



Mater Private Hospital Expansion Case Study

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The Mater Private Hospital Springfield expansion required a concrete curing and moisture control solution capable of meeting the stringent performance, hygiene, and lifecycle demands of a modern healthcare facility. Oxtek Solutions' X200 Densi Proof was selected as the preferred treatment methodology due to its proven ability to deliver water pond equivalent curing, permanent internal waterproofing, and long term protection of resilient and resin based floor finishes.

This case study outlines the project context, technical challenges, treatment methodology, and performance outcomes achieved through the application of X200 Densi Proof across critical clinical and public areas of the hospital.

Technical Challenges Identified

Healthcare environments impose strict performance requirements on concrete substrates. Some of the key challenges included:

Moisture Related Flooring Failures

- High internal RH in young PT slabs
- Risk of adhesive debonding, blistering, and plasticiser migration
- Osmotic blistering under resin systems
- Moisture entrapment beneath impervious coverings

Project Overview

Project: Mater Private Hospital Springfield – Stage 2 Expansion

Location: Springfield, Queensland

Facility Type: Acute healthcare, operating theatres, ICU, inpatient wards, diagnostic and public circulation areas

Construction: Multi storey structure incorporating extensive post tensioned (PT) suspended concrete slabs

Flooring Systems:

- Homogeneous vinyl sheet
- Rubber flooring
- Linoleum
- Seamless resin systems
- Hybrid and resilient finishes in public zones

The project required a concrete treatment system that would ensure dimensional stability, moisture compliance, and long term compatibility with impervious floor coverings.

Curing and Shrinkage Control

- Need for curing performance equivalent to water ponding
- Minimisation of microcracking and surface dusting
- Reduction of drying shrinkage to protect long corridors and large slab panels

Program Acceleration

- Requirement for early installation of floor finishes
- Limited tolerance for extended drying periods or temporary moisture membranes



Hygiene and Durability

- Floors must remain impermeable, dimensionally stable, and resistant to chemical cleaning
- Prevention of microbial harbourage beneath floor coverings

These challenges aligned directly with the performance capabilities of X200 Densi Proof.

X200 Densi Proof was specified due to its ability to:

- Act as a curing compound, achieving water pond equivalent curing
- Permanently waterproof concrete internally
- Reduce drying shrinkage and microcracking
- Provide a penetrative moisture barrier compatible with all major flooring adhesives
- Increase surface hardness and reduce dusting
- Deliver lifetime performance without reliance on surface films or membranes

Application Zones

X200 Densi Proof was applied to:

- Operating theatres and procedure rooms
- ICU and inpatient wards
- Sterile stores and CSSD
- Pharmacy and pathology

- Public corridors and lobbies
 - Back of house areas requiring resin or heavy duty finishes
- These areas represent the highest risk for moisture related flooring failures and the highest consequence of non performance.

Timing of Application

X200 Densi Proof was applied at the time of concrete placement or as soon as the slab could be safely accessed. This ensured:

- Optimal curing performance
- Maximum penetration
- Early establishment of the moisture barrier

Application Method

- Low pressure spray application
- Controlled coverage rates in accordance with Oxtek project specifications
- QC documentation including batch numbers, coverage records and product procurement

Integration with Flooring Systems

Oxtek Solutions provided:

- Written compatibility statements, warranties, for adhesives and floor finishes
- Surface preparation guidelines including light mechanical abrasion where required
- Moisture verification protocols (RH testing, surface moisture readings)

This ensured full compliance with flooring manufacturer requirements.

Performance Outcomes

Enhanced Curing and Surface Integrity

- Achieved curing performance equivalent to water ponding
- Increased surface hardness and abrasion resistance
- Reduced microcracking and surface crazing

Permanent Moisture Control

- Concrete rendered impermeable from any direction
- Significant reduction in moisture related flooring failures
- Protection against osmotic blistering under resin systems > 48



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