



# TECHNICAL BULLETIN 102

Subject: Elastomeric Concrete Placement in New Concrete

(ISSUE DATE: 1/13/09)

What is the recommended age of concrete related to the proper bond of elastomeric concrete or, more specifically, how soon before you can install the expansion joint system in to new concrete?

The optimal point to install any elastomeric concrete is when the concrete has cured a minimum of **28** days.

Chart 1 (on page 2) illustrates the hydration process that affects all polyurethane elastomeric concrete material's ability to bond to concrete. Throughout all periods and up until the deceleration period the concrete is absorbing water. During the deceleration period concrete begins releasing water (moisture) as a normal part of the curing process. Please note that the deceleration process begins after about 14 days. High moisture content will adversely affect the ability of polyurethane (sealants or elastomeric concrete) to cure properly and bond to concrete.

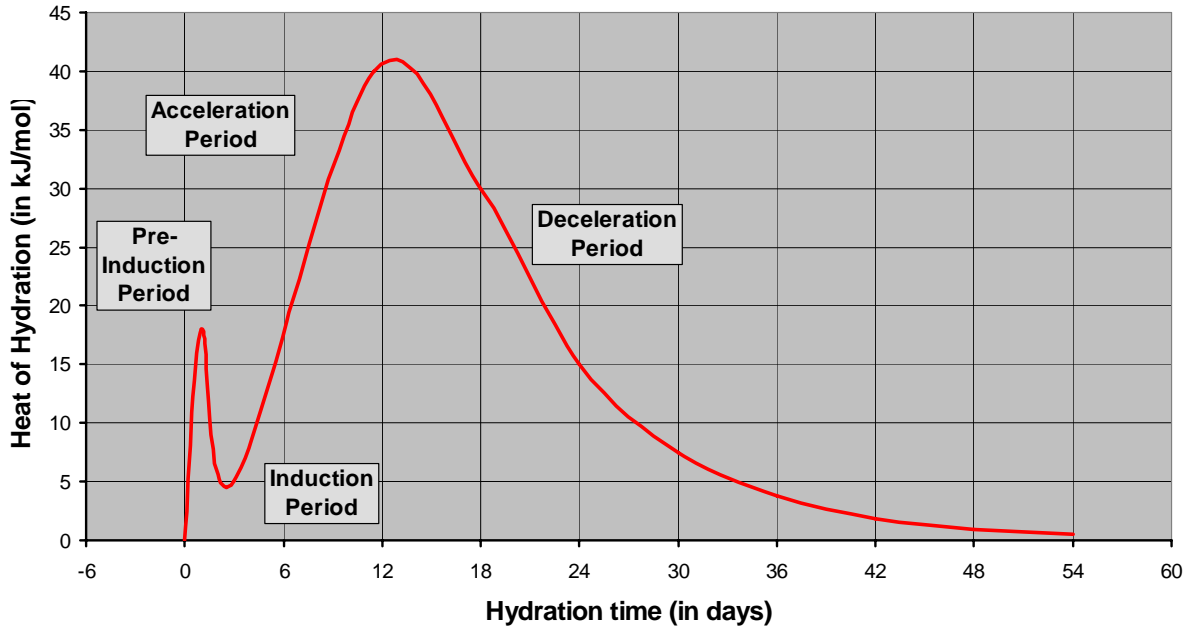
Some manufacturers will authorize the installation of elastomeric concrete material at the 14-day mark of the curing process. The use of a moisture barrier (referred to as a primer) is used to reduce the risk of delamination and foaming during this period. Pull tests conducted in laboratory tests reveal the optimal bond of elastomeric polyurethane and aggregate mixture to concrete is achieved when NO primers are used. In other words, the bond strength is reduced when primers are applied.

Chart 2 (on page 2) illustrates the strength of concrete during the curing process. Please note the concrete reaches 80% of its strength at 28 days. That coincides with the hydration process illustrated in Chart 1. After 28 days the concrete has reached a point in the hydration process where the moisture content in the concrete is at or below 4%. That is the targeted and acceptable moisture content when elastomeric concrete should be applied.

Please note that for every day below freezing you will need to extend the curing process by double that number of days.

# Curing Process of Concrete

**CHART 1 - Hydration Heat Evolution**



**CHART 2 - Strength of Concrete**

