

# the CONCRETE INFORMER

by **USMIX**

## Product News

## Featured Products for the New Year

### SAKRETE® All Weather Blacktop Patch

A high performance patching material containing a mixture of blended asphalts, aggregates and special additives. For repairing potholes in blacktop drives, walks and parking lots.

- 60 lb. bags, 56 per pallet



### SAKRETE® Concrete/Mortar Dissolver

A safe, environmentally-friendly liquid alternative to aggressive acid concrete removers. Concrete Mortar Dissolver can be used to remove dried on cement, concrete, mortar, or stucco from most surfaces.

Multiple applications used in conjunction with mechanical means may be necessary for removing stubborn or thick built up areas.

- 22 oz. bottle, 12 per case



### SAKRETE® Sand Mix

A quality mixture of sand and cement designed for the overlaying of damaged concrete, and for use as a bedding mix for flagstone, slate or brick. Use as a bedding mix and joint grout for flagstone, slate and brick walkways or a topping mix to rejuvenate damaged concrete surfaces. Can be applied in layers ranging from 1/2 to 2 inches. Just add water.

- 80 lb. bags, 42 per pallet
- 60 lb. bags, 49 per pallet



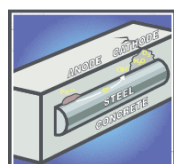
## Industry News

## Why Does Steel In Concrete Corrode?

Perhaps the greatest threat to the long-term durability of reinforced concrete is corrosion of the steel (primarily composed of iron, or Fe) which expands due to the greater volume of the corrosion by-products and then cracks the concrete and debonds from the concrete matrix. Billions of dollars in damage occurs each year due to this simple reaction, and our apparent inability to stop it. So what causes this reaction?



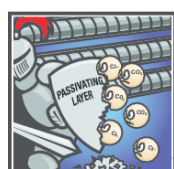
1) All metals, except gold and platinum, are unstable and will corrode. Reinforcing steel is made primarily of iron, which is highly corrosive. There are several things that can lead to corrosion of steel in concrete, with the most common being chloride—such as the chloride in table salt (sodium chloride). These chlorides come from sea water, deicing salts, chlorides used in the mix as an accelerator, or salty aggregate or water. Another common culprit that can cause corrosion is carbonation caused by atmospheric CO<sub>2</sub> penetrating the concrete.



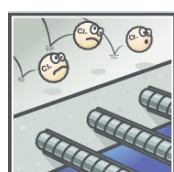
2) Corrosion is an electrochemical reaction (a corrosion cell) with positive charges flowing through the moist concrete and negative charges (electrons) flowing through the reinforcing steel. The cathode is a spot where water and oxygen have gotten through the concrete to the steel—perhaps at a crack. The anode is where the steel corrodes and forms corrosion by-products that can crack the concrete.



3) Good sound concrete has a pH in the pore solutions of 13.0 to 13.5, which is much more alkaline than something like Drano. In this environment, the steel forms a thin layer on its surface that we call a passivating layer. This layer protects the rebar and prevents the anode from forming so no corrosion can occur.



4) When chloride ions or carbonation penetrate the concrete and get down to the reinforcing steel, they lower the pH and attack the passivating layer. If there is also moisture and oxygen (at the cathode) then the steel begins to corrode. The corrosion by-products have no tensile strength, reducing the strength of the reinforcing steel, and have greater volume than the original steel, causing cracks.



5) Chlorides and carbonation will penetrate the concrete—it's only a question of time. But with good concrete cover (2 inches) and dense (low permeability) concrete, that could take centuries. And if the concrete is covered and dry, then it can't corrode because the ionic migration of positive charges can't take place.

**ORDERS**

E-mailed orders need to be sent to:  
**orders@usmix.com**

Orders sent to this address will be received by Joetta Gomez, Marielena Gomez *and* Theresa Toth.

This will reduce confusion and enhance our already great service.

For any questions please call our office at 303-778-7227.



**New Year, New Look**

Our newsletter has a new look for 2015!

We would love to hear your feedback.

- What do you like?
- What do you want to see more of?

E-mail comments to Marketing Coordinator, Anna Hebrank, at ahebrank@usmix.com



**MOUNTAIN STATES SHOW**

US MIX will be at the Mountain States Show this year. Shannon Chisholm as well as other US MIX team members will be there.

Stop by our booth to chat, hear about this year's show specials and enter to win one of our giveaways.

**March 19, 2015**  
**Denver Merchandise Mart**  
**Booth #309**



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**Concrete Corner**

**SAKRETE® Project Solution Center**



It's Here.

Visit the NEW Sakrete® Project Solution Center. This 3-D animated project solution center highlights common DIY repair and new installation projects and includes SAKRETE® product selection recommendations.

Additional tools available on sakrete.com:

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- Product Information including TDS and MSDS
- Product Calculators
- Where To Buy tool



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