INFORMATION BULLETIN - CONCRETE *CURING* PROCEDURE

DEFINITION OF CONCRETE/MORTAR CURING

CURING OF CEMENT BOUND MATERIALS IS A *PROCEDURE*

Curing of cement bound materials, including those that are through coloured by adding pigment, is an ***important*** procedure that needs to be continuous. This procedure may be selected from several of those recommended by the concrete construction industry for the purpose of successfully ***maintaining*** moisture in freshly placed, set and slowly hardening concrete and the like.

This procedure called ***curing***, done properly, ensures FULL strength development and is to be specified by engineers, architects, landscape architects and other specifiers in their building specifications and carried out by concreters (concrete finishers, applicators, fabricators and masons) for all cement and cement/lime bound materials.

To optimise the early and ultimate strength development, hardness and durability of all grades and classes of pre-mixed concrete, mortars and grouts, it is important that this procedure of curing be commenced ***immediately*** after the cement bound material sets (for concrete bound with Portland cement, this is approximately 3-3½ hours with the surrounding air at 23°C and a relative humidity of 50%), ie ideal *curing* of concrete is therefore a method from several available which can be decided upon prior to the time of concrete placement and finishing according to the prevailing weather conditions to ***prevent the evaporation of the concrete's mix water*** - commencing immediately after it sets. (NOTE: If there is no water, NOTHING happens).

Curing is an ***important*** procedure that should ***always*** be used to prevent the evaporation of the ***water*** used to mix concrete, grout and mortar (which for ideal performance should be an amount as **low** as possible in comparison to the amount of cement or cementitious powder binder).

Curing should, depending on the quality and long-term performance of the hardened concrete required, last for periods of 7 to 28 days from the time concrete sets.

EXAMPLES OF CONCRETE CURING PROCEDURES:

The easiest and often the most efficient procedure is to apply by painting on a single, thick coat of a suitable liquid film forming clear membrane curing compound coating (such as Ability's **'Duro-Seel' Clear**) to coat and cover by means of a soft broom or long-nap roller or knapsack spraying unit all the concrete's surfaces exposed to the air. This keeps the mixing water in the concrete for an extended period of several months.

- ☑ Alternatively, the timely provision of water 'ponding' where the set concrete is flooded with water to a depth of approximately 25-75 mm and kept filled to this depth;
- ☑ Provision of an ***intermittent*** water spray curing by spraying each 10m² of concrete six (6) times for 10 minutes over two to three (2-3) days;
- ☑ Laying of and ***maintaining*** the dampness in a heavy, water dampened woven textile material eg hessian, burlap and for small jobs, thick wet towels or similar woven materials, or
- ☑ The timely application of damp sand to a thickness of 50-75mm, which must be kept moist to allow it to work effectively to cure concrete.

IF YOU DON'T CURE CONCRETE, THE RESULT IS LIKE LEAVING OUT THE HARDENER OF AN EPOXY RESIN PRODUCT!

TO PREVENT PLASTIC CRACKING :

In hot weather – especially under direct sunlight, to avoid cracking BEFORE the concrete sets, liquid ALIPHATIC ALCOHOL can be sprayed onto the concrete's surface to reduce evaporation of its mixing water. This may need to be done SEVERAL times whilst finishing the concrete by trowel or floating. However, aliphatic alcohol, by forming a temporary film is only an evaporation retardant, it does not form a coating and is NOT a curing compound.

EARLY SAW CUTTING:

To avoid visual cracking, concrete joints should be saw cut within 8 hours to a depth of a of the concrete's thickness at approximately 1½ metre centres.

Further information – especially about aliphatic alcohol and '**Duro-Seel**' Clear curing compound, please call Anna, Dorothy, Bea, Michael, Peter or Robert on:

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Or go to our website www.abilityproducts.com.au for more information