



Extended Coverage Sidewall Sprinklers

Requirements and Test Methods

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VdS Guidelines for water extinguishing systems

**Extended Coverage Sidewall
Sprinklers**

Requirements and Test Methods

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1 Scope

These guidelines specify requirements and test methods for Extended Coverage Sidewall Sprinklers for the use in sprinkler systems according to VdS CEA 4001 (see remark).

Remark 1: The conditions for use referring to the performance characteristics required in these guidelines are specified in VdS CEA 4001 : 2008-11, section 12.2.5.

2 Normative References

These Guidelines incorporate, by dated or undated references, provisions from other publications (e.g. European Standards EN or International Standards IEC), which are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to these Guidelines only when incorporated in them by amendment or revision. For undated references the latest edition of the publication referred to applies

VdS CEA 4001	VdS Guidelines for sprinkler systems – Planning and installation
EN 12259-1	Fixed firefighting systems – Components for sprinkler and water spray systems – Part 1: Sprinklers

3 Definitions

For the purpose of these guidelines the definitions of EN 12259-1 and the following definitions apply:

Extended coverage sidewall sprinklers: sidewall sprinklers with extended coverage (area)

4 Requirements and test methods

4.1 General

4.1.1 Requirements and test methods from EN 12259-1

Extended Coverage Sidewall Sprinklers shall fulfil the requirements for sidewall sprinklers of EN 12259-1, except when otherwise stated in these guidelines.

Extended Coverage Sidewall Sprinklers shall be tested in accordance with the test methods for sidewall sprinklers of EN 12259-1, except when otherwise stated in these guidelines.

4.1.2 Room height

The manufacturer may, by specification, limit the use of Extended Coverage Sidewall Sprinklers to rooms with a height up to maximum 2.8 m.

4.2 Dimensions

Extended Coverage Sidewall Sprinklers shall have a nominal orifice diameter of 15 mm.

4.3 Nominal release temperature

Extended Coverage Sidewall Sprinklers shall have a nominal release temperature rating of between 57 °C and 80 °C.

4.4 K-Factor

Extended Coverage Sidewall Sprinklers shall have a K-factor of $80 \text{ l min}^{-1} \text{ bar}^{-\frac{1}{2}}$.

4.5 Thermal response

Extended Coverage Sidewall Sprinklers shall have response sensitivity of category "quick".

4.6 Water distribution

4.6.1 Requirements

4.6.1.1 Except as provided for in 4.6.1.2, a single sprinkler shall meet the requirements for water distribution specified in table 1 (columns 4, 5 and 6), when tested in accordance with 4.6.2, using the parameters given in table 1 (columns 1, 2 and 3).

4.6.1.2 The measurements at the distance ceiling/containers of 4100 mm are not necessary, if the manufacturer has specified the use of the extended coverage sidewall sprinklers in rooms with a height up to maximum 2.8 m only.

1	2	3	4	5	6
Distance ceiling/containers [mm]	Flow rate [l/min]	Measuring area [m ²]	Min. number of containers with water coverage $\geq 2.5 \text{ mm/min}$	Min. number of containers with water coverage $\geq 1.25 \text{ mm/min}$	Min. number of containers with water coverage $\geq 0.6 \text{ mm/min}$
1500	126.5	20.25 (4.5 m x 4.5 m)	41	65	73
2700	126.5	20.25 (4.5 m x 4.5 m)	41	65	73
4100	138.6	20.25 (4.5 m x 4.5 m)	41	65	73
1500	126.5	19.5 (3.0 m x 6.5 m)	39	62	70
2700	126.5	19.5 (3.0 m x 6.5 m)	39	62	70
4100	138.6	19.5 (3.0 m x 6.5 m)	39	62	70

Table 1: Requirements for water distribution of single extended coverage sidewall sprinklers

4.6.2 Test

The test facility is in accordance with 12259-1. In addition figure 1 applies.

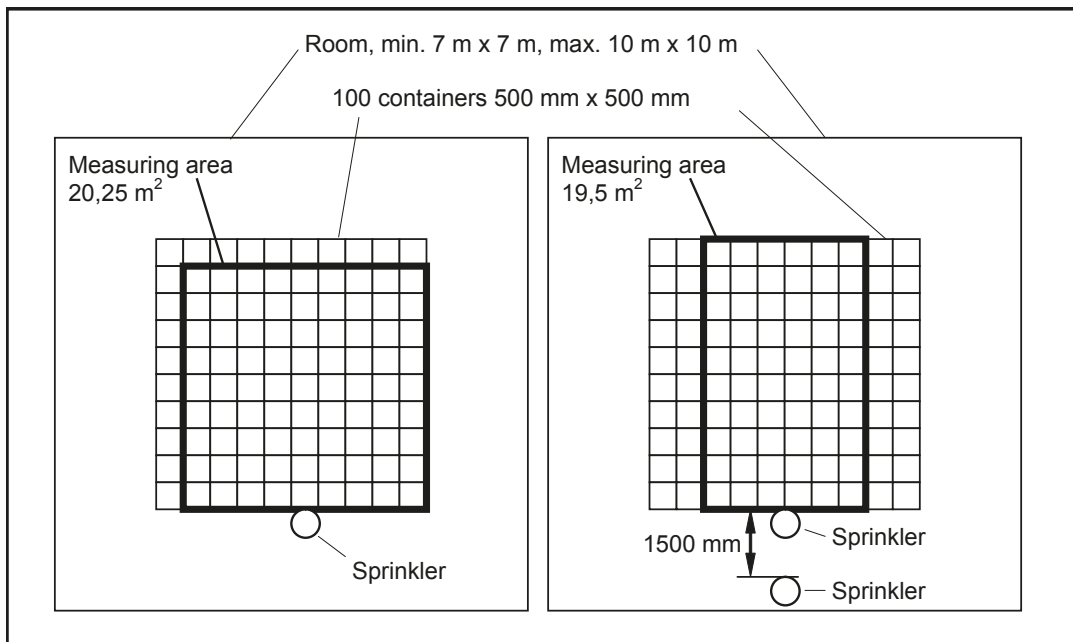


Figure 1: Layout of the test room to determine the water distribution of extended coverage sidewall sprinklers

The test is generally conducted according to EN 12259-1, but with the parameters given in table 1, columns 1 to 3, and the following further modifications:

- The distance between ceiling and deflector is 150 mm.
- The measurement with measuring area 19.5 m² (3 m x 6.5 m) is done in two steps (see figure 1).

Marking

The marking for the sprinkler type is ,WW' followed by the mounting position marking.