



Dense Top LR

Light Reflective, Quartz Aggregate Floor Hardener

DESCRIPTION

Dense Top LR is a non-metallic, shake-on floor hardener composed of specialty graded mineral quartz aggregates, plasticizers and cement binders in a ready-to-use composition. **Dense Top LR** is non-corrosive as well as rust free and offers a superior alternative to metallic floor hardeners. **Dense Top LR** is formulated to harden and densify concrete floors in both interior and exterior applications. Concrete treated with **Dense Top LR** will maximize overall lighting while increasing resistance to abrasion, impact, dusting, spalling, absorption and deterioration. When properly applied, concrete floors will exhibit twice the wear resistance of an untreated concrete floor.

USES

Dense Top LR is designed for application over interior and exterior floors subject to impact and abrasion from forklift traffic or heavy usage.

- Cold storage facilities, distribution facilities, warehouses, water treatment facilities and other high traffic areas
- Industrial and commercial floors and showrooms
- Restaurants
- Service garages
- Shopping malls
- Hospitals
- Driveways
- Theaters

BENEFITS

- Density: Three times that of normal concrete
- Densifies: Increases abrasion resistance of normal concrete by >25%
- Impermeable: Improved resistance to oils, grease, anti-freeze and many other chemicals
- Non-rusting: Can be used in exterior, moist or wet environments
- Quality: Precision blending of specialty graded components
- Consistent: Strict Quality Control testing and standards

SUBGRADE PREPARATION

The subgrade must be well drained, adequately and uniformly supported, graded and moistened but free of standing water. Avoid placing concrete over soft, frozen or muddy spots. Preparations should be done using established procedures according to American Concrete Institute recommendations.

COVERAGE

Actual rates can vary depending on the water/cement ratio of the concrete and application methods. Recommended coverage is as follows:

Light Duty:	75 lb (34.0 kg) per 100 ft ²
Medium Duty:	100 lb (45.4 kg) per 100 ft ²
Heavy Duty:	125 lb (56.7 kg) per 100 ft ²
Light Reflective*:	150 lb (56.7 kg) per 100 ft ²

*Exhibits a daytime reflectance of 60% when tested according to test method E1347.

CONCRETE PLACEMENT

The concrete should be placed and spread so that it completely fills all space inside the forms, then consolidated by vibrating to form a suitable surface for finishing. Before the appearance of bleed water, the surface should be screeded to the finished grade and wood-floated to the required flatness. Use a wooden bull float to embed the coarse aggregate and bring the mortar to the surface. Using a wood float allows the surface to remain open. Steel troweling closes the surface, making it harder to apply **Dense Top LR** and can have a negative impact on the uniformity of color.

PLACING

Adjacent concrete surfaces should be protected by plastic sheeting during application and finishing of the hardener. **Dense Top LR** should be applied after the concrete substrate has reached the point where the bleed water disappears and the floating process will not disrupt the level of the surface. A finisher's footprint should sink about 2/3" at time of application. Earlier application will result in reduced durability and require more hardener. Never use hardener to dry bleed water on the surface. US SPEC recommends a two-pass process 1/2 to 2/3 of the total amount is applied and floated on the first application and the remaining amount on the second application.

Apply the first application of **Dense Top LR** so that a uniform distribution of the hardener is obtained. The most efficient, economical and precise method of application is through the use of a mechanical spreader. When applying by hand or square-tip shovel, apply each pass perpendicular to the previous application to ensure complete coverage. To prevent segregation, the hardener should not be broadcast from a point above knee level. The necessary moisture for wetting the hardener must come from the concrete substrate to develop the proper bond. Water must not be added during application. Once the hardener has absorbed sufficient moisture, float and incorporate the hardener into the surface with a power trowel equipped with float blades or a pan attached. The concrete must not be troweled until after the final application. As the floating of the first application proceeds, follow immediately with the second application. After the second application, the surface should be floated, then hand or machine troweled to produce a smooth, dense, wear resistant surface. To prevent burning or darkening of the surface, hard steel troweling should be minimized.

FINISHING AND CURING

At the completion of the final troweling and when the surface will not be marred, apply **US SPEC Maxcure Resin Clear** at the rate specified.

SEALING

After the concrete has been allowed to cure for 28 days, seal the surface with an approved US SPEC sealer, such as **US SPEC Permalith**.

Packaging: 50 lb (22.7 kg) bag, 63 bags per pallet



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PHYSICAL PROPERTIES

All Physical Property testing performed in laboratory conditions of 73.5 ± 3.5°F (23 ± 2°C) and a relative humidity no less than 50% unless otherwise determined by the test method or specification. Tests are conducted under standardized conditions for comparative purposes, and results may not be representative of performance under field conditions.

Property and Test Method		Results			
Abrasion Resistance	Age	Abrasion @ :30	Improvement	Abrasion @ :60	Improvement
ASTM C779	7 Days	.008" (.20mm)	33%	.016" (.40mm)	33%
	28 Days	.008" (.20mm)	33%	.014" (.35mm)	26%

STORAGE

Normal cement storage and handling practices should be observed. Store material in an interior, cool, dry place. Shelf life is one year in original, unopened container.

LIMITATIONS

In addition to limitations already mentioned, please note the following. Do not apply to concrete with a slump greater than 4". Interior concrete must not be air entrained. Exterior concrete must not exceed an excess of 3% air entrainment. Avoid application during high wind. No high range water reducers (superplasticizers) should be added.

DANGER

This product contains Crystalline Silica (CAS# 14808-60-7) and Portland Cement (CAS# 65997-15-1). Harmful if swallowed. Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction. May cause cancer. May cause respiratory irritation. Causes damage to organs through prolonged or repeated exposure. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area. Do not breathe dust.



WARNING: Cancer and Reproductive Harm -

www.P65Warnings.ca.gov

FIRST AID

If swallowed: Immediately call a poison center/doctor. Rinse mouth. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical advice/attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.

MANUFACTURER/TECHNICAL SERVICE

Contact your US SPEC manufacturer's representative for the most current product information. Always read and follow the warnings and instructions on the most current technical data sheets, available online at www.usspec.com.

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Web Site: www.usspec.com

NOTICE OF LIMITED WARRANTY US MIX Co. (manufacturer) warrants to buyer that this product at the time and place of shipment is of good quality and conforms to the manufacturer's specifications in force on the date of manufacture when used in accordance with the instructions hereon. Manufacturer cannot warrant or guarantee any particular method of use, application or performance of the product under any particular condition. This limited warranty cannot be extended or amended by manufacturer's sales people, distributors or representatives or by any sales information, specifications of anyone other than the manufacturer. Liability under this warranty is expressly limited to refund of the purchase price. See product packaging for complete limitation of warranties and liability.