Title:
Use Epoxy Joint Sealer to Stop Concrete Floor Vibration and Damage

Word Count:
567

Summary:
Many heavy industrial settings, including paper warehouses, steel and other heavy-weight or high-traffic applications suffer from shaking concrete floors. The source of the vibration is most often caused by rolling equipment crossing expansion joints cut in the concrete when poured. Cement contractors place these expansion joints in the floor in order to allow for the shrinkage that occurs in the concrete slabs as they cure. The joints are also helpful if the slab experiences major temperature changes.

Keywords:
Concrete floor coatings, industrial flooring, garage floor seals, building maintenance, facilities management

Article Body:
Many heavy industrial settings, including paper warehouses, steel and other heavy-weight or high-traffic applications suffer from shaking concrete floors. The source of the vibration is most often caused by rolling equipment crossing expansion joints cut in the concrete when poured. Cement contractors place these expansion joints in the floor in order to allow for the shrinkage that occurs in the concrete slabs as they cure. The joints are also helpful if the slab experiences major temperature changes.

Bridges, highways, and sidewalks may expand and contract considerably. Most modern buildings, however, are climate controlled with temperature variations within a 10-15 degree range. As a result, these expansion joints are more of a problem than a solution.

Flexible caulks have been used in expansion joints to help transition between the slabs yet allow for some movement. Unfortunately, that movement can become a problem and cost if frequent or extensive.

A better solution is to epoxy the slabs together with 100% solid epoxy and color quartz. The epoxy-quartz filler levels the rut between slabs, thus eliminating the vibration, wear, and structural damage that would otherwise be caused by moving equipment. The quartz-epoxy mix withstands test strengths of 22,000 psi.

A recommended first step in the application process is to set a masonry blade on a skilsaw at 1/4 to 1/2 inch and run it down the expansion joints, cleaning both sides. Flexible chalk will melt out of the joints during this operation. Once the joints are cleaned, color quartz is swept into the joints until slightly lower than flush with the floor surface. Clear or colored 100% epoxy is then poured over these joints until saturating the quartz and rising level with the floor. 12 hours later the joint will need to be re-inspected and topped off.

Often these joints have openings at the bottom and some epoxy may leak through. The wetted color quartz will remain and block leak-through on the second application. It is important to come back to the floor between 10 and 12 hours later to scrape off excess epoxy. Too long a wait and the epoxy becomes hard to shave; too little setup time and the epoxy may be tacky or sticky. Using a 4-inch razor scraper with a long handle allows each side of the joint to help guide the scraper and provide a smooth, even filling over the joint between the slabs. If done well, the rolling equipment may never notice joints again and the floor life will be extended with reduced need for maintenance and repair.

The cost of filling deep holes and badly eroded floors can be reduced by using color quartz and a filler and wear inhibitor. Mixing 100% epoxy with color quartz to 28 lb. per gallon gives a trowel mix with a peanut butter consistency. This mix can be placed in holes using a trowel or putty knife. Small vertical surfaces are best filled by using a heavy rubber glove and applying the mixture by hand with a rubbing motion.

One floor coating manufacturer that has taken the lead in joint repair is Durall Industrial Flooring of Minneapolis, MN. Durall is the only industrial flooring manufacturer that also makes over 500 specialty cleaners, allowing them to produce special preparations of cleaners and application systems designed to assure optimum flooring adhesion and wear results.

Photo examples of the joint sealing process are available at www.concrete-floor-coatings.com/photos/jointsealer

For more information, contact Harvey Chichester at harvey@concrete-floor-coatings.com

Phone: 1-800-466-8910 or 952-888-1488 (24/7)

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