DANLEY™

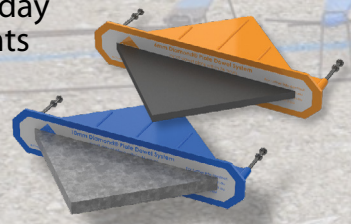
Load Transfer Tapered Plate Dowels

- For Concrete Industrial Ground Floors, and External In-situ Concrete Pavements
- Proven for More Than 20 Years

PD3 Dowel Cradle
for saw cut contraction joints

Available in 6 mm & 10 mm thickness

Danley Dowels
for day joints



Available in 6 mm & 10 mm thickness

Complies with
- Concrete Society TR34 Rev. 4
- Concrete Society TR66 Rev. 1
- ACI 330.2R-17
- ACI 360R-10

PD3 Installation for External Pavement: Smethwick, UK

◆ Easy to Install ◆
◆ Effective Joint Performance ◆
◆ Strategic Reinforcement Design to Optimise Material & Labour ◆

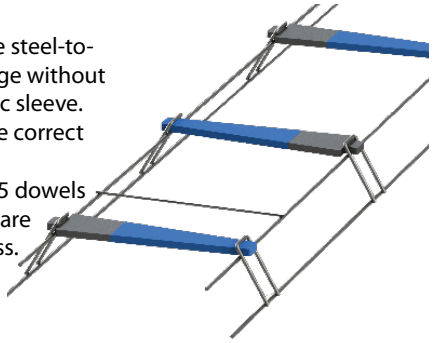
PD3 Dowel Cradle

Product Description

The PD3 design features a tapered and sleeveless plate dowel that provides the world's best performance in limiting joint deflection to provide superior joint stability. The PD3 dowel provides the highest deflection control tolerance in-line with ACI Standards recommendations to limit joint spalling, facilitate load transfer and provide the lowest risk of restraint to ensure the best serviceability outcome for the slab design. For simple construction, the PD3 dowels are positioned at preset heights and spacing in the cradles that are easy to carry and place.

Features

- Plate dowels alternate to maximise percent of steel at the joint, and provide generous installation tolerances.
- De-bonding material allows for close steel-to-concrete contact and allows shrinkage without restraint, eliminates need for a plastic sleeve.
- Wire cradle ensures dowels are at the correct heights and centre spacing.
- PD3 cradles are 2250 mm long with 5 dowels spaced 500 mm apart. Dowel plates are available in 6 mm or 10 mm thickness.



Trade Benefits

Concrete Contractor:

- Simple installation with generous tolerances and no need to stake to sub-base
- Easy to carry cradles
- Effective joint performance: reduced out of joint cracking, and less faulting and spalling
- Better performing concrete floors and pavements
- Improves customer satisfaction: less repairs and maintenance
- Repeat business
- Business differentiation

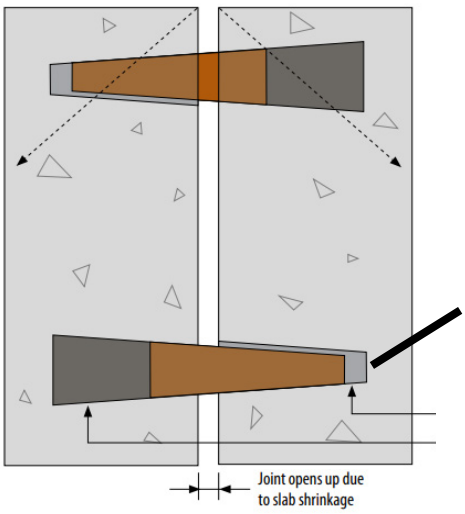
Engineer:

- Compliance with TR34, TR66, ACI 330.2R-17, and ACI 360R-10
- Performance engineered design: provides highest performance in controlling joint deflection and minimises restraint
- Reliable and predictable joint performance
- Simplified installation on-site ensures that design specifications and tolerances are met
- Value engineering: allows for designs that optimise materials

Asset Owner:

- Long life-cycle pavements and slabs
- Increases tenant satisfaction
- Reduces floor maintenance and downtime costs over the lifecycle of the facility

How Tapered Dowels Work



As the panels shrink, a small void is formed in the concrete by the tapered shape of the plate dowels, thereby minimising restraint induced stresses.

ACI 330.2R-17 Section 4.6.2
Dowels

"Joint or crack stability measurements below 0.25mm for Using positive load transfer has a direct impact on the thickness design of the pavement.

Example: Considering a concrete pavement with the same truck activity per day (1,000 trucks) and everything else considered equal, an optimised pavement with dowels can reduce slab thickness and concrete volume by almost 20%.

Meets ACI 360R-10

"Joint or crack stability measurements below 0.25mm for joints and cracks subjected to lift truck traffic with small, hard wheels will have good service life."

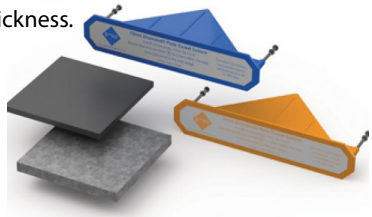
Danley Dowels

Product Description

Danley Dowels are a tapered plate dowel and sleeve system designed to reduce restraint for day joint applications in concrete industrial floors and pavements. Danley Dowels are designed as a fast fix to timber form system that provides load transfer across the joint and minimises differential deflection between adjacent slab panels. Danley Dowels provide a low cost solution by eliminating the need for drilling or processing of formwork that is required with traditional round and square dowel systems. Danley Dowels come pre-packaged with all components ready for installation.

Features

- Nailing flange with double-headed nails provides secure attachment to the forms.
- Double-headed nails help retain the sleeve in the concrete when stripping the forms.
- Plastic sleeves allow the dowel to be installed after the forms are stripped.
- Available in 6 mm and 10 mm thickness.



Trade Benefits

Concrete Contractor:

- Better performing pavements and slabs: eliminates out of joint cracking
- Simple installation: easy sleeve installation, form removal the next day, and dowel insertion
- Reduces labour: eliminates need for drilling or processing forms
- Improves customer satisfaction: less repairs and maintenance
- Repeat business

Engineer:

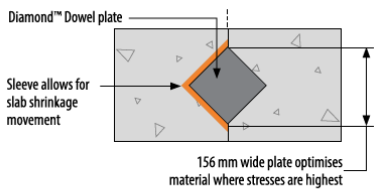
- Compliance with TR34, TR66, ACI 330.2R-17, and ACI 360R-10
- Performance engineered design: provides highest performance in controlling joint deflection and minimises restraint
- Allows for slab shrinkage and lateral movement on the horizontal plane
- Reliable pavement performance
- Sleeve provides expansion
- Sleeve ensures the plate dowel is held perpendicular to the joint

Asset Owner:

- Long life-cycle pavements and slabs
- Increases tenant satisfaction
- Reduces floor maintenance and downtime costs over the lifecycle of the facility

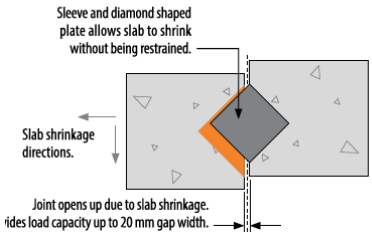
How Danley Dowels Work

Plan View at Construction Joint - *When Poured*

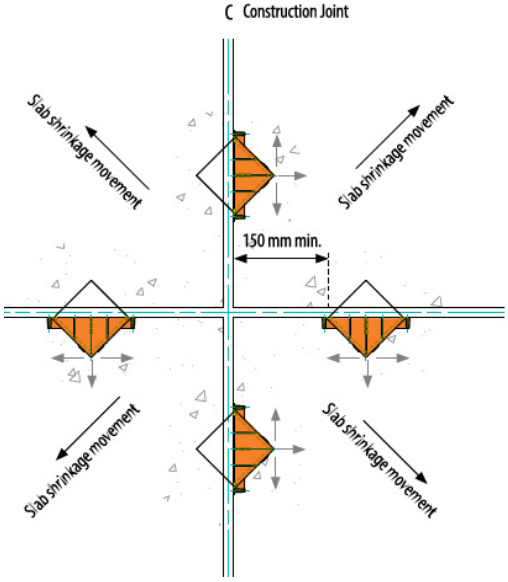


Danley Dowels allow two way lateral movement during early stages of rapid drying shrinkage.

Plan View at Construction Joint - *After Shrinkage*



The 45° tapered diamond plate technology allows for free horizontal movement of the concrete without restraint.



DANLEY™ Strategic Reinforcement Design

Strategic Reinforcement

Description

The Strategic Reinforcement Design is a value engineered solution that combines ground supported flatwork designs, with the performance advantages of tapered plate dowels: PD3 Dowel Cradles and Danley Dowels. The design optimises materials and labour by placing steel where it provides the most benefit, which is at the joints. All mid-panel reinforcement is thereby eliminated. Strategically reinforced concrete flatwork minimises joint spalling and random cracking with joints that are strategically placed to mitigate cracks, and the use of tapered plate dowels offer forgiving installation tolerances at the joints. The Strategic Reinforcement Design has realised a return on investment for contractors, owners, and designers with more than 200 million square meters in place worldwide.

Construction and Design Benefits:

- Value engineered solution: optimises materials and labour, by leveraging slab-on-ground designs, and tapered plate dowel technology
- Cost savings resulting from a performance based design
- Increases construction efficiencies; improved accessibility for vehicles and labour
- Long life-cycle pavements
- Simple construction: no misalignment on-site, no staking, drilling or spinning of round dowels
- Full access to subgrade: allows for re-leveling in the case of rutting from vehicles
- Reduces labour fatigue: less steel to carry

Performance Elements:

- Controls the natural characteristics of concrete such as curling and shrinking
- Minimises restraint that could result in cracking
- Delivers joint stability: less than 0.25 mm deflection with lift truck traffic with small, hard wheels
- Minimises joint faulting and spalling

Compliance:

- **Concrete Society TR66 Rev. 1:** External in-situ Concrete Paving
- **ACI 330.2R-17:** Guide for the Design and Construction of Concrete Site Paving for Industrial and Trucking Facilities
- **ACI 360R-10:** Guide to Design of Slabs-on-Ground

Atlanta, USA 15 years age

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