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U.S. General Services Administration

Cleaning Interior Limestone Walls

Procedure code:

446005S

Source:

Hsr - Departmental Auditorium Bldg/Wash, Dc - Grier, Brown..

Division:

Masonry

Section:

Limestone

Last Modified:

02/24/2012

THE CLEANING OR REMOVAL OF STAINS FROM STONE MAY INVOLVE THE USE OF LIQUIDS, DETERGENTS OR SOLVENTS WHICH MAY RUN OFF ON ADJACENT MATERIAL, DISCOLOR THE STONE OR DRIVE THE STAINS DEEPER INTO POROUS STONES. USE THE PRODUCTS AND TECHNIQUES DESCRIBED HERE ONLY FOR THE COMBINATIONS OF DIRT/STAIN AND STONE SPECIFIED.

PART 1---GENERAL

1.01 SUMMARY

- A. This procedure includes guidance on surface dirt from interior limestone walls. GENERALLY, THIS WORK SHOULD BE PERFORMED BY AN EXPERIENCED CONTRACTOR.
- B. See 01100-07-S for general project guidelines to be reviewed along with this procedure. These guidelines cover the following sections:
 - 1. Safety Precautions
 - 2. Historic Structures Precautions
 - 3. Submittals
 - 4. Quality Assurance
 - 5. Delivery, Storage and Handling
 - 6. Project/Site Conditions
 - 7. Sequencing and Scheduling
 - 8. General Protection (Surface and Surrounding) These guidelines should be reviewed prior to performing this procedure and should be followed, when applicable, along with recommendations from the Regional Historic Preservation Officer (RHPO).
- C. For precautions relating to pressure washing, see 04510-04-S.

PART 2---PRODUCTS

2.01 MANUFACTURERS

A. NOVA Chemical Company 1520 Erie North Kansas City, MO 64116 816/221-2712

B. ProSoCo, Inc. 755 Minnesota Avenue P.O. Box 1578 Kansas City, KS 66117 800/255-4255 or 913/281-2700

2.02 MATERIALS

A. Limestone Cleaner: Mildly acidic cleaner diluted with two parts water and containing 5 parts per million (ppm) of hydrochloric acid, 1 mg/m³ oxalic acid, 25 ppm glycol ether, and 10 mg/m³ ethylene glycol such as "Interior Stone Cleaner" (ProSoCo, Inc.), or approved equal.

B. Varnish and Paint Remover: Solvent based methylene chloride stripper specifically formulated for removing paint and adhesives from masonry such as "Graffiti Remover" (NOVA Chemical Company), "Sure Klean Graffiti Remover" (ProSoCo, Inc.), or approved equal.

C. Clean, potable water (heated to a temperature effective and tested for cleaning procedure and approved by RHPO).

D. Clean, soft cloths

2.03 EQUIPMENT

A. Pressure water rinsing equipment (measuring between 100 and 400 psi for low-pressure; between 400 and 800 psi for medium pressure).

B. Fan-type spray tips (15 degree fan spray)

C. Polyethylene bucket

D. Soft, fiber bristle brushes

E. Sponges

PART 3---EXECUTION

3.01 EXAMINATION

A. Test clean a small, inconspicuous area to check for adverse effects and damage to the material.

3.02 PREPARATION

A. Protection:

1. Protect surrounding materials on the site and adjacent building surfaces from coming in contact with the cleaning materials and run-off.
2. Provide workers with the necessary protection against cleaning chemicals, overspray and run-off.
3. Prevent cleaning chemicals from coming in contact with any painted, polished or metallic surfaces.
4. Divert and contain flow of run-off in compliance with municipal codes so as not to damage surrounding materials. Comply with municipal codes regarding containment and disposal of cleaning materials.

B. Surface Preparation:

1. Before proceeding with cleaning operations, remove all miscellaneous hardware from the surface to prevent any discoloration.
2. Clean the limestone working from bottom to top.

3.03 ERECTION, INSTALLATION, APPLICATION

NOTE: WHEN CLEANING, AVOID OVERCLEANING. AIM FOR ACHIEVING 85% CLEAN. MOST DAMAGE OCCURS WHEN ATTEMPTING TO CLEAN THE LAST 15%.

NOTE: TEST CLEAN A SMALL AREA TO DETERMINE EFFECTIVENESS OF CLEANING METHODS, MATERIALS, EQUIPMENT AND WORKING PRESSURES. SELECTED BEFORE PROCEEDING WITH CLEANING OPERATIONS ON LARGER AREAS. ADJUST METHODS,

MATERIALS, EQUIPMENT, PRESSURES, ETC. AS NECESSARY. DO NOT PROCEED UNTIL AN ACCEPTABLE CLEANING OPERATION HAS BEEN APPROVED AND FULLY DOCUMENTED.

- A. Dilute limestone cleaner with water (in accordance with results of test cleaning) and mix solution in a polyethylene bucket.
- B. Pre-wet limestone surface using a low pressure warm water wash (between 100-400 psi).
- C. Apply limestone cleaner to limestone using a soft, fiber bristle brush. Allow to stand for 3-5 minutes or as determined by testing.
- D. Apply more cleaner while lightly brushing stained areas with a soft, fiber bristle brush. Continue to scrub the surface for length of time as determined by testing.
- E. Thoroughly rinse the surface using a low pressure warm water wash.
 - 1. Rinse all corners, moldings, and interstices to remove all traces of chemical without damaging surrounding materials.
 - 2. Heat rinse water to a temperature determined most effective during testing.
- F. Use sponges and clean, soft cloths to remove excess water from the surface of the limestone; allow the surface to dry.
- G. To remove paint or adhesives that may remain on the surface, apply a varnish or paint remover following manufacturers instructions.

Last Reviewed: 2018-10-25