

**DESCRIPTION****THE FAST-SETTING HIGH STRENGTH CONCRETE**

**SPEED CRETE** is a complete, ready-to-use concrete patching compound that is unequalled for fast permanent repairs. It sets faster (less than 10 min.), has higher compressive strength, greater bonding power, and better freeze-thaw resistance than any patching material available. How do we know? Because it is job proven! For over 12 years **SPEED CRETE** has been demonstrating these superior qualities on highways, expressways and underwater restoration projects, where some of the most adverse environmental conditions exist. On every job **SPEED CRETE** excelled in overall performance.

and **SPEED CRETE** doesn't shrink either - one application does the complete job regardless of depth. NOTE: On traffic bearing surfaces where the depth of the patch is less than 3/4" and when applying over smooth concrete, a bonding agent is recommended.

**SPEED CRETE** is easy to use, too. Simply add water, mix and apply. Its putty-like consistency permits quick placement and finishing without special mould or forms, even when patching vertical or overhead surfaces. Saves time... saves money.

**CHOOSE FROM THESE TWO FORMULATIONS**

**Red Line** - for general purpose patching and restoring of gray concrete such as expressways, highways, streets, curbs, panels, bridges, pipes, etc. Will support vehicular traffic in less than one hour.

**Blue Line** - a special underwater formula for restoration of pilings, seawalls, sewers, water mains, dams, bridges, etc. Eliminates need to drain or pump out underwater area to be repaired. Can be used for out-of-water applications too.

**Packaging: 50 lb. bags or 5 lb. pails.**

**TYPICAL SPEED CRETE APPLICATIONS**

Expressways•Highways•Bridges•Curbs•Gutters•Walls•  
Columns•Precast Panels•Dams•Seawalls•Airport Runways•  
Loading Docks•Sewers•Hydraulic Leaks•Grouting•Piers•  
Floor Underlayments•Swimming Pools•Pilings•Ceilings•  
Pipes•Streets•Water Mains•Drains

**RED LINE SPECIFICATIONS****MIXTURE**

A typical shall be in the ratio of about 5 quarts of water to 50 pounds of **SPEED CRETE**. **SPEED CRETE** and water shall be thoroughly mixed for not more than one minute to the consistency of putty with clean and either fresh or sea water. If mixed in a rotary mixer, use small mixer with rubber tipped paddles. Pour required amount of water into mixer, then add **SPEED CRETE**. Mix no more than 100 pounds at a time. Mix just long enough to achieve the consistency of putty with no slump. Do not mix more than 60 seconds. If mixed by hand, small amounts of **SPEED CRETE**, such as 5 to 10 pounds can be readily mixed in a bucket.

**COMPRESSIVE STRENGTH**

**SPEED CRETE**, mixed as directed, shall obtain its initial set in 5 to 10 minutes, and its final set within 20 minutes. It shall have minimum compressive strengths of 150 PSI in one hour, 2500 PSI in 24 hours, 4300 PSI in 7 days, 4500 PSI in 14 days, and 5000 PSI in 28 days.

Test Methods - A.S.T.M. C-109 (modified)

**VOLUME CHANGE**

One hundredth of one percent expansion at end of 28 days. Four hundredths of one percent shrinkage at the end of 28 days. Test Methods - A.S.T.M. C-157 (modified)

**DENSITY**

Approx. 100 pounds per cubic foot.

**FREEZE AND THAW**

Durability factor 69. Compressive strength after 300 cycles completed- 4600 PSI. Flexural strength after 300 cycles completed - 370 PSI.

Test Methods - A.S.T.M. C-290 @300 cycles.

**PERCENTAGE OF CALCIUM CHLORIDE**

None.

**HEAT OF HYDRATION**

No noticeable heat of hydration.

**BONDABILITY**

**SPEED CRETE** bonds to clean concrete, stone, and masonry. Adheres well to steel and in some cases, bonds to wood.

**APPLICATION**

All loose, scaly, oily material shall be removed prior to placing.

**SPEED CRETE.** Area to be patched shall be dampened with water prior to placing

**SPEED CRETE.** If temperature is below 35°F do not dampen area before application. **SPEED CRETE** shall be placed in a firm manner to assure complete bond to all areas being covered. **SPEED CRETE** can be applied by gunite, trowel or hand methods and no forms are required.

**FINISHING**

**SPEED CRETE** applications shall be finished to a smooth, even surface by hand trowelling. Trowelling should be completed in 3 to 5 minutes. Material may be shaved after initial set.

**CURING**

No other finishing chemicals or methods are required other than standard curing compounds.

**COLOUR**

Light Gray

**SURFACE PREPARATION**

Remove all loose scale, oil and dirt. Clean out to solid concrete. With air and surface temperatures from 35° to 120°F, saturate the repair surface with water. Below 35°F: Do not dampen. Remove all ice from the repair surface.

**EQUIPMENT PREPARATION**

Clean out and rinse the mixer or mixing container, and the mixing tools.

Containers: Small amounts of Speed Crete (5-10 lbs.) may be mixed in a bucket. Use a metal wheelbarrow or bin for larger amounts. Wherever possible, use a 3-4 cu. ft. paddle-type mixer with rubber tipped blades for continuous mixing on larger jobs.

**WATER RATIO** (Imperial Measure)

Use 5 quarts of clean water to 50 lbs. of Speed Crete. In dry hot weather use 5½ quarts. Use fresh water or sea water. Below 35°F: Use warm water. Do not add anti-freeze, calcium chloride or other chemicals.

**AGGREGATE**

Clean, 3/8" minus gravel or crushed stone may be used with Speed Crete when repairing deep holes. Use no more than 40 lbs per 50 lb. bag of Speed Crete. Place the mix containing aggregate within 1" of the top, and finish with Speed Crete mix without aggregate. Water ratio per bag of Speed Crete when using gravel is the same as when gravel is not used. DO NOT ADD SAND - The speed Crete formula already includes a definite amount of silica sand.

**MIXING**

First, pour the required amount of water into the mixer. Add aggregate if required. Add the Speed Crete last, and start mixing at once. Mix thoroughly for no more than one minute, to the consistency of putty with NO SLUMP. In a mechanical mixer 40 seconds is sufficient. When mixing by hoe or trowel, 40-60 seconds is usually enough. DO NOT OVERMIX. Mix no more than 100 lbs. at a time.

**PLACING**

Immediately after mixing, place Speed Crete firmly to ensure a complete bond to all parts of the repair surface. Shape it in rough form by hand or by trowel, but DO NOT OVERWORK OR OVERTROWEL IT. Vertical or overhead placement: Apply in layers, and allow each layer to reach its initial set before applying a further layer. The layers can be up to 4" thick on vertical surfaces, and up to 2" thick on overhead surfaces. If forms have been used, they may be removed 30 minutes after all speed Crete is in place. Placing Methods: Speed Crete can be placed by gunite, trowel or hand.

**FINISHING**

Commence shaping and finishing Speed Crete by trowel as soon as it has reached its initial set. At the initial set, the Speed Crete can be shaved off in dry flakes. If the trowel pulls the material, the initial set has not been reached. After finishing, the surface may be washed down with a soaking sponge. A slick finish can be obtained by back-trowelling.

**RETEMPERING**

Speed Crete cannot be retempered. Therefore mix only as much as can be placed in 3 minutes.

**CURING**

Speed Crete is a cement product and as such it must be cured. In conditions of warm weather or strong winds use any approved conventional curing compound, or cover the area with wet burlap. In direct sun use resin-base rather than wax-base compounds. The following recommended compounds meet ASTM Designation C-309-58 Type 1 specifications:

1. Hydrocide Curing Compound Resin X - Sonneborn Bldg. Products, Inc.
2. Horncure 30C - AC Horn Products
3. Sika Gard - R. T. Sika Chemical Co.

**BLUE LINE SPECIFICATIONS****MIXTURE**

A typical mixture shall be in the ratio of about 4½ quarts of water to 50 lbs. of SPEED CRETE. SPEED CRETE and water shall be thoroughly mixed for not more than one minute to the consistency of putty with NO SLUMP. There shall be no retempering. Water shall be clean and either fresh or sea water. If mixed in a rotary mixer, use small mixer with rubber tipped paddles. Pour required amount of water into mixer, then add SPEED CRETE. Mix no more than 100 lbs. at a time. Mix just long enough to achieve the consistency of putty with no slump. Do not mix more than 60 seconds. If mixed by hand, small amounts of SPEED CRETE such as 5 to 10 pounds, can be readily mixed in a bucket. For larger amounts use a wheelbarrow or bin.

**PROPERTIES**

**SPEED CRETE**, mixed as directed, will obtain its initial set in 3 to 5 minutes, and its final set in about one half hour - even underwater. It shall have a minimum compression strength of 2000 PSI in 24 hours and a minimum of 5000 PSI in 28 days.

**VOLUME CHANGE**

One hundredth of one per cent expansion at end of 28 days. Four hundredths of one percent shrinkage at end of 28 days. Test Methods - A.S.T.M. C-157 (modified).

**DENSITY**

Approx. 100 pounds per cubic foot.

**PERCENTAGE OF CALCIUM CHLORIDE**

None.

**HEAT OF HYDRATION**

No noticeable heat of hydration.

**BONDABILITY**

**SPEED CRETE** bonds to clean concrete, stone, and masonry. Adheres well to steel and in some cases, bonds to wood.

**APPLICATION**

All loose, scaly, oily material, marine growth, deteriorated wood and rust scale shall be removed. **SPEED CRETE** shall be placed in a firm manner to assure complete bond to all areas being covered. **SPEED CRETE** can be applied by gunite, trowel or hand methods and no forms are required.

**FINISHING**

Out of water applications can be finished to a smooth, even surface by hand trowelling. **SPEED CRETE** used underwater is best finished by hand.

**CURING**

For out of water use, no other finishing chemicals or methods shall be required other than standard curing compounds.

**COLOUR**

Light Gray.

**APPLICATION**

In general, application instructions for out of water use should also be observed in underwater work, with the following additions.

**WATER RATIO** (Imperial Measure)

Use 4½ quarts of water to 50 lbs. Speed Crete.

**SURFACE PREPARATION**

Clean the surface to solid concrete immediately before repairing it. Remove any algae, oil or foreign matter by chisel, wire brush or sandblasting.

**MIXING**

Mix no more than 25 lbs. at a time because of the faster setting time. Form into convenient sized balls and drop to the diver in the water.

**PLACING**

Avoid overworking the material particularly when placing it at water level, since this forces water into the mix. The Speed Crete should be received by the diver and placed firmly in position with the minimum working. Placement should be by hand rather than by trowel.

**FINISHING**

Finish the material by hand.

**REPAIR OF PILING** (Wood, Steel or Concrete)

In repairing water level damage, extend the repair section 3" above and below the tide lines. After preparing the surface, wrap chicken wire around the repair section approximately 1" above and below the point where the concrete will finish. On wood and steel piling, apply Speed Crete at least 1" thick. concrete piling may be repaired without increasing the size of the piling.

**SPECIAL APPLICATIONS****TEMPERATURE EXTREMES**

Speed Crete can be applied in temperatures from 20°F to 120°F.

**REPAIR OF FREEZER FLOORS**

Follow the general application instructions with these additions: Etch smooth surfaces with muriatic acid, then wash with clear water. Remove ice or surface frost from the repair area with a blow torch. Mix the Speed Crete with warm water outside the freezer.

Curing: Use a chlorinated rubber curing compound if the freezer temperature is above 35°F. If the temperature is below 35°F., cover the repaired area with a blanket or similar material for the first 24 hours, and the Speed Crete will gain strength more rapidly.

**APPLICATION THICKNESS**

Highways and Streets: Apply at least ½" thick. Do not extend Speed Crete onto the surface beyond the repair area. Sidewalks, Curbs, Steps, Driveways: Apply to damaged or spalled areas in any thickness, including feathering (to zero thickness).

Feathered areas must be specially cured with a curing compound, or wet sand, or wet burlap.

Deep Holes: Apply to any depth required.

**BONDING AGENTS**

Bonding agents are unnecessary except in extreme cases where the repair surface cannot be roughened. Latex, polyvinyl acetate and vinyls may be used. For best results use "Rohm & Haas 4530".

**VIBRATORS**

If a vibrator is required it must be used immediately after the Speed Crete is placed. It may only be used for a short time since the vibrator acts on the material like a mixer.

**REPAIRING CRACKS**

"V" out or wedge cracks to approximately ¼" on either side. Deeper cracks require a wider "V". If the crack was caused by a structural failure, a permanent repair may not be possible because of the pulling and moving weight of the two slabs.

**COLOURING SPEED CRETE**

Use any iron oxide to a maximum of 1¼ lbs. per 50 lb. bag of Speed Crete.

**RETARDING THE SET**

If the Speed Crete starts to set up before placement is complete, it should be mixed in smaller amounts. The following conditions will extend the set time moderately: use of very cold water in the mix, cold ambient temperature, and high ambient humidity. Retarders must not be used. Speed Crete's formula is finely balanced to deliver specific results.

**SHELF LIFE**

Speed Crete has been tested and used after two years of dry storage. It contains nothing that will pre-ignite.

**APPLICATION TO DIFFERENT MATERIALS**

To Fresh Concrete: Speed Crete is regularly used to repair snap tie holes, honeycombing and imperfections in fresh concrete. Smooth, trowelled surfaces should be scored to improve the bond. To Steel: Speed Crete protects steel and will not attack it. Speed Crete bonds strongly to metal pilings and reinforcing steel. Before applying Speed Crete, remove all rust, scale and paint. Wrap steel beams with chicken wire to create a monolithic coating.

To Wood: Speed Crete bonds well to wood, particularly if the surface is cleaned and scored. Treat wood beams in the same way as steel beams.

To asphalt: A permanent bond between Speed Crete and asphalt is difficult, because bituminous and cementitious materials have different coefficients of expansion and contraction.

**THIN APPLICATIONS OVER EXISTING CONCRETE FLOORS**

The problems usually found are:

- a) The existing floor is too slick or dirty
- b) The Speed Crete is mixed too thin or worked too long.

If oil or grease are present, wash the surface with a commercial detergent and then acid. Then flush with water. The repair area should be chipped by hammer or etched with muriatic acid. If chipping or etching is not possible, wire brush the surface and apply a bonding agent, following the manufacturer's instructions.

**Recommended Bonding Agents:**

Rohm & Haas 4530; Sika-Colma Bonding Compound (an epoxy); Burke-Bond Crete (PVA).

If a bonding agent is not used, dampen the surface with a curing agent or cover it with wet burlap. Note: Do not use more than the recommended amount of water when mixing Speed Crete. Do not try to do too large an area at one time.

**UNDERWATER USE**

Both Red and Blue Lines can be and are used underwater. Blue Line is usually better because of the faster set, but there will be occasions where Red Line is preferable - for instance, where the repair location is difficult to reach and the additional set time is desirable.

**WARRANTY**

PennKote Ltd. warrants its products against manufacturing and material defects. PennKote will, for a period of two years from the date of application, supply replacement material for product proven to be defective. This warranty is in lieu of any and all other warranties expressed or implied. Pennkote Ltd. and any Distributor or Retailer of this product accept no liability for incidental or consequential damage due to defective material or improper installation. The user shall determine the suitability of this product for intended use.