
MODEL HYDRODEMOLITION SPECIFICATION

**Prepared By
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The following is a model for a typical hydrodemolition project specification. This model specification was developed after thousands of hours of on-the-job experience in concrete hydrodemolition. It encompasses the major components of a thorough concrete hydrodemolition project, and attempts to detail the responsibilities of both the owner and the contractor. It may be adapted to both public and private projects, as well as work on bridge decks, parking garages, and concrete substructures.

HYDRODEMOLITION SPECIFICATION

DESCRIPTION

This work shall consist of the removal of the deck surface by means of high pressure water jets (hydrodemolition), and the removal of material inaccessible to the hydrodemolition unit, by hand-held water blasting equipment or small pneumatic hammers.

EQUIPMENT

The hydrodemolition system shall only be operated by individuals who have passed rigorous training from the equipment manufacturer. The Robot unit of the hydrodemolition system shall be self-propelled and completely programmable, designed for high production concrete removal as well as removal of sound concrete at precise depths.

The high pressure pump (or pumps) shall be equipped with over-pressurization relief valves and rupture disc system.

The complete hydrodemolition system must be capable of depressurization from a single point.

All high pressure components shall be rated for full working pressure of the hydrodemolition system.

EQUIPMENT DEMONSTRATION

Two trial areas shall be designated by the Engineer to demonstrate that the equipment, personnel, and methods of operation are capable of producing results to the satisfaction of the owner's Engineer.

The first trial area shall consist of approximately 30 square feet of sound concrete as determined by the Engineer. The equipment shall be calibrated to remove the sound concrete to the depth of one inch.

After completion of this test area, the equipment shall be moved to the second area consisting of deteriorated or defective concrete, to determine whether this unsound concrete will be completely removed with the previous calibration.

Should it be determined that not all defective concrete has been removed, the hydrodemolition system shall be recalibrated to remove an additional one half inch of sound concrete, then retested on deteriorated concrete. If additional defective concrete is found, the depth of cut will increase in one half inch increments until only sound concrete is found remaining.

CONSTRUCTION METHODS

Where plans so indicate, one pass of the hydrodemolition unit shall be made to remove all sound concrete within the limits shown and to the depth specified, along with all deteriorated or defective concrete within these limits. Care shall be exercised to avoid removing sound concrete beyond the specified depth. Following the first pass, the Contractor's representative and the Engineer will determine and mark any remaining unsound areas of concrete. A second pass of the hydrodemolition unit shall then be made in these areas to remove the unsound concrete.

After the second pass, hand-held water blasting equipment may be substituted for the hydrodemolition unit in areas inaccessible or otherwise inconvenient to hydrodemolition unit equipment.

Shielding shall be installed beneath the deck where full depth removal is anticipated to protect pedestrian or vehicular traffic, if present.

Removal of concrete debris shall be accomplished either by hand or by mechanical means, and shall be accomplished directly following the hydrodemolition process, to prevent the debris from re-setting or re-adhering to the surface of remaining sound concrete. All concrete debris shall become the property of the Contractor and shall be legally disposed of at the Contractor's expense. Any debris which is allowed to re-settle or re-adhere to the surface of sound concrete shall be carefully removed by the Contractor (at no additional cost), and the Contractor shall exercise care to avoid any

damage to the remaining sound concrete or exposed reinforcement. Following the removal of debris and prior to the placement of the overlay, the entire surface shall be blast clean with high pressure water to remove any bond-breaking residue, loose material from the concrete surface, and/or rust from the reinforcing steel. This residue shall be collected and disposed of by the Contractor.

The Contractor shall provide for the collection, filtering, and disposal of all run-off water generated by the hydrodemolition process. The Contractor shall obtain any required permits and shall comply with applicable regulations concerning such water disposal. The Contractor also shall make provision for the safe handling of run-off water insofar as roadway surface. Unfiltered water shall not be allowed to enter storm sewers, bridge drainage downspouts, or any other surface water. The Contractor shall exercise care to protect existing berm slopes from scouring by run-off water from the water-jet.



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