

# VdS guidelines regarding water mist component testing

Marcel Eipl

VdS Schadenverhütung GmbH, Cologne, Germany, [meipl@vds.de](mailto:meipl@vds.de)

## Bio

Mr. Eipl has university degrees in Rescue Engineering and Technical Building Services. Already at university, he worked at VdS to design test benches. Later, he investigated the interactions between water mist droplets, system parameters and fire damages in specific fire scenarios.

Inside VdS he works as engineer for the department “Laboratory Water Extinguishing Systems and SHEVS” he is, among other things, responsible of water mist related topics like product approvals of systems and nozzles, development of internal projects to evolve water mist testing as well as standardization work (VdS guidelines as well as German and European standardization bodies).

## Background

VdS is an independent institution and approval body which has been ensuring safety and trust in the fields of fire protection and security for many decades. Our customers include industrial and commercial enterprises, leading manufacturers and systems houses, service providers, specialist firms and insurance companies. VdS Schadenverhütung GmbH (short: VdS) has international presences (12 offices) and over 500 employees. VdS is the preferred partner in matters of fire protection and security – especially regarding the VdS approved systems and components. Regarding water mist, VdS has more than two decades of experience on component testing and test protocols to prove effectiveness of water mist systems. Own test benches are planned right now to improve future component testing.

Regarding water mist guidelines, VdS saw the need of European and German test standards for component testing – not because the existing standards and guidelines are low in safety, it is because some requirements on the components do not fit in the planning and installation guideline of VdS.

## Objectives

Right now, the situation on standards describing water mist nozzle testing is one huge patchwork: On the worldwide level, there are only a few standards available, on European level, CENELEC is actually working on a standard, but at this moment (06/2022), there is only a withdrawn technical specification (CEN/TS 14972:2011) published. Things do not improve regarding a national German standard. Only the economy provides a huge number of standards, but each company has its own test plans they consider as rational.

## General descriptions of the methods

After a few years of evaluating nearly all available standards and guidelines regarding water mist nozzle testing as well as test reports regarding testing at VdS, we started to work on an own guideline including these tests which were considered as rational by us or by standardization institutes.

Already during draft status, we started to discuss the designed test plans inside our company, with costumers and German companies being global players, represented by a national registered association called BVFA. During our participation on European standardization (CEN TC 191 WG 10) we discussed our testing as experts inside the working group. This step showed that our test scope is rational even on European level, which led to many accepted proposals for the European nozzle-testing standard.

At least we pre-published two guidelines – one describing nozzle testing and another describing the testing on general water mist system component testing in a consultation procedure to take feedback from interested people and companies from all over the world into account.

## **Results**

After many years of evaluation work on standards, guidelines and component testing, VdS presents two guidelines, VdS 3100 and VdS 3100-46, to describe a nozzle testing procedure on a solid base of experience and knowledge from all over the world as well as a test guideline on further water mist components.

However, even after all the effort we have to keep on working on this guideline to ensure the high rationality regarding the scope of testing in interaction to other standards, guidelines and experiences.

## **Main conclusion and recommendations**

A lot of effort inside and outside VdS created a standard to provide a high safety level on VdS approved water mist systems and their included components. This presentation shows the creation process, basics and details of these guidelines as well as critical points inside approval processes.

**KEYWORDS: Component testing, VdS 3100-46, VdS 3100, VdS Schadenverhütung GmbH, Water mist;**

Presentation Guidelines:

The presentations should be free from commercial content. If descriptions of systems and equipment used in the work are necessary, specify this information without identifying the manufacturer, brand, or model.

The failure to comply with these rules may result in the presentation not being uploaded on the IWMA webpage after the conference and the speaker(s) and/or company being blacklisted.

The first slide should contain:

- Title of the presentation
- Name of the author(s) and the name of the speaker(s)
- Affiliation (you may introduce your company, organization briefly)

The second slide should contain:

- An overview of the content of the presentation

The slides between the third slide and the last but two slides shall contain the content of the presentation – as has been mentioned: free of commercial information!

The last but one slide should contain:

- The conclusion

The final slide should contain:

- Acknowledgement and contact information

Submission Deadline: 2nd November 2022 (failure to hand in the final version of the presentation on this day may result in losing the presentation slot)