TECHNICAL DATA SHEET

ShieldSeal SCP-1000

ShieldCrete®

Permanent Protection & Purging for Existing Concrete

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Product Description

ShieldSeal SCP Optimiser 1000≈ significantly aids with concrete placement/ finishing, generally saving about 25% finishing time, i.e., concrete pours. It spreads easier since it becomes extraordinarily homogenous and non- segregating during its mixing process, plus the volume of surface bleed water production becomes reduced and efflorescence potential is eliminated.

Is a colloidal, custom mineralized, pozzolanistic liquid which provides concrete the maximum possible degree of hydration during its curing process, and at the same time, ShieldSeal SCP Optimiser 1000≈ is simple and easy to use, as an alternative to micro silica, silica fume, or costly special blends of cement, i.e., slag cement etc.

Utilized in Portland cement concrete effectively provides extraordinary ultimate durability. Concrete becomes self-compacting / self-leveling / more mobile / more cohesive and lower in permeability. It increases surface abrasion resistance, plastic cracking resistance, becoming naturally (not chemically induced) shrinkage compensated, with reduced or eliminated slab- curl potential, improved aesthetic appeal, improved workability, compatibility, pumping ability / lowered pumping pressures, thus effectively lowering rebound volume in spray concrete applications.

Utilization generally lowers concrete's permeability percentages by about 35 to 50% of mixes not utilizing ShieldSeal SCP Optimiser 1000≈ - providing extraordinary freeze-thaw damage resistance such as scaling, while significantly increasing affected concrete's density. Laitance, honeycombs, dusting, and reinforcement steel corrosion potential becomes virtually non-existent.

Does not require special handling, safety equipment, storage procedures, or curing techniques as do other pozzolan products, yet it consistently works to ensure that both of concrete's cement pastes (paste-aggregate zone cement paste / bulk cement paste), produced during mixing is of the highest attainable quality, thus micro cracking (invisible internal cracking significantly affecting permeability) potential is virtually eliminated and the modulus of elasticity, flexural strength, and impermeability become significantly enhanced.

Properties

Colour	Cloudy White
Odour	None
Specific Gravity	1.10
pH	11.5
Flammability	0 (non-flammable)
Toxicity	None
VOC/VOS Content	0.0 g/ml
Surface Bond Quality	100% of Untreated Concrete
Paintability	100% of Untreated Concrete
Clean-up Solvent	Water
Environmental Impact	None/Neutral
User Status	Friendly

Product Benefits

- ✓ Huge reduction in capillary formation
- ✓ Increases the hydration of free cement in concrete
- ✓ Produces stronger, denser concrete
- ✓ Requires only normal batching, placing, and finishing techniques
- ✓ Economically improves Portland Cement Concrete
- ✓ Increases workability through lubricity
- ✓ Increases strength characteristics (i.e. – compressive, flexural, impact, etc.)
- ✓ Greatly enhances concrete colour quality (see pg2)
- ✓ Increases surface hardness and abrasion resistance
- ✓ Minimizes plastic shrinkage and stress cracking
- ✓ Minimizes concrete permeability to water and other contaminants
- ✓ Increases chemical resistance
- ✓ Minimizes slab curl through more uniform setting
- ✓ Increases dusting resistance
- ✓ Increases durability
- ✓ Increases bond quality of coatings, adhesives, etc.
- ✓ Increases thermal resistance
- ✓ Minimizes snow and ice removal effort
- ✓ Increases freeze-thaw resistance
- ✓ Minimizes maintenance efforts

Basic Use

ShieldSeal SCP Optimiser 1000≈ added to Portland cement concrete's mix water will convert conventional mix designs to high-performance, generating production of concrete that is extraordinarily hard, dense and of low permeability.

Installation Suggestion

Dry Mixing Batch:

- As a temporary measure, ShieldSeal SCP Optimiser 1000≈ can be poured directly into empty rinsed out transit mixer (If transit mixer is not clean, add 90% of potable mix water volume prior to adding ShieldSeal SCP Optimiser 1000≈ prior to pulling the truck under the batch plant for loading).
- Under batching plant, with mixer turning in its mixing mode, load a minimum of 75% of the total planned potable mix water volume then begin loading cement, aggregate (in the usual order and at the usual speeds) and then follow with the remaining balance of mix water.
- ShieldSeal SCP Optimiser 1000≈ in this scenario, is used at 652 millilitres per 100 kilos of cement mixed. 0.0 g/ml VOC content.
- Slump may be increased later, if desired, using potable water, followed by 5 minutes of additional mixing by transit mixer.

Central Mixing Operations:

- Determine volume needed at 652 millilitres of ShieldSeal SCP Optimiser 1000≈ per 100 kilos of Portland cement.
- Pour or pump the calculated volume of ShieldSeal SCP Optimiser 1000≈ into potable mix water premeasure tank as you add mix water.
- Then batch concrete as usual.
- After the concrete is batched, extra mixing time will be needed.
- For best results, a minimum of 50% more mixing time is required.
- Slump may be increased later, if desired, using potable water, followed by 5 minutes of additional mixing by transit mixer.

Continuous Mixing Operations:

- Determine dosage of ShieldSeal SCP Optimiser 1000≈.
- Calculate volume needed at 652 millilitres of ShieldSeal SCP Optimiser 1000≈ per 100 Kilos of Portland cement.
- Calculate amount of mix water needed per 100 kilos of Portland cement.

This will provide your ratio of ShieldSeal SCP Optimiser 1000≈ to mix water. For example, if calculations show that 50 litres of mix water are required per 100 kilos of cement, then the potable water in the tank should be treated at the rate of 652ml of ShieldSeal SCP Optimiser 1000≈ per 50 litres of water.

PRECAUTIONS:

1. NEVER ADD mix water enhancer to FRESH CONCRETE! Add only to the mixing water.
2. ShieldSeal SCP Optimiser 1000≈ may etch glass or dull shiny aluminium and can be difficult to remove from other surfaces once it dries.
3. For more information read Material Safety Data Sheet.

Advantages

- ✓ Converts regular mix designs to high performance mixes
- ✓ Quicker and Easier Concrete Placement
- ✓ Adds Workability by Increased Lubricity
- ✓ Stronger Bond of Concrete to Steel
- ✓ Decrease Cementitious Material Waste
- ✓ Greater Density and Less Permeability
- ✓ Reduces Bleed Water Volume
- ✓ Reduced Shrinkage and Cracking
- ✓ Reduced Honeycombing and Laitance
- ✓ Reduced Leaching and Efflorescence
- ✓ Reduced Slab Curl Potential
- ✓ Reduced Internal/External Dusting Potential
- ✓ Reduced Rate of Absorption
- ✓ Greater Freeze-Thaw Resistance
- ✓ Increased Flexural Strength
- ✓ Increased Compressive Strength
- ✓ Increased Acid / Chemical Resistance
- ✓ Lower Internal Chemical Reaction Potential
- ✓ Lowers Chloride Induced Corrosion Potential
- ✓ Greatly Improves Durability
- ✓ Improves Surface Abrasion Resistance

Material Safety Data Sheet

SDS can be downloaded from our website:
www.shieldcreteinternational.com.

DISCLAIMER

The information provided herein, especially recommendations for the usage and the application of our products, is based upon our knowledge and experience. Due to different materials and equipment used, as well as varying working conditions and environments beyond our control we strictly recommend carrying out intensive trials to test the suitability of our products regarding the required processes and applications. This data sheet is provided free of charge, and we do not accept any liability regarding the above information or regarding any verbal recommendation, except for cases where we are liable of gross negligence or false intention.