

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 "2012 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
Avg. Gradation	100	99	80	41	17	6	0.9

Physical Properties:

- MTM 110, Sum of Coke and Coal Particles – 0.0% (Specification 1.0% max)
- Shipping Moisture – 5.1%
- MTM 115, Freeze-Thaw Dilation – 0.003%
- ASTM C 29, Loose Unit Weight – 77 lb/ft³
- ASTM C 29, Rodded Unit Weight – 83 lb/ft³
- ASTM C 127, Bulk Specific Gravity Dry – 2.35
- ASTM C 127, Bulk Specific Gravity SSD – 2.42
- ASTM C 127, Absorption – 3.1%
- 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 ^A
- ASTM C 123, Light Weight Particles (Coal and Lignite) in Aggregate – 0.3%
- ASTM C 131, Abrasion and Impact in the Los Angeles Machine ^B
- ASTM C 88, Soundness of Aggregate by Use of Magnesium Sulfate – 1% loss

^A Not applicable to Blast Furnace Slag, see ASTM C 33 – Table 3, footnote C

^B 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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