

Material and Application Guide

6AA Limestone – Presque Isle Quarry



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Material: Limestone

Product: MDOT – 6AA

Source: Larfage North America, Presque Isle Quarry – State Pit #71-47

Location: St. Clair Aggregates – Detroit Dock

Applications: Coarse aggregate in portland cement concrete
Coarse aggregate in portland cement concrete pavements
Pipe bedding material

Description: A coarse aggregate, produced by crushing, washing and screening high calcium limestone. A white to light gray colored sedimentary rock formed by the precipitation of calcium carbonate from seawater. The particles are sized from 1½" (37.5mm) to ¾" (9.5mm).



6AA Limestone – Actual size shown

Specifications: Michigan Department of Transportation

6AA Presque Isle Limestone 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	100	89	46	24	3	1.4

Physical Properties:

- MTM 110, Soft Particles – 0.0% (Specification 2.0% maximum)
- MTM 110, Clay-Ironstone Particles – 0.0% (Specification 1.0% maximum)
- MTM 110, Chert Particles – 0.0%
- MTM 110, Sum of Soft Particles and Chert – 0.0% (Specification 4.0% maximum)
- MTM 115, Freeze-Thaw Dilation – 0.016% (Tested 2014)
- ASTM C 29, Loose Unit Weight – 89 lb/ft³
- ASTM C 29, Rodded Unit Weight – 97 lb/ft³
- ASTM C 127, Bulk Specific Gravity Dry – 2.60
- ASTM C 127, Bulk Specific Gravity SSD – 2.63
- ASTM C 127, Absorption – 1.2%
- ASTM C 142, Clay Lumps and Friable Particles in Aggregate – 0.2%
- ASTM C 123, Light Weight Particles (Chert [Less Than 2.40 sp gr SSD]) in Aggregate – 0.0%
- ASTM C 123, Light Weight Particles (Coal and Lignite) in Aggregate – 0.0%
- ASTM C 131, Abrasion and Impact in the Los Angeles Machine – 33%
- ASTM C 88, Soundness of Aggregate by Use of Sodium Sulfate – 3% loss

General Usage Guide:

The 6AA Limestone 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 minimize the amount of handling of the 6AA Limestone as handling operations will cause 'dusting' of the aggregates particles, increasing the amount of material passing the #200 mesh (75µm sieve).

Field Estimating Quantities:

Typical 6AA Limestone requirements per 1 cy. yd. of 3500 PSI concrete	1700 – 1800 lbs
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