SoilShield LS

The Three Dimensional Stabilizing Agent

Product Description

SoilShield-LS is a cost effective means for erosion control, soil and granite stabilization and dust control. **SoilShield-LS** is a liquid copolymer concentrate which when diluted and applied locks soil particles to effectively resist both water and wind erosion on erodible banks, walkways, driveways, access roads and trails. Since **SoilShield-LS** is colorless when dry, its use maintains a natural and aesthetically pleasing appearance blending with the surrounding landscape.

SoilShield-LS is not just a surface treatment, it is a three-dimensional form of soil stabilization penetrating the surface and forming a dimensional block. It provides a chemical bond between soil particles resulting in a dramatic increase in cohesive strength. **SoilShield-LS** will provide long term stabilization results if properly maintained and top coated every 2-3 years.

SoilShield-LS has produced impressive results on slope protection, driveways, private access drives, pathways, trails, runway shoulders vulnerable to erosion, dust and wind erosion. When **SoilShield-LS** is used with decomposed granite, 1/4" minus gradation is recommended for effective bonding. The decomposed granite should be a minimum of 2" depth for landscape use and 3"-4" for vehicular traffic. **SoilShield-LS** has also been effective stabilizing native sand soils with sandy loam without the use of aggregate cover.

** Long term depends upon depth of treatment and ultraviolet degradation over a period of time.*

Application Recommendations

Subgrade shall be shaped to the line and grade required allowing for positive drainage on all surfaces to receive **SoilShield-LS**. Subgrade shall be prepared and compacted to a minimum of 95% as specified prior to placement of aggregate materials. See "*Typical Aggregate Chart*". For clay soils, a base material is required. Spread cover aggregate loosely and evenly over prepared subgrade to the specified depth prior to **SoilShield-LS** application. When stabilizing native soils without cover aggregate, the top 2" to 3" shall be loosened uniformly to allow full penetration. Eroded areas or rills shall be stabilized and compacted prior to **SoilShield-LS** treatment.

SoilShield-LS shall be applied evenly and uniformly at the rate of one (1) gallon concentrate per 45 – 90 square feet diluted with water at a ratio of 15: 1 to 20: 1. See **SoilShield-LS** "*Application Chart*". The actual dilution rate may be varied based on stabilizing depth, existing moisture and optimum moisture of aggregate being stabilized. **SoilShield-LS** solution shall be applied slowly and uniformly to ensure full penetration, this may require several light applications, versus one heavy application. Allow enough time between sprays for solution to soak in (percolate) to the full depth of aggregate being stabilized. Depending on the aggregate to be stabilized, area may need to be raked, bladed or tilled between sprays to ensure penetration. Full penetration should be verified by hand sampling prior to compaction. It is important not to let area dry beyond optimum moisture before compacting. Optimum moisture is normally achieved between 15 minutes and 1 hour depending on ambient temperature. After allowing aggregate to dry to compactable consistency (optimum moisture) compact with vibratory plate tamp or 3-1/2 ton steel drum roller (do not vibrate). After compaction, apply topical application to treated area with **SoilShield-LS** solution as used above at the rate of one (1) gallon concentrate per 200 square feet.

SoilShield-LS as supplied should be protected from freezing, from outside storage and protected from direct sunlight and temperatures above 80 degrees Fahrenheit.

Applications shall not be made during rain or periods when rain may be expected during a 24 hour period. For best curing, application should not be made at temperatures lower than 50 degrees Fahrenheit. Treated area shall be protected from traffic until entire stabilized depth has completely dried. This could be 48 to 72 hours or more depending on weather conditions. **SoilShield-LS** shall not be applied in high wind to avoid property damage and to assure accurate coverage control.

Manufacturers training is recommended for installers involved in the application of **SoilShield-LS.**

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Application Chart

Application Type	DG Depth	Coverage Rate
Driveways and Access Drives	3" Depth	1 gal SoilShield-LS (concentrate) per 60 square feet
Pedestrian Paths & Trails	2" Depth	1 gal SoilShield-LS (concentrate) per 80 - 90 square feet
Parking Lots	3" Depth	1 gal SoilShield-LS (concentrate) per 45 - 60 square feet

Typical 1/4" Minus Gradation

Sieved Size	% Passing	Sieved Size	% Passing
1/4"	100	#30	35-40
#4	90-100	#40	30-35
#8	65-70	#50	25-30
#10	60-65	#100	20-25
#16	45-55	#200	10-15

Design & Maintenance Considerations

SoilShield-LS application rate may be increased to increase the strength of the product. Strength data is available from the manufacturer, however, results will vary depending on soil or aggregate.

SoilShield-LS retains elasticity and shape upon soaking. However, due to some decrease in strength in a soaked condition, treated areas should be designed for positive drainage avoiding any ponding of water.

SoilShield-LS will break down slowly by ultraviolet light. Due to this as well as normal surface wear, a top coat of **SoilShield-LS** should be applied to the surface every two years or as required to extend the life of the surface.

Testing and quality control methods are available from the manufacture upon request.

Top Coating of SoilShield LS : After 2 Years

A regular maintenance program of top coating every 2 to 3 years will result in a long lasting and effective treatment. This will overcome any ultraviolet degradation which will naturally occur over time. This treatment is comparatively inexpensive and does not require tilling or any disturbance of previously treated material. The following procedure should be followed:

Dilute SoilShield-LS in water at a ratio of 12:1. SoilShield-LS should be added to the mixing tank, a water truck, or other distribution equipment after the tank has been filled with water. SoilShield-LS solution should be slightly agitated until a uniform solution is obtained. Apply diluted SoilShield-LS material at a coverage rate of one gallon of SoilShield-LS concentrate per 180-200 square feet. Rolling should not be required on top coating.

The treated area shall be protected from traffic until completely dry.

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Suggested Specifications

The stabilizing agent for all stabilized areas shall be **SoilShield-LS** or approved equal. The stabilizing agent shall be a nonflammable concentrated polyvinyl acrylic copolymer with a formulation containing a minimum of 60% solids which may be diluted for application at job site. After drying, the copolymer shall form a colorless, transparent micro-plastic like film to agglomerate particles and allow exchange of air and moisture. The product shall have a minimum effective service life of at least two years, provided surface is maintained according to manufacturer's recommendations. When cured, the copolymer emulsion shall not re-emulsify and shall be biodegradable and non-toxic to plant and animal life. After application and drying, a core of the treated section shall be able to maintain a portion of its shape, elasticity, and a portion of its strength after being submerged in water for a 24 hour period.

Contractor shall furnish, if requested, signed copies of a compliance statement certifying that the copolymer complies with all governing specifications including weight per gallon, solids, PH, container size, and stating name or trade name of copolymer. The stabilizing agent shall meet the following specifications:

Color	White to off white, colorless when cured.
Form	Liquid
Weight	9.1 pounds per gallon
PH	4 to 5.05
Solids	60%
Flammability	Non-flammable
Flash point open cup	None
Storage Life	Do not freeze. Repeated freezing and thawing will cause the product to break down.

The stabilizing agent shall be diluted with water at the ratio of _____ and shall be applied over the surface of all stabilized areas at the rate of _____ square feet per one (1) gallon concentrate.

EROSION CONTROL AND STABILIZATION PRODUCTS

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