

CASE STUDY

EMERGENCY COMPOSITE REPAIR SOLUTION FOR TANK AND PRESSURE VESSEL REINFORCEMENT

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VERTECH

OVERVIEW

In August 2025, Vertech and 3X Engineering were engaged to carry out an emergency repair on a tallow tank that had developed a sidewall leak. With an imminent ship transfer scheduled, restoring the integrity of the tank was critical to avoid delays and operational risk. Following a detailed assessment of the defect, Vertech implemented 3X's TANKiT® composite repair system, a proven solution for rapid and reliable reinforcement of damaged storage tanks.

SCOPE OF WORK

To ensure the durability and adhesion of the repair, Vertech's team first prepared the affected area using a Bristle Blaster® machine to remove corrosion, contaminants, and achieve the required surface roughness (minimum Rz of 60 µm). Once surface preparation and environmental checks were complete, the repair followed 3X's Standardised procedures:

1. Filler & steel plate application – A thick layer of 3X filler was applied to smooth the surface and blend the transition between the tank wall and repair area. A pre-treated steel plate, coated with filler and prepared with the Bristle Blaster®, was positioned over the leak and held in place with magnets.

2. Resin application – After curing, a layer of 3X epoxy resin was applied to fully impregnate and wet out the Kevlar® reinforcement layers.

3. Kevlar® patch installation – Five Kevlar® patches (300mm x 300mm), each pre-impregnated with resin, were sequentially applied with precise alignment and overlap to build up a strong composite structure.

4. Finalisation – A final coat of epoxy resin was applied for protection, an identification plate added for traceability, and a rigid cover plate installed and magnetically held in place to ensure full compression during curing.

RESULTS

The TANKiT® repair system, supplied by 3X and delivered by Vertech's specialist team, successfully restored the tank's integrity, allowing the client to meet their shipping schedule without disruption. This project demonstrates Vertech's ability to rapidly mobilise composite repair expertise and reinforces the strength of our partnership with 3X Engineering in providing world-class repair solutions to the Australian market. The repair is supported by a two-year guarantee.



Fig. 1 - Tank Overview

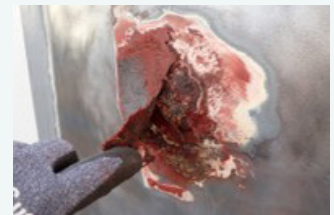


Fig. 2 - Leaking defect



Fig. 3 - Repair in progress

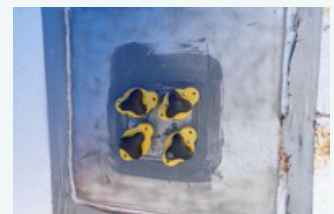


Fig. 4 - Steel plate applied with filler and magnets



Fig. 5 - Composite patching completed