



1 General Characteristics

SL® is a cementitious, rapid setting, *semi-leveling* versatile structural repair concrete. It is a single component powder that is water activated. **SL**® has 15 to 20 minutes of working time and will reach compressive strengths of 2,000 psi within one and a half hours and more than 8,500 psi at 28 days. Designed for use in horizontal and near horizontal repair applications, **SL**® can be applied in ambient temperature ranges from 40 to 110 degrees Fahrenheit.

RECOMMENDED USES: **SL**® is an ideal rapid repair material for roads and bridges, airport runways, warehouse or manufacturing facility floors, post-tension cable repairs and form and pour projects. Can be used as a temporary repair for asphalt pavement.

2 Additional Physical Properties

UNIT WEIGHT (With water, sand & aggregate)

138 lb/ft³

SETTING TIME

Set Times at 72°F/22°C at 1" (2.54 cm) material depth

Initial set: 15 - 20 minutes

Final set: 25 - 35 minutes

VOLUME YIELD

0.38 ft³ (0.010 m³) per 51.8 lb. (23.2 kg) unit

3 Specifications

Results provided by licensed engineering test laboratory and represent typical results from production materials. Actual results may vary from third party testing results; however, CERATECH's materials meet and/or exceed established internal quality control standards, (available upon request) . All samples were air cured.

Property	As Packaged 4 in. x 8 in. cylinders	Test Method
Compressive Strengths, psi (MPa)		
1.5 hour	2,000 (13.7)	ASTM C 39
2 hours	3,090 (21.3)	ASTM C 39
1 day - 24 hours	6,040 (41.7)	ASTM C 39
7 days	7,900 (54.5)	ASTM C 39
28 days	9,300 (64.1)	ASTM C 39
Flexural Strength, psi (MPa)		
1 day- 24 hours	1,170 (8.1)	ASTM C 78
7 days	1,220 (8.4)	ASTM C 78
28 days	1,270 (8.8)	ASTM C 78
Splitting Tensile Strength, psi (MPa)		
28 days	515	ASTM C 496
Bond Strength, psi (MPa)		
1 day- 24 hours	2,265 (15.6)	ASTM C 882
7 days	3,010 (20.8)	ASTM C 882
28 days	4,380 (30.2)	ASTM C 882
Rapid Freeze Thaw Resistance (Durability Factor - Retained percentage of Dynamic Modulus)		
300 cycles	100%	ASTM C 672
Scaling Resistance, lbs/ft² (kg/m²)		
50 cycles	0	ASTM C 672
Modulus of Elasticity, msi (GPa)		
28 days	4.02	ASTM C 469
Coefficient of Thermal Expansion, in/in/°F		
28 days	1.43	AASHTO TP 60
Length Change, % of total length		
28 days soak / 28 days dry	-0.024 / -0.042	ASTM C 157



**Semi-Leveling
RAPID REPAIR CONCRETE**



Updated 5.15.11

4 Site Preparation

Surfaces should be prepared in accordance with ICRI 03730, "Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion." and / or ACI 546R-96 "Concrete Repair Guide". Concrete surfaces should be prepared by appropriate mechanical methods to obtain an exposed aggregate surface with a minimum surface profile of +/- 1/16" (1.5 mm) in accordance with ICRI 03732. Pre-existing coatings or surface treatments should be completely removed. Dry, clean, stable surfaces are required. Remove all standing water. Reinforcing steel should have no loose scale. **Surfaces of host concrete must be damp.**

5 Mixing Instructions

Standard Mixing Procedures (Bucket Mixing with Drill & Paddle)

- Loosen material by tumbling bucket & dry mixing *before* adding water.
- To ensure product performance, **DO NOT divide or separate individual units into smaller portions. MIX ENTIRE CONTENTS AT ONE TIME.**
- A drill (6 amp minimum) with a mixer blade turning at least 500 to 800 rpm is required. Drills with speeds greater than 800 RPMs may entrain air in the mix.
- DO NOT HAND MIX**
- To begin the mixing process, add the proper amount of water:

For Each:	Add:
51 lb (23.2 kg) 5 gallon (18.9 L) bucket or bag	2 U.S. quarts (1.9 L) of water

- For application temps near 72°F/22°C, the ideal water temperature is between 65°F/18°C and 75°F/24°C.
- After adding the water, it is very important to rapidly incorporate all of the dry SL® powders into water to achieve a uniform wet mixture within the first 30 seconds of mixing. Mix for 3 1/2 to 4 minutes**

Standard Mixing Procedures for: Rotating Drum Concrete Mixer or Mortar Mixer

- Pre-wet cement mixer with water then drain all water from mixer (away from repair area)
- Start mixer - SL® requires a total of 2 quarts of water per 51 lb. unit. Initially, add 50% of total mix water to concrete mixer**
- Add pre-determined units of SL®
- Add in remaining mix water
- Mix for 5 minutes total
- Pour all contents into repair area
- Clean mixer or repeat process for next batch

NOTES:

- In ambient temperatures, < 50°F / 10°C, use warm water from 70°F/22°C to 85°F/29°C
- In ambient temperatures > 85°F / 29°C, use cooler water from 50°F / 10°C to 60°F/16°C
- Working times will vary when mix water temperature's are outside of these recommendations
- Minimum recommended batch size is 2 units (Use 4 quarts of water for 2 bag batches)**

6 Packaging & Shelf Life

PACKAGING

51.8 lb (23.2 kg) 5 gallon (18.9 L) bucket
51.8 lb (23.2 kg) bag

SHELF LIFE

Buckets - 3 years (when stored in original unopened bucket) Bags - 1 year

STORAGE

Buckets are environmentally sealed and require no special storage requirements

7 Limitations

- Not recommended for surface temperatures above 110°F/43°C or below 40°F/10°C.
(Contact CERATECH Tech support for temperatures below 50°F)
- Cannot be pumped.
- Can be mixed with drill and paddle, rotating drum concrete mixer or mortar mixer.

8 Application & Finish

- Surfaces of host concrete must be damp with no standing water.**
- Working times are influenced by surface temperature and repair profile. **Working time can be extended by adding CERATECH's Set Retarder Admixture to mix water. (See Set Retardant product data sheet for more information)**
- Minimum profile thickness is 0.38" (0.9 cm) as packaged. There are no restrictions to the depth of the repair profile.
- For best results, CERATECH recommends monolithic placement of repair materials. Maintain a minimum thickness of 1.00 inch if repair material must be layered. Subsequent placements must be placed before final set of underlying layer has been reached.
- Upon initial set, a broom finish can be applied. Upon final set, the material can be saw-cut, drilled, sanded and/or polished
- Do not re-temper. The addition of water to the surface of the repair will negatively affect the materials final properties.
- General loading in 1.5 hours for wheeled traffic and 45 minutes for foot traffic after addition of water @70°F**
! Add 30 minutes for every 10°F drop in temperature.
Contact CERATECH Field Engineering for Cold Weather Applications (50°F / 10°C and below)
- All previously existing joints must be re-established within 2-3 hours of final set.**
- Clean all tools and equipment with water prior to the material reaching final set.





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8 Safety

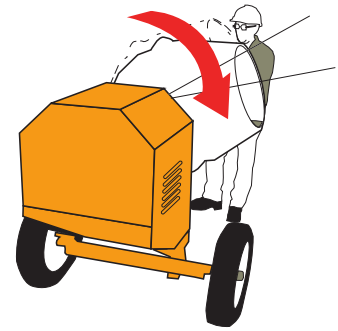
- See **Material Safety Data Sheet (MSDS)**.
- This document does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this document to establish appropriate safety and health practices and to determine the applicability of regulatory limitations prior to use.
- Dispose of water and materials in accordance with Federal, State and Local regulations.
- The use of a dust mask, safety goggles and gloves is recommended.
- Keep out of the reach of children.

To Ensure Performance **Read All Mixing Instructions**
Attention! **Prior To Using!**

Drill & Paddle Mixing Instructions **Repair Area Must Be Clean & Mechanically Sound**

- 1 Attach Mixing Paddle to Drill**
Use this size paddle.
Heavy Duty Drill (Min. 500 rpm) (Max. 800 rpm)
- 2 Tumble SL Bag or Bucket Several Times Prior To Opening To Break Up & Loosen Material**
- 3 Loosen Dry Powder with Drill Paddle.**
*For best results, mix water temperatures should be between 65° F/19° C & 75° F/24° C
- 4 Add 2 quarts of water to 5 gallon bucket**
Within first 30 seconds, aggressively mix ALL material into water
- 5 Mix for 3 1/2 - 4 minutes with drill and paddle**
- 6 Place SL after mixing for specified time**
DO NOT Finish with Water
- 7 Promptly Rinse All Tools Before Demolition Hardens On Tools**
When Utilizing Forms, A Bond Release Agent Must Be Used

For Optimum Material Performance, Lower Mix Drum Angle As Low As Possible Without Material Spilling Out.



Rotating Drum Portable Concrete Mixer A Minimum Two Bag Batch Is Recommended

- Step 1**
Pre-wet mixer with water.
Humedezca previamente con agua la mezcladora.
- Step 2**
Drain rinse water away from area to be repaired as shown and start mixer.
Vacíe el agua de enjuague lejos de la zona que se va a reparar, como se muestra, y encienda la mezcladora.
- Step 3**
SL™ requires 2 quarts of water total per 51 pound bag. Initially, add only 1 quart of water for each unit of SL™ to be mixed.
SL™ requiere un total de 2 cuartos de galón de agua por cada bolsa de 51 libras. Al comienzo, agregue solo 1 cuarto de galón de agua por cada unidad de SL™ que se vaya a mezclar.
- Step 4**
With mixer turning, add pre-determined units of SL™.
Con la mezcladora en funcionamiento, agregue unidades pre-determinadas de DOTLine™. Mezcle durante un minuto.
- Step 5**
Add in remaining 1 quart of water per bag of SL™.
* Agregue 1 cuartos de galón de agua restante por unidad de SL™.
- Step 6**
Mix for at least 5 minutes and place.
Screed and finish. **DO NOT RE-TEMPER WITH WATER.**
Mezcle durante 5 minutos más y colóquelo. Pase la regla y acabe. **NO VUELVAN A TEMPLAR CON AGUA.**
- Step 7**
Clean mixer or add water for next batch.
Limpie la mezcladora o agregue agua para el próximo lote.

Mix water temps should be between 60° F/16° C - 70° F/21° C.
La temperatura para la mezcla debe estar entre 60° F/16° C y 70° F/21° C.

In ambient temperatures less than 50° F/10° C, use warm water from 70° F/22° C to 90° F/32° C.
En temperaturas ambiente inferiores a 50° F/10° C, use agua tibia de entre 70° F/22° C y 90° F/32° C.

In ambient temperatures greater than 85° F/29° C, use cool water from 50° F/10° C to 70° F/22° C.
En temperaturas ambiente superiores a 85° F/29° C, use agua fría de entre 50° F/10° C y 70° F/22° C.

SL™ is a water to binder sensitive cement. NEVER use less than 2 quarts of water nor MORE THAN 2 1/4 quarts of water per 51 pound unit of SL™.
SL™ es un cemento sensible a la proporción entre agua y aglomerante. **NUNCA** utilice menos de 2 cuartos de galón de agua ni MÁS DE 2 1/4 cuartos de galón de agua por cada unidad de 51 libras.

WARRANTY:

CERATECH, Inc. ("CERATECH") warrants that its products are free from defects in materials and workmanship. If any CERATECH product fails to conform to this warranty, CERATECH will replace the product at no cost to the buyer or refund the purchase price, at CERATECH's election. Any warranty claim must be made within one (1) year from the date of the shipment of the product to the buyer. In no event shall CERATECH be liable to the buyer for any consequential or incidental damages of any nature. CERATECH MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, WRITTEN OR ORAL AS TO THE MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF ITS PRODUCTS AND EXCLUDES THE SAME. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF.

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