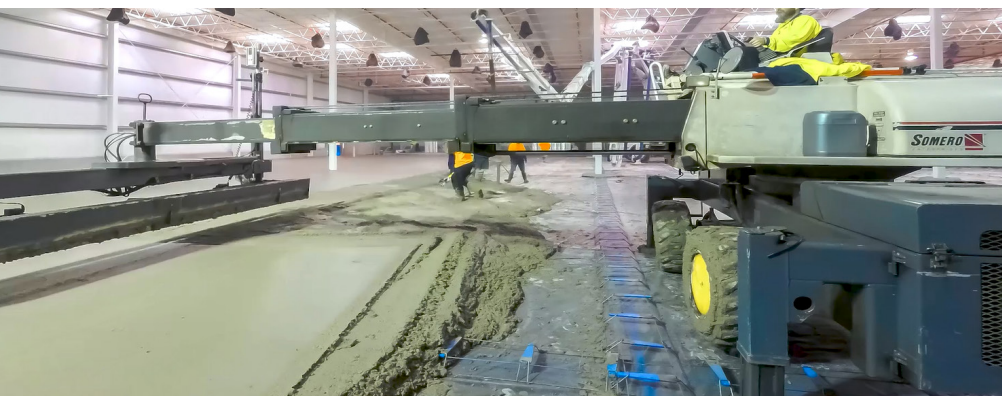


Strategic Reinforcement Design: No Mesh? No Chairs? No Worries!

Boasting over 14,000m², the new flagship store of a global, US based discount wholesale chain opened its doors to the public in August 2017. What makes this facility unique was the design and construction methodology of the floor - the first, large-scale Strategically Reinforced floor of its kind in Australia.



What is Strategic Reinforcement Design?

Strategic Reinforcement Design mitigates internal and external induced restraint and stress to optimise the load carrying capacity of the concrete, while concurrently delivering the joint stability required for technologically-advanced material handling equipment and all types of vehicular traffic.

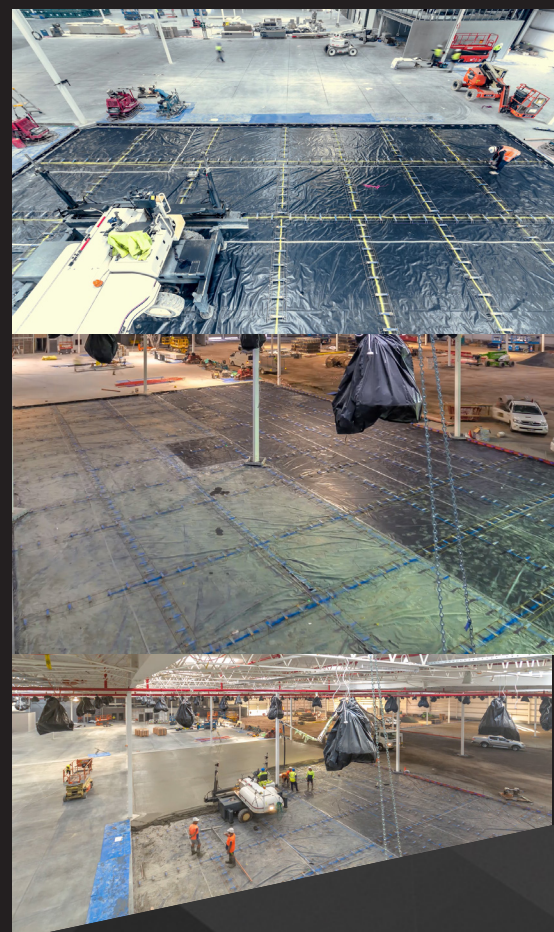
Strategically Reinforced floor slabs do not require the use of central reinforcing mesh, nor the need for plastic chairs and supports. Central to the Strategic Reinforced Design methodology is minimising joint spalling and random cracking with the design of contraction (or saw-cut) joints that are strategically placed to mitigate cracks and limit differential deflection of the slab sections. The use of Danley™ PD3™ Plate Dowels Cradles played a vital role in the design and construction of the floor.

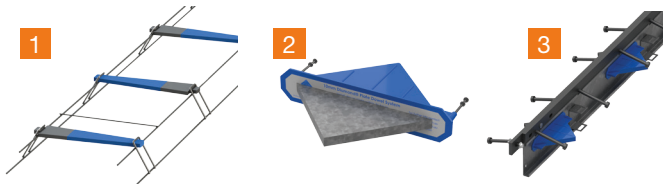
The Danley PD3™ tapered plate dowel cradles utilise a sleeveless dowel design to comply with the ACI requirement of less than .25mm deflection under load. The use of the PD3™ system extends the life-cycle of the floor to provide the highest level of floor efficiency for tenants and the highest return on investment for the asset owner.

[Continued >](#)

Project Information

Location:	Marsden Park, NSW
Project Size:	14,000 m2
Engineering:	ACOR
Builder:	Mainbrace
Contractor:	Ultimo Construction
Finish Date:	August, 2017
Products Used:	<p>Danley™ Diamond™ Dowels</p> <p>PD3™ Plate Dowel Cradles</p> <p>Hyper ArmourMate™ Edge Protection</p>





(1) PD3™ (2) Diamond™ Dowels (3) Hyper ArmourMate™

The Advantages of Strategic Reinforcement Design are:

- Faster set up and installation time.
- Eliminates the use of reinforcing mesh and the need for plastic chairs and spacers.
- Reduced concrete stresses eliminate the need for fibre reinforcement.
- Provides efficient load transfer between slab panels.
- Strategic reinforcement design reduces the labour force required during installation.
- Improved access reduces the reliance on concrete pumping and enables delivery direct from the truck.
- Reduces the crew's material handling requirements.
- Provides improved floor finish and floor performance.
- Reduces joint opening widths that are managed with semi-rigid epoxy fillers.

Strategic Reinforcement: Concreter Benefits

The Strategic Reinforcement Design is easy for the contractor to install during placement operations, reduces labour costs over traditional methods, mitigates the effect of curling and provides positive load transfer at the joints. This results in superior joint stability for the delivery of a cost-effective, durable and maintenance-free concrete floor.

Strategic Reinforcement: Asset Owner Benefits

The use of Strategic Reinforcement Design delivers future-proofing benefits for the asset owner. The benefits include lower joint and maintenance costs, in turn reducing facility downtime. Flatter floors with joint stability reduce the wear and tear on materials handling equipment and improve occupational health and safety.

Visit the [ramsetreid Youtube page](#) to watch a time-lapse of this project.