Building codes historically allow a “field mix” plaster/stucco, containing sand, water and cement, for a variety of reasons including variations in local raw materials, supply and climate. Proprietary plaster mixes are a factory blend of plaster base coat and may come unsanded or sanded. Any additives not expressly recommended by the manufacturer should not be allowed.

Both mixes must meet the criteria of ASTM C926. If proprietary mixes do not, the product should have its own code-approved evaluation report. When using an unsanded proprietary or “field mix,” the following major factors can contribute to the quality of the plaster/stucco:

**SAND:**
The code recognizes plaster aggregates should conform to ASTM C897. The proper proportion of various aggregate (washed) sizes proved effective throughout the years of the “hand-application” of base coats. Today, the plastering contractor has two challenges. This specific type of sand can be problematic during machine applications. Secondly, finding this kind of sand has become an increasing problem. ASTM has recognized this and states, If local sand cannot meet the requirements the sand shall be accepted, “provided there is evidence that plaster of comparable properties made from similar aggregates from the same source has been exposed to weathering, similar to that to be encountered”.1 In other words, if the sand supply has a proven track record it should be accepted.

**WATER:**
When mixing portland cement plaster, it is important that the water be potable, i.e. fit for human consumption.

Potable water is treated to specific standards so as to remove harmful chemicals, sediment and other particulates. Recycled, reclaimed, grey water or water from natural waterways is not approved for mixing cement stucco.

The mixing of the cement stucco with clean potable water allows the best conditions for setting and strength development of the stucco cladding.

Another important property of stucco during the mixing and application periods is air entrainment. Air entrainment occurs during the mixing stage and contributes to the workability and overall durability of the cladding. Non potable water may contain contaminants that could kill the air content or increase it excessively which could compromise the integrity of the stucco cladding. Some of the more common contaminants found in non-potable water include chlorides, acids, alkali’s, sanitary waste, sugar, silts, oils and algae. Reclaimed wash waters, such as those recycled from concrete mixers, can contain admixtures not intended for use in the stucco cladding. Chlorides found in non-potable water, could attack the embedded steel products such as lath, trims and fasteners thus compromising the integrity of the stucco cladding.

The water amount in a plaster mix should always be determined by the plastering contractor. The plasterer will always adjust the water to account for climate conditions, how quickly or slowly the substrate absorbs plaster moisture and variations in “field mix” materials.

For more on additions to Portland Cement Plaster/Stucco, see Technical Bulletin 60.186.

---

1 ASTM C897

This technical document is to serve as a guideline and is not intended for any specific construction project. TSIB makes no warranty or guarantee, expressed or implied. The most updated version of any said technical bulletin will be on the TSIB website and dated accordingly.