

**DIVISION 04
SECTION 04 01 21
MASONRY CLEANING**

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

- A. Provide all masonry cleaning Work at Bulkhead walls as directed by the Authority's Representative and as specified herein, including, but not limited to the following:
1. Pre-Clean: chemical or detergent wash all biological growth and stains as directed by the Authority's Representative and as necessary, prior to commencement of masonry work
 2. Final Wash-down: chemical or detergent wash each affected area in its entirety after all Work is complete
 3. Efflorescence: brush clean all efflorescence after the Final Wash-down
- B. The work of this section shall not take place until all paint (as designated by the Authority) has been removed.

1.02 REFERENCES

- A. References and industry standards listed in this Section are applicable to the Work. Unless more restrictive criteria or differing, requirements are explicitly stated in the Specifications, or mandated by governing codes or regulations, the recommendations, suggestions, and requirements described in the referenced standards shall be deemed mandatory and applicable to the Work.
1. American Society for Testing and Materials (ASTM)

1.03 SUBMITTALS

- A. Product Data:
- Cleaning materials manufacturers' catalog sheets, specifications, and application instructions.
- B. Quality Control Submittals:
1. Cleaning Subcontractor's Qualifications Data:
 - a. Firm name, address, and telephone number.
 - b. Period of time firm has performed masonry cleaning work, and names and addresses of the required number of similar projects completed by the firm.
 2. Cleaners Qualifications Data:
 - a. Name of each person who will be performing the Work of this Section.
 - b. Employer's name, address, and telephone number.
 - c. Names and addresses of the required number of similar projects that each person has worked on which meet the experience criteria.

3. Cleaning Procedure: Proposed cleaning procedure for cleaning masonry including each step in the cleaning process, type of scaffolding, and type, size and location of equipment.
- C. Submit a schedule of cleaning activities for each type of masonry to be cleaned. Include location and a description of the cleaning sequence, all products, equipment and scaffolding, etc. to be used.
- D. Submit a description of Protection Procedures for each condition and surface which requires protection.
- E. Mockup: Clean one area, 4' x 4', at each building, location to be selected by the Authority's Representative.

1.04 QUALITY ASSURANCE

A. Cleaning Contractor's Qualifications:

The firm performing the Work of this Section shall have been regularly engaged in masonry cleaning work for a minimum of five years and shall have completed 5 similar projects using the cleaning method specified.

B. Cleaners' Qualifications:

The persons cleaning the masonry and their supervisors shall be personally experienced in the required method of masonry cleaning and shall have worked on 5 similar projects within the last 3 years.

C. Field Examples:

1. Before the building cleaning operations are started, clean a sample panel of approximately 100 square feet of each type of masonry cleaning, at a location on the building directed by the Authority's Representative. If the sample panel is not satisfactory, as determined by the Authority's Representative, modify the cleaning procedure and clean another sample panel. Continue cleaning sample panels until satisfactory results are obtained and approved by the Authority's Representative. When a final approval is obtained, go back and re-clean all previously rejected panels.

- a. For cleaning procedures other than specified, but which generally follow the method(s) specified, submit proposed procedure for approval and clean additional sample panels adjacent to the above sample panels for comparison of results.

2. Approved panels and procedures will become the cleaning standard for the Work of this Section.

3. Cover the approved sample panels with six mil polyethylene plastic mounted on wood frames of adequate size and strength to protect the panels until the completion of Work. The cover shall be easily removable for comparison with completed Work.

D. If unusual types of soiling agents are encountered, consult with the Authority's Representative before proceeding with the Work.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver cleaning materials in manufacturer's packaging, with instructions for use.

B. Store, protect, and handle cleaning materials in accordance with manufacturer's instructions.

1.06 PROJECT CONDITIONS

A. Environmental Requirements:

1. Make necessary provisions for the diversion and disposal of cleaning water and solutions, including the furnishing of pumps if required. Take precautions as required to prevent damage and contamination resulting from run off of cleaning solution.
2. Do not wet or wash down masonry surfaces when the temperature is below 40°F or may drop below 40°F within 24 hours.

B. Existing Conditions:

1. Take necessary precautions and protective measures to prevent injury to people and damage to property in areas adjacent to the Site, including damage due to wind drift of cleaning materials. Apartments at this development are continuously occupied.
2. Pumping equipment will not be allowed in or on the building.
3. Ensure that painted surfaces (such as exterior doors, windows, window sills, etc.) are not affected by the washing, except for those surfaces designated by the Authority for cleaning.

PART 2 PRODUCTS

2.01 MATERIALS

A. Cleaning Materials:

Liquid detergents and water, and solutions of chemical cleaning agents and additives, that will remove the dirt, grime, carbon, surface residues, biologicals, stains, graffiti, and other foreign material from the masonry surfaces, but will not damage the masonry.

- #### **B.**
- Do not use abrasive blasting aggregate cleaning method, or low pressure micro-abrasive powder process or any other cleaning method until written permission is given by the Authority.

PART 3 - EXECUTION

3.01 PREPARATION

A. Protection:

1. Protect windows, doors, fixtures, air conditioners, roofing, flashings, painted surfaces and other adjacent surfaces not required to be cleaned, from damage.
2. Protect landscaping, paving, and other improvements near the building from damage.
3. Construct temporary sidewalk sheds at building entrances and other areas to divert cleaning materials and debris away from entrance ways and to provide sheltered access to the building.

B. Surface Preparation:

1. Remove vines, bird nests, stalactite deposits, and heavy accumulations of dirt, bird droppings and other foreign materials from surfaces required to be cleaned. Remove material from the site.

2. Perform this preliminary cleaning by brushing, sweeping, wiping, scraping, vacuuming, and other approved methods as required by existing conditions. Use tools that will not damage the masonry.

3.02 WET CLEANING MASONRY (PRE-CLEAN and FINAL WASH-DOWN)

- A. Chemical Solutions or Liquid Detergent and Water:
 1. Pre-wet the masonry surfaces with water.
 2. Prepare cleaning solutions and operate pressure spray equipment in accordance with cleaning materials manufacturer's recommendations, unless otherwise indicated.
 - a. Clean areas not accessible to spray equipment with bristle brushes.
- B. Water Cleaning Methods:
 1. Low pressure (water soak) for limestone and marble.
 2. Medium pressure: Use 200 psi to 600 psi.
- C. Clean masonry equal in appearance to the approved sample panels.
- D. Clean masonry free of dirt, grime, soot, carbon, efflorescence, moss, stains, graffiti, tendrils, and other foreign materials. Leave masonry uniformly clean and undamaged.
- E. Clean all features and appurtenances of the masonry such as sills, arches, lintels, returns, reveals, projecting courses, coping, entablature work, back of parapets and balustrades, balconies, friezes, fascias, cornices, chimneys and other features, except for those building features which are painted and are not included in the scope of work.
- F. Thoroughly rinse off the masonry surfaces with water.

3.03 BRUSH CLEANING MASONRY (EFFLORESCENCE)

- A. Use a soft-bristle broom or soft scrub-brush to remove all efflorescent salts from face of masonry. Provide light wash-down after brush cleaning to wash away loosened salts.

3.04 CLEAN-UP

- A. Clean and restore sidewalks, paving, and lawns soiled or damaged as a result of the cleaning operations. Remove all protective materials.

END OF SECTION