



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

**VERIFYING SIEVES  
ITM No. 902-21**

**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 #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 #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 #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 #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 **#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 #4.** If there are general physical condition deficiencies as noted in 6.3.2, the sieve shall be replaced.

**SIEVE TOLERANCES  
TABLE 1**

<b>Sieve Designation</b>	<b>Permissible Average Opening</b>	<b>Maximum Individual Opening</b>
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 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: \_\_\_\_\_

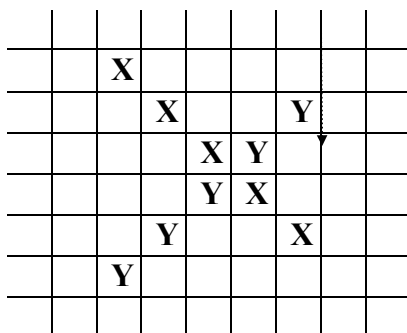
Frame Diameter: \_\_\_\_\_ Calipers (if used): \_\_\_\_\_

General Physical Condition					
#4 Sieves or Coarser		√	Sieves Finer than # 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		

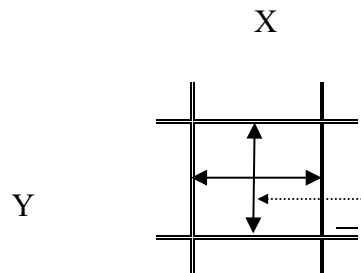
Opening Verification #4 and Coarser					
	Field 1		Field 2		
	X	X	Y	Y	No X or Y component exceeds the maximum individual opening given in Table 1 (Y or N)
1					
2					
3					
4					
5					The X or Y average does not exceed the permissible average opening given in Table 1 (Y or N)
	Average X =		Average Y =		

**Figure 1**

Field 1: X Field 2: Y



**Figure 2**



Remarks: \_\_\_\_\_

Verified by: \_\_\_\_\_

Date: \_\_\_\_\_

Next Due Date: \_\_\_\_\_