

CHRYSO® Profilm 19



CHRYSO® ProFilm 19 - an evaporation reducer

CHRYSO® ProFilm 19 protects fresh concrete from the effects of excessive moisture loss in rapid drying conditions, without increasing the bleed. This product is an evaporation reducer that is sprayed over fresh concrete surfaces. When applied, the water-based, VOC compliant product forms a continuous barrier film over the concrete surface.



■ Ability to reduce plastic shrinkage cracking

Plastic shrinkage cracking commonly occurs when the evaporation rate of fresh concrete exceeds its bleeding rate. These cracks can on occasion penetrate the full depth of a slab, causing a significant expense with regard to remedial measures and an even greater cost should the slab be replaced.

This commonly occurs in hot, windy conditions with low humidity as well as inside heated buildings during cold weather.

CHRYSO® ProFilm 19 retards the loss (evaporation) of surface moisture by forming a mono-molecular film over freshly placed concrete surfaces. This mono-molecular film lasts as long as the concrete is plastic, despite floating and trowelling operations.

According to the American Concrete Institute (ACI) technical document - ACI 305 Hot Weather Concrete, plastic shrinkage cracking of concrete is probable whenever the evaporation rate exceeds 1 kg/sq.m/hr. Many combinations of air temperature, relative humidity, concrete temperature and wind velocity can produce the evaporation rate exceeding 1 kg/sq.m/hr. Below is a table showing environmental factors and the resulting evaporation rate.

Air temperature (°C)	Relative humidity (%)	Concrete temperature (°C)	Wind velocity (km/hr)	Evaporation rate (kg/sq.m/hr)
32	30	21	40	1
22	50	27	40	1.9
29	50	32	16	1
16	20	27	40	2.4
18	20	27	24	1.7
32	60	32	24	1.2
7	10	32	8	1

■ Eliminates the need to add extra mixing water to the concrete (in order create more bleed to compensate for rapid evaporation) and does not increase the bleed

CHRYSO® ProFilm 19 does not increase or reduce the bleed of fresh concrete; it merely forms a mono-molecular film over the concrete. Excessive bleed water can get trapped under aggregate particles, mesh reinforcement or reinforcing bars. This can create voids, weak internal surfaces and increased permeability of hardened concrete. Increased bleeding can also increase the water:cement ratio of the mortar layer at the top of the concrete, thus weakening the surfaces.

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■ Ideal for mix designs with low water contents

CHRYSO® ProFilm 19 is most suitable when there is a very low water content in mix designs (such as mix designs containing fibres). When you take out too much water in a mix design, there is very little bleed – leading to cracking and sponginess of the concrete.

■ Replaces the need to spray water on the concrete surface

Water is often sprayed on the concrete surface in order to reduce the evaporation of bleed water. This is not an ideal method as the concrete surface has to be kept continuously wet (which is difficult to achieve). The use of water spray may create a wet environment that can prevent other trades from operating in the same area and if there is surplus water, complications can arise. **CHRYSO® ProFilm 19** is a far more reliable, controlled way of preventing the rapid evaporation of water.

■ Timing of the operations is less critical

Timing of the operations is less critical because **CHRYSO® ProFilm 19** slows the evaporation rate down and allows the concrete to set uniformly. This increases the amount of surface area handled per concrete finisher.

■ Creating superior concrete flatwork appearances

Since **CHRYSO® ProFilm 19** provides the concrete with adequate lubrication, it eliminates or reduces surface crusting, concrete sponginess, stickiness, concrete crazing and dusting that can cause an uneven and poor surface texture.

■ Does not affect the hydration process of concrete

■ Classified as harmless and is safe to use.

■ Economy of use

CHRYSO® ProFilm 19 contains a fugitive dye as a visual aid to ensure complete and uniform application. Treated surfaces are easily distinguished from un-treated surfaces – preventing potential over application. The dye disappears completely upon drying and will not affect the colour of the concrete.



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