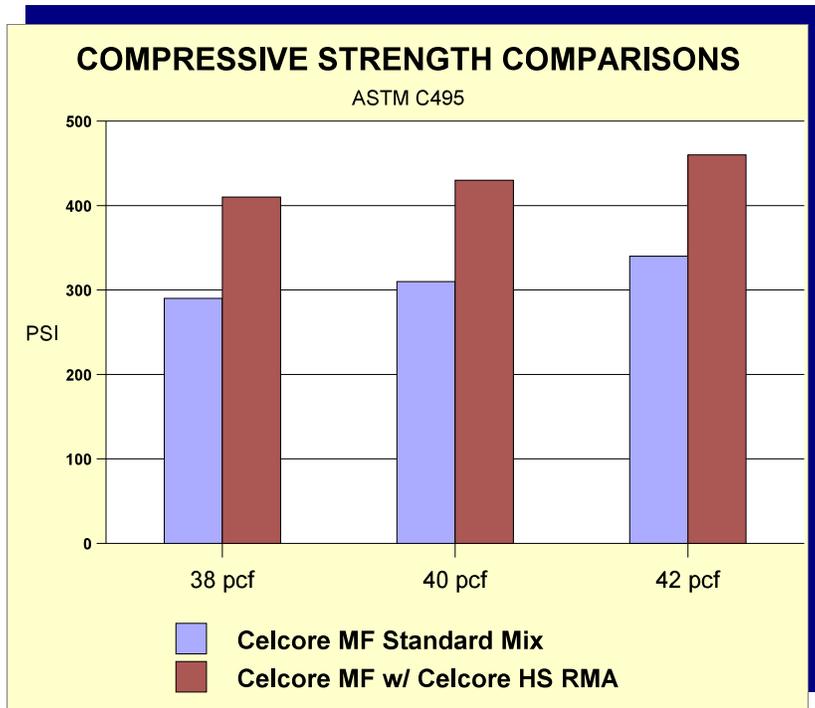




# Technical Bulletin

## Celcore MF and Celcore MF with Celcore HS Compressive Strength Comparisons

The chart below compares the average 28 day compressive strength of Celcore MF Cellular Concrete and Celcore MF Cellular Concrete with Celcore HS Rheology Modifying Admixture having similar cast densities. These data are from averages of specimens tested in accordance with ASTM C495.



The standard Celcore MF mixtures shown herein use typical water to cement ratio(s) of .42 - .45. The Celcore MF with Celcore HS Rheology Modified mixtures had lower water to cement ratio(s) of .30 - .32, and additive dosage rates of approximately 1.5 fl/oz per 100 weight of cement [dosage rate may vary by cement source]. The Celcore HS mixtures produced had placement and finishing properties comparable to the non-dosed mixtures despite being made using substantially less mix water. Earlier and ultimately higher compressive strength values are a result of the reduced water mixtures. Further, additional hardened property benefits include, increased early fastener withdrawal resistance values, without having concerns of longer term excessive deck hardness and fastener installation difficulty. This property is possible due to

the comparative mass (density) of the dosed and non-dosed mixtures. Notably, it is relative mass (density) and not compressive strength that can cause a roof deck to become excessively hard and difficult to nail. It is therefore a good practice, that when a Product Approval requires a target minimum compressive strength that exceeds 300 psi, the target strength shall be accomplished with the use of Celcore HS admixture and not by way of increasing the mixtures cement factor, thereby raising the materials mass (cast and resulting dry density).

Celcore MF Cellular Concrete with Celcore HS Rheology Modified Admixture is a low cost way to assure that compressive strength compliance for all specifications can be met and exceeded. The additive is particularly applicable where higher compressive strength values are noted as a requirement for compliance within many of the new, more stringent, building code Product Approvals.

**Note:** As with all concrete mix designs, actual tests should be conducted using the available component materials to verify all theoretical physical property predictions. The cementitious product used to contemplate the physical properties as shown in the table above is Type I portland cement meeting ASTM C 150. The compressive strength values shown are at 28 days of age and determined in accordance with ASTM C 495. The information above is provided **AT NO CHARGE AND WITH NO WARRANTY, EXPRESSED OR IMPLIED.**

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