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September 11, 2002

Universal Minerals, Inc.  
4620 South Coach Drive  
Tucson, AZ 85714

Attention: Mr. Dan Schulse

Reference: MAXXSTRIP FINE Abrasive

Dear Mr. Schulse:

In accordance with your request, we have completed our evaluation of the reference product, and can recommend it for use as a heavy duty cleaning material for dimension stone.

The abrasive was tested for its engineering and chemical qualities, and it's potential to cause damage to the geology of the stone being treated. The tests were designed to determine the usefulness of MAXXSTRIP FINE as an abrasive in a system employing water and air to propel the MAXXSTRIP FINE against various dimension stone products, to ascertain its effectiveness as a cleaning material, and determine if any MAXXSTRIP FINE residue would penetrate the body of the stone, and what effect that residue, if any, will have on the stone.

The tests addressed the following specific areas of concern:

1. ***The disruptive effect of pure water on the stone.*** Damage to stone by wetting and drying is recognized in many decay studies. While it is possible to model the disruptive action of heating-cooling cycles of trapped water, the disruptive action is not yet understood.
2. ***Measure and evaluate the MAXXSTRIP BLAST MEDIA FINE residue in the stone after cleaning.*** Although the particle size is too large to gain access to the stone through the spaces between the crystals, it is possible that the product will dissolve somewhat in the water solution and those smaller particles could thus gain entry into the stone as a constituent of the water in a smaller particle size.

3. ***Determine if the residue will combine with other elements in the stone to form other mineral compounds (especially salts), and their potential effect on the life of the stone (weathering) and its appearance.*** The principal salt compounds we wanted to explore are :
- Na<sub>2</sub>CO<sub>3</sub>+MgSO<sub>4</sub>
  - M<sub>2</sub>CO<sub>3</sub>+MgSO<sub>4</sub>
  - Na<sub>2</sub>CO<sub>3</sub> + MgCl<sub>2</sub>
  - and K<sub>2</sub>CO<sub>3</sub> + MgCl<sub>2</sub>, which are all known destructive salts to natural stone.

The chemical tests were conducted by Testing Engineers International at their facility in Salt Lake City, Utah. Those tests results were negative for contamination. However, the product retains moisture, and any MAXXSTRIP FINE Abrasive left on the stone will act as a moisture point for future contamination by pollution.

The testing began at approximately 12:30 PM on Thursday, August 22, 2002. Present were Vincent R. Migliore, Empress Migliore SpA (USA), Inc., William Zomro, Adirondack Precision, and Pete Mitchell and Harry Richmond from Universal Minerals, Inc.

Mr. Richmond set up the equipment which consisted of a pressure washer, an air compressor, a container in which MAXXSTRIP BLAST MEDIA FINE (60-80 mesh) was able to be stored and supplied as required, and a hose assembly with a capability of using either high pressure water, or high pressure water with a quantity of the BAXXSTRIP BLAST MEDIA FINE. Mr. Richmond operated the unit during the tests. He used a full face mask and heavy duty work gloves as personal protection while operating the equipment.

This abrasive is chemically magnesium sulphate (naturally the element KIESERITE (Hydrated Magnesium Sulfate ( MgSO<sub>4</sub>, H<sub>2</sub>O)), a white soluble compound. KIESERITE forms in marine evaporate deposits where sea water has been concentrated. The mineral's principal use is as a fertilizer in agricultural applications. KIESERSITE is readily water-soluble, is a fine crystalline product consisting of 27% MAGNESIIM OXIDE and 22% SULFATE

Tests were conducted on two types of limestone, Polished White Carrara marble, and Red Bahia Granite. During a portion of the tests a limestone sample was blackened with acetylene to cause soot to develop on the face of the stone. Removal of the soot was easily accomplished by the cleaning system.

The abrasive is said to be 3.5 on the Moh scale. This means that it will scratch any material on the scale with a lower rating.

The complete MOHs scale is as follows:

- |            |             |             |
|------------|-------------|-------------|
| 1. Talc    | 5. Apatite  | 9. Corundum |
| 2. Gypsum  | 6. Feldspar | 10. Diamond |
| 3. Calcite | 7. Quartz   |             |

4. Fluorite

8. Topaz

During the test the abrasive was able to abrade the finish on the Red Bahia Granite (7 on the Moh scale) with the water pressure turned up high. On low pressure there was visible deterioration to polish finish on the marble. The smoothness of the original honed finish on the limestone was reduced.

The test was unable to remove a slight rust stain from a corner of the White Carrara, although it was able to remove a portion of the polish.

Conclusions:

The system is more than capable to be used as a heavy duty cleaning system for natural stone. The material and particle size we used did not damage the test stones, nor did it leave a residue inside that stone.

The MAXXSTRIP BLAST MEDIA works by abrasion. It will renew and clean by exposing stone under the existing surface. Material removal is dependant on the hardness of the stone being cleaned, the pressure at the nozzle, and the skill of the operator. Amount of material removed in the testing to achieve good cleaning was minimal, and would not be considered detrimental in flat work.

We would not recommend this system for POLISHED stone surfaces, or stonework that is intricately carved and/or carries a "FINE ART" classification. We think it is suitable to be used for commercial carving where there is not great detail. Therefore appropriateness of use in classical architectural conservation carving work is dependant on the fineness of the carving, the hardness of the stone the carving is on, and the type of cleaning required. Use will alter the existing face of the art work.. Abet slightly.

The test was geared toward determining the suitability of this material for use in cleaning the Indiana Limestone and granite wall covering in The Cathedral of St. John the Devine, New York City, NY, which suffered fire damage.

Cleaning of stonework in prestigious buildings must be undertaken with substantial preservation techniques in place. Water use must be minimized. Joints, which are softer than the stone, must be carefully cleaned while leaving the grout intact at the face of the stone. This system will clean the flat LIMESTONE and GRANITE in this project effectively. Where carved work is involved, we recommend that a methodology be explored that will allow the use of minimal water air pressure, and abrasive. A smaller nozzle is recommended for control purposes. A highly skilled and competent workman is critical to success of the project.

In flat areas we are more concerned with the volume of water being used than the abrasiveness of the product or stone removal, because we are without knowledge of the installation method of the stone, or its thickness – and the prime consideration in cleaning must be to insure that no further damage is caused to the buildings stonework and/or it's installation system.

It is our opinion that MAXXSTRIP BLAST MEDIA is an effective and safe cleaning product for natural stone when used in a manner consistent with the tests we conducted. Thorough rinsing is required. Sediment should not be allowed to remain on vertical or horizontal surfaces.

Respectfully submitted,

Empress Migliore SpA (USA), Inc.

By: Vincent R. Migliore