Advanced Repair Technology, Inc.
The Science of Repair

CSI SPECIFICATIONS

SECTION 06250 Wood Repairs

PART 1. GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of the contract, including General and Supplementary Conditions and Division 1 Specifications, apply to this section.

1.2 WORK INCLUDED

Provide labor, materials and equipment necessary to complete the work of this Section including, but not limited to the following:

1. Removal of exterior finish systems at areas of wood restoration or repair
2. Preservation and sealing of seams and joints
3. Removal of decayed and contaminated wood
4. Installation of borate wood preservatives
5. Installation of wood repair compound materials

Extent of wood restoration work is as indicated on the drawings and as specified herein.

Related Sections: The following sections contain requirements that relate to this section.

1.3 SUBMITTALS

General Submit the following according to Conditions of Contract and Division I Specification Sections

Product data, installation instructions, and general recommendations from manufacturer for types of repair required including technical data sheets defining performance properties.

Restoration Schedule: Submit schedule for each window, door, cornice, or area of wood trim to be restored, outlining in detail proposed restoration work to be performed on each component. Obtain written approval from Architect prior to commencement of repair work.

Certification that materials comply with local VOC limitations.

Qualification data for firms and persons specified in the "Quality Assurance" article to demonstrate their capabilities and experience. Include a list of completed projects with project name, address, names of Architects and Owners, and information specified.

1. Five (5) business days after bid opening, submit a written qualification and experience of all lead personnel for work on the Project. List project manager or foreman's name and experience relative to this Project.
2. All work shall be performed by persons whose qualifications have been submitted and approved.

1.4 QUALITY ASSURANCE

A. Restorations Specialist: Work must be performed by a firm having not less than (5) years successful experience in comparable wood restoration work including work on at least three (3) buildings listed in the National Register of Historic Places under the direction of federal and state preservation agencies in the last five (5) years and employing personnel skilled in the restoration process and operations indicated.

1. Restoration Specialist firm must be acceptable to, or certified by, manufactured of primary restoration materials.
2. Work associated with work of this section, including (but limited to) paint removal and substrate preparation, is to be performed by Installer of the work.
3. Only skilled workers who are thoroughly trained and experienced in wood repairs and restoration work at areas as noted, have the skills required for the work of this section, and are completely familiar with the materials and methods specified shall be used for wood restoration work.
4. At least one skilled worker shall be present at all times during the execution of the work and shall personally direct the wood repairs and restoration work

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5. In acceptance or rejection of the wood restoration work, no allowance will be made for lack of skill on the part of the workers.

B. Field Mock-ups

1. Wood Restoration: following the requirements of the Section, perform a mock-up of each type of wood repair system specified to demonstrate materials and methods intended to be used in the finished work.

   a) perform mock-ups in areas indicated by the Architect.

   b) obtain the Architect's written approval of each mock-up before proceeding with the work of the Section

   c) protect the approved mock-ups until the completion of all the work

   d) Approved mock-up shall represent the minimum acceptable standard for each type and detail of the restoration work.

C. Manufacturer: Obtain primary repair materials from a single manufacturer. Provide secondary materials as recommended by the manufacturer of the primary materials.

1.5 DELIVERY STORAGE AND HANDLING

A. Deliver all materials in original unopened containers labeled with the manufacturer's name, brand name, item name and installation instructions.

B. Store materials in compliance with the manufacturer's requirements for temperature, maximum and minimum, and other conditions. Keep all materials under cover and dry. Protect against exposure to the weather.

C. Discard and remove from the job site any materials damaged in handling or storage and any materials that have been subjected to conditions contrary to the manufacturer's recommendations or whose maximum shelf life has expired.

1.6 PROJECT CONDITIONS

A. **Lead:** Existing paint may contain lead. Take all necessary precautions to ensure the safety of all persons engaged in removing lead-based paint and dispose of all residues generated from lead-based paint stripping in a legal manner in accordance with all local, state and federal codes.

B. **Coordination:** Coordinate wood repair with paint stripping so that the effected surfaces are exposed for a minimal time to avoid further damage to bare wood. Coordinate with painting so that all restored surfaces are primed as soon as possible after repair.

C. **Weather:** Proceed with the work of this section only when existing and foreseen weather conditions permit the work to be performed in accordance with the manufacturer's recommendations for temperature and humidity range, minimum and maximum.

D. **Substrate Conditions:** Do not proceed with product applications until substrates have been inspected and are determined to be in satisfactory conditions. Substrate moisture content shall not be in excess of 18°/0 during preparation and application

1. Remove all decayed wood to a clean, sound, unaffected substrate

2. Remove all built up paints, and other debris to a clean sound substrate.

3. Remove all wood sawdust to a clean sound substrate.

E. **Protection:**

1. Use all necessary means to protect interior of building from all damage caused by precipitation and other environmental conditions during the work of the Section

2. Protect all adjacent building surfaces from damage, staining or deterioration resulting from wood restoration work.

3. Protect the restoration work in progress to prevent further deterioration exposed wood surfaces. Protect the completed work until the time of final inspection and acceptance by the architect.

F. **Safety:** General Contractor shall use all means necessary to ensure that no person (whether involved in the work of the Section or not) is harmed or injured due to the work of this Section. Comply with all applicable laws codes and regulations.

G. **Security:** Coordinate work with the owners project manager to ensure that the building is secured at the end of each work period. Review security procedures with the Owner prior to proceeding with the work in this Section.

PART 2- PRODUCTS

2.1 GENERAL

Compatibility: provide products recommended by the manufacturers to be fully compatible with indicated substrate.

2.2 EPOXY REPAIR PRODUCTS

Epoxy repair materials shall consist of 2 separate systems, a 2 part low viscosity epoxy primer/coupling agent and a 2 part thixotropic paste meeting the criteria of Table A and B.

2.3 MANUFACTURER OF REPAIR PRODUCTS AND EQUIPMENT

Manufacturer: Subject to compliance with the requirements, provide product of the following or approved equal.

1. Advanced Repair Technology, Cherry Valley, NY
2. Window Care Systems, Pembroke, MA
3. or approved equal

2.4 REPAIR PRODUCTS

1. Low viscosity epoxy coupling/bonding agent
2. Epoxy repair compound
3. Injectable Borate gel
4. Borate rods

2.5 PAINT STRIPPERS

A. Chemical Stripping Agent. Methylene chloride based, Thixotropic stripper

B. **Products:** Subject to compliance with requirements, provide the following, or approved equal
   1. 509 Stripper
   2. ProSoCo
   3 or approved equal

C. Low Temperature heat gun or heat plate, no open flame.

PART 3-EXECUTION

3.1 INSPECTION

A. Inspect all wood surfaces in conjunction with the Architect to determine the extent of restoration and methods to be used.

1. The Architect's decision regarding the extent of required repair, and extent of profile replication work shall be final.
2. In wood surfaces where decay is present, determine the methods and treatment of repair.
3. Areas that do not attach existing profiles, determine the level of restoration and replication to be achieved.

B. Joints, Joinery and edges: Check wood members at joints, seams and edges for:

1. Any open seams or failed conditions.
2. Wood moisture content.
3. The presence of wood decay, by probing surfaces.

C. Sills and Trim

1. Inspect wood surfaces for natural defects (knots) cracks and checks.
2. Determine wood moisture content.
3. Probe for the presence for wood decay.

3.2 REMOVAL

A. Removal of Finishes:

1. Remove all peeling and loose paint by scraping. Taking care not to damage sound wood and profiles.
2. Strip all painted wood surface to bare wood, taking care not to damage sound wood and profiles by the application of stripping paste or by the use of a heat gun or plate

   a) Remove stripper and finishes as directed by manufacturer.

   b) Dispose of debris in accordance with approved methods.

3. Wash all surfaces with recommended neutralizing agents to remove any foreign particle, dust and chemical residue, allow surface to thoroughly dry.

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3.3 PREVENTATIVE SYSTEMS

A. Preservation and Sealing of seams and joints. Repair of wood" checking" due to weathering

1. Open or failed seams and checks shall be dilated to a width of 3/16" and depth of 1/2"

2. Remove all decayed, soft and weathered wood.

3. Check the moisture content and hardness of wood at and around the repair, maximum allowable moisture content 18°/0.

4. Sand bare wood to remove all loose fibers, paint, compounds. Remove all sawdust and dirt.

5. Pre-treat bare and sanded wood thoroughly with low viscosity epoxy coupling/bonding agent

6. Allow coupling agent to penetrate wood surface for a minimum of 10 minutes and maximum of 30 minutes, or as recommended by the manufacturer. Avoid applying in direct sunlight

7. Remove any excess bonding agent with absorbing paper

8. Apply epoxy repair compound over epoxy bonding agent while still tacky.

9. Epoxy compound shall have optimal contact with wood 10. Avoid inclusion of air pockets during application

11. Fill joints full, even and smooth in one application

12. Allow full cure time as specified by manufacturer before application of paint or varnish.

13. After curing, sand surface even and smooth. Transitions and irregularities between wood and epoxy shall not be visible after sanding

14. If required, smooth any remaining irregularities with an additional application of epoxy repair compound. Always sand between coats.

3.4 CURATIVE SYSTEMS

A. Preservation and Repair of Damaged/Decayed Wood:

1. Remove all paint and other coatings from area to be repaired.

2. Remove all decayed soft and discolored wood, to sound bright unaffected material

3. Check area of removal to determine complete elimination of decayed material.

   a) Remaining wood should be even color without red-brown and/or gray spots.

   b) No soft wood, existing brittle compound, or other previous repair materials should remain.

4. Check moisture content and hardness of the wood in and around the repair area

   a) Moisture content of wood to be 18°/0 or less

5. Sand bare wood to remove all loose fibers, paint, compounds. Remove all sawdust and dirt.

6. Drill holes in effected area to receive borate gel and rods. Follow manufacturer's dose recommendations for dimensional lumber.

7. Inject recommended dose of borate gel. Gel should not come in contact with exposed wood surface.

8. Install borate rod in same hole as gel. Gel should not come in contact with exposed wood surface.

9. Pre-treat bare and sanded wood thoroughly with low viscosity epoxy coupling/bonding agent.

   a) Allow coupling/bonding agent to penetrate wood surface for a minimum of 10 minutes and maximum of 30 minutes, or as recommended by the manufacturer. Avoid applying in direct sunlight

   b) Remove any excess bonding agent with absorbing paper.

10. Apply epoxy repair compound over the uncured epoxy coupling agent.

    a) Epoxy fill shall have optimal contact with wood

    b) Avoid inclusion of air pockets during application

    c) Fill joints fill, even and smooth in one application

    d) Allow full cure time as specified by manufacturer before preparing for finishes.

11. After curing, sand surface even and smooth. Transitions and irregularities between wood and epoxy shall not be visible after sanding.

12. If required, smooth any remaining irregularities with an additional application of epoxy repair compound. Always sand between coats.

3.5 ADJUSTMENTS

A. Repair or replace all defective work at no additional cost to the owner.

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