

TECHNICAL SPECIFICATIONS  
FOR  
CLEANING CONCRETE SURFACES

1. Description

The work shall consist of cleaning concrete surfaces by removing all stains, dirt, dust, deposits, pollution, leachates, oil, grease, efflorescence, calcium carbonate deposits and build-up, unauthorized paint marks, undifferentiated spills, tail pipe emission pollutants, moss, lichen and other invasive vegetation; animals and animal wastes, and any other discolorations from the exposed concrete surfaces; and to contain and dispose of the waste stream and all materials and solvents used in the cleaning process in a safe and approved manner. "Cleaning" shall also mean removing loose concrete surface material that has resulted from scaling and spalling.

The objective of cleaning is to return the color of all exposed concrete surfaces to the original color, as closely as possible, of the newly built condition, recognizing that different structural elements had different original colors and architectural finishes.

The performance of the work shall clean all the exposed concrete surfaces without removing sound structural concrete, or diminishing in any way the existing structural sections of the structural members. The methods, techniques, and equipment used in the cleaning, and in the containment and disposal of waste processes shall at all times be at the discretion of the Engineer.

The Contractor shall not use equipment, methods, or solvents that will cause spreading of existing stains, drive existing surface pollutants further into the concrete, or add new areas of discoloration.

The cleaning methods to be used shall be pressure water blasting; manual brushing; and automatic brushing.

2. Materials

The Contractor shall use fresh water from a potable water source.

3. Equipment

The pressure water blasting equipment shall be capable of delivering nozzle pressures between 3,000 psi and 5,000 psi. The Contractor shall provide, and have on hand, a full range of nozzle types and stream patterns from a flat-fan to a straight jet tip. Nozzle pressures in excess of 5,000 psi will be considered to be too likely to cause damage to the concrete structural members and will not be allowed.

Brushes used to loosen dirt, pollutants, and calcium deposits shall have natural, non-ferrous, or stainless steel bristles. Brushes having ferrous bristles shall not be used. Both manual and automatic brushing will be allowed at the discretion of the Engineer.

4. Construction Requirements

Surfaces to be cleaned shall be pressure water blasted. If discoloration persists on the surface, the surfaces shall be brushed and then the pressure water blasting procedure shall be repeated as many times as necessary to remove the dirt, pollution, rust stains and calcium deposits, or until the Engineer directs otherwise.

After pressure water blasting, the surface shall be allowed to thoroughly dry before a final determination is made as to the necessity of repeating the procedure.

Once a surface has been cleaned, subsequent cleaning operations shall be conducted to not get the newly cleaned surface dirty.

5. Method of Measurement

The measurement for cleaning concrete surfaces shall be on a single lump sum basis, which lump sum shall include cleaning all exposed concrete surfaces of the structure, including the parapet wall; the sidewalk; the curb; the sides and underside of the deck; the spandrels; the arch rings; the foundations; the abutments; the breast walls; the columns; and the beams.

6. Basis of Payment

The accepted single, lump sum quantity for cleaning concrete surfaces, measured as provided for above, will be paid for at the Contract lump sum bid price, which price shall be full compensation for all labor, materials, and equipment needed to perform the Work, including all labor, materials, equipment, and incidentals required to protect adjacent property and persons from potential damages attributable to the cleaning operations.

The Contractor shall obtain all permits associated with performing the Work. The costs of obtaining permits shall not be a separate pay item, but shall be included in the lump sum price bid for "Cleaning Concrete Structures."

The Contractor shall satisfy all OSHA, EPA, and TDEC rules and regulations governing the activities and performance of the Work. The costs associated with complying with OSHA, EPA, and TDEC rules and regulations shall not be a separate pay item, but shall be included in the lump sum price bid for "Cleaning Concrete Structures."

The Contractor shall coordinate the performance of the Work with all State of Tennessee Department of Transportation (TDOT) construction projects and construction schedules in the general vicinity of the work. The costs associated with coordinating the work with TDOT construction projects and construction schedules shall not be a separate pay item, but shall be included in the lump sum price bid for "Cleaning Concrete Structures."