

ITEM 560.2007 11 M - CLEAN CEILING AND WALL TILES INCLUDING DISPOSAL OF EFFLUENT WASH WATER

DESCRIPTION This work shall consist of furnishing all labor, equipment and material to water clean all exposed surfaces of the wall and ceiling tiles.

MATERIALS

Cleaning Agent: Dominion Restoration Products, DR-90™ Tunnel Tile Cleaner or approved equal shall be used. The detergent shall comply with all EPA, NYCDEP, NYSDEC and other environmental requirements. The contractor shall submit catalog cuts for equipment to be used in the work, along with Material Safety Data Sheet (MSDS) for all cleaning materials proposed.

Water: In accordance with Section 712-01 of Standard Specifications (Metric Edition).

Scheduling: Cleaning shall be performed after tile replacement, regrouting or repointing.

CONSTRUCTION DETAILS

A minimum of two applications of DR-90 will be required for the tunnel tile cleaning.

The surface must be dry prior to applying DR-90™.

Apply DR-90™ full strength onto a dry surface using a sprayer working from the bottom to the top of each section.

Allow a dwell time of 4-5 minutes. Do not exceed 5 minutes.

Use a 20 MPa (3000 psi) pressure washer to rinse the surface. Rinse from the top, down of each section. Use overlapping passes and keep the tip 150mm-200mm (6-8 inches) away from the surface.

Allow the surface to dry prior to reapplying. Allow the surface to dry thoroughly prior to evaluating the results achieved.

DR-90™ IS NOT A CONCENTRATED PRODUCT. DO NOT DILUTE. DR-90™ WILL NOT PERFORM IF DILUTED.

Two test panels, a minimum of 4.5 m x 3m (15 ft x 10 ft) each, shall be cleansed using DR-90 at locations indicated by the Engineer. The panels shall be marked and photographed before and after the test for future comparison. The test shall be conducted in the presence of the Engineer and the manufacturer's representative. Samples of wash water shall be collected during the test cleaning, and subjected to laboratory testing, as described in Disposal of Effluent from Washing Water section.

Tile cleaning shall be scheduled for performance when the ambient temperature within the tunnel does not fall below 50 degrees Fahrenheit during the cleaning operation.

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The Contractor shall protect and maintain existing tunnel equipment during the wall cleaning operation, including electrical power service and tunnel lighting fixtures, roadway drains and tunnel drainage system.

The Contractor shall repair or replace any elements damaged during the cleaning at no additional cost to NYSDOT.

DISPOSAL OF EFFLUENT FROM WASH WATER

Note: All catch basins, manholes etc must be sealed during washing to prevent discharges of wash water into the sewer system or other areas.

This Section specifies the requirements for collecting, handling, and disposing of wastes generated by the tunnel wall and ceiling cleaning activities.

It is anticipated that liquid and solid waste materials will be generated from the wall washing process. These wastes will consist of wash water containing suspended and dissolved solids and oil and grease and cleaning agents. Dissolved solids may include the regulated Resource Conservation and Recovery Act (RCRA) metals: lead, cadmium, chromium, and barium. In addition to these metals, PCBs and Dioxin may also be presented. Requirements presented in this Section apply to the collection, handling and disposal of cleaning effluent (wash water) containing dissolved and suspended solids in accordance with all applicable environmental laws and regulations.

Representative samples of wash water shall be collected during initial testing of wall cleaning procedures. The Contractor shall perform such sampling and analysis as may be required to assure the proper and legal handling of the waste materials, in accordance with the US Environmental Protection Agency's (USEPA's) Toxicity Characteristic Leaching Procedure (TCLP). These samples shall also be subjected to tests and analyses to meet the New York City Department of Environmental Protection (DEP) criteria described in DEP's Chapter 19, Use of the Public Sewers. At a minimum, the DEP testing shall be in accordance with the effluent standards for discharge to storm sewers and sanitary/combined sewers and include but not limited to, pH, 5-day BOD, and flash point, and the concentrations of Oil and Grease, Petroleum Hydrocarbons, Total Suspended Solids, Lead, Chromium, Cadmium, PCBs, Cyanide, Copper, Mercury, Nickel, Zinc and Total Metals (total of dissolved and suspended metals). Testing shall be performed under the Contractor's supervision at a qualified, NYS certified and accredited laboratory, experienced in handling and testing hazardous wastes.

Four representative samples shall be collected and tested during the initial wall cleaning testing.

Two representative samples shall be collected and tested during the demonstration phase.

The Contractor shall combine the results of the sample testing with other DEP-required data, as

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described below and in DEP Chapter 19, and submit a proposed Discharge Program to DEP for written approval prior to proceeding with the wall cleaning activities. A NYCDEP discharge permit will be required for discharge of wash water to the NYC sewer system. It is the contractor's responsibility to obtain the NYCDEP discharge permit.

All wash water shall be fully contained, tested and removed from the site to a point of discharge in the City sanitary sewer system, as approved by DEP. No on-site treatment shall be performed with the exception of filtration. No discharge to any waterway is permitted (i.e. New York harbor, East River etc.).

REFERENCES

All applicable laws, codes, rules, and regulations including, but not limited to the requirements stated herein, shall be complied with. References to laws, codes, ordinances, rules, regulations, standards, or other Federal, State, municipal, local and departmental legal requirements shall be deemed to mean the latest version or revision thereof, or successor thereto, notwithstanding any change in numbering or designation to titles. Initial Exposure Assessment requirements and site-specific Safety Plan requirements are described in Section 01450.

NYSDEC

New York City Department of Environmental Protection (DEP): Chapter 19, Use of Public Sewers.

National Institute of Occupational Safety and Health (NIOSH):

Manual of Analytical Methods.

Pocket Guide to Chemical Hazards.

Occupational Safety and Health Administration (OSHA) Regulations, including, but not limited to:

Title 29 CFR, Code of Federal Regulations, U.S. Department of Labor (Part 1910 – General Industry and Part 1926 – Construction Industry), Part 1910.120(e)(3) Management and Supervisor Training, Part 1910.1025(f), Part 1926.62, Lead Exposure in Construction, Part 1926.32(f) Part 1926.150, Fire Protection.

OSHA Sampling and Analytical Methods.

Title 29 CFR, Code of Federal Regulations, U.S. Department of Labor (Part 1910 – General Industry and Part 1926 – Construction Industry), Part 1910.120(e)(3) Management and Supervisor Training,

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Part 1910.1025(f), Part 1926.32(f) Part 1926.150, Fire Protection.

New York State Code of Rules and Regulations (NYCRR): Part 364, NYCRR, Waste Transporter Rules, effective January 10, 1985; revised December 30, 1985. Part 372, Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities, as amended, effective January 31, 1992.

Resource Conservation and Recovery Act (RCRA).

Toxic Substance Control Act (TSCA).

SUBMITTALS

A Discharge Program/ Permit Application shall be prepared and submitted to DEP for review and approval, with a copy to the Engineer. The Program shall include, at a minimum:

Results of all testing per NYCDEP Standards (See Special Notes no. 29)

Site plans showing the exact point or points of proposed discharge into the sanitary sewer system.

Engineering calculations to show quantity of wastewater to be discharged.

A copy of the discharge permit obtained from the Division of Sewer Regulation and Control for discharges of 10,000 gallons per day or more.

Method of collection and disposing of the wastewater generated in the tunnel.

Detailed plans showing the existing pumping station in the tunnel and the existing drainage system.

Detailed plans showing the proposed drainage system for cleaning operations in tunnel.

Detailed measures for preventing wash water from entering the fresh air duct and other tunnel systems.

Daily time schedules for work to be done in tunnel.

WORK TO BE PERFORMED

The work shall consist of the collection and removal of wash water and associated solids, the disposal of such products in the City sanitary sewer system, and the preparation of associated documentation relating to the collection, removal and disposal.

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All labor, worker training, materials, equipment, testing and analytical services, transportation, documentation and record keeping shall be furnished as required to handle and dispose of wastes generated by tunnel wall cleaning activities, in accordance with these specifications.

Was water or associated waste solids, with the exception of filtration, shall not be treated on-site. The Contractor is also prohibited from discharging wash water or associated waste solids. The Contractor shall conduct all activities involving wash water and associated waste solids in accordance with all applicable Federal, State and local laws and regulations.

Wash water and associated solids shall be prevented from entering the fresh air duct, and proposed methods of protection shall be fully described in the Discharge Program.

Collection and disposal of wash water shall be performed on a daily basis during or after completion of daily wall washing activities.

All supplies and equipment associated with conducting the work specified in this Section shall be decontaminated as necessary and transported off-site upon completion of wall washing activities at the end of each workshift.

All records and documentation concerning the work conducted under this Section shall be submitted to the Engineer within 30 days of completion of wall washing activities in each tube.

Residual was water and associated solids shall be cleaned from within any affected tunnel drainage system elements upon completion of tunnel wall washing activities.

QUALIFICATIONS

Work under this Section shall be performed by an entity having a minimum of five years experience in successful completion of projects similar in size and scope to the Work under this section.

The Contractor shall demonstrate the ability to prepare appropriate DEP documentation, and supply the labor, supervision, materials, equipment, and expertise required to perform the Work of this Section.

Work of this Section shall provide for the following qualified personnel:

The Contractor's on-site personnel shall include a competent person as stipulated in the Code of Federal Regulations 29 CFR 1926.32(f) who shall be responsible to perform the duties required by 26 CFR 1926 et. Seq. This individual shall have valid certification of the following:

Successful completion of OSHA 29 CFR 1910.120(e)(3) Management and Supervisor Training.

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Cardio-Pulmonary Resuscitation (CPR).

A Certified Industrial Hygienist (CIH) holding current valid certification by the American Board of Industrial Hygiene (ABIH) with at least 1 year of experience on hazardous waste operations. Such person shall prepare the Health and Safety Plan for this Project. Such person may be the same individual stipulated in Paragraph 1, above, if so qualified.

A NYS certified laboratory accredited by the American Industrial Hygiene Association (AIHA) shall be used for all sample analysis.

All persons employed to work on the wall cleaning effort shall have completed training as stipulated in the Code of Federal Regulations 29 CFR 1926.62 (L).

Any entity performing off-site transportation required for work of this Section shall hold current valid permits for work stipulated in Article 3.03.

SCHEDULE

Initial testing and preparation of Discharge Program Application submittal shall be complete and delivered to NYCDEP and the Engineer a minimum of three months prior to the scheduled initiation of wall cleaning and dust decontamination activities.

PROJECT/SITE CONDITIONS

Cleaning, handling and disposal activities shall be restricted to one lane, to prevent interference with other entities in the tube.

EQUIPMENT

For all personnel who will be in contact with wash water and associated waste solids, protective work clothing, eye shields, and equipment shall be furnished in accordance with the OSHA requirements described in 29 CFR 1910.1025(f) and as per requirements outlined by the manufacturer of the cleaning product.

Four complete extra sets of protective clothing and eye shields shall be furnished, maintained and cleaned, and shall be made available to the Engineer when requested.

Appropriate equipment for removing wash water and associated waste solids from sumps shall be furnished.

Appropriate equipment for sampling wash water and associated waste solids shall be furnished.

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Appropriate equipment shall be furnished to contain effluent for collection and disposal.

Appropriate equipment shall be furnished for transporting wash water and associated waste solids from the collection point to the disposal point.

GENERAL WORK PROCEDURES

A personnel decontamination zone shall be established in the vicinity of the work. Such zone shall provide a change room with facilities for cleaning and disposal of protective clothing and contaminated articles and shall serve as an issue and storage area for all equipment and materials. The location and construction details of the decontamination zone shall be coordinated with and approved by the Engineer. All workers and personnel leaving the work site shall proceed through the decontamination facility according to procedures defined herein.

Warning signs shall be posted at the entrance to the change room

Emergency exits and fire escape routes shall not be blocked or locked. Treatment of an injured worker shall not be delayed for reason of decontamination. Emergency exits shall be clearly marked.

Temporary lighting shall be provided at the work site, in accordance with OSHA standards. All electricity shall be brought in from the outside or from portable diesel generators, and shall be connected via ground fault interrupters to the appropriate source.

Employees shall be prohibited from eating, drinking, smoking, chewing (gum or tobacco), or applying cosmetics at the work site or in the change room. Toilet facilities must be separate from the work site.

The Engineer will direct the Contractor to stop any work immediately should, in the opinion of the Engineer, the work present a health hazard to the public, engineering personnel, or construction personnel, or if the quality of workmanship is judged to present a future health hazard.

Access to the work site shall be restricted to the Engineer, Contractor, and their personnel, and other authorized personnel who are properly protected, and have received the appropriate training in respiratory protection and lead exposure hazards, and other personal protective equipment and decontamination procedures specified herein.

WORKER PROTECTION, TRAINING AND HYGIENE REQUIREMENTS

All Contractor personnel directly involved in the handling of wash water shall have a medical examination prior to the start of and at the completion of their work. Medical examinations shall

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meet the minimum requirement under current OSHA regulations.

All Contractor personnel directly involved in the handling of wash water shall be fully trained in the processes and procedures to be observed during the work, including the selection, fit-testing and medical approval associated with respiratory protection, if applicable.

REMOVAL AND OFFSITE DISPOSAL OF WASH WATER

In the event a NYCDEP discharge permit is not obtained, off-site disposal of wash water and wastes will be required. Location of on-site storage of wash water and associated waste solids must be pre-approved by Engineer.

Wash water shall be tested in accordance with the requirements established in the written approval received from NYCDEP and as per requirements of the disposal facility. Those requirements may be different from the NYCDEP standards. Wash water shall be tested at least once a week.

Wash water removed from the site shall be transported and disposed of in compliance with all applicable laws, codes, rules, and regulations. Work shall be performed as specified within this Section.

Appropriate transport vehicle(s), or approved containers holding material removed from the work site, and contaminated items shall be certified to be stored and transported in a safe and secure manner to prevent release to the environment and exposure to the public. Each container shall be properly labeled in conformance with applicable laws, codes, rules, and regulations.

Off-site transportation of waste materials shall conform to 6 NYCRR Part 364, NYSDOT R-Permit Regulations, at a minimum, and all other applicable laws, codes, rules, and regulations. Also NYSDEC and USDOT regulations for waste shipments.

Other requirements for the removal and disposal of waste materials shall consist of the following items:

All required waste manifests/waste shipment records shall be furnished in accordance with 6 NYCRR Part 372 and other applicable laws, codes, rules, and regulations, for review. Waste profiles, as required by DEP, shall be provided to the Engineer.

Contaminant area, decontamination area and haul routes used to remove contaminated materials from the tunnel shall be cleaned upon completion of operations for each Work Period.

Before transporting waste materials from the site, all completed waste manifests/waste shipment records shall be provided and all labels, tags and placards mandated by Federal and State agencies

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having jurisdiction over the transportation of materials shall be furnished and affixed to all vehicles.

Waste manifests/waste shipment records for each load of material removed and transported from the site to the disposal site shall be executed and approved by the Hazardous Material Monitoring Subcontractor, and submitted to the Engineer.

A certification of final disposal of each waste manifest/waste shipment record shall be furnished to the Engineer.

Copies of waste transporter and disposal facility licenses, permits and certificates of insurance must be submitted for review prior to transport of wash water and waste materials.

All necessary precautions shall be taken to prevent contamination of the construction site, adjacent properties, roadways, atmosphere, or ground surface.

Stopping enroute, either before or after pick-up of materials from Battery Park Underpass and West Street Underpass properties, is prohibited unless the Engineer has specifically approved such stoppage in writing.

FIRE PROTECTION

The Contractor shall provide fire protection in accordance with 29 CFR 1926.150, Fire Protection, and shall institute full back-up systems, as required.

METHOD OF MEASUREMENT No measurement will be taken for the work of this item. Payment for this work will be made on a lump sum basis.

BASIS OF PAYMENT The Lump Sum price bid shall include the cost of pilot testing, furnishing all materials, labor, equipment and NYCDEP fees for discharge into the sewer system necessary to complete the work.