

CONCRETE CHATS

A MONTHLY NEWSLETTER OF BOMETALS, INC.

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Concrete Slabs

Concrete slabs are seen in a variety of interior and exterior applications including floors, sidewalks, pavements, and others. The identifier “slab-on-grade,” also called “slab-on-ground,” is commonly used when referring to interior slabs, like floors, and guidance on designing interior slabs can be found in ACI 360 – Guide to Design of Slabs-on-Ground. Slabs for exterior applications are simply referred to as exterior slabs or pavements, with pavements being the most common application. Guidance for these can be found in ACI 325 Guide for Construction of Concrete Pavements, ACI 330 Guide for the Design and Construction of Concrete Parking Lots, and ACI 330.2 Guide for the Design and Construction of Concrete Site Paving for Industrial and Trucking Facilities. While there are many characteristics common to all concrete slabs, there exist some basic differences between interior and exterior slabs in the areas of concrete mixtures, finishing, and joint spacing.

Concrete Mixtures: Air content is the biggest difference in concrete mixtures between interior and exterior slabs. Exterior slabs have air entrained, or added, into concrete mixtures to improve durability and protect the concrete from damage due to freeze/thaw cycles. With this additional air content comes the risk of lower strength gain, need for increased cement content, and risk of higher shrinkage, and associated cracking, during setting.

Concrete Finishing: Interior slabs commonly have more exacting flatness and levelness requirements, and have a smoother surface finish which requires more finishing steps, like hard troweling. Surface finish on exterior slabs is typically textured, like a broom finish, for enhanced traction and slip resistance.

Joint Spacing: Efforts are often made to increase joint spacing on interior slabs to enhance flatness & smoothness and reduce the number of interactions between joints and hard wheeled vehicles, such as forklifts. Joint spacing for exterior slabs, pavements primarily, has been trending shorter to lessen the impacts of curling, for example and improve pavement performance. Larger pneumatic tires on cars and trucks are less impacted by additional joints.

Common to all slabs, interior or exterior, is load transfer across joints and overall joint performance for the long-term success of your concrete slab. [BoMetals Inc](#) offers a variety of load transfer devices and technical support to aid in design and development of your next project.

QuicTip▶ BoMetals QuicDiamond Dowels and QuicDiamond Dowel Baskets are available with and without epoxy coating for use on interior and exterior slabs. BoMetals QuicKey and Pro-Key systems are galvanized steel and also suitable for interior and exterior slabs.

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