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Removing Surface Dirt From Concrete

Procedure code:

371015S

Source:

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

Division:

Concrete

Section:

Concrete Cleaning

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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 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 dirt from concrete using a detergent, chemical solvent or steam.
- B. Dirt encompasses deposits of almost any material in a location where it's not wanted, but it usually includes fine, dark-colored solid particles, often surrounded by some kind of oily film. It is particularly troublesome on architectural and decorative concrete, including exposed aggregate surfaces.
- C. 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. Whenever acid is used, the surface should be thoroughly rinsed with water as soon as its action has been adequate. Otherwise it will continue etching the concrete even though the stain is gone.
 - 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.
- D. 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:

1. A strong corrosive irritating acid.
2. Other chemical or common names include Chlorhydric acid; Hydrogen chloride; Muriatic acid*; Marine acid*; Spirit of salt*; Spirit of sea salt*.
3. Available from chemical supply house, drugstore, hardware store.

B. Detergent:

1. CAUTION: SOME DETERGENTS CONTAIN AMMONIA AND MAY REACT VIGOROUSLY WITH HYDROCHLORIC ACID.

C. Clean, potable water

D. Clean white cloths or towels

2.02 EQUIPMENT

A. Steam cleaning equipment

B. Stiff bristle brushes (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 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. Brush affected area with water and strong detergent.

B. Rinse the area thoroughly with clean, clear water and blot the surface dry with clean towels.

C. Repeat the treatment as necessary until the desired level of cleanliness is achieved.

-OR-

D. Mix 1 part hydrochloric acid in 19 parts water.

- E. Scrub the concrete surface with this solution. NOTE: THIS IS A STRONG METHOD AND MAY ROUGHEN THE CONCRETE.
- F. Rinse the area thoroughly with clean, clear water, blot the surface dry with clean towels.
- G. Repeat the treatment as necessary until the desired level of cleanliness is achieved.
 - OR-
- H. Steam cleaning is generally effective and may be used in combination with proprietary materials, such as detergents for dirt removal.
- I. If there is oil present in the dirt, follow the procedure described for removing lubricating oil, see 03710-31-R "Poulticing Lubricating and Petroleum Oil Stains From Concrete".

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