\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

THIS SPECIFICATION IS PROVIDED BY PROSOCO, INC. AS A SERVICE AND IS INTENDED TO BE USED AS A PROJECT SPECIFIC SPECIFICATION SECTIONS. \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

**TIPS:**

To view non-printing **Editor's Notes** that provide guidance for editing, click on the Show/Hide button or Word offers a convenient keyboard shortcut; press the Ctrl+\* keystroke to toggle on/off. (Press the Ctrl key, Shift key, and the number 8 simultaneously).

##### Retain the applicable section title below to suit the project.

# SECTION [03 01 40.51-Cleaning of Precast concrete] [04 01 [20][40].52–[UNIT MASONRY] [stone] CLEANING][08 01 40.52 CLEANING OF CURTAIN WALLS]

### SUMMARY

##### Edit paragraphs below to suit the project.

#### This section includes cleaning of existing [unit masonry][concrete][stone][curtain wall] as follows:

##### Cleaning exposed, existing [unit masonry][concrete][stone][curtain wall] surfaces.

##### Protection of existing structure during cleaning operations.

#### Related Sections:

##### Retain subparagraphs below to suit the project.

##### Section 01 25 00 – Substitution Procedures

##### Section 01 33 00- Submittal Procedures

##### Section 07 19 00 - Water Repellents

##### Section 07 90 00 - Joint Sealants

##### Section 09 96 23- Graffiti Resistant Coating

### DEFINITIONS

##### Edit the paragraph below to suit the project.

#### Cleaning: This Specification describes a cleaning system designed to effectively clean and restore the existing exterior [unit masonry][concrete][stone][curtain wall] surfaces. The system combines the application of a specific restorative cleaner with efficient rinsing pressure.

#### Rinsing-Pressure Spray: 400 to 1000 psi; 6 to 8 gpm.

#### Low-Pressure Spray: 100 to 400 psi; 4 to 6 gpm.

### SUBMITTALS

#### General: Submit the following according to the Conditions of the Contract and Division 01 General Requirements specification sections.

#### Product data for each product indicated including recommendations for their application and use. Include test reports and certifications substantiating that products comply with requirements.

#### Material certificates for the following signed by manufacturer and Contractor certifying that each material complies with requirements.

##### Each type of chemical cleaning material.

#### Qualification data for firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include list of completed projects with project names, addresses, telephone numbers, names of Architects and Owners, and other information specified.

#### Restoration program: For each phase of the restoration process, including protection of surrounding materials on building and site during operations. Describe in detail the materials, methods, and equipment to be used for each phase of the restoration work.

##### If alternative methods and materials to those indicated are proposed for any phase of restoration work, provide a written description, including evidence of successful use on other comparable projects, and a testing program to demonstrate their effectiveness for this Project.

#### Cleaning Program: Describe cleaning process in detail; protection of surrounding materials on building and site; and control of runoff during operations. Describe in detail the materials, methods and equipment to be used.

##### If alternative methods and materials to those indicated are proposed for any phase of cleaning work, provide a written description, including evidence of successful use on other comparable projects, and a testing program to demonstrate their effectiveness for this Project.

#### Cold-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with cold-weather requirements.

### QUALITY ASSURANCE

#### Restoration Specialist: Engage an experienced restoration and cleaning firm that has specialized in the types of work required for this Project for a minimum of five (5) years. At Contractor's option, the work may be divided between two specialist firms: one for cleaning work and one for repair work.

##### Field Supervision: Require restoration specialist firm to maintain an experienced full-time supervisor on the job site during times that stone masonry restoration and cleaning are in progress.

##### Restoration Worker Qualifications: Persons who are experienced in restoration work of types they will be performing.

##### Edit the paragraph below to suit the project.

#### Chemical Manufacturer Qualifications: A company regularly engaged in producing [unit masonry][concrete][stone][curtain wall] cleaning compounds, which have been used on similar projects with successful results, and that retains factory-trained representatives who are available for consultation and job site inspection and assistance at no additional cost.

#### Source of Materials: Obtain materials for restoration from a single source for each type material required (stone, cement, sand, etc.) to ensure a match of quality, color, pattern, and texture.

#### Field-Constructed Mockups:

##### Schedule a Pre-Mockup conference to review brick and mortar removal and replacement procedures with the A/E . The A/E will select locations for any mockups.

##### Cleaning Mockup: Prior to starting general cleaning, prepare mockups on existing walls under same weather conditions to be expected during remainder of the Work. Prepare mockups using same materials, equipment, and methods proposed for the Work. Obtain A/E's acceptance of visual qualities before proceeding with work.

###### Notify A/E one week in advance of dates and times when samples will be prepared. Manufacturer's representative of cleaning materials to be present during testing.

##### Edit the subparagraph below to suit the project.

###### Cleaning: Demonstrate the materials and methods to be used for cleaning each type of [unit masonry][concrete][stone][curtain wall] surface and condition on sample location approximately 25 sq. ft. in area.

Test materials and methods on samples of adjacent non-masonry materials for possible reaction with cleaning materials, except where materials and methods are known to have a deleterious effect on such materials.

Allow a waiting period of the duration indicated, but not less than 3 calendar days, after completion of sample cleaning to permit a study of sample panels for negative reactions.

###### Retain acceptable panels in an undisturbed condition, suitably marked, during construction as a standard for judging the completed Work. Areas may remain as part of the completed work.

###### Approval of sample panels is for degree of cleaning; aesthetic qualities of workmanship; and other material and construction qualities specifically approved by the Architect in writing.

##### Approval of sample panels does not constitute approval of deviations from the Contract Documents contained in sample panels, unless such deviations are specifically approved by the A/E in writing.

### DELIVERY, STORAGE, AND HANDLING

#### Deliver masonry materials to Project in undamaged condition.

#### Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

### PROJECT CONDITIONS

##### Edit the paragraph below to suit the project.

#### Clean [unit masonry][concrete][stone][curtain wall] surfaces only when air temperature is 40 deg F and above and will remain so until [unit masonry][concrete][stone][curtain wall] has thawed and dried out, but for not less than 7 days after completion of cleaning.

##### Edit the subparagraphs below to suit the project.

##### Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and above and will remain so until [unit masonry][concrete][stone] has thawed and dried out, but not less than 7 days after completion of cleaning.

##### Hot-Weather Requirements: Protect [unit masonry][concrete][stone][curtain wall] work when temperature and humidity conditions produce excessive evaporation of water from [unit masonry][concrete][stone]. Provide artificial shade and wind breaks and use cooled materials as required.

###### Refer to chemical cleaner manufacturer’s recommendations for application techniques when application hot-weather conditions exist.

### SEQUENCING AND SCHEDULING

#### Order replacement materials at earliest possible date, to avoid delaying completion of the Work.

#### Perform restoration work in the following sequence:

##### Remove plant growth, if any.

##### Inspect for open mortar joints and repair before cleaning to prevent intrusion of water and other cleaning materials into the wall.

##### Edit the subparagraph below to suit the project.

##### Clean [unit masonry][concrete][stone][curtain wall] surfaces.

## PRODUCTS

### MANUFACTURERS

##### Edit the paragraph below to suit the project.

#### Substitutions: [No Substitutions] [In accordance with Section 01 25 00 – Substitution Procedures].

### CLEANING MATERIALS and equipment

#### Water for Cleaning: Clean, potable, free of oils, acids, alkalis, salts, and organic matter.

#### Retain paragraph below if a mild cleaner and degreaser is required. Use to clean light to heavy soiled masonry, concrete, stone, tile, and curtain wall surfaces.

##### Edit the paragraph below to suit the project.

#### Low-odor, Non-fuming, Concentrated Restoration Cleaner: Manufacturer's standard concentrated acidic cleaner for cleaning atmospheric and carbon staining on [unit masonry][concrete][stone][curtain wall] surfaces.

##### Approved Products:

###### “[Enviro Klean SafRestorer](https://prosoco.com/product/safrestorer/)”: [PROSOCO, Inc.](file:///C%3A%5CUsers%5Cjoelle%5CAppData%5CLocal%5CMicrosoft%5CWindows%5CTemporary%20Internet%20Files%5CContent.Outlook%5CCD0KQH20%5C04_01_20.91_04039.doc) (800-255-4255) (Basis of Design).

#### Nonabrasive Brushes: Fiber bristles only.

##### Edit the paragraph below to suit the project.

#### Spray Equipment: Provide equipment for controlled spray application of water and chemical cleaners, if any, at rates indicated for pressure, measured at spray tip, and for volume. Adjust pressure and volume, as required, to ensure that damage to [unit masonry][concrete][stone][curtain wall] does not result from cleaning methods.

##### For chemical cleaner spray application, provide a low-pressure tank or chemical pump suitable for the chemical cleaner indicated, equipped with a cone-shaped spray tip.

### CHEMICAL CLEANING SOLUTIONS

#### General: Unless otherwise indicated, dilute chemical cleaning materials with water to produce solutions of concentration indicated but not greater than that recommended by chemical cleaner manufacturer.

## EXECUTION

### EXAMINATION

#### Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.

### PREPARATION

#### General: Comply with the chemical cleaner manufacturer's recommendations for protecting adjacent building surfaces against damage from exposure to their products.

##### Proceed with installation only after unsatisfactory conditions have been corrected.

##### Edit the paragraph below to suit the project.

#### Protect persons, motor vehicles, surrounding surfaces of building whose [unit masonry][concrete][stone][curtain wall] surfaces are being restored, building site, plants, and surrounding buildings from injury resulting from work.

##### Comply with chemical cleaner manufacturer's and Owner’s written instructions for protecting building and other surfaces against damage from exposure to its products. Prevent chemical cleaning solutions from coming into contact with pedestrians, motor vehicles, landscaping, buildings, and other surfaces that could be injured by such contact.

##### Cover adjacent surfaces with materials that are proven to resist chemical cleaners used unless chemical cleaners being used will not damage adjacent surfaces. Use materials that contain only waterproof, UV-resistant adhesives. Apply masking agents to comply with manufacturer's written instructions. Do not apply liquid masking agent to painted or porous surfaces. When no longer needed, promptly remove masking to prevent adhesive staining.

##### Keep wall wet below area being cleaned to prevent streaking from runoff.

##### Edit the subparagraph below to suit the project.

##### Do not clean [unit masonry][concrete][stone][curtain wall] during winds of sufficient force to spread cleaning solutions to unprotected surfaces.

##### Dispose of runoff from cleaning operations by legal means and in a manner that prevents soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.

##### Erect temporary protection covers over pedestrian walkways and at points of entrance and exit for persons and vehicles that must remain in operation during course of work.

#### Protect adjacent surfaces from contact with chemical cleaners by covering them with a liquid strippable masking agent or polyethylene film and waterproof masking tape. Apply masking agent to comply with manufacturer's recommendations. Do not apply liquid masking agent to painted or porous surfaces.

##### Contractor must provide detailed information on materials and method plan to be used on these surfaces, prior to beginning of work, and as approved by A/E.

#### Surfaces that are not to be cleaned shall be protected from contact with the cleaning solution with sheets of polyethylene or other proven protective materials, firmly fixed and sealed to the surface.

##### Contractor must provide detailed information on materials and method plan to be used on these surfaces, prior to beginning of work, and as approved by A/E.

#### All surfaces not to be cleaned shall be tested for possible detrimental effect of the cleaning solutions and protected as determined necessary by test results.

#### All open joints shall be temporarily caulked or otherwise protected to prevent intrusion of washing waters into the wall structure or building interior. Build up waterproof dams to divert flowing water to exterior.

### Acidic Chemical Cleaner

#### Low-odor, Non-fuming, Concentrated Restoration Cleaner (Enviro Klean SafRestorer):

##### Edit the subparagraph below to suit the project.

##### At locations indicated, clean [unit masonry][concrete][stone][curtain wall] surfaces to comply with manufacturer’s recommendations, as follows:

###### Prewet substrate with clean water applied working from bottom to the top.

##### Edit the subparagraph below to suit the project.

###### Apply concentrate or diluted chemical cleaning system to prewet [unit masonry][concrete][stone][curtain wall] surfaces that comply with chemical cleaner manufacturer's written instructions for dilution and recommended application instructions; use low pressure spray, acid resistant brush, or heavy nap roller methods. Do not spray apply at pressures exceeding 50 psi.

###### Let the cleaning solution stay on the wall 5 to 15 minutes. If the cleaner starts to dry, reapply.

###### Reapply the cleaning solution to heavily soiled areas. Scrub gently.

###### Working from the bottom to the top, thoroughly rinse treated surfaces with clean water. Make sure to flush all spent cleaner and dissolved soiling from the surface, surface pores and adjacent surfaces.

### PROTECTION

#### Provide final protection and maintain conditions in a manner acceptable to Installer, which ensures work without damage and deterioration at the time of substantial completion.

#### Correct damage by cleaning, repairing or replacing, and repainting, as approved by A/E.

##### Retain the applicable section title below to suit the project.

END OF SECTIOn [03 01 40.51] [04 01 [20][40].52] [08 01 40.52]