

Property vs. Proportion Mixes per ASTM C270

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TCC Materials® manufactures Spec Mix masonry mortars that are designed to comply with ASTM C270, *The Standard Specification for Mortar for Unit Masonry*. Per the Standard, ASTM C270 “covers mortars for use in the construction of non-reinforced and reinforced unit masonry structures ... mortars are covered in each of two alternative specifications: (1) proportion specifications and (2) property specifications.” The proportion or property specifications shall govern as specified. Therefore, specifications should be clear on the design intent (property or proportion), so the contractor knows what the acceptance criteria for the proposed mortar will be.

If the Proportion requirements of ASTM C270 are specified, that means that the manufacturer is required to produce the mortar to have specific proportions as stated in this standard. TCC blends Proportion Mortars to meet those specific proportions by volume.

Because this recipe is prescriptive, there are no performance criteria within ASTM C270 for test data since the manufacturer doesn't have direct control of the design. This means test data should not be required for submittal purposes. Submittal information should include the proportions of the mortar materials and certificates of compliance for each raw material used, and should be evaluated for acceptance accordingly.



Alternatively, when the Property requirements of ASTM C270 are specified, that means the manufacturer is responsible for the design of the mix, including the amount of sand, lime and cement that goes into the mix. TCC Materials blends Property Mortars to meet specific design criteria for the mortar required in the specification, including minimum compressive strength at a specific flow, a minimum amount of water retention, a maximum air content, and a minimum and maximum aggregate ratio. The actual mix design of the mortar is proprietary to the mortar manufacturer and will not be disclosed.

When Property Mortars are specified, submittal information should include test data from a qualified laboratory that indicates the compressive strength and flow, the water retention, the air content, and the aggregate ratio of the mortar tested, as well as certificates of compliance for each raw material used. This data can then be compared to the performance criteria within ASTM C270 in order to evaluate whether the mortar complies with the specification.

In no case should both test data and mix proportions be required in order to demonstrate compliance with the specification. This would create a situation where a manufacturer would be required to comply with both alternates of the specification. The specifier should select either “Proportion” or “Property” per ASTM C270.

TCC Materials prepares submittal information in order to expedite evaluation of our mortar mixtures on jobs that have specifications. These submittal packages are put together to demonstrate that our masonry mortars meet the requirement of ASTM C270. For more information please refer to the latest version of ASTM C270.