

Concrete Engineering Specialists

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September 20, 2005

Mr. Steve McDonald
EZform Inc.
120-B Camp St.
Loganville, Ga 30052

Re: Load Calculations for EZdowel

Dear Mr. McDonald

We have reviewed the engineering calculations for the EZdowel. As an engineering design reference, ACI Committee 325 report "Structural Design Considerations for Pavement Joints" published in Journal of the American Concrete Institute, July 1956 was used. The basis for these calculations was originally derived by Timoshenko and has been included in pavement references books for years; most notably those by Oglesby and Hicks, "Highway Engineering" and Yoder and Witczak, "Principles of Pavement Design." These two books have been used to teach civil engineering graduates for the past 40 years.

The calculations and tables produced in the ACI 1956 article have been used by various other ACI committees including ACI 302 "Guide to Floor and Slab Construction" and ACI 360 "Design of Slabs on Grade." The design philosophy in the ACI 1956 article has also been used to analyze other dowel shapes. Finite element analysis by the Winkler method, the accepted method for analysis of slabs on ground, was also used to analyze the EZdowel. This finite element analysis was used as a comparison and to supplement the ACI 1956 design method.

The load values calculated for the EZ Dowel include consideration of (1) the EZdowel bearing against the concrete, (2) the EZdowel failing in punching shear, and (3) the EZdowel failing in bending or shear. The allowable load was chosen as the smallest load capacity for those considerations. In addition, the effective dowel group action factor was calculated consistent with the ACI committee report to provide the load carrying capacity of a dowel group. Differential deflection of adjacent slab surfaces across the joint was also calculated.

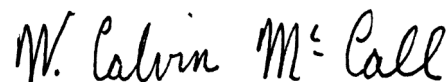
This analysis conforms to the current standard of the industry for dowel bars and is consistent with the intent and application of the 1956 ACI committee report.

Sincerely,

Concrete Engineering Specialists



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President
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