**Lesson Information**

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| Lesson: (3 of 3) Inspection and Repair Length: 90 minutes  Unit: (3 of 3) Specialized Technique  Course: Masonry |

**Content Assumptions**

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**Essential Questions**

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| 1. How are masonry structures built to standards? 2. How can damaged and deteriorated masonry be repaired? |

**Objectives Assessments**

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| After completing this lesson, students will be able to:   1. Demonstrate their knowledge of masonry standards and processes for preventing and correcting masonry damage. | 1. Masonry deterioration handbook — rubric |

**Activities/Instruction**

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| **Show and Tell** (30 minutes)  Using photos as listed in the Materials section, Instructor gives an overview of industry standards for masonry, including sample panels and prisms (how they are built and tested, and why this is important). Instructor also introduces the different types of deterioration in masonry (including signs and causes). Students ask questions as Instructor teaches, creating a classroom dialogue.  **Research and Development** (40 minutes)  Instructor divides class into six groups, designating to each group a different type of deterioration from the following:   * Efflorescence * Cracking * Faulty mortar joints * Basement water damage * Fireplace rebuilding * Replacing damaged bricks in walls   Using classroom, library, and/or Internet resources, each group researches the causes, prevention, and repair of their type of deterioration, including the corresponding ASTM standards. Each group then collectively creates a page for a “masonry deterioration handbook,” including all the relevant information from their research as well as photos (as applicable). Instructor collects the pages from each group and makes copies, so that each student has a copy of the entire handbook.  **Teach Each Other** (20 minutes)  Instructor brings class back together, and then divides students again into groups of six, so that the groups have one student representing each of the six groups from earlier. Students take turns giving overviews of what they learned in their research, using the handbook as a guide. |

**Materials**

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| For students:   * Internet resources, such as: * http://www.masonry-restoration.com/ (Guides for masonry repair) * http://www.astm.org/Standards/masonry-standards.html (List of masonry standards from the American Society for Testing and Materials)   For Instructor:   * Photos of sample panels, sample prisms, and deterioration in masonry * [HANDBOOK RUBRIC] |