

Material and Application Guide

6A Natural Gravel – Holly



EDW. C. LEVY CO.

8800 Dix Avenue, Detroit, Michigan 48209

Phone (313) 429-LEVY

Fax (313) 429-2448

e-mail sales@edwclevy.net

<http://www.edwclevy.com>

Material: Natural Gravel

Product: MDOT – 6A

Location: Burroughs Materials, Holly Plant – State Pit #63-54

Applications: Coarse aggregate in portland cement concrete
Filter gravel in septic fields
Pipe bedding material
Decorative stone for landscaping

Description: A coarse aggregate, produced by washing, screening and reduction of deleterious particles from natural gravel. The particles are sized from 1½" (37.5mm) to #4 mesh (4.75mm) and were formed by the natural disintegration of numerous types and colors of rocks by glacial or riverbed action into primarily round particles.



6A Natural Gravel – Actual size shown

Specifications: Michigan Department of Transportation

6A Natural Gravel conforms to all the requirements of Michigan Department of Transportation "2003 Standard Specifications for Construction", section 902 "Aggregates" with the exception of the Freeze-Thaw Dilation. This material cannot be certified as MDOT 6A at this time due to a Freeze-Thaw Dilation that exceeds the MDOT specification limit.

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	1.0 max
2008 Average	100	97	87	51	20	0	0.2

Physical Properties:

- MTM 110, Soft Particles (2008 Average) – 1.2% (Specification 3.0% maximum)
- MTM 110, Clay-Ironstone Particles (2008 Average) – 0.2% (Specification 2.0% maximum)
- MTM 110, Chert Particles (2008 Average) – 4.9% (Specification 7.0% maximum)
- MTM 110, Sum of Soft Particles and Chert (2008 Average) – 6.3% (Specification 9.0% maximum)
- MTM 115, Freeze-Thaw Dilation – 0.067% (Tested 2007) – **Exceeds Specification Limit**
- ASTM C 29, Loose Unit Weight (Average of last 5 tests) – 99 lb/ft³
- ASTM C 29, Rodded Unit Weight (Average of last 5 tests) – 105 lb/ft³
- ASTM C 127, Bulk Specific Gravity Dry (Average of last 5 tests) – 2.67
- ASTM C 127, Bulk Specific Gravity SSD (Average of last 5 tests) – 2.69
- ASTM C 127, Absorption (Average of last 5 tests) – 1.1%
- ASTM C 142, Clay Lumps and Friable Particles in Aggregate – 0.1%
- ASTM C 123, Light Weight Particles (Chert [Less Than 2.40 sp gr SSD]) in Aggregate – 1.0%
- ASTM C 123, Light Weight Particles (Coal and Lignite) in Aggregate – 0.6%
- ASTM C 131, Abrasion and Impact in the Los Angeles Machine – 17%
- ASTM C 88, Soundness of Aggregate by Use of Magnesium Sulfate – 3% loss

General Usage Guide:

The 6A Natural Gravel 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.

Field Estimating Quantities:

Typical 6A Gravel requirements per 1 cy. yd. of 3500 PSI concrete	1900 – 2000 lbs
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