

NUMBER OF TESTS PERFORMED: 13

DATE OF LAST TEST: 10/01/2002

*NOTE: Values indicate the percent by weight passing square opening sieves.

Gradation						
SIEVES (mm)	MNDot Spec Limits	MNDot Spec Median	NUQQ Running Avg.	Standard Deviation about Running Avg.	NUQQ Gradation Target Band	% tests inside of Target Range
1.25" (31.5)	100%	-	100.0%	0.0%	100%	100%
1.0" (25.0)	95%-100%	97.5%	97.0%	1.2%	96%-98%	83.3%
0.75" (19.0)	65%-95%	80.0%	80.5%	2.2%	79%-84%	83.3%
0.625" (16.0)	-	-	-	2.4%	-	-
0.5" (12.5)	-	-	41.0%	2.4%	-	-
0.375" (9.5)	25%-55%	40.0%	22.5%	5.1%	24%-34%	83.3%
#4 (4.75)	0%-7%	3.5%	4.2%	0.6%	3%-4%	83.3%

This product will meet A.S.T.M. #57 specification for gradation.

DISCLAIMER: The gradation and mechanical test results included in this report are for information only. New Ulm Quartzite Quarries, Inc. makes no representation or warranties either expressed or implied with respect to the use of this information. New Ulm Quartzite Quarries, Inc. assumes no liability to anyone for special, collateral, exemplary, indirect, incidental, consequential, or any other kind of damage resulting from the use or application of this information. Customers and other users of our products should exercise their independent judgment when using these products for the purposes they intend.

General Quality			
Quality Parameters	NUQQ Running Avg.	MNDot Spec Limits	Note
Non Class 'A' Material by Weight:	7.0%	4.0% Max.	Sandstone
L.A.R. Abrasion Loss (A.S.T.M. C131-89):	32.0%	40% Max.	Toughness
Magnesium Sulfate Loss (A.S.T.M. C88-90 - 5 Cycles):	4.8%	15% Max.	Soundness
Friable Particles, (A.S.T.M. C142-78):	0.0%	2.5% Max.	Soft Particles
Specific Gravity, (A.S.T.M. C127-88):	2.63	N/A	Bulk Spec. Gravity
Absorption, (A.S.T.M. C126):	<0.35%	N/A	Porosity
Freeze thaw durability (A.S.T.M. 666 Meth. A, 306 Cycles):	88.5%/0.006%	N/A	RDME/Length Change
200 Mesh, (75 Micron), Material, (A.S.T.M. C117-90):	0.2%	0.8% Max.	Surface Dust
A.S.R. Expansion, (A.S.T.M. C-1293 @ 365 Days W/O Mitigators):	0.123	-	A.S.R. Reactivity
A.S.R. Expansion, (A.S.T.M. C-1293 @ 365 Days W/ 25% "Coal Creek" FA Replacement):	0.027%	0.04% Max	A.S.R. Reactivity
A.S.R. Expansion, (A.S.T.M. C-1260 @ 14 Days W/O Mitigators):	0.080%	-	A.S.R. Reactivity

Quartzite Aggregates contain no shale, iron oxide, slate, unsound chert or clay balls.