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GSA U.S. General Services Administration Removing Wood Stains from Concrete

Procedure code: 371042S Source: Historic Concrete: Investigation & Repair - Pre-Conference Training Course, APT Annual Meeting, 1989. Division: Concrete Section: Concrete Cleaning Last Modified: 03/30/2017

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 specification guidance on removing wood stains from concrete using a hypochlorite solution.
- B. Wood stains on concrete may appear as yellow or brown in color. Stains from rotten wood may appear as chocolate brown in color.
- C. Safety Precautions:
 - 1. DO NOT save unused portions of stain-removal materials.
 - 2. DO NOT store any chemicals in unmarked containers.
 - 3. NOTE: 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.

- D. Read "General Project Guidelines" along with this specification. 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). The 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)

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. Glycerol (C3H8O3):

- 1. A sweet syrupy hygroscopic trihydroxy alcohol usually obtained by the saponification of fats and used especially as a solvent and plasticizer.
- 2. Other chemical or common names include Glycerine; Glyceryl hydroxide; Glycyl alcohol; 1,2,3-propanetriol; Propenyl alcohol.
- 3. Potential Hazards: FLAMMABLE.
- 4. Available from chemical supply house, drug store or hardware store.
- B. Sodium Hypochlorite (NaOCl):
 - 1. An unstable salt produced usually in aqueous solution and used as a bleaching and disinfecting agent.
 - 2. Other chemical or common names include Bleaching solution*; Household bleach*; Laundry bleach*; Solution of chlorinated soda*.
 - 3. Potential Hazards: CAUSTIC TO FLESH.
 - 4. Available from chemical supply house, grocery store or supermarket, hardware store or janitorial supply distributor.

-OR-

Job-prepared hypochlorite, which consists of:

1. Calcium Hypochlorite (CaCl2O2):

- a. A white powder used especially as a bleaching agent and disinfectant.
- b. Other chemical or common names include Chlorinated calcium oxide; Bleaching powder*; Calcium oxymuriate*; Chloride of lime*; Chlorinated lime*; Hypochlorite of lime*; Oxymuriate of lime*.
- c. Potential Hazards: CAUSTIC TO FLESH; FLAMMABLE (when in contact with organic solvents).
- d. Available from chemical supply house, dry cleaning supply distributor, drugstore or pharmaceutical supply distributor, janitorial supply distributor, swimming pool supply distributor, or water and sanitation supply distributor.
- 2. Trisodium Phosphate:
 - a. Other chemical or common names include Tribasic sodium phosphate; Trisodium orthophosphate; Sodium orthophosphate; TSP*; Phosphate of soda*.
 - b. Potential Hazards: CAUSTIC TO FLESH.
 - c. Available from chemical supply house, grocery store or supermarket or hardware store.
- 3. See "Making a Solution for Removing Beverage, Soot, Tar and Other Stains from Concrete" for guidance on preparation of job-prepared hypochlorite.
- C. Clean, potable water.
- D. Accessible source of water, soap and towels for washing and rinsing in case of emergencies associated with the use of chemicals.

2.02 EQUIPMENT

- A. Stiff, natural bristle brushes.
- B. Clean, dry cloths.

PART 3---EXECUTION

3.01 PREPARATION

Protection:

- A. Provide adequate wash solutions (i.e. water, soap and towels) before starting the job.
- B. 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. First, scrub the surface thoroughly with a solution of 1 part glycerol in 4 parts water.
- B. Next, scrub the stained area with a hypochlorite solution. See "Making a Solution for Removing Beverage, Soot, Tar and Other Stains from Concrete" for guidance on making job-prepared hypochlorite.
- C. Rinse thoroughly with clean, clear water and allow to dry.
- D. Repeat the process as required to achieve the desired level of cleanliness.

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