

# Material and Application Guide

## 6AA Blast Furnace Slag – Levy Plant #1



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**Material:** Blast Furnace Slag

**Product:** MDOT – 6AA

**Location:** Levy Plant #1 – State Pit #82-19

**Applications:** Coarse aggregate in portland cement concrete  
Coarse aggregate in portland cement concrete pavements  
Pipe bedding material  
Decorative stone for landscaping

**Description:** A coarse aggregate, produced by crushing and screening air-cooled iron Blast Furnace Slag. A light brown to gray crystalline aggregate, formed simultaneously with the production of iron in a blast furnace. The particles are sized from 1½" (37.5mm) to ¾" (9.5mm).



**6AA Blast Furnace Slag – Actual size shown**

## Specifications: Michigan Department of Transportation

6AA Blast Furnace Slag conforms to all the requirements of Michigan Department of Transportation "2003 Standard Specifications for Construction", section 902 "Aggregates"

## Gradation:

U.S. Sieve	1½"	1"	¾"	½"	⅜"	#4	LBW
Metric Sieve	37.5mm	25.0mm	19.0mm	12.5mm	9.5mm	4.75mm	
Specification	100	95-100	-	30-60	-	0-8	2.0 max
2008 Average	<b>100</b>	<b>99</b>	<b>78</b>	<b>40</b>	<b>17</b>	<b>5</b>	<b>0.9</b>

## Physical Properties:

- MTM 110, Sum of Coke and Coal Particles (2008 Average) – 0.0% (Specification 1.0% max)
- Shipping Moisture (2008 Average) – 5.0%
- MTM 115, Freeze-Thaw Dilation – 0.001% (Tested 2007)
- ASTM C 29, Loose Unit Weight (2008 Average) – 76 lb/ft<sup>3</sup>
- ASTM C 29, Rodded Unit Weight (2008 Average) – 85 lb/ft<sup>3</sup>
- ASTM C 127, Bulk Specific Gravity Dry (2008 Average) – 2.38
- ASTM C 127, Bulk Specific Gravity SSD (2008 Average) – 2.42
- ASTM C 127, Absorption (2008 Average) – 2.8%
- ASTM C 142, Clay Lumps and Friable Particles in Aggregate – 0.0%
- ASTM C 123, Light Weight Particles (Chert [Less Than 2.40 sp gr SSD]) in Aggregate <sup>A</sup>
- ASTM C 123, Light Weight Particles (Coal and Lignite) in Aggregate – 0.3%
- ASTM C 131, Abrasion and Impact in the Los Angeles Machine <sup>B</sup>
- ASTM C 88, Soundness of Aggregate by Use of Magnesium Sulfate – 2% loss

<sup>A</sup> Not applicable to Blast Furnace Slag, see ASTM C 33 – Table 3, footnote C

<sup>B</sup> Not applicable to Blast Furnace Slag, see ASTM C 33 – Table 3, footnote A

## General Usage Guide:

The 6AA Blast Furnace Slag should be blended into the concrete mixture along with the cement, fine aggregate, water, admixtures and any special additives in the proportions detailed in the mix design. Care needs to be taken to maintain the moisture content of the 6AA Blast Furnace Slag at or above the absorption level (2.9%) so as to prevent the absorption of mix water into the Blast Furnace Slag particles.

## Field Estimating Quantities:

Typical 6AA Blast Furnace Slag requirements per 1 cy. yd. of 3500 PSI concrete	1400 – 1500 lbs
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