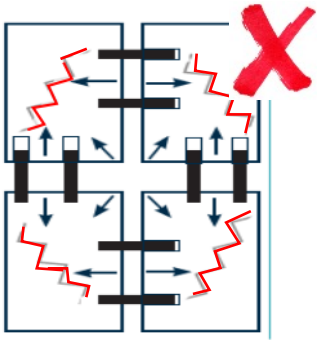
PRODUCT DATA SHEET

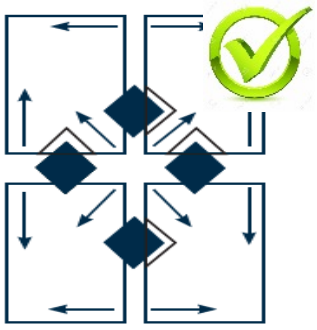
QUICDIAMOND DOWEL SLEEVES & PLATES and PRE-FAB BASKET ASSEMBLIES

As an owner/developer, you want a roof that doesn't leak, a cash register that never breaks down, and a floor that stays in perfect service - we can help with your floor. As soon as it was discovered "Continued Reinforcement" through a joint became the culprit in early and fast joint deterioration, round dowels become the norm.

Round dowels required perfect installation and didn't take into account two-way slab movement. Now, Diamond Dowels give you the necessary slip/movement for 180 degree movement at a joint - all joints! Both 'pre-fab' basket assemblies for saw-cut joints and speed sleeves against forms for construction joints are available.

All the top commercial designers are designing slabs under ACI 360R-10 - Guide to Designs of Slabs-on-Ground. They make it clear the tapered plate dowel or *"Diamond Dowel" is the state-of-the-art* dowel for superior load transfer and true 360 degree movement at all joints. Plate sizes available in 1/4", 3/8", 1/2" and 3/4" thickness; depending on slab thickness.





BETTER TECHNOLOGY

In 2010 the American Concrete Institute published perhaps the most comprehensive guide on durable slab construction to date - "Guide to Designs of Slabs-on-Ground". After an Introduction, definitions, slab types, and soil compaction, the committee focuses on Joints - and more appropriately, LOAD TRANSFER OF JOINTS. 360.R26 6.2 prescribes "Use load-transfer devices at construction and contraction joints (figure on the right) when positive load transfer is required, unless a sufficient amount of post-tensioning force is provided across the construction joint to transfer the shear. Load-transfer devices force concrete on both sides of a joint to deflect approximately equally when subjected to a load. This can help prevent damage to an exposed edge when subjecting the joint to wheel traffic."

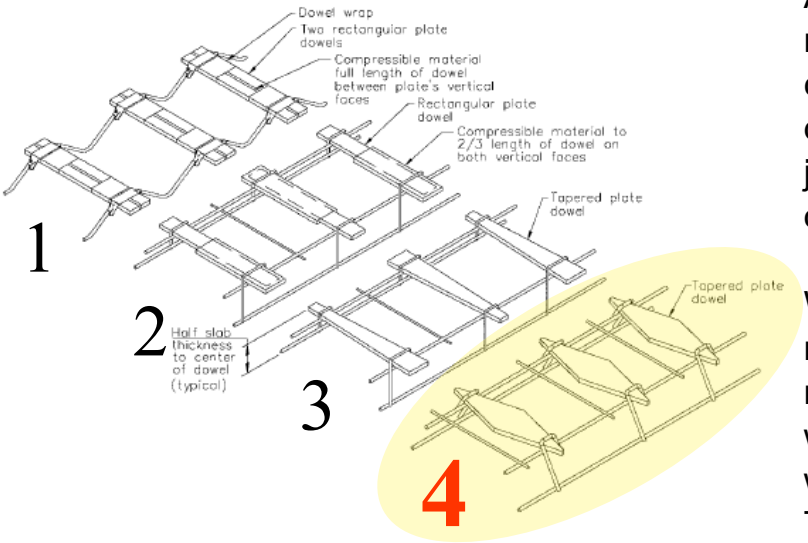
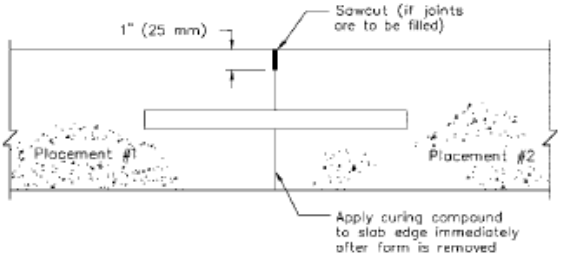
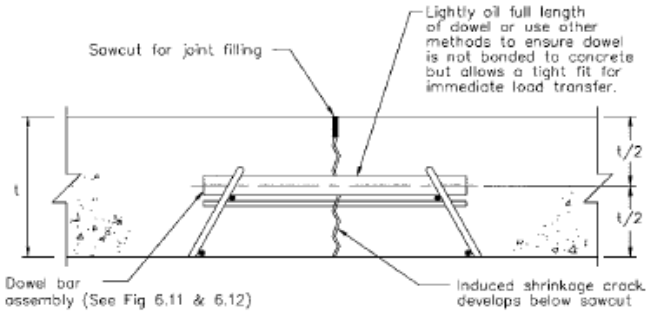


Illustration from ACI 360 (2010)
Guide to Design Slabs-on-Ground; page 26



Typical doweled construction joint

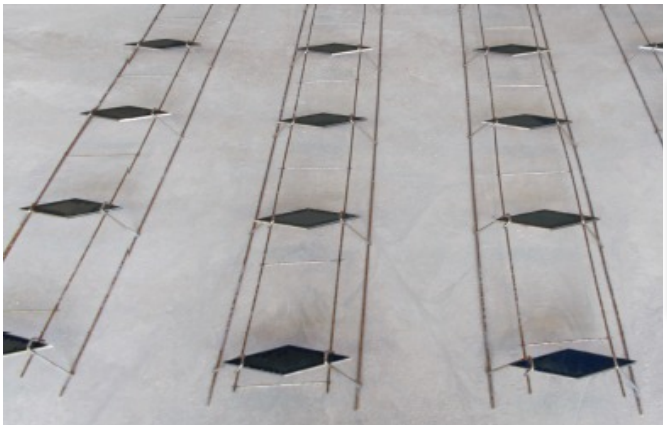


Notes:
- Dowels and baskets are manufactured as a fully welded assembly
- Dowels are welded at alternate ends

Typical doweled contraction joint

As well "Dowel baskets should be used to maintain alignment of dowels in sawcut contraction joints, and alignment installation devices should be used in construction joints." Choices for acceptable devises are on the left.

We feel, the fourth option has the least restraint, with the greatest range of movement and optimum effectiveness. No welds touch the plates - only light tack welded frames. Plates are coated with a Tectyl 506 coating for protection and ease of movement.



"QuicDiamond Baskets are the ideal solution for saw cut joints to optimize the installation of the steel, flat piece dowel to bridge an induced crack consistently."

QuicDiamond™ Baskets

- Provides stable dowel support alignment with fully-welded basket assemblies
- Custom baskets available directly through manufacturing plants
- All steel is sawn according to industry guidelines ensuring smooth plate edges that will ensure free movement of dowel
- Doweling method in accordance with ACI 360's Design of Slab-on-Ground
- Engineered to provide optimal use of steel
- Design accommodates axial and lateral slab movements with lowest restraint possible
- Solidly constructed framework to maintain positioning for rigorous jobsite conditions,
- Factory-applied debonding agent on all baskets,
- All plates are manufactured from steel certified to meet ASTM A36,
- Cross-sectional area of steel at the outside edge of the saw-cut installation tolerance,
- Dowel length (based on saw-cut installation tolerances) is 2" for all dowels.

QuicDiamond™ Sleeves & Plates

- Provides excellent joint stability compared to other systems
- Provides reliable and maintenance-free concrete flatwork joints
- The plate shape is engineered for optimal material performance
- Plates are sawn steel for smooth square plate edges, allowing for unrestrained horizontal or lateral movement
- Consistently specified manufacturing tolerances
- Positive load transfer and continuity of surface profile
- Sleeves are manufactured from high-density ABS plastic
- Internal collapsible fins and spacers ensure load plate is installed in the correct position to preserve integrity of the sleeve
- Wide sleeves for increased lateral movement
- Sleeves are ribbed for increased rigidity and internally supported to stop compression for sure and easy plate installs every time
- Plate shape allows for the most lateral and horizontal movement with maximum strength at the center of the joint

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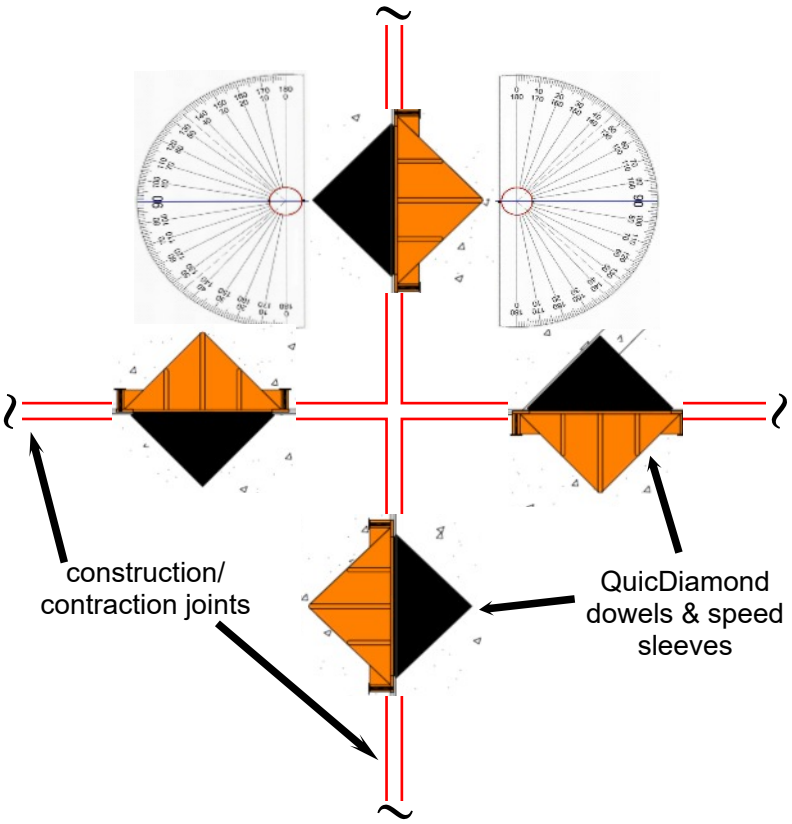

For the lowest restraint and greatest movement, Diamond (rotated square plates) dowels are unquestionably the optimum geometry. The combination of longitudinal (length) and latitudinal (width) movement can be satisfied with unlimited 180 degree, un-restrained, bridging protection. Don't take it from us - but reflect on the Industry's leading researchers and associations:

- PERFORMANCE-BASED DOWEL DESIGN - by Wayne Walker & Jerry Holland. January 24, 2007 https://www.concreteconstruction.net/how-to/repair/performance-based-dowel-design_o
- ACPA Update #10.01 – Plate Dowels; An Innovation Driven by Industrial Concrete Paving. April 2010 http://1204075.sites.myregisteredsite.com/downloads/RT/RT%2010.01%20-%20Plate%20Dowels.pdf

The Diamond Dowel Load Transfer system is equally effective for both today's super-high forklift traffic and heavy outdoor paving applications.

BoMetals, inc.
concrete and masonry accessories

BoMetals is a proud USA fabricator (meets or exceeds ISO 9001 standards) with two manufacturing locations and various warehouses throughout the country.

California, Nevada & Hawaii are handled by -

Jim Kaylor 310.650.4263 jim@DurabilityConsultants.com

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