James Heal

# OPERATOR'S GUIDE

## Spray Rating Tester

Model 513

*Extraordinary Testing Solutions*

James H. Heal & Co. Ltd.
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Setting the Standard

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# SPRAY RATING TESTER MODEL 513

## Unpacking

- Remove the tape from the packing case and open the lid.
- Carefully remove the packaging from around the instrument and lift the instrument out of its case and place it on a firm flat surface.
- Do not dispose of any packaging material until all standard and optional accessories are fully accounted for. If there are any discrepancies, please contact your supplier immediately.
- Please check the instrument serial number plate corresponds with your delivery note. The serial number plate is located on the rear of the instrument.

## Accessories

| | |
|---|---|
| 510-315 | Spare Spray Nozzle |
| 510-347 | Spare Specimen Holder |
| 766-456 | AATCC Spray Test Rating Chart (17 x 14 inches, approx. A3 size) |
| 201-513 | ISO Certificate of Calibration |
| 794-200 | Spray Rating Drip Tray |

Please state serial number of instruments when ordering accessories.

# Scope

The Spray Test is a simple method to determine the resistance of any fabric, which may or may not have been given a water-resistant or water-repellent finish, to surface wetting by water. It is not intended to predict waterproofness, since it does not measure the penetration of water through fabric.

The Spray Rating Tester consists of a metal frame in which a conical funnel of 150 mm diameter is held vertically. A metal nozzle is connected to the stem of the funnel.
The nozzle has a convex face with an array of nineteen holes comprising a central hole surrounded by two concentric rings of 6 and 12 holes.

The specimen holder consists of two metal rings which fit into each other, one of 150mm inside diameter and one of 150mm outside diameter, into which the specimen can be secured. The rings are positioned on the apparatus at an angle of 45°, with the centre of the test area 150 mm below the centre of the spray nozzle face.

# Standards

The instrument complies with the following standards:

- EN 24920
- ISO 4920
- AATCC 22
- Marks & Spencer P23
- Other local Standards may apply

# Principle

A specified volume of distilled water is sprayed centrally onto an inclined test specimen. Stringent quality control of the nozzle hole pattern, combined with accurate height setting above the specimen, ensure a consistent spray flow and formation, critical to the requirements of the International standards.

The assessment of spray rating is determined by comparing the appearance of the tested specimen with descriptive standards and photographs. The AATCC Spray Test Rating Chart is available for this purpose.

# Equipment and materials

- Spray Rating Tester complete with fitted nozzle and specimen holder.
- Distilled water at either 20±2ºC (temperate) or 27±2ºC (tropical).
- AATCC Spray Test Rating Chart for visual assessment.
- Optional Spray Rating Drip Tray

# Specimen Conditioning and Testing Conditions

Conditioning and testing should be carried out according to ISO 139 *Textiles - Standard atmospheres for conditioning and testing*. For British Standard Tests and throughout Europe, 20±2ºC and 65±4% r.h. are widely used (standard temperate). In other areas, standard tropical may apply 27±2ºC, 65±4% r.h.

# Preparing for a test

If a Spray Rating Drip Tray is being used, place the Spray Rating Tester in drip tray.

Ensure that the pipe is attached to the outlet nozzle of the tray.
Place the other end of the pipe in a bucket or suitable receptacle, at a height lower than the spray rating unit and tray. Empty the bucket/receptacle once full or at the end of testing.

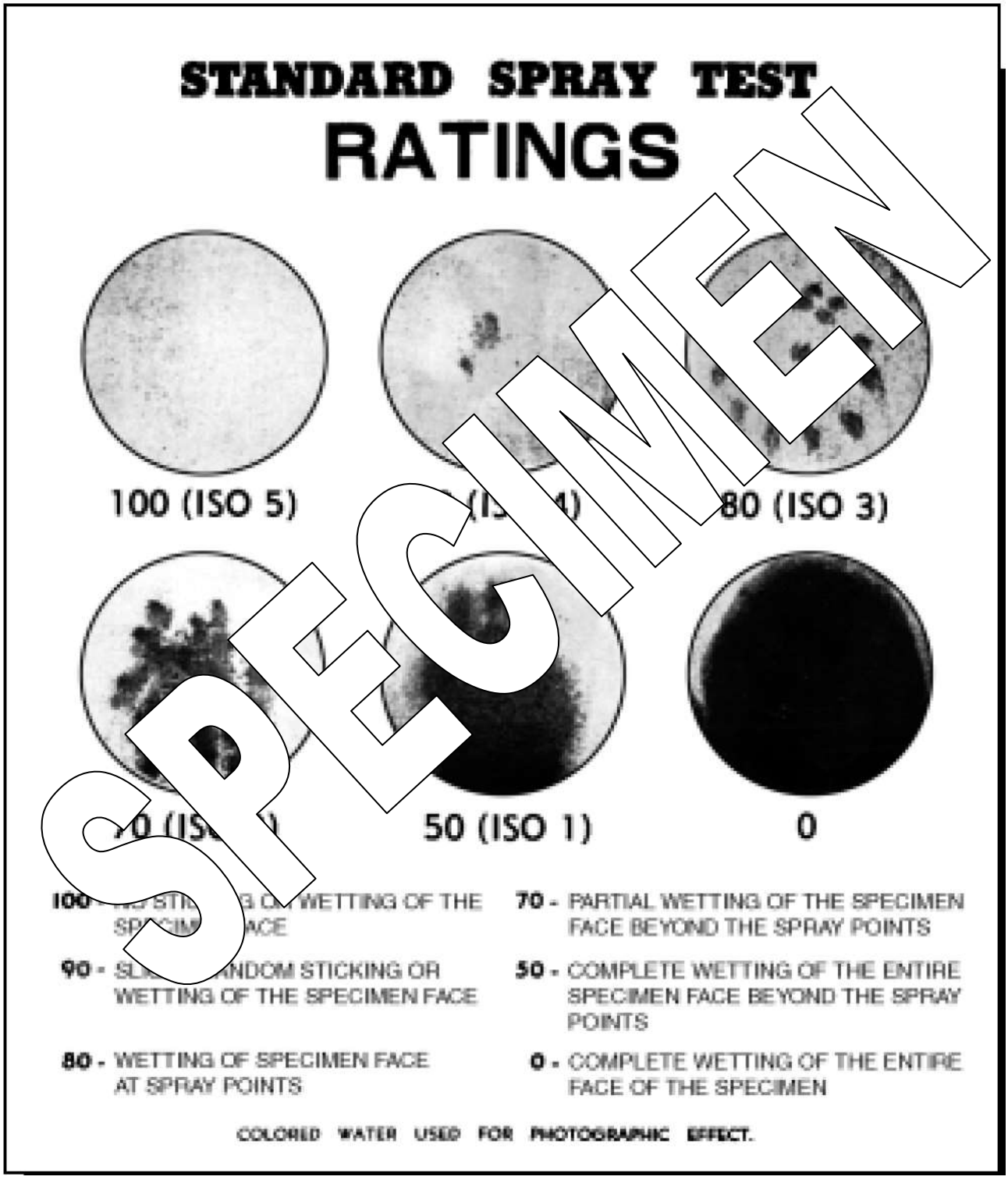
It is vital that distilled or deionised water at the specified temperature is used for the test.

Prime the nozzle before each series of tests by passing at least 500ml of distilled water through the nozzle, this will remove any accumulated debris.

Having primed the nozzle pour 250ml through the instrument as described in the test method. **Flow should be complete within 25-30 seconds**.

Before testing and periodically, verify that the height of the nozzle above the surface of the specimen is in accordance with the requirements of the test standard, adjust as necessary by gently twisting the nozzle in the location tube.

Condition test specimens for at least 24 hours in the conditioning atmosphere.
The instrument is now prepared to perform Spray Rating Tests in accordance with the Standard.


STANDARD SPRAY TEST
RATINGS
100 (ISO 5)
80 (ISO 3)
50 (ISO 1)
0
70 - PARTIAL WETTING OF THE SPECIMEN FACE BEYOND THE SPRAY POINTS
50 - COMPLETE WETTING OF THE ENTIRE SPECIMEN FACE BEYOND THE SPRAY POINTS
0 - COMPLETE WETTING OF THE ENTIRE FACE OF THE SPECIMEN
COLORED WATER USED FOR PHOTOGRAPHIC EFFECT.