



CASE STUDY

Hychem extends asset life at Sunbury Recycled Water Plant

SUMMARY

Client

Greater Western Water

Location

Sunbury, Victoria

Challenge

Refurbishing ageing concrete treatment tanks within a live operational environment to support increased plant capacity and future demand.

Sector

Water & Wastewater

Solution

Extended asset life and improved chemical resistance with GeoCast geopolymer mortar and Velosit protective lining system.

Outcome

The refurbished tanks now provide increased recycled water production capacity and meet contemporary expectations for environmental performance and longevity.

Products

VELOSIT® RM 205, VELOSIT® CP 201, VELOSIT® WP 120, GeoCast Geopolymer Mortar

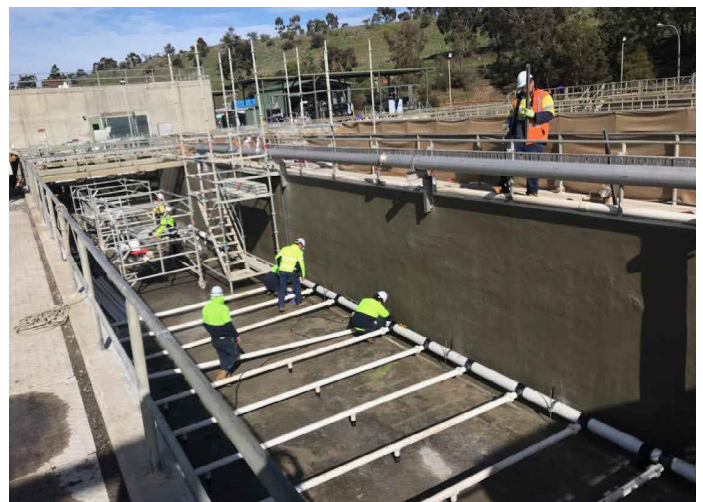
Hychem Infrastructure, in collaboration with Downer, delivered a comprehensive concrete remediation and protective lining solution for the Sunbury Recycled Water Plant upgrade.

By integrating the advanced GeoCast geopolymer system with high-performance VELOSIT® linings, our team successfully extended the service life of critical assets, supporting increased plant capacity while adhering to modern water authority standards.

The challenge

As a critical component of the broader Sunbury Recycled Water Plant upgrade, several existing concrete treatment tanks required refurbishment to handle revised operational loads and updated hydraulic conditions.

Originally constructed to earlier durability standards, these legacy assets faced challenges from ageing concrete and long-term environmental exposure, and without the correct solution they were at risk of needing to be replaced.



The remediation scope required a solution that could address localised degradation, cracking, and surface defects while providing long-term resistance to chemical attack and abrasion from wastewater processes.

Furthermore, all works had to be delivered within a live operational environment, necessitating materials and methodologies that allowed for rapid turnaround without compromising safety or performance outcomes.

The engineered solution

Hychem's engineering team provided a suite of high-performance materials tailored for structural remediation and chemical protection, and safe for use within a live environment.

Hychem GeoCast was selected for structural infill and reinstatement works due to its rapid strength gain and enhanced durability in aggressive environments. This was complemented by the Velosit repair and tank lining system to provide a multi-layered, low-permeability barrier against ingress.

Our methodology involved using VELOSIT® RM205 for structural concrete repairs and surface profiling of deteriorated elements, followed by Velosit CP201, a corrosion-inhibiting, pore-blocking coating designed to enhance resistance to moisture and chemical attack.

The system was finalised with VELOSIT® WP120, providing a dense, waterproof lining suitable for continuous immersion in wastewater. This integrated approach ensured that all construction joints and pipe penetrations were upgraded to offer watertight performance.

Throughout the process, Hychem Infrastructure supported the principal contractor, Downer, to ensure the refurbished tanks could be seamlessly integrated with newly constructed infrastructure.

The outcome

The project successfully transformed legacy assets into high-performing components of the upgraded plant. By choosing an engineered remediation strategy over full asset replacement, Greater Western Water achieved significant capital expenditure savings while securing a durable, reliable solution.

The refurbished tanks now provide increased recycled water production capacity and meet contemporary expectations for environmental performance and longevity.

This successful outcome highlights the effectiveness of Hychem's geopolymer and protective technologies in extending the lifecycle of critical water infrastructure.

