

To: TCC Customers From: David W. Morlock, P.E. Date: April 7, 2022 Re: Cement change at TCC plants

This memo is to advise you that TCC is transitioning from using Portland Cement conforming to ASTM C150 to Portland-Limestone Cement (PLC) conforming to ASTM C595. This transition is occurring because cement manufacturers are replacing Portland Cement with PLC at their facilities, and Portland Cement will no longer be available in our markets. The new cement has been engineered to have a higher limestone content than is allowed by ASTM C150. However, PLC is designed to perform the same or better as current Portland cement. PLC conforms to ASTM C595, Standard Specification for Blended Hydraulic Cements. ASTM C595 cements are recognized by the building codes, DOT specifications and related standards.

TCC has done extensive qualification testing at our laboratory in St. Paul and has determined that this switch will not have any adverse effects on our finished products. In fact, all our testing shows that the new cements perform substantially similar to, or better than the old cement. The cement sources used at TCC Materials are all on approved product lists for all DOT's in our markets.

The main benefit of this change is that the new cement contains about 10% interground limestone, which reduces the amount of CO_2 emissions associated with cement manufacturing. More information on this changeover can be found at www.greenercement.com.

All TCC plants that have historically used Type I/II Portland Cement will be switching to Portland-Limestone Cement that has the same moderate sulfate resistance. The PLC cements we are using are designated as Type IL (10) MS. The 10 in parenthesis is the amount of interground limestone and the MS suffix means Moderate Sulfate resistance (equivalent to the old Type II). If you run into any problems with specifications on commercial jobs, please reach out so we can assist you with product approval.

If you have any questions regarding this memo please contact me directly.

Sincerely,

David W. Morlock, P.E. Technical Services Manager TCC Materials MN Registration No. 40803

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