide a cost effective water storage solution for both domestic and commercial applications**

Water Tank Liners



Fabric Design Criteria

- Fabric design and engineering play a critical role in achieving a sustainable solution for the expected life of the tank
- In comparison to earthen tank liners, above ground water tank liners are exposed to differing mechanical and element stresses

Fabric Design Criteria

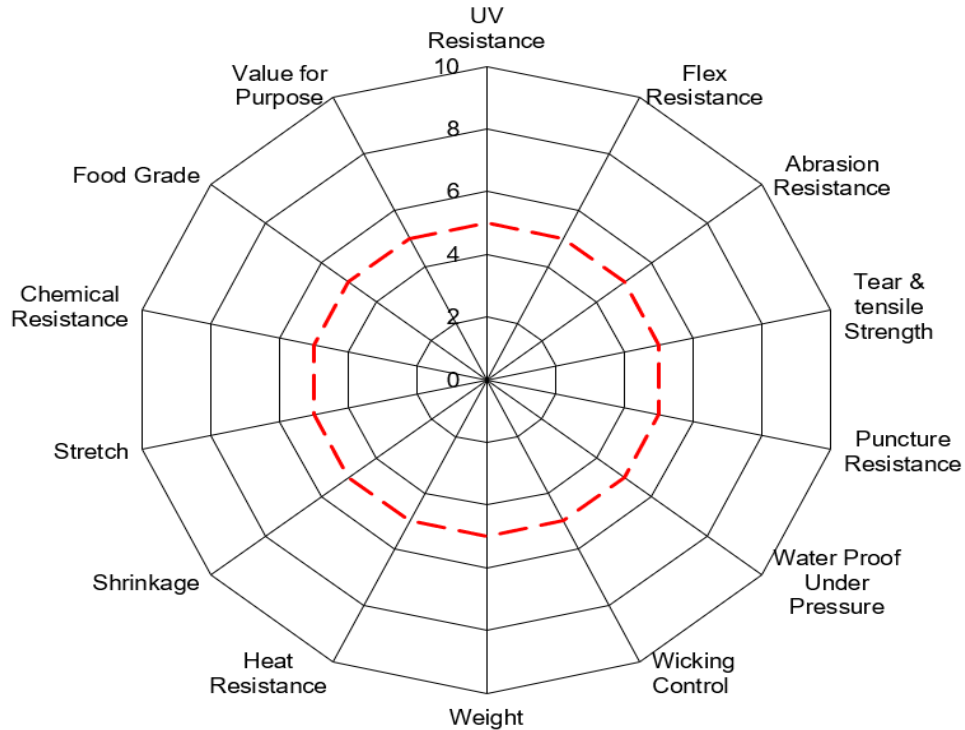
- Above ground roofed water tanks are in an enclosed environment with minimal exposure to the elements
- The liner must retain its integrity due to vertical loading on the draping on the walls whilst still having the flexibility and abrasion resistance to accommodate cyclic filling and emptying that places additional load on the liner

Fabric Design Criteria

- **Earthen Tank Liners remain comparatively static.**
- **Once installed they are exposed to the elements including UV, wind and higher risk of impact damage from external influences.**
- **Subsequently thicker heavier fabrics provide a more robust solution for the applications**

Key Fabric Properties

Liner Fabric Evaluation



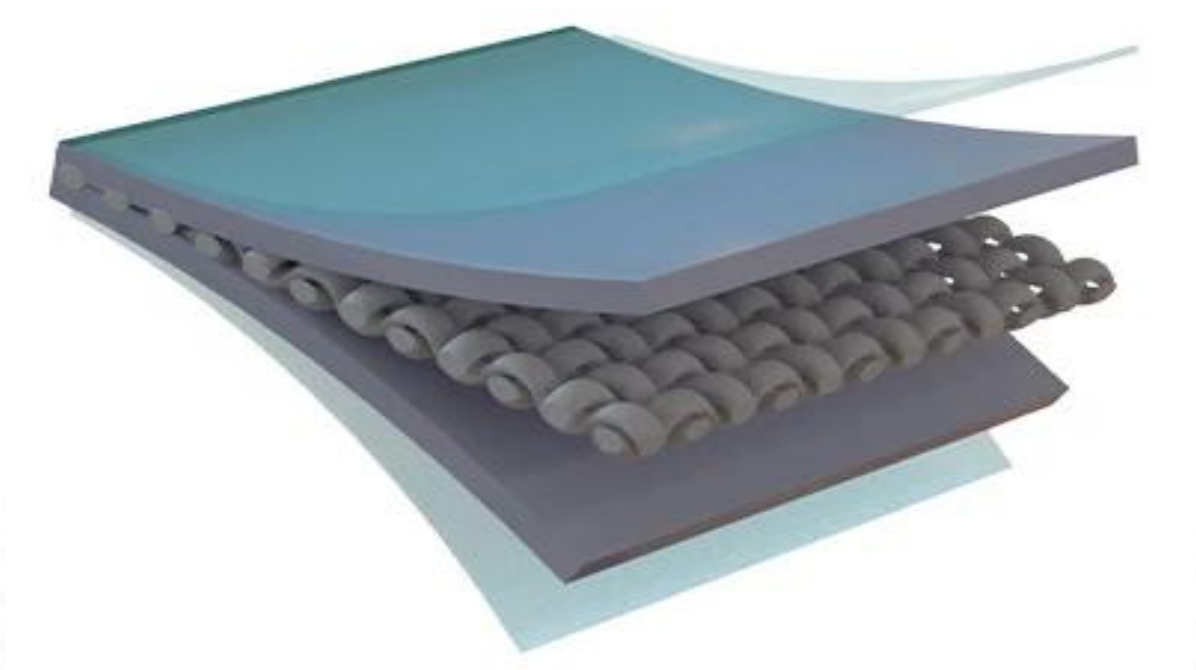
Unsupported Liners

- **Water Tank Liners manufactured from unsupported plastics (PP and PVC) encounter premature failures on a regular basis**
- **Failures commonly derive from the liner stretching due to loading or shrinkage due to heat**
- **When such instances are identified a common measure is to increase the thickness of the liner. This also has been proven to be ineffective.**

Unsupported Liners



Woven Coated Liners



Woven Coated Liners

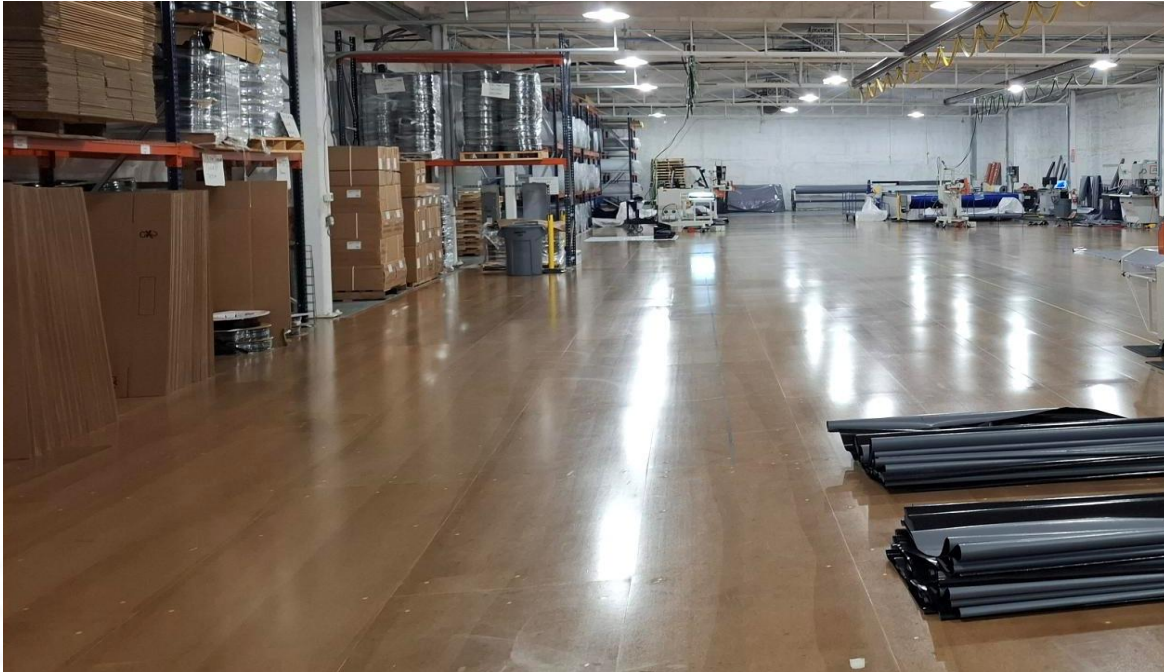


Woven Coated Liners

- **Woven coated liners provide stability, durability and longevity as a water containment option**
- **The thicker the coating on the fabric does not necessarily improve the performance of the liner (it can be inhibitive in some instances)**
- **Woven coated potable PVC liners measuring 15 mil are in service globally with no performance issues on 10 000+ liners beyond a ten-year service life**

Fabrication and Fitment

Liners are best manufactured in a clean sterile shop/ factory environment



Fabrication and Fitment

- **Consideration must be taken to the fabric properties to ensure fabrication is uniform and all welded seams are of high integrity**
- **Liners are ideally oversized to the tank diameter and height**
- **Additional considerations to specific fixing methods at top of tank wall to individual tank designs**
- **Fabricated reinforcements or grommets can further enhance integrity of fitting**

Fabrication and Fitment



Fabrication and Fitment

- **Additional attachments to the outside of the liner can ensure liner placement and distribute vertical load when fixed to the tank structure.**
- **Intermittent fixings to the base perimeter of the liner ensure liner does remains in contact with the tank**
- **Intermittent fixings on the walls of the liner distribute the liner evenly and reduces the load of the uppermost attachment on the liner**

Fabrication and Fitment



Fabrication and Fitment



Food Grade Certified Liners



Certified to
NSF/ANSI/CAN 61

Food Grade Certified Liners

- **NSF/ANSI/CAN 61 certification provides peace of mind on the liner being suitable for potable water and human consumption**
- **Certification can be applied to the manufactured goods. Fabric AND manufacturing processes are assessed annually allowing the manufactured goods to carry the NSF certification mark.**
- **Certification on raw material fabric ONLY. Any liner manufactured from certified fabric cannot bear the mark once additional process has occurred**

QUESTIONS



Thank You