MARYLAND CONCRETE CONFERENCE

New Maryland Specifications

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Vicki R. Stewart - Chief of Concrete Technology Division in OMT

Soil Cement Specification

- Presented by Intikhab Haider, Chief of Soils and Aggregated Technology Division

Section 902 – Portland Cement Concrete and Related Products.

902.10.03 Portland Cement Concrete Mixtures.
INSERT: The following into Table 902 A after mix no. 12.

MIX NO.	SPECIFIED ACCEPTANCE COMPRESSIVE STRENGTH psi	COMPRESSIVE STRENGTH ACCEPTANCE TEST AGE days	STD. DEV. psi	CRITICAL VALUE psi	MIN CEMENT FACTOR lb/yd^3	COARSE AGGREGATE SIZE M 43 / M 195	MAX WATER/ CEMENT RATIO by wt	SLUMP RANGE in.	TOTAL AIR CONTENT %	CONCRETE TEMP. °F .
13	**4000**	**28**	**600**	**4180**	**615**	**57, 67**	**0.45**	**2 - 5**	**5 - 8**	**50 - 95**

Category 600 shoulders
section 602 - CURB, COMBINATION CURB AND GUTTER, AND MONOLITHIC MEDIAN

SECTION 602 —
602.02 MATERIALS

DELETE: Portland Cement Concrete 902.10, Mix No. 3

INSERT: Portland Cement Concrete 902.10, Mix No. 13

602.03 CONSTRUCTION

602.03.01 Concrete Curb, Combination Curb and Gutter, and Monolithic Median.

DELETE: (h) Cold Weather Construction and Curing in its entirety.

INSERT: The following.

(h) Cold Weather Construction and Curing. Refer to 603.03.01 (f)

SECTION 603 - SIDEWALKS

603.02 MATERIALS

DELETE: Portland Cement Concrete 902.10, Mix No. 3

INSERT: Portland Cement Concrete 902.10, Mix No. 13

SECTION 603 - SIDEWALKS

603.03 CONSTRUCTION

603.03.01 Concrete Sidewalks

DELETE: (d) Finishing and **(f) Cold Weather Construction and Curing** in their entirety.

INSERT: The following.

(d) Finishing. Immediately after screeding and before bleed water appears, bull float the concrete to seat the coarse aggregate particles. After bull floating and waiting until bleed water has dissipated and the concrete has begun to set, float the concrete to provide a level surface and apply a broom finish. Do not plaster the surface. Use a 1/4 in. edging tool on all outside edges and all joints. On dry and/or windy days and as directed by the engineer, while waiting for the concrete to set, a thin film of evaporation retarder shall be applied per the manufacturer's recommendations. Evaporation retarder shall not be used as a finishing aid. At no time during any phase of the finishing operations shall water be added to the concrete. Immediately following texturing and edging begin the concrete curing. An ACI or NRMCA exterior flatwork certified finisher shall be present at all times during finishing operations.

(f) Cold Weather Construction and Curing. Refer to 520.03.02 and 520.03.12 (a) White Pigmented, except the requirement for an approved spraying machine with drive wheels is waived. Apply by sprayers in two directions at 90 degrees to each other.at a rate recommended by the manufacturer completely covering the surface of the concrete. Have standby equipment on site in the event of spraying equipment failure. Do not allow pedestrian and vehicular traffic during the curing period.

Section 604 - Concrete Traffic Barriers
604.03.01 Concrete Barriers

604.03.01 Concrete Barriers.

DELETE: **(a) Fixed Form Method** in its entirety.

INSERT: The following

(a) Fixed Form Method. Use steel forms with a tolerance in grade and alignment of ¼ in. in 10 ft. For bifurcated and transition sections, other forming Materials may be used as directed.

Thoroughly clean and coat the forms with form release compound each time they are used.

Mix and place concrete as specified in **915.03.05** and Section 420, respectively. Vibrate concrete using an approved immersion type mechanical vibrator.

Saw or form construction and contraction joints at 20 ft intervals with a minimum of 10 ft. For saw time requirements, refer to 520.03.14 ©(1). Place expansion joints where specified or as directed. Ensure that all joints in footers and walls align.

Finish concrete as specified in 604.03.03 except apply a broom finish to the surface when forms are stripped in less than 24 hours. Remove the face forms for finishing as soon as the concrete can retain its shape.

After removing the forms, immediately repair all honeycombed and damaged areas.

SECTION 902 — PORTLAND CEMENT CONCRETE AND RELATED PRODUCTS

(adding IL cement)

902.04 BLENDED HYDRAULIC CEMENT

DELETE: **902.04 BLENDED HYDRAULIC CEMENT** in its entirety.

INSERT: The following.

902.04 BLENDED HYDRAULIC CEMENT

M 240 Type IP containing 15 to 25 percent Fly Ash by weight of blended cement, Type 1S containing 25 to 50 percent slag cement by weight of blended cement or Type 1L. Maximum loss on ignition of Fly Ash used for blending is 3.0 percent.. The requirement for a manufacturer's written statement of the chemical composition is waived.

902.10.03 Portland Cement Concrete Mixtures. (IL cement)

DELETE: Note 1 below TABLE 902 A in its entirety.
INSERT: The following.
Note 1: When concrete is exposed to water exceeding 15 000 ppm sodium chloride content, Type II cement shall be used. In lieu of Type II cement, a Type I or a Type 1L blended hydraulic cement may be used in combined form with an amount of up to 50 percent replacement with slag cement, or an amount of up to 25 percent replacement with Class F fly ash. The Contractor shall submit to the Engineer the proposed mix proportions and satisfactory

ADD: To TABLE 902 B the following.

MINIMUM MITIGATION REQUIREMENTS				
SCM Type	Low Alkali Cement R1	Normal Alkali Cement R1	Low Alkali Cement R2	Normal Alkali Cement R2
Binary blend with Type IL	Approval required	Approval required	Approval required	Approval required

DELETE: Paragraph "Ternary blends using …" below TABLE 902 B in its entirety.
INSERT: The following.
Ternary blends using two SCM's and binary blends with Type IL hydraulic cement and a SCM will require C1567 testing by an accredited laboratory. The expansion test results shall not be greater than 0.10 percent to be considered acceptable. Changes to the SCM blend percentages will require retesting.

SECTION 915 — PRODUCTION PLANTS

915.03.05 Mixers and Agitators.

DELETE: **(g)** When the concrete is specified… in its entirety.

INSERT: The following.

(g) When the concrete is to be produced by volumetric batching and continuous mixing, the batching and mixing unit shall meet C 685. Calibration shall meet MSMT 558.

Concrete produced by the volumetric method is only to be used when specified and is permissible for use in sidewalks, curbs, gutters, monolithic median, fence and sign post footings, signal, sign and lighting foundations, and utility encasement.