



Sample Requirements and Background Information for Mortar Testing

Background Information: For detailed laboratory investigation of a masonry mortar, we request the following information in a detailed letter of transmittal:

1. Contact person knowledgeable on the project - Name, Phone, Fax, Email address, Mailing address, and, Company info.
2. Bill-To information for sending Invoice
3. Ship-To information for sending the Final Report & Samples after Testing
4. Full Name and Address of the Project (e.g., Street, City, & State)
5. Your Project Number (if applicable)
6. Testing Requested – ASTM C 1324
7. Reason(s) for the Requested Testing (e.g., Finding the Mix Composition for a Tuck-Pointing Mortar, if there is a problem or concern, Nature and Extent of the problem, etc.)
8. Detailed background Information, e.g.:
 - Age of the Building, Including Age of the Sample Being Extracted;
 - If the sample is an Original Mortar or a Tuck-Pointing Mortar, or Both;
 - Location/environment of the material (e.g. indoor vs. outdoor, wall vs. floor, if it exposed to a freezing and thawing environment or a chemically aggressive environment);
 - Mix design, MSDS data sheets, etc., if available about the mortar;
 - Previous testing results, if any; and
 - Any other relevant information not mentioned here
9. Field photographs (by email) showing:
 - Condition of the building and the masonry wall in question,
 - The nature of the problem (e.g., showing efflorescence, discoloration, staining, etc.),
 - Locations with the extracted samples.
10. What would you like to do with the extracted sand after testing is completed (Toss or Return)?
11. Label your samples properly (e.g., Sample ID, which side is top or exposed, good-vs.-bad)

samples, etc.)

12. Turn around (3 to 4 weeks Standard, or 5 to 10 days Expedite Report)

Please provide a very detailed letter including everything known or concerned about the project, no matter how irrelevant the fact may be seemed.

Report: Report will include everything about: (a) the mortar and its components, e.g., types and compositions of sand and various binders (calcitic or dolomitic lime, natural hydraulic lime, natural cement, portland cement, masonry cement), calculated mix proportions, along with if there is any issue with the mortar *per se*; (b) if there is any evidence of loss of moisture, premature stiffening, shrinkage, cracking, de-bonding, etc. and if mortar has any role for such issues; (c) any effect of any potentially deleterious components within the mortar or effect of such agents from the environment to the mortar.

Sample Requirement: Sample for mortar testing should include:

- At least 6 to 7 fragments (approximately 1 to 1½ in. in long dimension),
- At least 50 grams of mortar collected from one single location on the masonry wall, e.g., from three perpendicular adjacent joints – e.g., one head joint and two adjacent bed joints above the head joint, all collected from the joints with a hammer and chisel,
- All pieces that constituent one such mortar sample from a location should be placed in a plastic Ziploc bag for mailing.
- Avoid sending powdered sample or of low amount.
- Mortar testing requires multiple tests – from optical microscopy to XRD to XRF to chemical analysis to SEM-EDS, etc. – so sample amount should be adequate for all these tests.

Caution: Cost will be multiplied if additional mortar ‘types’ are discovered during investigation in a single plastic bag of a single sample, i.e. if the bag contains mortars from multiple episodes of tuck pointing that became obvious when multiple testing are already initiated simultaneously. Therefore, caution is requested during sampling to examine if a single mortar of the interest is collected.