



CEMENT, STUCCOS, AND RENDERS



CenoStar cenospheres have been widely used in the construction industry for many years. From roofing materials to stuccos and grouts; new applications and products continue to be developed. The quantity and applications of cenospheres used within the construction industry continue to grow today as more and more companies realize the advantages cenospheres bring to their products.

One of the advantages of hollow ceramic microspheres is that they provide **excellent thermal insulation**. Cenospheres **reflect and dissipate** heat very effectively because of their inherent physical properties.

Stuccos and Renders

Cementitious stuccos and renders either as used in external wall insulation base coats or finishing renders are a major use of cenospheres. More and more customers are finding that addition levels of only 2% considerably improve the workability and slump resistance of these products. Workability is always an important issue and it is a cenosphere's spherical shape that yields this property. The reduced slump also means a percentage of the chemicals used can also be reduced resulting in no cost increase.

Cement

The largest application area for cenospheres is in cementitious products. Although cenospheres are considerably more expensive than the sand they replace, the improvement in properties is such that cementitious applications are often the least price sensitive. The largest application is in **oil well cements** where cenospheres are used to **reduce density** while still retaining good strength. This permits oil to be extracted from areas where the geological conditions are too weak to withstand the hydrostatic pressure of a column of normal density cement.

A growing application is the use of cenospheres in cement boards. Gypsum boards are widely used in industry but are not water resistant and can only be used in interior applications. Cement boards suffer from being too heavy and can only be used as much smaller boards. Their main drawbacks are they are too stiff to use in the same manner as gypsum boards and are difficult to cut, saw, drill etc. the addition of approximately 25 % cenospheres solves all of these problems and produces what is recognized as the best cement board available. Probably the widest and most popular use of cenospheres is in high build **concrete repair mortars**. These mortars can be applied up to 80 mm thick in one application compared to 20 mm for conventional mortars. The result is considerably lower application costs and improved adhesion.