


The VdS logo consists of the letters 'VdS' in a white, bold, sans-serif font, centered within a dark blue rounded square.

**VdS**

The slogan 'Vertrauen durch Sicherheit' is written in a white, sans-serif font, stacked in three lines within a dark blue rounded square.

Vertrauen  
durch  
Sicherheit

A man in a light blue shirt and tie is leaning over a desk in a modern office, looking at a computer monitor. The background shows other computer workstations and large windows.

# **VdS guidelines regarding water mist component testing**

**IWMC 2022 - Madrid**

# Overview

- VdS – Basic information
- VdS guideline development
- Water mist guidelines in general
- Time for questions

# VdS – Water mist guidelines

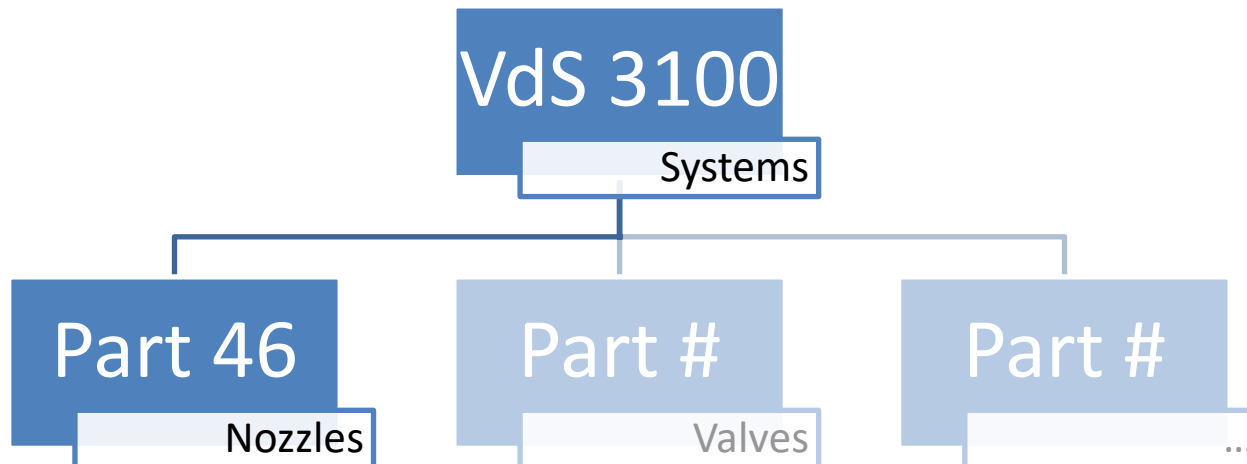
- Component testing
  - VdS 3100                      Systems and components
  - VdS 3100-46                Water mist sprinklers and nozzles
  
- Planning and installation
  - VdS 3188                      HPWM systems
  - VdS CEA 4001                Sprinkler systems (LPWM included)
  - VdS 2109                      Water spray systems (LPWM included)
  - VdS 2562                      Approval of new ext. techniques
  
- Fire test protocols
  - VdS 3883 WM systems (own part for each application)

## ■ VdS 3100 as basis

- System durability and function testing
- Pump unit
- Valves
- Hoses
- Filters and Strainers
- Pressure switches / sensors

## ■ VdS 3100-46

- Based on prior done testing (CEN/TS)
- First component covered by specific part
- More parts are WIP
- VdS 3100 (basis document) will become obsolete.



# Water mist guidelines – Europe



- IMO Resolution A.800 (1990)
  - Reaction on multiple incidents like *Scandinavian Star* fire
  - Sprinkler systems on ships are called out as required
- DIN CEN/TS 14972
  - Technical specification, not harmonized
  - P&I plus Annex D for Nozzle testing
  - Withdrawn
- EN 14972-1
  - P&I
  - Content from CEN/TS 14972
- prEN 17450-2
  - Nozzle testing
  - Status: Enquiry 1

Guideline	Topics	Component testing	P&I	Fire test protocol
IMO A.800(19)		+	-	-
DIN CEN/TS 14972		+	-	-
VdS 3100 / VdS 3100-46		+	-	-
ISO 6182-9		+	-	-
FM 5560		+	+	+
UL 2167		+	-	+

Selection of water mist related guidelines containing test methods for nozzles

Testing	VdS 3100-46	CEN/TS 14972-1	ISO 6182-9	prEN 17450-2
<ul style="list-style-type: none"> <li>- Nominal operating temperature</li> <li>- Water flow</li> <li>- Comparison of the water distributions</li> <li>- Function</li> <li>- Water mist sprinkler body strength</li> <li>- Release element strength</li> <li>- Evaluation of load values within the water mist sprinkler</li> <li>- Tightness</li> <li>- Fatigue</li> <li>- Thermal shock</li> <li>- Moist atmosphere</li> <li>- Change of pressure</li> <li>- Heat resistance</li> <li>- Vibration</li> <li>- Impact test</li> <li>- Long-term tightness</li> <li>- Low pressure</li> <li>- Salt spray corrosion</li> <li>- Stress corrosion cracking (NH<sub>3</sub>)</li> </ul>				Not published yet, stay tuned for January

Testing	VdS 3100-46	CEN/TS 14972-1	ISO 6182-9	prEN 17450-2
- Stress corrosion cracking (MgCl) - Sulphur dioxide corrosion	+	-	+	
- Dynamic heating (C and RTI)	VdS 3883	+	+	
- Lateral discharge	VdS 3188	+	+	
- Hydrostatic strength	1,5x SP	1,5x OP	4x OP	
- Integrity of nozzle coating	Indiv.	-	Div.	
- Clogging	VdS 3188	-	+	



<b>VdS</b>	VdS Guidelines for Water Extinguishing Systems	VdS 3100en
<h2>High Pressure Water Mist Systems</h2> <p>Requirements and Test Methods</p>		
<p>VdS 3100en : 2022-08 (01)</p>		

<b>VdS</b>	VdS Guidelines for Water Extinguishing Systems	VdS 3100-46en
<h2>Sprinkler and Nozzles for the Use in Water Mist Systems</h2> <p>Requirements and Test Methods</p>		
<p>VdS 3100-46en : 2022-08 (01)</p>		

Testing	VdS 3100-46	CEN /TS 1497 2-1	ISO 6182 -9	prE N 174 50-2
- Nominal operating temperature				Not published yet, stay tuned for January
-Water flow				
- Comparison of the water distributions				
- Function				
- Water mist sprinkler body strength				
- Release element strength				
- Evaluation of load values within the water mist sprinkler				
- Tightness				
- Fatigue				
- Thermal shock				
- Moist atmosphere				
- Change of pressure				
- Heat resistance				
- Vibration				
- Impact test				
- Long-term tightness				
- Low pressure				
- Salt spray corrosion				
- Stress corrosion cracking (NH <sub>3</sub> )				
- Stress corrosion cracking (MgCl)	+	-	+	
- Sulphur dioxide corrosion				
- Dynamic heating	VdS 3883	+	+	
- Lateral discharge	VdS 3188	+	+	
- Hydrostatic strength	1,5x SP	1,5x OP	(4x OP)	
- Integrity of nozzle coating	Indiv.	-	Div.	
- Clogging	VdS 3188	-	+	