



Performance Examination - Aggregate

Standard Method of Test for Sieve Analysis of Fine and Coarse Aggregates (AASHTO T 27-14) [ASTM C136 / C136M-14]

Candidate Name: _____ NICET ID: _____

Apparatus	Trial 1	Trial 2
Balance Readable to 0.1% of sample mass		
Optional: Mechanical sieve shakers, meet adequacy of sieving requirements. Shaker runs for the correct amount of time (determined during annual standardization)		
Oven Maintains 110 ± 5 °C (230 ± 9 °F)		

Procedures	Trial 1	Trial 2																								
Coarse Aggregate Gradation or Mixtures of Coarse and Fine Aggregate Gradation																										
Initial mass: _____ Final mass: _____																										
Test sample obtained by T 2																										
<table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Nominal Maximum Size, mm (in.)</th> <th style="text-align: center;">Test Sample Size, Minimum, kg (lb)</th> </tr> </thead> <tbody> <tr><td style="text-align: center;">9.5 (3/8)</td><td style="text-align: center;">1 [2]</td></tr> <tr><td style="text-align: center;">12.5 (1/2)</td><td style="text-align: center;">2 [4]</td></tr> <tr><td style="text-align: center;">19.0 (3/4)</td><td style="text-align: center;">5 [11]</td></tr> <tr><td style="text-align: center;">25.0 (1)</td><td style="text-align: center;">10 [22]</td></tr> <tr><td style="text-align: center;">37.5 (1 1/2)</td><td style="text-align: center;">15 [33]</td></tr> <tr><td style="text-align: center;">50 (2)</td><td style="text-align: center;">20 [44]</td></tr> <tr><td style="text-align: center;">63 (2 1/2)</td><td style="text-align: center;">35 [77]</td></tr> <tr><td style="text-align: center;">75 (3)</td><td style="text-align: center;">60 [130]</td></tr> <tr><td style="text-align: center;">90 (3 1/2)</td><td style="text-align: center;">100 [220]</td></tr> <tr><td style="text-align: center;">100 (4)</td><td style="text-align: center;">150 [330]</td></tr> <tr><td style="text-align: center;">125 (5)</td><td style="text-align: center;">300 [660]</td></tr> </tbody> </table>	Nominal Maximum Size, mm (in.)	Test Sample Size, Minimum, kg (lb)	9.5 (3/8)	1 [2]	12.5 (1/2)	2 [4]	19.0 (3/4)	5 [11]	25.0 (1)	10 [22]	37.5 (1 1/2)	15 [33]	50 (2)	20 [44]	63 (2 1/2)	35 [77]	75 (3)	60 [130]	90 (3 1/2)	100 [220]	100 (4)	150 [330]	125 (5)	300 [660]		
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3. Sample dried to constant mass at 110 ± 5 °C (230 ± 9 °F) or sieved surface dry (<i>coarse aggregate only</i>)																										
4. Mass determined to nearest 0.1% (unless already determined in T11)																										
5. If hand sieving, particles not forced to pass through openings																										
6. Sieving continued until not more than 0.5% by mass of the total specimen passes a given sieve during one minute of continuous hand sieving (check by hand with 8-in. diameter sieve).																										
7. Residue on each sieve weighed to 0.1% of original dry mass.																										
8. Sieves not overloaded																										
9. Mass of residue on each sieve [finer than 4.75 mm (No. 4) sieves] does not exceed 7 kg/m ² of sieving surface (200 g for 8-in. diameter sieve; 469 g for 12-in. diameter sieve)																										

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10. Mass of residue on each sieve [for 4.75 mm (No. 4) sieves and larger] does not exceed 2.5 x (sieve opening, mm) x (effective sieving area, m ²)		
11. The total mass of material after sieving agrees with a mass before sieving to within 0.3% (If not, do not use for acceptance testing)		
12. Percentages calculated to nearest 0.1% and reported to the nearest whole number (except 75-µm (No. 200) – if less than 10%, percentage – 200 reported to the nearest 0.1%)		
13. Percentage calculations based on original dry sample mass, including the passing 75-µm fraction from T 27		
14. The sample obtained by R 76 or whole field sample used, minimum sample mass 300 g		
15. Sample dried to constant mass at 110 ± 5 °C (230 ± 9 °F)		
16. Sieving continued until not more than 0.5% by mass of the total specimen passes a given sieve during one minute of continuous hand sieving (check by hand with 8-in diameter sieve)		
17. Residue on each sieve weighted to 0.1% of the original dry mass		
18. Sieves not overloaded		
19. Mass of residue on each sieve [finer than 4.75 mm (No. 4) sieves] does not exceed 7 kg/m ² of sieving surface (200 g for 8-in. diameter sieve; 469 g for 12-in. diameter sieve)		
20. Mass of residue on each sieve [for 4.75 mm (No. 4) sieves and larger] does not exceed 2.5 x (sieve opening, mm) x (effective sieving area, m ²)		
21. The total mass of material after sieving agrees with a mass before sieving to within 0.3% (If not, do not use for acceptance testing)		
22. Percentages calculated to nearest 0.1% and reported to the nearest whole number (except 75-µm (No. 200) – if less than 10%, percentage – 200 reported to the nearest 0.1%)		
23. Percentage calculations based on original dry sample mass, including the passing 75-µm fraction from T 11		

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Maximum Allowable Quantity of Material Retained on a Sieve, kg (lb)

Sieve Opening Size, mm (in.)	Nominal Dimensions of Sieve				
	8-in. (203.2-mm) diameter	10-in. (254-mm) diameter	12-in. (304.8-mm) diameter	14 by 14-in. 350 by 350 mm diameter	14.5 by 23-in. 72 by 580 mm diameter
	Sieving Area, m² (ft²)				
	0.0285 (0.3)	0.0457 (0.5)	0.0670 (0.7)	0.1225 (1.3)	0.2158 (2.3)
125 (5)	•	•	•	•	67.4 (148½)
100 (4)	•	•	•	30.6 (67½)	53.9 (118¾)
90 (3½)	•	•	15.1 (33¼)	27.6 (60¾)	48.5 (106¾)
75 (3)	•	8.6 (19)	12.6 (27¾)	23.0 (50¾)	40.5 (89¼)
63 (2½)	•	7.2 (15¾)	10.6 (23¼)	19.3 (42½)	34.0 (75)
50 (2)	3.6 (8)	5.7 (13)	8.4 (18½)	15.3 (33¾)	27.0 (59½)
37.5 (1½)	2.7 (6)	4.3 (9½)	6.3 (13¾)	11.5 (25¼)	20.2 (44½)
25.0 (1)	1.8 (4)	2.9 (6½)	4.2 (9¼)	7.7 (17)	13.5 (29¾)
19.0 (¾)	1.4 (3½)	2.2 (4¾)	3.2 (7½)	5.8 (12¾)	10.2 (22½)
12.5 (½)	0.89 (2)	1.4 (3)	2.1 (4¾)	3.8 (8¼)	6.7 (14¾)
9.5 (¾)	0.67 (1)	1.1 (2½)	1.6 (3½)	2.9 (6¼)	5.1 (11¼)
4.75 (No. 4)	0.33 (¾)	0.54 (1¼)	0.80 (1¾)	1.5 (3¼)	2.6 (5¾)

• Sieves with less than five full openings; should not be used for sieve testing.

First Attempt: Pass: _____ Fail: _____ **Second Attempt:** Pass: _____ Fail: _____

Exam Administration: Remote _____ In-Person _____

Comments:

Examiner Name: _____ **Examiner Signature:** _____ **Date:** _____