

COMPARISON OF TMR AND RMS ASPHALT AGGREGATE TEST METHODS

Variance between test methods

Minimal

Low

Medium

High

RMS test	TMR test	Property Measured by Test	RMS test method differs from TMR test method how?
T100	Q060	Sample sampling	Test T100 specifies that aggregates must be sampled in accordance with AS 1141.3.1. While Q060 is based on but is not identical to AS 1141.3.1.
T105	Q101	Sample preparation	MRTS30, Table 4 specifies that Q101 shall be used to prepare samples. RMS Specification 3152, Cl. 8.2 specifies that samples must be riffled and/or quartered but does not specify the sample preparation test method.
AS 1141.11.1	Q103B	Dry Sieving Particle Size Distribution	Q103B includes 16mm sieve and excludes 75.0, 53.0, 37.5 and 0.425mm sieves. Q103B permits hand sieving only. AS 1141.11 permits mechanical sieving. Q103B Table 1 specifies larger minimum sample masses than AS1141.11 Table 1.
AS 1141.12	Q103C	Material finer than 75µm	Q103C is based on AS1289.3.6.3 and uses a hydrometer to determine the PSD of aggregates that pass the 2.36mm sieve. AS 1141.12 only reports the fraction that passes the 75 µm sieve. Both tests are not applicable if less than 10% of the material passes the 75 micron sieve.
AS 1141.14	Q201	Particle Shape/Flakiness Index	Both tests measure particle shape/flakiness. However, the results of the tests are not comparable as: <ul style="list-style-type: none"> AS 1141.14 uses a proportional caliper to determine the percentage of particles with an average greatest to least dimension ratios $\geq 2:1$ and $3:1$ Q201 uses slotted sieve sizes with rectangular apertures to determine the percentage of particles with a least dimension $< 0.6 \times$ mean dimension.
AS 1141.14	Q213	Particle Shape	Q213 is identical to AS 1141.14. However, Q213 is not referenced in MRTS30, Table 4.

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T235	Q202	ALD of 10mm aggregate	T235 is only relevant to 10mm and 14mm aggregates used in SMA and differs from Q202 as: <ul style="list-style-type: none"> Q202 is based on AS 1141.20.3 although it calculates ALD from flakiness index and median size of the aggregate, rather than utilizing the nomograph in AS 1141.20.3, Figure B1. T235 is based on AS 1141.20.1 which directly measures ALD using a dial gauge or vernier callipers or slotted gauge
T275	Q202	ALD of 5 mm and 7 mm aggregate	T275 is only relevant to 5 and 7mm aggregates used in SMA and differs from Q202 as: <ul style="list-style-type: none"> Q202 is only applicable to aggregate with an ALD ≥ 7mm and is based on AS 1141.20.3 although it calculates ALD using a formula rather than utilizing the nomograph in AS 1141.20.3, Figure B1. T275 is based on AS 1141.20.2 which physically measures ALD using a slotted gauge.
T278	?	Ratio of greatest to least dimension of coarse aggregates	T278 is performed on 5, 7, 10 and 14mm aggregates used in SMA. TMR does not appear to have a test method comparable to RMS test method T278.
T239	Q215	No. of fractured faces of coarse aggregates	Q215 and T239 both measure the percent by mass of aggregates with two or more fractured faces. However, T239 also measures the percent by mass of aggregates with no fractured faces and one or more fractured faces.
AS 1141.41 & AS 1141.42	Q203	Polished aggregate friction value	Q203 is based on AS 1141.40: Polished aggregate friction value – vertical road wheel machine and AS 1141.42: Pendulum friction test. RMS specification 3152 requires PAFV to be determined based on AS 1141.41: Polished aggregate friction value - Horizontal bed machine and AS 1141.42: Pendulum friction test.
T215	Q205A & Q205B	Aggregate 10% fines wet and dry strength variation	T215 is virtually identical to AS 1141.22 and Q205A & Q205B.

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AASHTO T304-96 Method A	-	Angularity of aggregates with a nominal size of 5 mm or less	RMS Specification 3152 Table 3152.2 specifies that T304 must be performed on fine aggregates used in SMA. TMR does not require asphalt aggregate angularity to be measured.
AS 1141.5	Q214A	Fine aggregate water absorption & apparent density	Both tests measure the percentage by mass of water held in the permeable voids of saturated surface dry fine aggregates to their oven-dried mass. Q214A differs from AS 1141.5 by allowing apparent density to be calculated.
AS 1141.6.1	Q214B	Coarse aggregate water absorption & apparent density	Both tests measure the percentage by mass of water held in the permeable voids of saturated surface dry coarse aggregates to their oven-dry mass. Q214B allows a weighing technique that AS 1141.6.1 does not.
AS 1141.24	Q209	Soundness of aggregates	SAA advises in AS 1141.24 that the test is not sufficiently precise or repeatable to be suitable for outright rejection of aggregates based solely on the percentage of aggregates that disintegrate during the test. RMS specification 3152 Table 3152.2 specifies that when tested in accordance with AS 1141.24 the weighted loss fine aggregates $\leq 12\%$.
-	Q217	Weak particles	Q217 applies the principles of AS 1141.32 but differs from the standard as it is only performed on aggregates $\geq 4.75\text{mm}$ in size and the calculates the percentage of weak particles based on the ratio of particles that break down to those that when immersed in water for 24 hours. MRTS30 permits suppliers to manufacture asphalt from aggregates containing up to 1% weak particles. RMS Specification 3152 Cl. 5.1 effectively specifies that 0% of aggregates particles are allowed to be weak as coarse aggregates must be free from dust, clay, dirt or other deleterious matter.
-	Q208B	Degradation factor	Q208B differs from AS 1141.25.2 by minor alterations to the defined test portion and stock solution ingredients, by modifying the washing technique during preparation and after abrasion, and by directly calculating the degradation factor only from the operating formula. Q207B is performed on aggregates with a particle size $\geq 2.36\text{mm}$. MRTS30 specifies that dense graded asphalt aggregates shall have a minimum degradation factor of 40 and open graded asphalt aggregates shall have a minimum degradation factor of 45. RMS does not require this test to be performed.