



Department of Public Service
Division of Engineering and Construction

All Permit Holders: All areas shall be restored as per City of Cleveland specifications using the attached drawings. Backfill and concrete mix specifications are shown below

Backfill Specification

All backfill material used under any pavements shall be done per the City of Cleveland specification and restoration drawings provided.

**City of Cleveland
Concrete Design Mix**

All applicable work items shall be bid using the concrete mix design specified in this section. Under this section of these specifications the contractor is required to submit a separate mix design for each combination of cement type, aggregate type and concrete supplier they will use under this contract. Each mix shall be designed in accordance with ASTM-C94 Option C and as herein modified.

Requirement

Description

Minimum twenty-eight (28)

4,000 psi for 28 days compressive strength test. Four cylinders will be taken and tested as per ASTM C39-34. One to be tested at seven days and the remaining three will be tested at twenty eight days. Acceptance will be based on the average results of the three cylinders.

Minimum Cement Content

650 lbs per cubic yard. The cement shall conform to ASTM C 140-94 OR C-595-94.

Water Cement Ratio

0.45 Maximum

Slump

Nominal three inches (3") as per ASTM C 94-94 (2"-4" actual). The use of chemical admixtures meeting ASTM C 494, to increase the slump to a maximum of 7", may be used with prior written approval of the Engineer. If this option is selected the admixture and resultant maximum slump shall be submitted for approval.

Air Content

Four percent (4%) to seven and one half percent (7-1/2 %) ASTM C 173-94 or C231-94.

Aggregate Size

No. 57 for course aggregate shall be limestone, gravel or crushed air- cool blast furnace slag. Both course and fine aggregate as per ASTM C 33-94.

If crushed air-cooled blast furnace slag is used it shall meet all of the requirements of ODOT 703.1 and 703.2. Copies of all tests and certifications for the crushed air-cooled blast furnace slag, if used, shall be submitted as a part of the concrete mix design.



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When high early strength is required, ASTM C 150-94 Type II A cement or admixtures in accordance with ASTM C 494-94 shall used.

The contractor is required to furnish affidavit, in triplicate, from each concrete supplier to the Commissioner giving dry weight and type of cement, saturated surface-dry weight and the type of fine and coarse aggregate, quantity, type and name of each admixture and weight of water per cubic yard of concrete. The contractor shall also furnish twenty-eight (28) day cylinder tests (per testing section) as verification that the materials used and the proportions selected will produce concrete of the quality specified.

Hot and cold weather protection (blankets, heaters, ice, etc.) shall be included in the unit price bid.

The contractor is required to comply with all the above requirements. The contractor shall require that all sub-contractors placing concrete under this contract also comply with all of the above requirements.