

ITEM 11559.920X M - GRAFFITI REMOVAL FROM UNTREATED SURFACES

DESCRIPTION This work shall consist of removing graffiti by the methods described in this specification.

MATERIALS All materials and equipment shall be subject to the Engineer's approval before any work can begin.

Abrasive material for blast cleaning shall meet the requirements of **§572-2.01, Abrasive for Blast Cleaning.**

PAINT All paint used shall meet the following requirements:

The primer shall be a quality primer with good hiding power and formulated specifically for the purpose of covering graffiti. It shall be compatible with the surface it is used on as per the manufacturer's data sheet, and must adhere well to the substrate and resist fading and chalking. Additional coats of paint shall be flat exterior paint, compatible with the primer and the substrate. Compatibility should be verified by the paint manufacturer's product data sheet. A textured paint may be used as approved by the Engineer.

The paint shall comply with the volatile organic compound (VOC) requirements of New York State Department of Environmental Conservation regulation 6 NYCRR Part 205, Architectural Surface Coatings.

The Paint shall be mixed to match the color of the adjacent surface to the satisfaction of the Engineer, unless otherwise directed.

POWER WASH Soluble, abrasive blast media shall be a large crystal sodium bicarbonate or a magnesium sulfate based media. Solubility of the media in water shall be 8.6 g/100 ml.

The equipment with the media shall be a soluble media injector type power washer. The Contractor shall submit catalog cuts or other documentation for all equipment proposed for use in this work.

SOLVENT WASH The cleaning compound shall be a blend of an organic solvent of emulsifiers and surfactants. It shall be a bio-degradable water based mixture developed from non-toxic and non-corrosive substances. This may be a soybean solution or other, satisfactory to the Engineer. Mineral spirits are also acceptable for this usage.

The cleaner shall lift graffiti from the substrate surface, and emulsify and dissolve the paint constituents; pigments; oils; binders and fillers. The material(s) used shall not damage, mar or reduce the reflectivity of the substrate, when used on a sign panel. Acceptance of the cleaning compound will be based on the manufacturer's certification that the material conforms to the requirements of this specification.

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Some acceptable solvents include the following: Orange Magic Cleaner, as manufactured by Orange Power, 257-02 Craft Ave., Rosedale, NY 11422; 3M Citrus Base Natural Cleaner, manufactured by 3M Adhesives, Coatings and Sealers Division, St. Paul, Minnesota 55144; Enviro-Solutions Paint Stripper & Graffiti Remover, by RCI Trading, P.O.Box 1789, Englewood, CO. 80150-1789; SOY solv, 6154 N CR 33, Tiffin, OH 44883; EZ Solv, by Gemtek, 3808 North 28th Street, Phoenix, AZ, 85017, (800) 331 - 7022; Taginator, by Equipment Trade Service, 20 E. Winona Ave, Norwood, PA 19074; Graffiti Free Cleaner, Enviro-Northeast, PO Box 975 Highland Lakes N.J. 07422; or Mineral Spirits.

CONSTRUCTION DETAILS

All work must conform to the OSHA standards referred to in subsection 107-05 of the Standard Specifications.

Unless otherwise directed by the Engineer, the following methods shall be used to remove graffiti from various surfaces. If one of these prescribed methods is used, and the graffiti still remains visible, the contractor shall use an alternate method approved by the Engineer. Painting over graffiti is the preferred option on previously painted surfaces, and where solvents were unsuccessful at removing graffiti.

Unless otherwise noted or directed by the Engineer, graffiti shall be removed within five (5) working days of written notification. If a lift device will be necessary, the removal date will be extended to ten (10) working days.

GRAFFITI SURFACE	SUGGESTED GRAFFITI REMOVAL METHOD
Steel (smooth, non-porous) Wood (painted or unpainted)	Solvent Wash with Enviro-Solutions Paint Stripper & Graffiti Remover; SOY solv; Mineral Spirits or Painting Over Graffiti or Power Washing
Brick, Stone, Concrete, Paving blocks (porous, unpainted)	Solvent Wash with Taginator, or Power Washing, or Painting Over Graffiti or Abrasive Blasting
Painted masonry	Painting Over Graffiti or Power Wash
Sign Panel Faces & Aluminum (unpainted mill finish or anodized finish)	Solvent Washing with Enviro-Solutions Paint Stripper & Graffiti Remover; SOY solv; EZ Solv or Mineral Spirits.

PRIORITY GRAFFITI REMOVAL

Graffiti of a particularly offensive nature, in the opinion of the Engineer, shall be removed by the

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contractor within one (1) day after written notification of the existence of such graffiti. This shall be called PRIORITY GRAFFITI REMOVAL, and will be paid at twice the bid price for the removal method(s) selected.

PAINING OVER GRAFFITI

The Contractor shall paint over all graffiti on the concrete surfaces within limits in the contract documents, A.O.B.E., and take appropriate precautions to prevent paint from falling onto traffic.

The substrate surfaces shall be thoroughly cleaned before painting. All dust, dirt, oil, grease, and other substances which might prevent the adhesion of the paint to the substrate shall be removed.

No sandblasting will be allowed. Paint shall be applied as soon as practicable after cleaning is completed. If in the opinion of the Engineer, the substrate surface has become soiled, or otherwise contaminated, prior to the application of the paint, the surface shall be recleaned at no additional cost to the State. The paint shall be applied evenly in a neat and workmanlike manner by a roller or other suitable method, as approved by the Engineer. The rolling shall be done at such a pace that no spinning of the roller or throwing off of paint occurs when the roller is lifted from the surface. The paint shall be feathered out by using light pressure at the end of the stroke to promote uniformity. The first time a surface is painted, it shall be painted from column to column, post to post, and from top to bottom for panels and from joint to joint or scoremark to scoremark for other concrete surfaces. After the first time, which includes previous painting for graffiti removal, the substrate surface shall be painted in small rectangular patterns in order to minimize the area painted and ensure that the graffiti will no longer be "readable" when the painting is complete. If the paint to be applied requires more stringent or additional surface preparation than stated in this specification, the Contractor shall prepare the surface in accordance with the paint manufacturer's recommendations.

The graffiti must be completely hidden before the painted area will be measured for payment. The Contractor will be required to repaint areas if the graffiti remains visible after painting at no additional cost to the State. New graffiti at the same location will be measured for payment when the painting meets the requirements of this specification. The Engineer may require sand be added to the paint to provide a texture to the final surface.

POWER WASHING GRAFFITI SURFACES

All graffitied surfaces shall be cleaned with a soluble, abrasive blasting media applied with a soluble media injector at 20,500 kPa, 19 L per minute or a compressed air delivery system at 690 kPa, 140 L/second, whichever is satisfactory to the Engineer. No particulate matter of any nature shall be permitted to remain on the cleaned surface. After cleaning, the surface shall be rinsed with tap water applied with a power washer at 6900 kPa. All visible media shall be removed

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from the surface.

After rinsing, the Contractor shall repeat the cleaning process in areas where graffiti or paint is still visible. If the second cleaning process fails to remove the graffiti or paint to the Engineer's satisfaction, the equipment and methods used by the Contractor will again be subject to review and approved by the Engineer. Cleaned surfaces shall bear no evidence of graffiti paint layers.

SOLVENT WASHING GRAFFITI SURFACES

Pre-Cleaning Materials.

A wet, non-abrasive cleanser is recommended. This cleanser shall not contain strong solvents or alcohols.

Pre-Cleaning Procedure.

Cleanse the surface of loose dirt particles with clean water.

Use a soft sponge or brush to wash the graffitied surface with detergent and water. Avoid scrubbing the surface unnecessarily. After the cleaner has been utilized, apply a steady stream of water on the cleaned surface to wash the dirt particles away.

Allow to dry.

Cleaning Procedure.

The Contractor shall supply the instructions of the cleaning procedure, to the Engineer, at least two weeks prior to starting this work. Graffiti Removal material shall be applied to surfaces as per the manufacturer's instructions. Graffiti Removal material shall not be applied to silk screen processed areas.

After the solvent is applied, the surfaces shall then be wiped with a non-abrasive material.

The wiped surfaces shall then be rinsed with a water wash.

The cleanliness of the surfaces is subject to the approval by the Engineer.

After rinsing, the Contractor shall repeat the cleaning process in areas where graffiti is still visible. If the second cleaning process fails to remove the graffiti to the Engineer's satisfaction, the equipment and methods used by the Contractor will again be subject to review and approval by the Engineer.

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Cleaned surfaces shall bear no evidence of graffiti. The cleaning of the graffiti image shall be feathered out by using light pressure at the end of the stroke to promote uniformity on the surrounding surface.

ABRASIVE BLASTING OFF GRAFFITI

Due to the potential of abrasive blasting to damage the substrate, this method of graffiti removal may only be performed as a last resort, at the direction of the Engineer, after all other methods to remove graffiti have failed.

Graffiti should be removed using vacuum-shrouded blasting or power-tool equipment that has the appropriate attachments for the surface being cleaned to ensure that no dust or abrasive escapes during operation. This equipment should be capable of cleaning all the graffiti off the surface at a rate acceptable to the engineer while producing no detectable dust. The equipment should operate in a manner such that all dust or abrasive/dust mix generated is simultaneously drawn away from the contact surface into attached vacuum hoses leading to a vacuum that utilizes HEPA filters. The vacuum and its hoses should be sufficiently rated for the volume of debris and/or abrasive/debris generated. A containment similar to that described and paid for under item 570.09 M Environmental Ground Protection may be employed if found necessary. The equipment, its method of use, and efficiency shall be demonstrated to the Engineer prior to the start of work. Manufacturers of this type of equipment include Pentek Inc. of Coraopolis, PA among others.

Power tool cleaning should remove the graffiti without causing undue damage to the surface being cleaned.

GRAFFITI REMOVAL FROM OVERHEAD STRUCTURES

If the use of a mechanical aerial lift is required to safely access the graffitied surface, the Contractor shall obtain the necessary equipment and use it in conjunction with the other graffiti removal items.

METHOD OF MEASUREMENT

This work will be measured by the number of square meters, measured to the next whole square meter, of surface area that graffiti is either removed from, or painted over, in accordance with this specification.

If the use of a mechanical aerial lift is required to safely access the graffitied surface, the Contractor will be paid for GRAFFITI REMOVAL FROM OVERHEAD STRUCTURES, which will be measured as the number of structures for which the lifting device is required.

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BASIS OF PAYMENT

The unit price bid per square meter shall include the cost of furnishing all labor, materials and equipment necessary to complete the work.

There will be no payment for removing graffiti that is not done within the time limitations stated in this specification.

If one of the graffiti removal methods is approved by the Engineer, and the graffiti still remains visible, and the Engineer suggests an alternate method to remove the graffiti, the contractor will be paid for both graffiti removal methods.

If the use of a mechanical aerial lift is required to safely access the graffitied surface, the Contractor will be paid for GRAFFITI REMOVAL FROM OVERHEAD STRUCTURES, in addition to other graffiti removal items.

Particularly offensive graffiti designated by the Engineer for PRIORITY GRAFFITI REMOVAL will be paid at twice the bid price for the removal method(s) selected.

<i>Item No.</i>	<i>Item</i>	<i>Pay Unit</i>
11559.9201	Graffiti Removal by Painting Over Graffiti	Square Meter
11559.9202	Graffiti Removal by Power Wash	Square Meter
11559.9203	Graffiti Removal by Solvent Washing	Square Meter
11559.9204	Graffiti Removal by Abrasive Blasting	Square Meter
11559.9205	Graffiti Removal from Overhead Structures	Each Structure