November 1, 2012

REVISION OF SECTION 703

AGGREGATES FOR HOT MIX ASPHALT

**NOTICE**

This is a standard special provision that revises or modifies CDOT’s *Standard Specifications for Road and Bridge Construction*. It has gone through a formal review and approval process and has been issued by CDOT’s Project Development Branch with formal instructions for its use on CDOT construction projects. It is to be used as written without change. Do not use modified versions of this special provision on CDOT construction projects, and do not use this special provision on CDOT projects in a manner other than that specified in the instructions unless such use is first approved by CDOT’s Standards and Specifications Unit. The instructions for use on CDOT construction projects appear below.

Other agencies which use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

**Instructions for use on CDOT construction projects:**

Use in projects having HMA.

Section 703 of the Standard Specifications is hereby revised for this project as follows:

Delete subsection 703.04 and replace with the following:

**703.04 Aggregates for Hot Mix Asphalt.** Aggregates for hot mix asphalt (HMA) shall be of uniform quality, composed of clean, hard, durable particles of crushed stone, crushed gravel, natural gravel, or crushed slag. Excess of fine material shall be wasted before crushing. A percentage of the aggregate retained on the 4.75 mm (No. 4) sieve for Gradings S, SX and SG— and on the 2.36 mm (No. 8) sieve for Gradings SF and ST—shall have at least two mechanically induced fractured faces when tested in accordance with Colorado Procedure 45. This percentage will be specified in Table 403-1, as revised for the project in Section 403. The angularity of the fine aggregate shall be a minimum of 45.0 percent when determined according to AASHTO T 304. Grading SF mixes, when determined by RME, may not require fine aggregate angularity of 45.0 percent. Aggregate samples representing each aggregate stockpile shall be non-plastic if the percent of aggregate passing the 2.36 mm (No. 8) sieve is greater than or equal to 10 percent by weight of the individual aggregate sample. Plasticity will be determined in accordance with AASHTO T 90. The material shall not contain clay balls, vegetable matter, or other deleterious substances.

The aggregate for Gradings ST, S, SX and SG shall have a percentage of wear of 45 or less when tested in accordance with AASHTO T 96.

# Table 703-4

**Master Range Table for Hot Mix Asphalt**

|  |  |
| --- | --- |
| **Sieve Size** | **Percent by Weight Passing Square Mesh Sieves** |
| **Grading SF\*\*** | **Grading ST** | **Grading SX** | **Grading****S** | **Grading SG** |
| 37.5 mm (1½″) |  |  |  |  | 100 |
| 25.0 mm (1″) |  |  |  | 100 | 90 – 100 |
| 19.0 mm (¾″) |  |  | 100 | 90 – 100 |  |
| 12.5 mm (½″) |  | 100 | 90 – 100 | \* | \* |
| 9.5 mm (⅜″) | 100 | 90 – 100 | \* | \* | \* |
| 4.75 mm (#4) | 90 – 100 | \* | \* | \* | \* |
| 2.36 mm (#8) | \* | 28 – 58 | 28 – 58 | 23 – 49 | 19 – 45 |
| 1.18 mm (#16) | 30 – 54 |  |  |  |  |
| 600 μm (#30) | \* | \* | \* | \* | \* |
| 300 μm (#50) |  |  |  |  |  |
| 150 μm (#100) |  |  |  |  |  |
| 75 μm (#200) | 2 – 12 | 2 – 10 | 2 – 10 | 2 – 8 | 1 – 7 |
| \* These additional Form 43 Specification Screens will initially be established using values from the As Used Gradation shown on the Design Mix.\*\*SF applications are limited and the CDOT Pavement Design Manual should be referenced, prior to use. |

Aggregates for stone matrix asphalt (SMA) shall be of uniform quality, composed of clean, hard, durable particles of crushed stone, crushed gravel, or crushed slag. A minimum of 90 percent of the particles retained on the 4.75 mm (No. 4) sieve shall have at least two mechanically induced fractured faces when tested in accordance with Colorado Procedure 45. The particles passing the 4.75 mm (No. 4) sieve shall be the product of crushing rock larger than 12.5 mm (½ inch) and shall be non-plastic when tested in accordance with AASHTO T 90.

Additionally, each source of aggregate for SMA shall meet the following requirements:

1. No more than 30 percent when tested in accordance with AASHTO T 96 Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
2. No more than 12 percent when tested in accordance with AASHTO T 104 Soundness of Aggregate by Use of Sodium Sulfate.

The aggregate for Hot Mix Asphalt (HMA) shall meet the requirements of Table 703-4A when tested in accordance with CP-L 4211 Resistance of Coarse Aggregate to Degradation by Abrasion in the Micro-Deval Apparatus. The Contractor shall be assessed a price reduction of $1000 for each production sample of the combined aggregate with a value greater than 20 according to CP-L 4211.

**Table 703-4A**

## Aggregate Degradation by Abrasion

##  in the Micro-Deval CP-L 4211

|  |  |
| --- | --- |
|  | **Not to exceed** |
| Combined Aggregate (Mix Design) | 18 |
| Combined Aggregate (1/10,000 tons, or fraction thereof during production) | 20 |