



TECHNICAL BULLETIN – TB050

MOVEMENT AND CONTROL JOINTS IN CONCRETE AND TOPPINGS

5th November 2024

INTRODUCTION & SCOPE

Flooring Contractors are often asked to complete building works that go against Building Standards and good practice. One of the most commonly requested for repair procedures is for products and methods to fill in **movement joints in concrete**.

Another issue to consider is the maximum panel size for topping areas, particularly where the thickness exceeds several millimetres. This is done to reduce strain within the system.

The following points are basic building requirements for the treatment or filling of movement joints and recommended sizes of topping pours.

PANEL SIZES

Where areas of floor smoothing cement are to be poured onto large subfloors that have either no or few control or movement joints (for example, hundreds to thousands of square metres), the maximum size of panel that can be poured shall not exceed 100m² and no single dimension should exceed 8m-10m in length without the prior consent of ARDEX.

When areas exceed these dimensions, movement joints should be installed in the topping system between adjacent pours so that these dimensions are not exceeded. These joints must be total topping thickness and filled with a flexible sealant or metal joint strip. Further, existing subfloor joints, whether they correspond or not with the topping joints, must also be carried through the topping.

Typically, this process will entail either detailing the previous joints with edge strips (if permanent) or pouring the topping and then cutting the joints to the full thickness of the topping the day after it is poured (when it is hard enough to take the weight of a diamond floor saw).

TOPPING CONTROL JOINTS

- Control joints in toppings may be filled with rigid materials after 28-42 days of cure have elapsed from the time of the pour (e.g., ARDEX A45 or an epoxy such as ARDEX RA88 Plus).

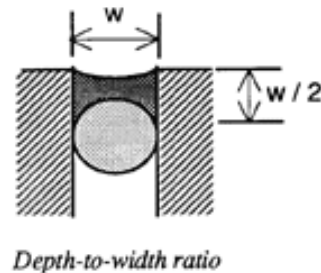
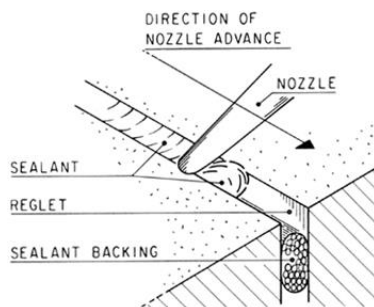
MOVEMENT JOINTS

- Low modulus silicone, polysulphide, silane-urethane, or polyurethane sealants should be specified for concrete movement joints.
- The selection of the joint filling compound is directly related to the expected movement of the joint, and sealants should have durability requirements that pertain to ASTM specification C920 (<http://www.astm.org/Standards/C920.htm>), type S (single component), grade NS (non-sag), and class 25 (25% expansion).

Joint filling materials are required to be capable of movement to $\pm 50\%$ of the joint width and comply with ASTM C719



- Consult the applicable Standard (<http://www.astm.org/Standards/C719.htm>) to determine joint movement capability.
- Joint filling is typically achieved by placing a polyethylene backing rod (compressed to no more than 25% of the rod diameter) in the joint. The backing rod is placed just below the joint surface to ensure that the Low Modulus Sealant, when installed, will have a width-to-depth ratio of 2:1. Maximum width using this system is typically 30mm.



<http://www.nrc-cnrc.gc.ca/eng/ibp/irc/cbd/building-digest-96.html>

<http://www.nrc-cnrc.gc.ca/eng/ibp/irc/cp/sea2.html>

- An alternative is a proprietary pre-made type of floor joint (for example, 'Latham joints' <http://www.latham-australia.com/> or 'Miska joints' <http://www.miska.com.au/>).
- A.S. 1884-2021 section 4.2 (f) states, "Floor coverings shall not be laid over structural expansion joints or construction joints."
- B.S. 8203-2001, Section 4.4.1 states, "Floor coverings should not be installed to cover expansion joints. A proprietary joint should be inserted, and the floor covering terminated on either side of this joint."
- **Floor levelling cement or any type of cement-based product WILL NOT fall into the category of a "low modulus" material. These materials are rigid, do not deform, and have high modulus.**
- High modulus cements will either be cracked or crushed and then forced out of the joint with resultant show through and possible damage to vinyl. Tiles may be cracked, and joint lines may fail.
- The site engineer should specify the type of movement joint required. All products and systems to be used to fill movement joints should be forwarded to the site engineer for approval before use.
- Floor covering manufacturers have specified joint configurations to be followed.

SUMMARY



Should the contractor wish to take the risk and install floor-levelling cement, they consequently take the ultimate responsibility for replacement costs should the applied system fail.

ARDEX recommends that in these situations, where floor levelling cement is applied, the joints are marked on the floor before any levelling installation. After the topping has set completely, a 5mm thick diamond saw is used to make clean cuts through the floor levelling cement for the placement of suitable joint materials.

When an ARDEX Moisture Barrier is used, the barrier must be re-instated into the cut, as detailed in ARDEX Technical Bulletins TB006 or TB192.

IMPORTANT

This Technical Bulletin provides guideline information only and is not intended to be interpreted as a general specification for the application/installation of the products described. Since each project potentially differs in exposure/condition, specific recommendations may vary from the information contained herein. For recommendations for specific applications/installations, contact your nearest Ardex Australia Office.

DISCLAIMER

The information presented in this Technical Bulletin is to the best of our knowledge true and accurate. No warranty is implied or given as to its completeness or accuracy in describing the performance or suitability of a product for a particular application. Users are asked to check that the literature in their possession is the latest issue.

REASON FOR REVISION-ISSUER

Change of slogan and address

DOCUMENT REVIEW REQUIRED

36 months or whenever third-party suppliers change their recommendations.

Australia: 1300 788 780

New Zealand: 643 384 3029

Web: www.ardexaustralia.com

email: technical.services@ardexaustralia.com

Address: 2 Buda Way, Kemps Creek NSW 2178