



2009 PRODUCT TEST SUMMARY

PRODUCT: A.R.E.M.A. 24 BALLAST

GRADATION

NUMBER OF TESTS PERFORMED: 7				DATE OF LAST TEST: 07/02/2009		
SIEVES (millimeters in parentheses)	A.R.E.M.A. SPEC LIMITS	A.R.E.M.A. SPEC MEDIAN	N.U.Q.Q. RUNNING AVERAGE	SAMPLE STANDARD DEVIATION ABOUT RUNNING AVERAGE	N.U.Q.Q. PRODUCTION WORKING RANGE	PERCENT OF INDIVIDUAL TESTS WITHIN NUQQ WORKING RANGE
2.5" (62.5)	90% - 100%	95%	100.0%	0.0%	100%	100.0%
2.0" (50.8)			88.0%	0.0%	88% - 88%	
1.5" (37.5)	25% - 60%	42.5%	58.0%	6.6%	51% - 65%	71.4%
1.0" (25.0)			17.0%	9.3%	8% - 26%	
0.75" (19.0)	0% - 10%	5%	5.5%	9.8%	-4% - 15%	0.0%
0.5" (12.5)	0% - 5%	2.5%	1.1%	6.0%	-5% - 7%	0.0%
#4 (4.75)			0.5%	0.8%	-0% - 1%	

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
NON CLASS 'A' MATERIAL BY WEIGHT:	0.0%	4.0% MAX.	SANDSTONE
L.A.R. ABRASION LOSS, (A.S.T.M. C535):	29.8%	30% MAX.	TOUGHNESS
MAGNESIUM SULFIDE LOSS, (A.S.T.M. C88-90 - 5 CYCLES):	3.3%	15% MAX.	SOUNDNESS
FLAT & ELONGATE PARTICLES, (A.S.T.M. D 4791):	0.0%	5% MAX.	3:1 RATIO
SPECIFIC GRAVITY, (A.S.T.M. C127-88):	2.63 / 2.65 / 2.64	N/A	BULK / APPARENT / SSD
ABSORPTION IN BULK SAMPLE, (A.S.T.M. C126):	< 0.5%	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):	< 0.5%	0.8% MAX.	SURFACE DUST
MILL ABRASION LOSS / UNION PACIFIC ABRASION INDEX:	3.0% / 44.2%	N/A	BALLAST DURABILITY

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

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 SAMPLES AVAILABLE UPON REQUEST