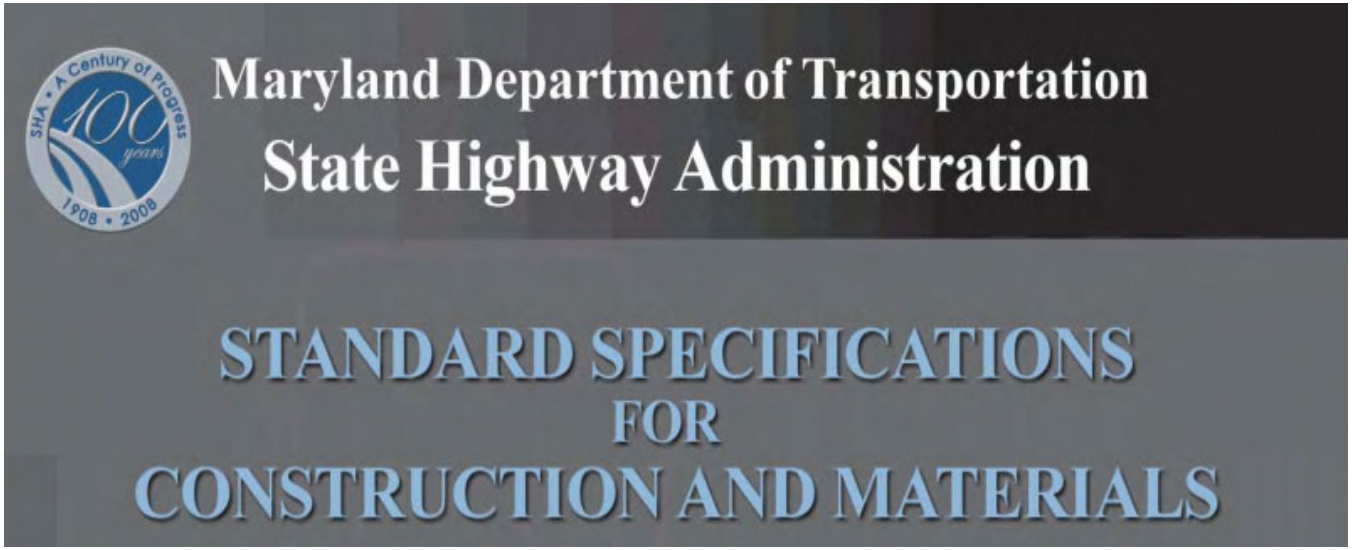

*I know everything needed to build a durable sidewalk is in this book.*

*Whoo can help me find the pieces?*

Rod Meyers, P.E.
Schuster Concrete




**SECTION 603 - SIDEWALKS**

**603.01 DESCRIPTION.** Construct hot mix asphalt (HMA) or concrete sidewalks and sidewalk ramps. Ensure that the sidewalks and sidewalk ramps are constructed in accordance with the most recent accessibility guidelines of the Americans with Disabilities Act (ADA)

# Materials

**603.02 MATERIALS**

| | |
|---|---|
| Curing Methods | 902.07 |
| Concrete Mix No. 3 | 902.10 |
| Preformed Joint Fillers | 911.02 |

902-PORTLAND CEMENT CONCRETE

The concrete mixes shall conform to the following:

**TABLE 902 A**

**PORTLAND CEMENT CONCRETE MIXTURES**

| 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 . |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2500 | 28 | 375 | 2430 | 455 | 57, 67 | 0.55 | 2 - 5 | 5 - 8 | 50 - 95 |
| 2 | 3000 | 28 | 450 | 3010 | 530 | 57, 67 | 0.50 | 2 - 5 | 5 - 8 | 50 - 95 |
| 3 | 3500 | 28 | 525 | 3600 | 580 | 57, 67 | 0.50 | 2 - 5 | 5 - 8 | 50 - 95 |
| 4 | 3500 | 28 | 525 | 3600 | 615 | 57, 67 | 0.55 | 4 - 8 | N/A | 50 - 95 |
| 5 | 3500 | 28 | 525 | 3600 | 580 | 7 | 0.50 | 2 - 5 | 5 - 8 | 50 - 95 |
| 6 | 4500 | 28 | 675 | 4770 | 615 | 57, 67 | 0.45 | 2 - 5 | 5 - 8 | 50 - 80 |

# Finishing

**603.02 CONSTRUCTION**
**603.03.01 Concrete Sidewalks**

**(d)** Finishing Float the surface and apply a broom finish. Do not plaster the surface. Use a ¼ in. edging tool on the outside outside edges edges and all joints.




| SPECIFICATION | CATEGORY CODE ITEMS |
|---|---|
| APPROVED | Kirk G. McAllister<br>DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT |

| APPROVAL • SHA REVISIONS | APPROVAL • FEDERAL HIGHWAY ADMINISTRATION |
|---|---|
| APPROVAL 3-11-64 | APPROVAL 6-9-64 |
| REVISED 10-1-01 | REVISED |
| REVISED | REVISED |
| REVISED | REVISED |

**Maryland Department of Transportation**
**STATE HIGHWAY ADMINISTRATION**
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

# SIDEWALK EXPANSION JOINTS

**STANDARD NO. MD 655.01**

# Excavation

**603.03 CONSTRUCTION**
**603.03.01 Concrete Sidewalks**
**(a) Excavation Refer to 602.03.01**

Excavate to the specified depth and to the width required to install and brace the forms. Compact the subgrade to 92% density per T180, Method C, and trim to the proper shape and required grade. Remove all soft and unsuitable material and replace with approved material.

# Joints

**603.03 CONSTRUCTION**
**603.03.01 Sidewalks**

(e) Joints. Place joints as specified. Tool or saw dummy joints a minimum of ¾ in. deep

Match adjacent joints in curb or pavement. Place expansion joint material to the full depth of the concrete.

# Curing

**502.03.12 Curing**. Following texturing and edging, cure the concrete for at least 72 hours. Whenever the ambient air temperature falls below 40 F during the curing period, use insulated blankets to maintain the concrete temperature above 40F. Use insulated blankets in addition to any curing material that is used. Provide a sufficient number of thermometers to monitor the temperature of the concrete. Cure the concrete using one of (listed) methods

# 520.03.12 Sidewalk Curing Methods

(a) Liquid Membrane Forming Compound
(b) Burlap Curing
(c) Cotton Map Curing
(d) Sheet Materials

# 902.07.03 Liquid Membrane

902.07.03 Liquid Membrane. M 148 Field control testing of the white pigmented curing compounds shall be on the basis of weight per gallon. The samples shall not deviate more than +/- 0.3 lb/gal from the original source sample

# Cold Weather Protection and Curing

**603.3 CONSTRUCTION**
**603.03.01 Sidewalks**
(f) Cold Weather Protection and Curing. Refer to 520.03.02 and .12. Do not allow pedestrian and vehicular traffic during the curing period.

# Forms

**603.03 CONSTRUCTION**

**603.03.01 Concrete Sidewalks**

(b) Forms

(1) Fixed Form Method. Use Full depth steel or wood forms. Use forms that are straight, free from warp, and are sufficient strength to resist the pressure of the concrete. Brace and stake the forms so that they remain in both horizontal and vertical alignment. Thoroughly clean and coat forms with form release compounds each time they are used. Allow the concrete to set at least 12 hours before removing the forms.

(2). Slip-Form Method. Refer to 604.03.01 (b), except use 603.03.01( e) for joint construction.

# Concreting

**603.03 CONSTRUCTION**

**603.03.01 Concrete Sidewalks**

**(c)** Concreting. Before placing concrete, moisten the subgrade with as much water as it can absorb. Mix the concrete according to 915.03.04. Volumetric batching and continuous mixing will be permitted. Deposit the concrete on the prepared subgrade in successive batches to the full width of the sidewalk. Thoroughly spade along the edges and tamp the entire surface area to eliminate voids. Strike off and screed the concrete to the top of the forms.

# Expansion Joint Sealing

603.3 CONSTRUCTION

603.03.01 Expansion Joint Sealing

(g) Prior to sealing, clear dirt and other foreign materials from the expansion joints. Ensure that joint walls and all surfaces to which the sealing material is to adhere are surface dry for at least three hours prior to sealing. Do not seal the joints until they are acceptable to the Engineer. Ensure that the surface of the sealing compound is not more than 1/8 in. below the sidewalk surface.

# Weather Restrictions

**520.03.02 Weather Restrictions.**
**(a) Temperature and Surface Conditions.** Begin concrete placement when the ambient air and surface temperatures are at least 40 F and rising. Discontinue placement whenever the temperature falls below 40 F. These requirements may be waived for incidental concrete construction. Do not place concrete on a frozen base.
**(b) Precipitation.** Have sufficient approved material on hand to cover freshly placed concrete as protection against precipitation.
**(c) Wind.** Cease placement when the Engineer determines that wind conditions may have a detrimental effect on the work.

When weather conditions differ from these limits, placement of material en route is at the Contractor's risk.
If the Engineer for any other reason stops placement, dispose of enroute material at no additional cost to the Administration.

What do you think?

Everything needed to construct a durable concrete is in the book