

# N.U.Q.Q.

## NEW ULM QUARTZITE QUARRIES

### 2011 PRODUCT TEST SUMMARY

PRODUCT: MNDOT FA-3, (3/8" x #4)

### GRADATION

NUMBER OF TESTS PERFORMED: 12

DATE OF LAST TEST: 05/23/2011

SIEVES (millimeters in parentheses)	MNDOT SPEC LIMITS	MNDOT SPEC MEDIAN	N.U.Q.Q. RUNNING AVERAGE	STANDARD DEVIATION ABOUT RUNNING AVERAGE	N.U.Q.Q. GRADATION TARGET BAND	% OF TESTS INSIDE OF TARGET BAND
0.375" (9.5)	90% - 100%	100.0%	100.0%	0.0%	100%	100.0%
0.250" (6.35)	0% - 70%	35.0%	30.5%	7.0%	24% - 37%	75.0%
#4 (4.75)	0% - 25%	12.5%	6.4%	1.6%	5% - 8%	58.3%
#8 (2.36)	0% - 5%	2.5%	2.2%	0.4%	2% - 3%	83.3%

NOTE: VALUES INDICATE THE PERCENT BY WEIGHT PASSING SQUARE OPENING SIEVES.

### GENERAL QUALITY

QUALITY PARAMETERS	N.U.Q.Q. RUNNING AVERAGE	MNDOT SPEC LIMITS	NOTE
L.A.R. ABRASION LOSS, (A.S.T.M. C131-89):	< 30.0%	40% MAX.	TOUGHNESS
MAGNESIUM SULFIDE LOSS, (A.S.T.M. C88-90 - 5 CYCLES):	4.8%	N/A	SOUNDNESS
SPECIFIC GRAVITY, (A.S.T.M. C127-88):	2.627	N/A	BULK SSD
ABSORPTION IN BULK SAMPLE, (A.S.T.M. C126):	< 0.35%	N/A	POROSITY
LOOSE WEIGHT:	86.70	N/A	LBS. / CU. FT.
VOIDS IN LOOSE AGGREGATE:	53.2%	N/A	
200 MESH, (75 MICRON), MATERIAL, (A.S.T.M. C117-90):	0.57%	1.0% MAX.	SURFACE DUST
MEDIAN SIZE:	0.140	N/A	INCHES
AVERAGE LEAST DIM.:	0.102	N/A	INCHES
FLAKINESS INDEX:	0.0%	30.0% MAX.	SHAPE
SUGGESTED AGGREGATE APPLICATION RATE FOR SEAL COAT:	11.0	N/A	LBS. / SQ. YD.

QUARTZITE AGGREGATES CONTAIN NO SHALE, IRON OXIDE, SLATE, UNSOUND CHERT OR CLAY BALLS.