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U.S. General Services Administration

Removing Gypsum Plaster Stains From Concrete

Procedure code:

371022S

Source:

Hstrc Concrete: Investigation & Rpr/Pre-Conf Training - 1989

Division:

Concrete

Section:

Concrete Cleaning

Last Modified:

08/02/2016

PREFACE: The cleaning or removal of stains from concrete may involve the use of liquids detergents or solvents which may run off on adjacent material discolor the concrete or drive the stains deeper into the porous concrete. Use the products and techniques described here only for the combinations of dirt/stain and concrete specified.

PART 1---GENERAL

1.01 SUMMARY

A. This procedure includes guidance on removing gypsum plaster stains from concrete using hydrochloric acid and detergent.

B. Safety Precautions:

1. DO NOT save unused portions of stain-removal materials.
2. DO NOT store any chemicals in unmarked containers.
3. EXCELLENT VENTILATION MUST BE PROVIDED WHEREVER ANY SOLVENT IS USED. USE RESPIRATORS WITH SOLVENT FILTERS.
4. No use of organic solvents indoors should be allowed without substantial air movement. Use only spark-proof fans near operations involving flammable liquids.
5. Provide adequate clothing and protective gear where the chemicals are indicated to be dangerous.
6. Have available antidote and accident treatment chemicals where noted.

C. See "General Project Guidelines" 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).

PART 2---PRODUCTS

2.01 MATERIALS

NOTE: Chemical products are sometimes sold under a common name. This usually means that the substance is not as pure as the same chemical sold under its chemical name. The grade of purity of common name substances, however, is usually adequate for stain removal work, and these products should be purchased when available, as they tend to be less expensive. Common names are indicated below by an asterisk (*).

A. Hydrochloric Acid (30-35%):

1. A strong corrosive irritating acid.
2. Other chemical or common names include Chlorhydric acid; Hydrogen chloride; Muriatic acid* (generally available in 18 degree and 20 degree Baume solutions); Marine acid*; Spirit of salt*; Spirit of sea salt*.
3. Potential Hazards: TOXIC, CAUSTIC TO FLESH; CORROSIVE TO CONCRETE, STEEL, WOOD OR GLASS, FLAMMABLE.
4. Available from chemical supply house, drugstore or pharmaceutical supply distributor, or hardware store.

B. Detergent

2.02 EQUIPMENT

A. Wood or plastic scraper

B. Stiff bristle brush (non-metallic)

PART 3---EXECUTION

3.01 PREPARATION

A. Protection:

1. Provide adequate wash solutions (i.e. water, soap and towels) before starting the job.
2. Whenever acid is used, the surface should be thoroughly rinsed with water as soon as its action has been adequate. Otherwise it will continue
3. etching the concrete even though the stain is gone.

3.02 ERECTION, INSTALLATION, APPLICATION

NOTE: DO NOT TRY MORE THAN ONE TREATMENT ON A GIVEN AREA UNLESS THE CHEMICALS USED FROM PRIOR TREATMENT HAVE BEEN WASHED AWAY.

- A. Scrape off all blobs and masses; then scrub with cold or luke-warm (not hot) water and detergent.
- B. If this is not effective, apply a solution of 1 part hydrochloric acid in 19 parts water and scrub with a stiff (non-metallic) bristle brush.
- C. Thoroughly rinse the area with clean, clear water and allow to dry.
- D. Repeat the process as necessary to achieve the desired level of cleanliness.

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