

TECHNICAL BULLETIN ON MILITEC-1 LUBRICATION FOR STONE CUTTING AND DRILLING

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The Sae Jin Stone Co., Ltd. in Korea is one of the largest in its industry operating eleven large quarries. They have been using Militec-1 for over three months in all of their mining, transport and processing equipment. In all, about 80 different types of equipment have been treated with Militec-1. No failures have been reported on any of the equipment and monitoring is underway to see how long the equipment can remain failure-free using Militec-1 compared to historical records.

Two reports have already been issued, one on drill bits and the other on saw blades.

DRILL BITS:

The company produces slabs of marble for the exterior of buildings. Holes are drilled into the marble to secure the slabs to the sides of the buildings. The drill bits, made of high speed steel with a diamond tip (9 mm), are imported from Japan and cost \$55 each. They have been able to drill 420 to 450 holes before they fail.

Militec-1 is applied by heating the drill bits to 80°C (176°F) in an oven and then putting them into the Militec-1 for 2-3 minutes. The Militec-1 is kept at 60°C (140°F) by immersing a bowl of Militec-1 in heated water. Upon removal, the drill bits are given time for the excess Militec-1 to drip off. Once treated, the drill bits are stored, some for as long as a week, before they are installed and put into operation.

The treated bits now last from 550 to 620 holes, showing an increase that ranges from 100 to 200 holes per bit.

SAW BLADES:

The saws are used to cut the marble slabs. The blades have a diamond edge to give them strength and longer life. The application of the diamond film on the edge costs \$500 to \$700 per blade. The blades historically lasted 3 days when cutting this marble.

Militec-1 is applied by heating the saw blades in a similar fashion to the drill bits, first heating them in an oven to 80°C and then putting them into the Militec-1 which is kept at 60°C. In the case of the saw blades, the blades are rotated in the Militec-1 for 20 minutes (as the blade cannot be fully immersed in the Militec-1 at one time).

The result after using Militec-1 on the saw blades after 2 months showed that the life of the blades was increased to 4.5 to 5 days (50-67% added life).