



**INDIANA DEPARTMENT OF TRANSPORTATION
DIVISION OF MATERIALS AND TESTS**

**VERIFYING SIEVES
ITM No. 902-22**

1.0 SCOPE

- 1.1 This test method covers the procedure for verifying the physical condition of laboratory testing sieves ranging in size from 4 in. to No. 200.
- 1.2 Two procedures are included in this test method: verifying with calipers and verifying with a go-no go gauge. The Department will use the verifying with calipers method. Industry may utilize the procedure with a go-no go gauge upon approval of the Department.
- 1.3 This ITM may involve hazardous materials, operations, equipment and may not address all of the safety problems associated with the use of the test method. The user of the ITM is responsible for establishing appropriate safety and health practices and to determine the applicability of regulatory limitations prior to use.

2.0 REFERENCES.

2.1 ASTM Standards.

E11 Woven Wire Test Sieve Cloth and Test Sieves

3.0 TERMINOLOGY. Definitions for terms and abbreviations shall be in accordance with the Department's Standard Specifications, Section 101.

4.0 SIGNIFICANCE AND USE. This ITM is used by laboratory personnel to verify the physical condition of testing sieves.

5.0 APPARATUS.

5.1 Calipers, readable to 0.01 mm and having a jaw depth allowing the blades to stay perpendicular to the screen throughout the measurements.

5.2 [Optional] Go-No Go Gauge, conforming to the tolerances shown in Table 1.

6.0 PROCEDURE.

6.1 No. 4 Sieves and Coarser using Calipers.

6.1.1 Record the sieve identification, manufacturer, opening size and diameter.

- 6.1.2 Hold the sieve against a uniformly illuminated background. Check the general condition of the sieve for cracks in frame, broken solder joints, wire tightness, and irregular openings.
- 6.1.3 Select two perpendicular fields of five openings each for verification. (Appendix A - Figure 1)
- 6.1.4 Using the calipers, measure and record the openings at their vertical (Y) and horizontal (X) midpoints (Appendix A - Figure 2). Keep the X and Y components separate and calculate the average of all 10 X measurements and all 10 Y measurements.

6.2 **No. 4 Sieves and Coarser With Go-No Go Gauge.**

- 6.2.1 Specific procedures for checking sieves with a go-no go gauge shall be developed by the Industry end user and included as a part of their Quality Control Plan, subject to approval by the Department.

6.3 **Sieves Finer than No. 4.**

- 6.3.1 Record the sieve identification, manufacturer, opening size and diameter.
- 6.3.2 Hold the sieve against a uniformly illuminated background. Check and record the general condition of the sieve for cracks in frame, broken solder joints, weaving defects, creases, wrinkles, wire tightness, and irregular openings.

7.0 **TOLERANCE.**

- 7.1 **No. 4 Sieves and Coarser.** The maximum individual opening and average opening for each sieve shall not exceed the sieve tolerances of Table 1. If the tolerances of Table 1 are exceeded or there are general physical condition deficiencies as noted in 6.1.2, the sieve shall be replaced.
- 7.2 **Sieves Finer than No. 4.** If there are general physical condition deficiencies as noted in 6.3.2, the sieve shall be replaced.

**SIEVE TOLERANCES
TABLE 1**

Sieve Designation	Permissible Average Opening	Maximum Individual Opening
100 mm (4 in.)	(97.35 - 102.65) mm	103.44 mm
90 mm (3-1/2 in.)	(87.61 - 92.39) mm	93.18 mm
75 mm (3 in.)	(73.00 - 77.00) mm	77.78 mm
63 mm (2-1/2 in.)	(61.31 - 64.69) mm	65.44 mm
50 mm (2 in.)	(48.66 - 51.34) mm	52.06 mm
37.5 mm (1-1/2 in.)	(36.49 - 38.51) mm	39.17 mm
25 mm (1.00 in.)	(24.32 - 25.68) mm	26.24 mm
19 mm (3/4 in.)	(18.48-19.52) mm	20.01 mm
12.5 mm (1/2 in.)	(12.15 - 12.85) mm	13.25 mm
9.5 mm (3/8 in.)	(9.24 - 9.76) mm	10.11 mm
6.3 mm (1/4 in.)	(6.12 - 6.48) mm	6.76 mm
4.75 mm (No. 4)	(4.62 - 4.88) mm	5.12 mm

Tolerances for sieves not in Table 1 may be found in ASTM E11

**SIEVE VERIFICATION
ITM 902**

Sieve Identification: _____ Manufacturer: _____ Opening Size: _____

Frame Diameter: _____ Calipers (if used): _____

General Physical Condition			
No. 4 Sieves or Coarser	√	Sieves Finer than No. 4	√
The frame is not cracked		The frame is not cracked	
The welds are not broken		The welds are not broken	
The wires are tight		No weaving defects, creases, or wrinkles	
No irregular openings		The screen is tight	
		No irregular openings	

Opening Verification No. 4 and Coarser					
	Field 1		Field 2		
	X	Y	X	Y	
1					Average X = _____
2					Average Y = _____
3					
4					
5					

Figure 1

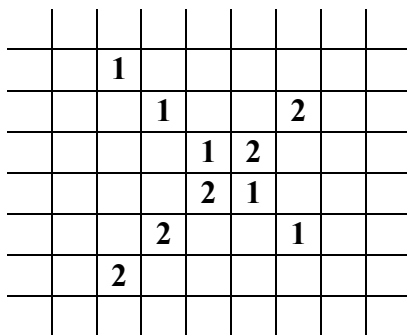
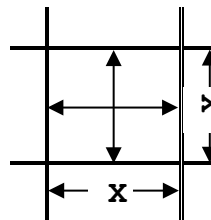


Figure 2



Does the X or Y component exceed the maximum individual opening given in Table 1? (Y or N)

Does the X or Y average exceed the permissible average opening given in Table 1? (Y or N)

Remarks: _____

Verified by: _____

Date: _____

Next Due Date: _____