

PRODUCT INFORMATION BULLETIN



BETTER CONCRETE & MORTARS & NO MORE UGLY EFFLORESCENCE

A comprehensive research and development program by Melbourne-based Ability Building Chemicals Co into the control of efflorescence occurring on concretes and mortars resulted in the release of an economical high performance, 100% active powder admixture product for these cement bound materials. The company launched this product in 1985 as 'EFFLOREIN®' powder.

Since then, Ability has constantly expanded its market for 'EFFLOREIN®' because their on-going evaluations and testing programs has demonstrated that as well as preventing ugly efflorescence – the unsightly white salt bloom or 'scum' that disfigures the surface of set concrete and mortar – the product makes concrete watertight, protective, durable and enhances other beneficial factors of Portland cement-bound building materials.

After 19 years of successful use, the **Mark 2** version, with approximately 30% increase in the value of each of its predecessor's benefits, was introduced in October 2004 with no increase in price.

As a consequence, this unique Australian-made product – invented and manufactured by Ability – a proudly Australian-owned company – is exported worldwide.

Domestic and overseas users vary widely, from pre-mixed concrete producers, machine extruded concrete borderline and garden edging contractors, concrete product manufacturers, dry wall plasterers, stucco and concrete paving contractors to formulators of acrylic resin/cement applied wall coatings, cementitious (containing cement) paving paints and decorative pavement finishes.

'EFFLOREIN®' Mark 2 is suitable for use with *both* normal wet (plastic) as well as just moistened, 'semi-dry' mix cement bound mixes.

The latter type require efficient compaction into suitable moulds and where in many cases such as in highly compactive machine processed masonry and paver concrete mixes, no further water addition is possible.

Following is a list of just some of the properties, which result when this unique reasonably priced, value-for-money concrete/mortar admixture product is added – preferably as the *last* material item into an *already prepared* unset concrete or mortar mix having about 20% (1/5) less water than normal:

- ☑ **Waterproofs** – 'EFFLOREIN®' Mark 2 considerably assists in making hardened concrete/mortars to have substantially reduced permeability to moisture and other liquids and is an ultra-efficient clear waterproofer – especially for the lower grades and classes of pre-mixed concrete, mortar applied to walls to 'render' or 'plaster' them, other cement bound, decorative applied coating finishes for walls, floors, pavements and roofs as well as for cement bound extruded roofing tile mixes and cement bound adhesives and grouts.



Watertight mortars and concretes obviously protect the underlying substrate better and last considerably longer than those, which are porous – especially in salty atmosphere marine locations.

- ☑ **Improves quality** – whilst it is not a complete replacement for an efficient continuous *curing* procedure - an important concrete industry recommended mix water retention procedure to be adopted by the application contractor immediately after concrete sets for several days and if possible, up to three (3) to four (4) weeks thereafter, 'EFFLOREIN®' Mark 2's water-retention properties allow freshly laid or applied concrete, mortar and cement bound construction products to hydrate and harden better under ambient weather conditions to more ideal durability and quality.
- ☑ **Improves** the workability, finishability, pumping ease, extrudability and in-built rheology of wet cement bound masonry mortars, screeds, toppings, plasters and all grades/classes of pre-mixed concrete.
- ☑ With sprayed *shotcrete* 'EFFLOREIN®' Mark 2 improves the wet adhesion properties to reduce rebound from the surface being sprayed and with the adoption of proper compaction and curing procedures has the potential to effectively waterproof the installation.
- ☑ **Reduces bleeding** – the tendency of mix water to rise to the surface of wet freshly placed in situ concrete. The elimination of bleeding allows faster finishing and reduces a tendency after setting and hardening to sustain weak dusting surfaces. A weak surface layer on concrete is referred to as *laitance*. The avoidance of bleeding and *laitance* allows concrete to have hard surfaces with high resistance to wear and if paints, surface coatings or sealers are to be applied, a firm, hard, non-dusting surface helps to ensure their sound, firm adhesion.
- ☑ **Strengthens** – less water is required for concrete, mortar and other cement-bound materials made with the addition to the mix of 'EFFLOREIN®' Mark 2 admixture for the **same** mix consistency/workability. Therefore due to the *lower* water:cement ratio, potentially results in them when hardened, being stronger, harder, denser (less porous) and more durable. Note also that the product increases strength in *addition* to this water reduction feature.

☑ **Improves colours** – because of its ultra-fine powder particle dispersing qualities and as a result the provision of more enhanced cement binding qualities, 'EFFLOREIN®' Mark 2 added to coloured concrete, mortar etc incorporating ultra-fine grain (0.02µm). UV resistant colouring pigments such as Ability's range of 'abilox®' oxide powder cement colours, produces more dispersed, de-agglomerated discrete pigment grains to result in the material or product having permanently ***brighter, richer, cleaner, stronger and more uniform*** colours.

☑ In addition, these *micro-fine*, insoluble pigment particles become *tightly locked into* the binding cement matrix for maximum lasting colour durability.

TYPICAL DOSE RATES:

'EFFLOREIN®' Mark 2 is usually added (into already prepared cement/water bound wet mixes, having about 20% *less* water than would normally be added for the same slump or mix consistency). The usual dose rate for 'EFFLOREIN®' Mark 2 is 1½% (+ or - ½%) by weight of the cement weight. Typically therefore, 600 grams (0.6 kg or about 4 cups full by volume) is added per normal standard 40 kg or in the USA a 94 pound sack of cement

Ability Building Chemicals has a range of printed product data, independent testing results and pamphlets about 'EFFLOREIN®' Mark 2 and its many other benefit-giving products – all available on request by telephoning **(03) 9457 6488** (International: 61 3 9457 6488) or an email may be sent to: service@abilityproducts.com.au.

In addition, the company will provide a free, no charge trial sample of 'EFFLOREIN®' Mark 2 powder, free information on its use and back up from its experienced and expert technical staff.

You may also check out 'EFFLOREIN®' Mark 2's details in Ability's web site, which can be found at: www.abilityproducts.com.au.

