

What is “stockpile wetted” salt?

“Stockpile wetted” salt can best be understood by studying a series of events that occurred in the fall of 1979 and winter of 1980. In October 1979, the Chicago area received 16 inches of rain in 6 weeks. During that time-period, a 1500-ton-pile of salt was constructed just outside of Chicago and covered with a waterproof tarp. In January of 1980, the tarp was removed to access the salt, and it was discovered that the 1500-ton-pile was “frozen.” On top of this, the winter of 1979-80 was especially cold and wet which caused the Illinois River north of Alton and Lake Michigan to freeze. Because both these waterways were transportation routes for delivering salt to Northern Illinois, there became a salt supply shortage. It was crucial that the 1500-ton-pile be accessible.

At that time, Sicalco was the vender for 32% Liquidow® in the state of Illinois which IDOT used to prewet their salt. Thinking we had a solution for the “frozen” pile, Sicalco answered the request by IDOT to “thaw out” the “frozen” stockpile. Sicalco offered to do an experiment for IDOT in the hopes of salvaging the “frozen” stockpile. The supplies for the experiment were a 38% CaCl_2 solution we had available from the Dow terminal in Lemont, Illinois, an insulated trailer, 2” hoses with nozzles, and a by-pass equipped PTO driven pump. Using these items, we were able to spray 4,000 gallons of the 38% CaCl_2 solution on the uncovered pile. Almost immediately, we heard the snap, crackle, and pop of the ice breaking up. Sicalco then instructed IDOT to cover the pile, allow it to completely “thaw,” and then mix it thoroughly before use. That weekend, a lake effect snow covered the Dan Ryan Expressway. IDOT was able to access the 1500-ton-stockpile, and they reported good results with the treated salt.

From this experience, Sicalco learned a lot. We went on to introduce “stockpile wetted” salt to the market. After seeing the benefits of wetted salt, which include approximately 28% more wetted salt staying on the road versus dry salt, quicker action, a reduction in the total amount of salt needed, and a reduction in the total cost to keep roads safe, most customers embraced this technique and went on to invest in the storage and various types of dispensers needed for this strategy.

An example of the cost to deliver on a 4000-gallon-load of 38% Liquidow® with probes and hoses to treat a 450-ton-pile at \$1.20 per gallon of 38% Liquidow® resulted in a \$100 per ton dry salt to now be valued at \$105.26 per ton of wetted salt. These calculations are based on a 2% by dry weight of CaCl_2 to salt.

If only 1% CaCl_2 dry weight per ton of salt is used, the increased cost would be ½ of the 2% cost and would treat 2 times the 2% dosage.

Compare the above numbers to a 20% increase in bid price which 3 salt vendors quoted to Kentucky DOT as an alternate to their plain salt price. These 3 salt vendors all used an addition of 1% by dry weight of magnesium chloride.

If your agency is interested in using “stockpile wetted” salt for future projects, please contact Sicalco to discuss pricing and other details.