CHECKING THE ACCURACY OF PERFORATED PLATE SIEVES

1. SCOPE

This method is used to check the accuracy of perforated plate test sieves in the range AS 75.0 mm -AS 4.75 mm. It is performed by direct measurement of sieve apertures. These measurements, taken along both centre lines of an aperture (Fig. 1), must be within the range given in Table 1 of this method for the sieve to be serviceable.

2. APPARATUS

(a) Taper gauges, type 1 - readable and accurate to 0.01 mm.

(b) Taper gauges, type 2 - simply marked with the allowable size range with markings accurate to 0.02 mm (generally for sieve sizes 26.5 mm to 75.0 mm).

(c) Worksheet.

3. PROCEDURE

(a) Record the laboratory identification and the date of measurement.

Record the following details of the test sieve under examination. Serial No., Item No., Aperture Size and Allowable Size Range (Table 1). Record the item number of the checking gauge used.

(b) Examine the sieve for damage or wear that may affect its performance. If such damage or wear is found, record details and repair the sieve, as necessary. Mark any apertures that appear worn or oversize.

(c) Select apertures for measurement.

If the number of apertures in the sieve does not excced 30, all are measured.

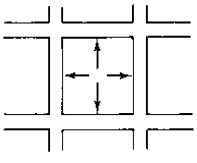

Figure 1 Both Centrelines of an Aperture

If the number of apertures in the sieve exceeds 30, measurements are made on 30 apertures, selected so that as many rows of apertures as possible in each direction are measured (see Note 1). **Ensure that any aperture suspected of being oversize or undersize is included.**

(d) **For sieves of nominal sizes 4.75 to 22.4mm inclusive,** measure along both centrelines of each selected aperture to the nearest 0.01 mm using type 1 taper gauges and record.

For sieves of nominal sizes 26.5 to 75mm inclusive, test each selected aperture by using type 2 taper gauges along both centre lines to assess whether the aperture is within the allowable size range given in Table 1. Record a tick for those apertures within the allowable size range **and** a cross for those apertures outside.

Taper gauges are inserted from the upper surface to the point where contact is just made and **only** a gentle touch is necessary.

Measuring may be discontinued if any measurement does not fall within the allowable size range (Table 1). Clearly and indelibly mark any such aperture.

(e) Remove a sieve that is found to be damaged or out of tolerance from the set and repair or replace it.

4. REPORTING

Records shall be maintained on the worksheet for each sieve checked.

NOTES

Note 1

Ideally, measurements should be taken on at least one aperture in each row in each direction and this aim will be attained with test sieves having fairly large apertures (say, above 19.0mm). For test sieves with smaller apertures a selection must be made covering as many rows as possible. A good selection is a systematic double zig zag pattern, taking only a few apertures on each diagonal, to cover as much of the total surface area of the sieve as possible.

TABLE 1. PERFORATED PLATE SIEVES-ALLOWABLE SIZE RANGE

Nominal AS Size mm	75.0	53.0	37.5	31.5	26.5	22.4	19.0
Allowable Range mm	74.30 75.70	52.45 53.55	37.05 37.95	31.10 31.90	26.15 26.85	22.10 22.70	18.71 19.29
Nominal AS Size mm	16.0	13.2	9.5	6.7	4.75		
Allowable Range mm	15.73 16.27	12.95 13.45	9.29 9.71	6.53 6.87	4.61 4.89		

Note 2

For sieves smaller than 26.5 mm. If sieves are not subject to a laboratory equipment assurance program, it may be more suitable to mark the tolerances on the Type 1 gauges and use them as go/no go gauges.