 <p><b>Manitoba</b> Transportation and Infrastructure</p> <p>Highway Design</p>	Standard No.: <b>MEB-P055</b>
	<p><u>Effective Date</u> Current: <b>March 2023</b> Previous: <b>None</b></p>
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Standard Test Method: <b>Specific Gravity and Absorption of Bituminous Aggregates</b>	

## 1.0 SCOPE

This test method covers the determination of density, relative density and absorption of bituminous aggregates.

## 2.0 REFERENCE STANDARDS

### *ASTM Standards*

- C127 Density, Relative Density (Specific Gravity) and Absorption of Coarse Aggregate
- C128 Density, Relative Density (Specific Gravity) and Absorption of Fine Aggregate
- C117 Materials Finer than 75- $\mu$ m (No. 200) Sieve in Mineral Aggregates by Washing

### *AASHTO Standards*

- T85 Specific Gravity and Absorption of Coarse Aggregate
- T84 Specific Gravity and Absorption of Fine Aggregate

### *MTO Standards*

- LS-600 Dry Preparation of Aggregates for the Determination of Physical Constants

### *MEB Standards*

- P054 Preparation of Bituminous Aggregates for the Determination of Physical Properties

## 3.0 DEFINITION

**Coarse Aggregate:** Coarse aggregate is all material retained on the 4.75 mm sieve. This includes material retained on the 4.75 mm sieve contained in the fine aggregates.

**Fine Aggregate:** Fine aggregate is all material passing the 4.75 mm sieve. This includes material passing the 4.75 mm sieve contained in the coarse aggregates.


**Blended aggregates:** As-received aggregate samples combined as per the bituminous mix design

## 4.0 PROCEDURE

Follow ASTM C127 and C128 procedure except as noted in 4.1 and 4.2.

4.1 Combine as-received aggregates in accordance with *MEB-P054 Preparation of Bituminous Aggregates for the Determination of Physical Properties*.

4.2 Split blended aggregates on the 4.75 mm sieve and separate portion retained on the 4.75 mm sieve (coarse aggregate) and the portion passing the 4.75 mm sieve (fine aggregate) for testing.

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4.3 Wash fine aggregate portion over a 0.075 mm sieve in accordance with *ASTM C117 Materials Finer than 75- $\mu$ m (No. 200) Sieve in Mineral Aggregates by Washing*.

## 5.0 CALCULATION

Calculate specific gravity of the blended aggregates as follows:

$$(P_{coarse} * SG_{coarse}) + (P_{fine} * SG_{fine})$$

Where:

$P_{coarse}$  = Portion of Blended Aggregate retained on the 4.75 mm sieve, %

$P_{fine}$  = Portion of Blended Aggregate passing the 4.75 mm sieve, %

$SG_{coarse}$  = Specific Gravity of the Coarse Aggregate

$SG_{fine}$  = Specific Gravity of the Fine Aggregate

Calculate absorption of the bended aggregates as follows:

$$(P_{coarse} * ABS_{coarse}) + (P_{fine} * ABS_{fine})$$

Where:

$ABS_{coarse}$  = Absorption of the Coarse Aggregate

$ABS_{fine}$  = Absorption of the Fine Aggregate

## 6.0 REPORT

Report to specific gravity to the nearest 0.001 and absorption to the nearest 0.01%.