

PRODUCT DATA SHEET

Speed Plate

Plate Dowel System

PRODUCT DESCRIPTION

Speed Plate is a patented sleeve and steel plate dowel system. Speed Plate® provides load transfer across construction joints and immediately accommodates lateral and axial movement produced by concrete shrinkage and differential slab movement. The large, non-tapered plate design reduces bearing stresses on the concrete and ensures consistent bearing stresses on the concrete at the joint face and fully embedded depth of the dowel.

Speed Plate system is comprised of a high density plastic sleeve pocket former and insert to properly position the load plate dowel for axial and lateral shrinkage capability. Steel load plate dowel is manufactured from hot rolled steel plate meeting ASTM A36.

USES

Concrete slabs-on-ground requiring effective load transfer across joints.

Typical structures include:

- Warehouse / Distribution Centers
- Big Box Stores
- Manufacturing Facilities
- Commercial / Industrial Complexes
- Entertainment Centers
- Recreational Complexes
- Parking Lots and Site Paving
- Airports

Product selection and slab parameters:

Sleeve Color	Slab Depth	SPEED PLATE * Dowel Dimensions	Plate Dowel On Center Spacing
Red	5" - 6"	1/4" thick X 4" width X 6" long	18"
Yellow	7" - 8"	3/8" thick X 4" width X 6" long	18"
Green	9" - 11"	3/4" thick X 4" width X 6" long	18"

Note: Values are based on a maximum joint opening of 0.20"

CHARACTERISTICS / ADVANTAGES

Sika Greenstreak's Speed Plate® reduces the number of dowels required when compared with conventional doweling systems. Speed Plate® will allow the installer to increase the spacing between dowels, further reducing labor and material costs. The spacing chart above is conservative and is based on spacing recommendations in accordance with ACI 360R-10.

Advantages:

- Larger steel plates provide greater overall surface area to reduce bearing stresses on concrete
- Non-tapered plate profile ensures consistent bearing stresses at joint face and full depth of dowel
- Engineered to provide optimal use of steel
- Integral, patented sleeve insert eliminates lateral restraint between concrete sections
- A doweling method in accordance with:
ACI 302 Guide for Concrete Floor and Slab Construction

ACI 330 Guide for the Design and Construction of Concrete Parking Lots

ACI 360 Design of Slabs-on-Ground

- One-piece design with alignment marks and preinstalled nails makes installation quick and easy
- Ensures proper dowel alignment at a construction joint
- Reduces labor
- No form drilling required
- No greasing, spinning, removing, or replacing of dowels

PRODUCT INFORMATION

Packaging

All Speed Plate® sleeves and steel load plate dowels are boxed for easy handling. 1/4" and 3/8" Speed Plate® systems are sold in units of 100 kits and each 3/4" Speed Plate® system is sold in units of 42 kits. One kit includes a Speed Plate® sleeve and plate dowel. Each 1/4" Speed Plate® kit is 1.93 lbs, 3/8" Speed Plate® kit is 2.79 lbs, and 3/4" Speed Plate® kit is 5.37 lbs.

Shelf Life

No expiration.

Storage Conditions

Cover and store Speed Plate® system off ground to protect from exposure to rain, rusting, and damage.

Deliver Speed Plate® system in Sika Greenstreak packaging. Cover and store Speed Plate® system off ground to protect from exposure to rain, rusting, and damage.

Dimensions

1/4", 3/8", or 3/4" thick by 4" x 6" load plate dowel.

APPLICATION INSTRUCTIONS

1. Snap a chalk line or use the Speed Plate® alignment tool along the form to the desired dowel depth. Ideally, the centerline of the Speed Plate® sleeve is positioned at the centerline of the slab, but is not less than 2 1/4" from the top of the slab.
2. Set forms and nail the Speed Plate® sleeve to the form with the preset nails provided. Speed Plate® thickness and spacing shall be per contract documents. Pour and finish the first slab according to ACI specifications. **IMPORTANT:** Use internal vibration to consolidate the concrete around the Speed Plate® system.
3. Strip forms and bend nails flush with the face of the construction joint.
4. Insert the steel Speed Plate® dowel through the label

and into the sleeve cavity. If possible, this should be done while the concrete is still green for easier placement. Do not use excessive force while inserting Speed Plate® dowel as this could potentially damage the concrete.

5. Pour and finish the adjacent slab(s), again use an internal vibrator to consolidate the concrete around the Speed Plate® dowels according to ACI specifications.

AVAILABILITY/WARRANTY

Testing and Research

Independent tests were conducted to provide an unbiased evaluation of the current doweling methods available, including round, flat plate, square, and tapered plate. The test procedure utilized a modified version of the AASHTO T253 test for load transfer devices and was designed to determine the following:

- Total joint deflection under load

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- Bearing stresses imparted to the concrete at the joint face
- Failure mode of each doweling system

Conclusions: Tests of ALL DOWEL SYSTEMS resulted in a tensile “pop-out” failure of the concrete. All dowel types provided deflections far less than the typically accepted value of 0.010” when loaded to 1,500 lbs per dowel (typical load for 10,000 lbs axle load on a 6” slab with dowel spacing at 24” on center). **Deflections greater than 0.020” can lead to joint failure due to impacts from wheeled traffic. MINIMIZING DEFLECTION is key to insuring the durability of the joint.**

Dowels with rectangular cross sections and larger widths are effective in reducing bearing stresses on concrete. Adding sleeves to dowels of all types also reduces the bearing stress on the surrounding concrete. Speed Plate® provides the lowest stress on the surrounding concrete of all Sika Greenstreak Dowel Systems. Bearing stress alone, however, does not predict ultimate dowel loads. All dowel systems tested failed at a wide range of bearing stress but at similar applied loads.

Flat plates, or square dowels with sleeves that allow movement in the direction of the joint, are effective in eliminating lateral restraint between concrete sections. The Speed Plate® sleeve incorporates an integral, custom insert that provides immediate lateral movement capability between concrete sections. It is critical to use internal vibration to consolidate the concrete around ALL plate dowel systems.

More information:

It is critical to use internal vibration to consolidate the concrete around ALL plate dowel systems. Consult a Sika Greenstreak engineer to review your specific parameters for design and spacing recommendations, additional product information, documentation for LEED® compliance purposes, or warranty information.

BASIS OF PRODUCT DATA

Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

OTHER RESTRICTIONS

See Legal Disclaimer.

ENVIRONMENTAL, HEALTH AND SAFETY

For further information and advice regarding transportation, handling, storage and disposal of chemical products, user should refer to the actual Safety Data Sheets containing physical, environmental, toxicological and other safety related data. User must read the current actual Safety Data Sheets before using any products. In case of an emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.



LEGAL DISCLAIMER

- KEEP CONTAINER TIGHTLY CLOSED
- KEEP OUT OF REACH OF CHILDREN
- NOT FOR INTERNAL CONSUMPTION
- FOR INDUSTRIAL USE ONLY
- FOR PROFESSIONAL USE ONLY

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