

Danley™ PD3™

Load Transfer Systems

Plate Dowel Cradle 20mm Technical Data Sheet



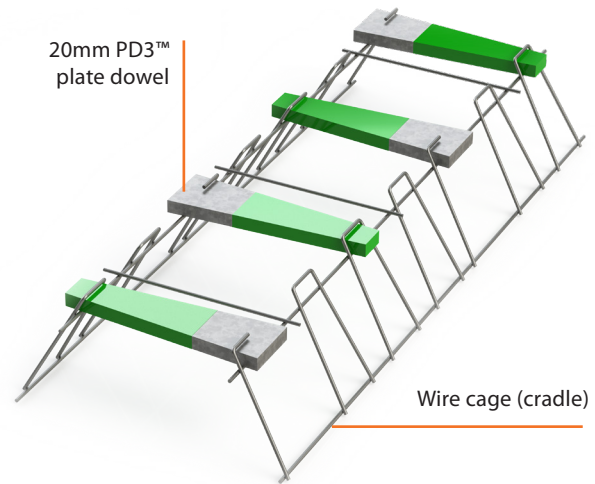
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Product Description

The PD3™ 20mm Plate Dowel Cradle load transfer system is specifically designed for heavy duty industrial pavement applications 230mm in thickness, or greater, such as:

- Hardstand areas
- Port facilities: Container terminals, storage and handling
- Freight and transport logistic facilities
- Heavy rail and intermodal facilities
- Airports, hangers and runways

The Danley™ PD3™ 20mm provides significant benefits over traditional round and square doweled contraction joints in industrial pavement applications.



Advantages

The 20mm PD3™ load transfer system provides a total contraction joint system solution by incorporating two systems in the one solution:

- The tapered 20mm PD3™ plate dowels allow for lateral movement whilst eliminating deflection under load.
- The wire cage (cradle) acts as a chair and spacer to ensure the dowels are aligned and maintained at the correct height and spacing during the pouring of the slab, in turn improving the speed and efficiency of installation.

PD3™ Plate Dowel Cradles provide superior engineered performance over round dowels, controlling differential deflection and limiting joint spalling in heavy duty industrial pavements.



Trade Benefits

Engineering Benefits:

- Provides highest performance in controlling joint deflection.
- Compliance with ACI 360R-10, design recommendations.
- Galvanised finish to AS/NZS 4680.
- Accuracy of dowel placement ensures the most effective load transfer performance.

Asset Protection Benefits:

- Reduces the risk of spalling damage to the concrete at the joints.
- Reduces maintenance & downtime costs.
- Provides a smoother surface at the joints.

Concrete Benefits:

- Speed and accuracy of dowel placement.
- Lowest placement cost.
- Pour through capability.
- Greater stakeholder satisfaction.
- Wider sweet spot for saw cut placement provides greater tolerance for accuracy.

Material Technical Data:

Component	Dimensions	Material Type	Materials Standards	Steel Grade Equivalent	Yield Stress (MPa)	Tensile Strength (MPa)	Standards Compliance
20mm Dowel:	20mm x 300mm	Cold Drawn Steel	Q345	≥ Grade 300	345	550	AS/NZS 3679.1
Wire cage:	Ø 5.4mm	Hard Drawn Wire	AS/NZS 4671	Grade 500L	500	650	AS/NZS 4671
Travel bars:	Ø 4mm	Ribbed Wire	AS/NZS 4671	Grade 500L	500	625	AS/NZS 4671
Galvanising:	85 µm	Hot Dipped Galv	AS/NZS 4680	-	-	-	AS/NZS 4680

Manufacturing Tolerances:

Overall Length:	±10 mm	Overall Height:	±5 mm	Dowel Centres:	±5 mm
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Product Performance Data:

Product Code	Product Description	Slab Thickness (mm)	Single Dowel Design Capacity (kN)	Single Wheel Design Load (kN) (mid panel joint)	Single Wheel Design Load (kN) (edge loading)
PD320300250G	PD3 Cradle 20mm @ 300mm centres to suit 230-275mm slab Galv (1.2 metres = 4 dowels)	230	30.3	268	147
		250	41.2	402	221
		275	41.2	402	221
PD320300300G	PD3 Cradle 20mm @ 300mm centres to suit 280-330mm slab Galv (1.2 metres = 4 dowels)	280	44.2	439	241
		300	57.1	621	342
		330	57.1	621	342
PD320400360G	PD3 Cradle 20mm @ 400mm centres to suit 340-390mm slab Galv (1.6 metres = 4 dowels)	340	64.1	581	319
		360	79.4	767	422
		390	79.4	767	422
PD320400425G	PD3 Cradle 20mm @ 400mm centres to suit 400-450mm slab Galv (1.6 metres = 4 dowels)	400	85.5	843	463
		425	107.6	1144	629
		450	107.6	1144	629

Concrete Compressive Strength = 32 Mpa. Joint Opening = 5mm. Design capacities should be compared with factored loads.

How to specify the PD3™

The Danley™ PD3™ sleeveless tapered plate dowel cradle system is designed for use in sawcut contraction joints, providing bilateral movement and limiting differential deflection under load to no more than 0.25mm.



- Complies with ACI 360R-10.
- Available in 6mm, 10mm & 20mm

