



EUCLID CHEMICAL

## TECHNICAL BULLETIN CP-04

# COLD TEMPERATURE INSTALLATION OF JOINT FILLERS

This bulletin pertains to Euco 700, Dural 340 NS/SL, and all QWIKjoint joint fillers.

Joint Fillers manufactured by Euclid Chemical can be successfully installed at cold temperatures but must be handled and applied with special techniques specific to the environment. Advanced planning, including the following precautions, will help to prevent problems that can be encountered while installing joint fillers in cold temperatures.

- 1. Chemical Reaction:** Mixing Part A and Part B of a joint filler starts a chemical reaction that produces heat. Ambient and concrete temperatures both affect the joint filler's rate of reaction and degree of cure. If the temperature is too low, the joint filler may eventually harden, but will not reach a complete cure or achieve its designed physical properties, which could lead to premature failure. Epoxy formulations tend to be more temperature sensitive as compared to polyurea and/or hybrid formulations. For example, epoxy joint fillers will not cure properly in temperatures less than 40°F (4°C). In comparison, polyurea and/or hybrid joint fillers will cure in temperatures as low as -20°F (-29°C). Therefore, selecting the right material for the required installation is very important.
- 2. Concrete Slab Stabilization:** Filling joints in cold rooms should not be performed until the area has reached its service temperature and the slab shrinkage is no longer significant. The American Concrete Institute recommends that cooler room floors be stabilized at ultimate operating temperature for at least 5 days, and freezer rooms for at least 14 days, or as long as possible, prior to filling joints.
- 3. Joint Filler Storage:** In a cold environment, keep Part A and Part B warm before and during use (70–90°F/21–32°C). Warm the material with heat lamps or keep them in a heated building. A small portable storage box can be built out of rigid sheets of foil-backed insulation, with a regular light bulb or an electric heating pad inside to maintain a temperature of 70–90°F (21–32°C). This method will keep the warm material near the work area and prevent it from cooling off before it can be mixed and applied. Doing so will start the initial chemical reaction quicker, resulting in better curing even if the material cools after it is applied. The warmer mixture will also flow smoother and saturate concrete surfaces better.
- 4. Low Temperature Installation** The material must be kept warm during installation. Pumps must be equipped with a heating system to keep reservoir tanks, lines and the mixer head warm. Attempting to pump cold material can result in off-ratio dispensing and bubbling of the joint filler. Dispensing Part A and Part B "off ratio" can compromise the joint filler's ability to cure properly. Ensure that Part A and Part B are pumped in the proper mix ratio. Frequent ratio checks of the installation pump are highly recommended.