

CONCRETE CHATS

A MONTHLY NEWSLETTER OF BOMETALS, INC.

MARCH 2026

Load Transfer Across Joints

Effectively, or efficiently transferring loads across joints is a significant concern with concrete floors and pavements. When cars, trucks, forklifts, or other vehicles move from one concrete slab to another, the movement can cause vertical deflection in each slab independent of the other. This differential deflection and associated uneven surface across joints, particularly construction joints, increased the risk of damage to joint edges from wheel impact or damage to the vehicle wheels, especially hard wheels on forklifts.

Poor Load Transfer: Poor load transfer conditions exist whenever differential deflection between concrete panels is unchecked. Examples of poor load transfer potential are construction joints, where the slabs are formed and poured separately, or isolation joints, where slabs are separated by compressible material. Subgrade support, as well as speed and volume of heavy traffic can impact the severity of, and risk of damage from, differential deflection.

Thickened Edge Joints: Thickening the edges of slabs at any butt-type joint, such as transverse construction joints or isolation joints when they are subject to wheel load, by 20% can help in reduction of differential deflection.

Aggregate Interlock: When contraction (control) joints are sawcut, the slabs below the bottom of the cut will crack in a pattern that goes around the aggregate, creating an irregular face on either side of the crack. Aggregate embedded in one slab projects across the crack to the other slab “interlocking” with aggregate projecting across the crack in the opposite direction aiding in load transfer across the joint.

Keyways: Primarily used in construction joints, Keyways use a half-round or trapezoidal shape formed on one slab and projecting across the joint to the other slab. Keyways have also been used in longitudinal joints to aid in load transfer as traffic changes lanes.

The load transfer mechanisms listed above do not include the use of load transfer devices, such as dowels, and are more commonly seen with slabs subject to lighter loading conditions. Thickened Edge Joints and Keyways are used less frequently in current construction than other approaches that will be discussed in upcoming installments.

QuicTip▶ [Keyway Systems - BoMetals Inc.](#) are galvanized joint systems, including QuicKey and PRO-KEY, that remain in place and are suitable for use at construction joints and contraction joints.

CONCRETE CHATS is an Informational Source
For Industry Professional courtesy of:

BoMetals, inc.[®]
concrete and masonry accessories