NATIONAL
CONCRETE MASONRY
ASSOCIATION

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March 22, 2005

Jim Swisher, President
Buddy Equipment
6271-14th St. Augustine Rd., Suite 232
Jacksonville, FL 33217

Dear Mr. Swisher:

This letter is a report regarding the examination of your 10 cubic foot mortar mixer (Buddy mixer) conducted at the Research and Development Laboratory (project 05-261). In this examination, two identical mortars were batched by volume in your 10 cubic foot mixer and the Laboratory mortar mixer. The mix was a standard 3:1 mortar mix, with 3 parts sand to 1 part cement. Water was added to reach the desired consistency and the mortar was mixed until it was properly blended in each mixer. At your direction, the mortar was sampled and the air content was taken using a Protex Air Meter, which determines air content of concrete and is frequently used by inspectors on concrete work. The sample was sealed into a pressure type air meter and pressurized, forcing the air into a column where the air content was recorded on the meter.

The air contents were determined to be:

- Laboratory mortar mixer – 11.1% air by volume
- Buddy 10 cubic foot mortar mixer – 11.5% air by volume

The mortar from each mixer was then spread on a few concrete blocks to observe the mortar's behavior. The mortar from the Buddy mixer was observed to have a longer pan life. A cone penetration test was taken on both mixes 1 hour after batching and the cone penetration measurement for the Buddy mixer was 54 mm and the Laboratory mixer was 42 mm. This extended period of plasticity may allow a longer time period before tooling mortar in the field. The mortar mixed in the Buddy Mixer was 5 degrees cooler than the mortar mixed with the NCMA mixer and had sufficient body to hold a proper mortar joint thickness when two concrete masonry units were constructed into a prism.

To enable you to study the benefits of your mortar mixer, I am enclosing an example of a mortar workability study that the Research and Laboratory can perform. A quotation for a mortar workability research study will be furnished upon your request.

This letter comprises the reporting of the mortar analysis conducted on behalf of Buddy Equipment. Please feel free to contact me with any questions.

Sincerely,

Jeffrey H. Greenwald, P.E.
Vice President of Research and Development

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