

Table 902-4

Grading Requirements for Fine Aggregates

Material	Sieve Analysis (MTM 109), Total Percent Passing (a)							Loss by Washing % Passing No. 200 (a), (b)	Fineness Modulus Variation (c)
	$\frac{3}{8}$ in	No. 4	No. 8	No. 16	No. 30	No. 50	No. 100		
2NS	100	95–100	65–95	35–75	20–55	10–30	0–10	0–3.0	± 0.20 (d)
2SS (e)	100	95–100	65–95	35–75	20–55	10–30	0–10	0–4.0	± 0.20 (d)
2MS	—	100	95–100	—	—	15–40	0–10	0–3.0	± 0.20 (d)

a. Test results based on dry weights.

b. Use test method MTM 108 for Loss by Washing.

c. Aggregate having a fineness modulus differing from the base fineness modulus of the source by the amount exceeding the maximum variation specified in the table, will be rejected. Use ASTM C 136.

d. The base fineness modulus will be supplied by the aggregate producer at the start of each construction season and be within the range of 2.50 to 3.35. The base FM, including the permissible variation, will be within the 2.50 to 3.35 range.

e. Quarried carbonate (limestone or dolomite) cannot be used for any application subject to vehicular traffic.

**Table 902-1
Grading Requirements for Coarse Aggregates, Dense-Graded Aggregates, and Open-Graded Aggregates**

Material Type	Class	Item of Work by Section Number (Sequential)	Sieve Analysis (MTM 109) Total Percent Passing (a)										Loss by Washing (MTM 108) % Passing No. 200 (a)
			2½ in	2 in	1½ in	1 in	¾ in	½ in	⅜ in	No. 4	No. 8	No. 30	
Coarse Aggregates	4 AA (b)	<u>602</u>	100	90-100	40-60	—	0-12	—	—	—	—	—	≤2.0
	6 AAA (b)	<u>602</u>	—	—	100	90-100	60-85	30-60	—	0-8	—	—	≤1.0 (c)
	6 AA (b)	<u>601, 602, 706, 708, 806</u>	—	—	100	95-100	—	30-60	—	0-8	—	—	≤1.0 (c)
	6 A	<u>205, 401, 402, 601, 602, 603, 706, 806</u>	—	—	100	95-100	—	30-60	—	0-8	—	—	≤1.0 (c)
	17 A	<u>401, 406, 701, 706, 708</u>	—	—	—	100	90-100	50-75	—	0-8	—	—	≤1.0 (c)
	25 A		—	—	—	—	100	95-100	60-90	5-30	0-12	—	≤3.0
	26 A	<u>706, 712</u>	—	—	—	—	100	95-100	60-90	5-30	0-12	—	≤3.0
29 A		—	—	—	—	—	100	90-100	10-30	0-10	—	≤3.0	
Dense-Graded Aggregates	21 AA	<u>302, 304, 305, 306, 307</u>	—	—	100	85-100	—	50-75	—	—	20-45	—	4-8 (d,e)
	21 A	<u>302, 305, 306, 307</u>	—	—	100	85-100	—	50-75	—	—	20-45	—	4-8 (d,e)
	22 A	<u>302, 305, 306, 307</u>	—	—	—	100	90-100	—	65-85	—	30-50	—	4-8 (d, e, f)
	23 A	<u>306, 307</u>	—	—	—	100	—	—	60-85	—	25-60	—	9-16 (e)
Open-Graded Aggregates	4 G (g)	<u>303</u>	—	—	—	—	—	—	—	—	—	—	—
	34 R	<u>401, 404</u>	—	—	—	—	—	100	90-100	—	0-5	—	≤3.0
	34 G	<u>404</u>	—	—	—	—	—	100	95-100	—	0-5	—	≤3.0

a. Based on dry weights.

b. Class 6AAA will be used exclusively for all mainline and ramp concrete pavement when the directional commercial ADT is greater than or equal to 5,000 vehicles per day.

c. Loss by Washing will not exceed 2.0 percent for material produced entirely by crushing rock, boulders, cobbles, slag, or concrete.

d. When used for aggregate base courses, surface courses, shoulders and approaches and the material is produced entirely by crushing rock, boulders, cobbles, slag, or concrete, the maximum limit for Loss by Washing must not exceed 10 percent.

e. The limits for Loss by Washing of dense-graded aggregates are significant to the nearest whole percent.

f. For aggregates produced from sources located in Berrien County, the Loss by Washing must not exceed 8 percent and the sum of Loss by Washing and shale particles must not exceed 10 percent.

g. Reference contract documents.