ANSI/ASABE S626 SEP2016
Landscape Irrigation System Uniformity and Application Rate Testing

American Society of Agricultural and Biological Engineers

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Approved September 2016 as an American National Standard

Landscape Irrigation System Uniformity and Application Rate Testing

Proposed to ASABE by the Irrigation Association; adopted by ASABE September 2016; approved as an American National Standard by ANSI September 2016.

Keywords: Distribution uniformity, Landscape irrigation, Audit, Catch can test, Drip irrigation, Soil moisture

1 Purpose and Scope

1.1 This standard provides methods for evaluating the application rate and/or uniformity of coverage of installed landscape irrigation systems. The landscapes covered include continuous areas of turf or small ground cover, or other areas where irrigation coverage is unimpeded by the landscape materials.

The methods described in this standard provide a representation of the performance of the irrigation system at the time of the test. It may or may not be representative of the everyday performance of the system. The methods may be used as part of an overall irrigation system audit. Accuracy of the results depends on the quality of measurements and data provided by the end user.

2 Definitions

2.1 sprinkler: For purposes of this standard, sprinkler refers to a landscape irrigation sprinkler that operates as a rotor, impact, or spray device, including the nozzles. Also sometimes called a head or sprinkler head. Where the term rotor is used, it shall apply to an impact sprinkler or sprinklers with multi-stream multi-trajectory rotating nozzles.

2.2 test area: geographic area of the irrigated landscape that represents the entire area of interest.

2.2 drip irrigation: a type of microirrigation using emitters that discharge water in a small uniform flow or trickle. Drip irrigation emitters dispense water at a flow rate of less than or equal to 6.3 gallons per hour (24 liters per hour) when operated at 30 psi (206.8 kPa).

2.3 soil moisture meter: a sensor used to determine the amount of water in the soil. For the purposes of this standard, it refers to a portable sensor (probe), not one that is permanently installed.

2.4 catch device: a container for collecting water dispensed by the irrigation system. The device may have markings to determine volume, or may be emptied into another container for measurement. Sometimes known as a catch can.

3 Sprinkler Distribution Uniformity Testing

The following procedures are for measuring the delivery of water from multiple sprinklers applying water to a common area. The distribution uniformity test shall be performed during normal operating conditions. If the test is not performed during normal operating conditions, an assessment of the impact of these testing conditions compared to normal operating conditions shall be included in the report.

3.1 Determine the test area. Establish the boundaries of the test. The test area may be served by a single sprinkler zone or multiple overlapping zones.

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3.1.1 Test areas less than 200 ft^2 may not produce statistically valid results. See Table 1.

3.1.2 "Linking" (using information from one station or zone and applying to another) may be used when there are a large number of sprinkler zones that are identical, i.e. the same sprinkler head, nozzle, spacing, operating pressure and irrigating similar soil and plant types. The auditor may elect to perform catch device tests on one-third to one-half of the sprinkler zones to get an average value that could be applied to all sprinkler zones that are identical.

3.2 Catch device description and location. A minimum of 24 catch devices shall be used. All catch devices used for any one test shall be identical. They shall be such that the water does not splash in or out. The catch devices shall be of adequate size such that no device overflows during the test. The size and type of catch device shall be identified and recorded on the data sheet. Catch devices shall be uniformly distributed throughout the test area.

3.2.1 The position of all catch devices shall be maintained such that the entrance portion is level.

3.2.2 The above ground height of the top of any catch device shall be a maximum 25 cm (10 in.) above the ground and shall not interfere with the stream of water. If the test area is bordered by a hardscaped surface, the catch devices along the edge of the test area shall be placed 12 to 24 inches in from the edge.

3.2.3 Approximate catch device location and layout, relative to the tested sprinklers, shall be documented. See Table 1 for guidance on distance from sprinklers and maximum spacing between catch devices.

3.2.4 Catch device layout and placement. Examples of possible catch device placement relative to sprinkler heads and each other are shown in Figures 1-5. Any catch device should be placed at least 30.5 cm (12 in.) from any sprinkler. Note that catch devices appearing on sprinkler heads Figures 1 and 2 are diagrammatic and shall be placed to match the requirements in Figures 3-5.

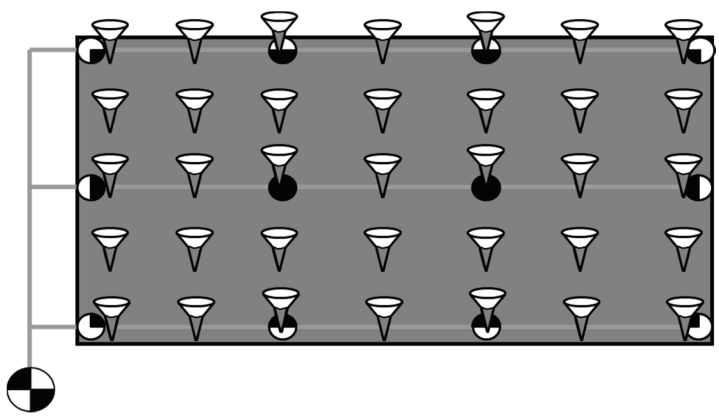

Figure 1 – Catch device layout on a rectangular area

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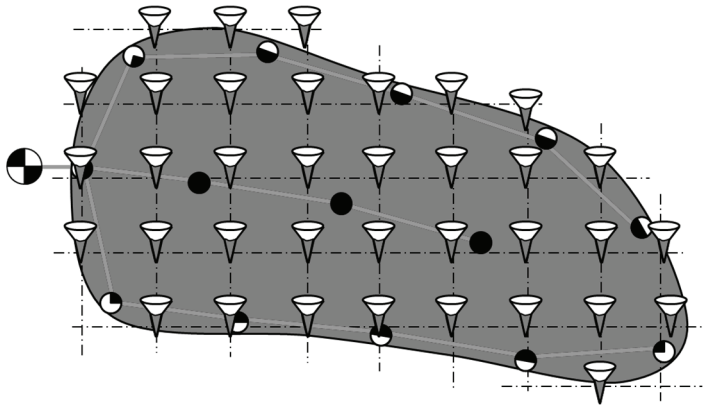

Figure 2 – Catch device layout on an irregular area

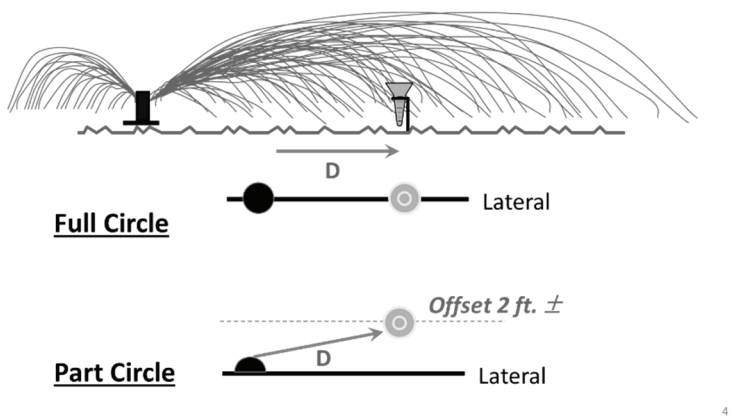

Figure 3 – Catch device placement relative to sprinkler heads

3.2.5 Catch device height. Catch devices shall be placed so that they do not interfere with irrigation water. Figure 4 shows an incorrect placement with spray hitting the side of the catch device. Figure 5 shows correct placement of the catch device in the same location.

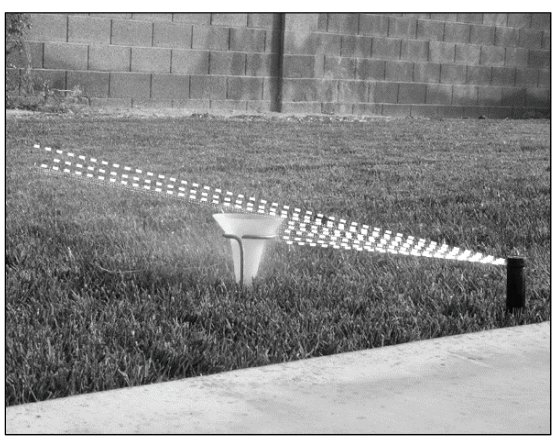

Figure 4 – Incorrect placement of catch device

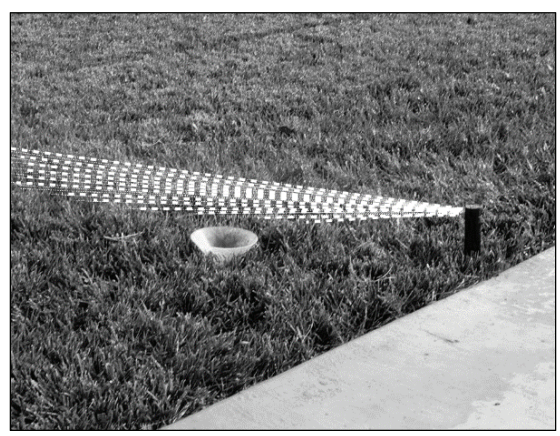

Figure 5 – Correct placement of catch device

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