Based on DIN EN 62305-3 (VDE 0185-305-3)

HVI Lightning Protection System Inspection

Test report no.:	
Date:	

1. General:			
Test object address:			
Name:			
Contact:			
Street, town, post code:			
Phone / mobile:			
Object owner ☐ / Client ☐ :			
Name:			
Contact:			
Street, town, post code:			
Phone / mobile:		Email:	
Inspector's address:			
Name:			
Contact:			
Street, town, post code:			
Phone / mobile:		Email:	
HVI lightning protection system installer's address:			
Name:			
Contact:			
Street, town, post code:			
Phone / mobile:		Email:	

2. Information on the structure:	
Building designation:	
Street:	
Town, post code:	
Its use:	
Year of building construction:	
Extension (year):	
Building height:	
Building dimensions (circumference):	
Design:	
Roof type:	
Type of roofing:	
Notes:	

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3. Type of inspection:

	Standard	System located in a hazardous area	Sections to be worked through 4.–11.	12.	13.–15.	
Acceptance test	☐	☐	✔	✔	✔	
Visual inspection	☐ (2 years)	☐ (1 year)	✔		✔	
Complete Inspection	☐ (4 years)	☐ (2 years)	✔	✔	✔	
Individual inspection	☐	☐				

4. Inspection principles / project documentation

Lightning protection standards and regulations at the time of installation

Time of installation:			
Standard:	☐ DIN V VDE V 0185-3 (VDE V 0185 part 3)	Date/version:	
	☐ DIN EN 62305-3 (VDE 0185-305-3)	Date/version:	
	☐ DIN EN 62305-3 (VDE 0185-305-3) supplement 1–6	Date/version:	
	☐	Date/version:	
	☐	Date/version:	

Notes:

Project documentation

Class of LPS:	☐ I	☐ II	☐ III	☐ IV
Change in the type of use / structural change to the building compared to the time of installation:	☐ Yes (Grandfathering may be cancelled: class of LPS check)		☐ No	
Complete drawing documentation of the lightning protection system available:	☐ Yes		☐ No	
Drawing number:				
Separation distance calculation available:	☐ Yes		☐ No	
Installations deviate from the plan (e.g. positioning of air-termination systems):	☐ Yes (Deviations are to be documented)		☐ No	

Notes:

5. General information on the HVI lightning protection system:

Type of HVI Conductor used: (hereinafter "HVI Conductor")

Note: the criteria for conductor selection are the calculated separation distance and the class of LPS. Correct use of the HVI lightning protection system is only guaranteed if the calculated separation distance "s" is ≤ the equivalent separation distance of the HVI Conductors.

HVI light (s_{Air} ≤ 45 cm)		☐ grey
HVI light plus (s_{Air} ≤ 60 cm)		☐ grey
HVI (s_{Air} ≤ 75 cm)	☐ black	☐ grey
HVI power (s_{Air} ≤ 90 cm)	☐ black	
Calculated separation distance "s_{Air}"		

Installation instructions at the time of installation: (Note down title, print no. and date/version)

Note: You can find more information on the respective installation instructions at www.dehn-international.com.

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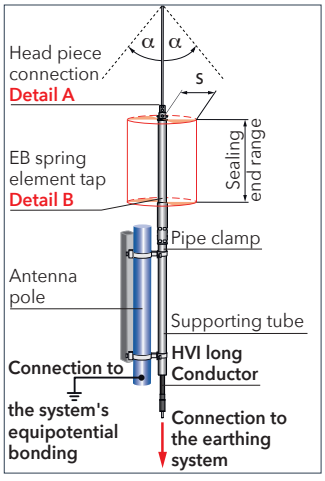
6. Checking the supporting tubes and accessories

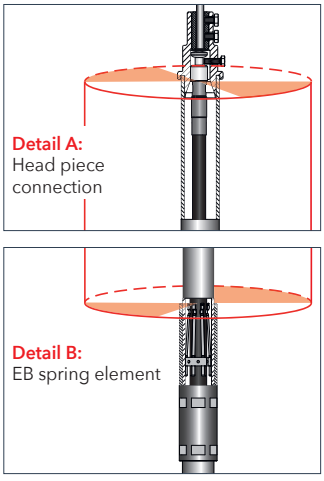
Description of supporting tube / installation location:			
Supporting tube outside Ex zone 1 / 21	☐ Yes	☐ Not relevant	☐ No (deficiency) (change air-termination system position / rework LPS)
Visible damage to the supporting tube / air-termination rod	☐ Yes (deficiency)	☐ Not relevant	☐ No
Bracket spacing – supporting tube fixing – according to mounting specifications (e.g. wall mounting)	☐ Yes	☐ Not relevant	☐ No (deficiency)
Colour coating in the GRP area of the supporting tube	☐ Yes (not permissible; system not working)	☐ Not relevant	☐ No
Connection of the supporting tube / stand to the nearest equipotential bonding point of the system (≥ 4 mm² Cu or not mandatory for HVI light / HVI light plus)	☐ Yes	☐ Not relevant	☐ No (deficiency)
Correct number of concrete bases checked and taken into account in accordance with installation specifications / wind loads	☐ Yes	☐ Not relevant	☐ No (deficiency)
Use of approved components (terminal, holder) in Ex zone 1 / 21	☐ Yes	☐ Not relevant	☐ No (deficiency)
Continuity of the mounting materials of DEHN	☐ Yes	☐ Not relevant	☐ No (deficiency)
Notes:			

7. Checking the HVI Conductor inside / outside the supporting tube and accessories:

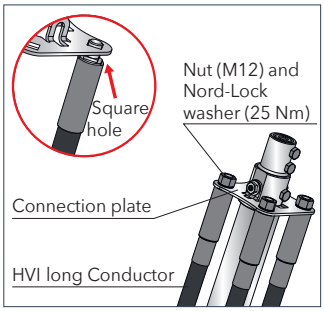
Assessment of danger points / compliance with separation distance in the sealing end range:

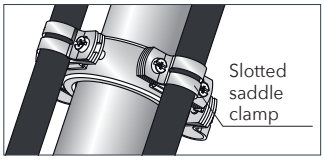
General information:
The sealing end range (metal-free area) extends from the connection of the head piece to the EB spring element integrated in the supporting tube (see image, details A and B) and can be assumed to extend along the entire length of the GRP tube when viewed from the outside.
The calculated separation distance "s" to electrically conductive or earthed parts must be maintained in the sealing end range.
The actual distance "d" to the object to be protected must be ≥ the calculated separation distance "s_{Air}".
Danger point definition:
Danger points are locations where the actual distance "d" is smaller than the equivalent separation distances.
For example, these are metal / earthed components in the sealing end range.





Information on external routing:
Up to four HVI Conductors or one HVI power Conductor can be attached to the outside of the supporting tube. The sealing end range (metal-free area) extends from the connection of the head piece to the fixing ring attached to the supporting tube. It is essential that the semi-conductive sheath is contacted using a slotted saddle clamp or stainless steel tensioning strap, including a suitable fastening ring. The grey sheath must be stripped in the slotted saddle clamp area on the grey HVI Conductor. The calculated separation distance "s" to electrically conductive or earthed parts must be maintained in the sealing end range. The actual distance "d" to the object to be protected must be ≥ the calculated separation distance "s_{Air}".
Danger point definition:
Danger points are locations where the actual distance "d" is smaller than the equivalent separation distances.
For example, these are metal / earthed components in the sealing end range.





Notes:

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7. Checking the HVI Conductor inside / outside the supporting tube and accessories:			
Danger point:	Description:		Location:
Separation distance:	Calculated:	Actual:	
Notes:			
Danger point:	Description:		Location:
Separation distance:	Calculated:	Actual:	
Notes:			
Danger point:	Description:		Location:
Separation distance:	Calculated:	Actual:	
Notes:			
Danger point:	Description:		Location:
Separation distance:	Calculated:	Actual:	
Notes:			
Danger point:	Description:		Location:
Separation distance:	Calculated:	Actual:	
Notes:			

8. HVI Conductor installation inside / outside the supporting tube and along the rest of the conductor			
HVI Conductor – installed inside supporting tube Locking screws on the supporting tube head approx. 7 mm distance between head and screw	☐ Yes	☐ Not relevant	☐ No (deficiency)
Grey HVI Conductor – installed inside supporting tube Stripping of the additional grey sheath in the contact area (contact spring – equipotential bonding)	☐ Yes	☐ Not relevant	☐ No (deficiency)
HVI Conductor – installed outside supporting tube Shrink-wrapping of the connection elements – adhesive discharge from both ends of the heat-shrinkable sleeve	☐ Yes	☐ Not relevant	☐ No (deficiency)
Grey HVI Conductor – installed outside supporting tube Stripping of the additional grey sheath in the slotted conductor holder area (equipotential bonding)	☐ Yes	☐ Not relevant	☐ No (deficiency)
HVI Conductor – installed outside supporting tube Correct fixing of the cable ties (fastener not directly on the HVI Conductor) or plastic half shells (819296 or 819297)	☐ Yes	☐ Not relevant	☐ No (deficiency)

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9. HVI Conductor installation along the rest of the conductor			
Bending radii of the HVI Conductor complied with as per installation specifications (minimum bending radius: 10x outer diameter)	☐ Yes	☐ Not relevant	☐ No (deficiency)
No signs of crushing/cutting on the HVI Conductor Note: check the wall area (permanent position fixation) only required for acceptance test	☐ Yes	☐ Not relevant	☐ No
HVI Conductor – installed in Ex zone 1 / 21 Compliance with the installation specifications (regular contacting of the semi-conductive sheath as per installation instructions)	☐ Yes	☐ Not relevant	☐ No (deficiency) (not permissible; system not working)
Compliance with minimum distance of the HVI Conductors after the supporting tube (distance "a" ≥ 200 mm)	☐ Yes	☐ Not relevant	☐ No (deficiency)
Cable routing only in strike-protected areas (LPZ 0_B)	☐ Yes	☐ Not relevant	☐ No (deficiency)
Crossing of components carrying lightning currents up to a max. separation distance s_{Air} ≤ 35 cm	☐ Yes	☐ Not relevant	☐ No (deficiency, if s_{Air} > 35 cm)
Distance between conductor holders in flat roof areas (distance "a" ≤ 1.0 m)	☐ Yes	☐ Not relevant	☐ No (deficiency)
Distance between conductor holders in wall areas (distance "a" ≤ 1.0 m) Note: Only required for acceptance test	☐ Yes	☐ Not relevant	☐ No (deficiency)
Colour coating of the HVI Conductor Note: Colour modification only for HVI Conductors with additional grey sheath as per installation specifications beyond the sealing end range	☐ Yes (deficiency, if black HVI; see grey HVI note)	☐ Not relevant	☐ No
HVI Conductor installation in a metal pipe after the supporting tube			
Installing the HVI Conductor in a metal pipe after the HVI supporting tube?	☐ Yes (following question)		☐ No
Is the metal pipe continuous and linked to the earthing system?	☐ Yes (Heed note)		☐ No
Note: The HVI Conductor is a component for maintaining the separation distance. In terms of its design, it does not have a magnetic shielding effect. Look out for induction effects in secondary conductors/loops. Surge protection measures may need to be taken.			
Notes:			

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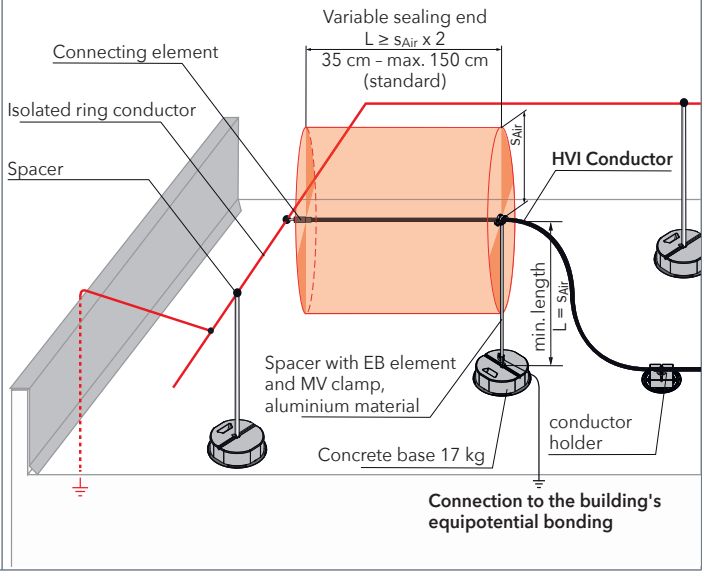
HVI Lightning Protection System Inspection

10. Connection of the HVI Conductor to isolated ring conductor / parapet; separation distance s_{Air} ≥ 17.5 cm

Variable sealing end (see installation instructions)
If the HVI Conductor is not connected to the earthing system but to parts carrying lightning voltage (e.g. parapet, ring conductor), the figure opposite is decisive for the effective length of the sealing end.
The length of the variable sealing end results from the calculated separation distance in s_{Air} (exit point) multiplied by a factor of 2.
Sealing end length "L" ≥ separation distance in s_{Air} x 2
Note: the additional grey sheath of the HVI Conductor must be stripped under the EB connection element.

Danger point definition:
Danger points are locations where the actual distance "d" is smaller than the equivalent separation distances.
For example, these are metal / earthed components in the sealing end range.

Note: please heed the information in the installation instructions.



Connection of the HVI Conductor to isolated ring conductor / parapet; separation distance s_{Air} ≥ 17.5 cm

Danger point:	Description:		Location:
Separation distance:	Calculated:	Actual:	
Notes:			
Danger point:	Description:		Location:
Separation distance:	Calculated:	Actual:	
Notes:			
Danger point:	Description:		Location:
Separation distance:	Calculated:	Actual:	
Notes:			
Danger point:	Description:		Location:
Separation distance:	Calculated:	Actual:	
Notes:			
Danger point:	Description:		Location:
Separation distance:	Calculated:	Actual:	
Notes:			

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HVI Lightning Protection System Inspection

11. Connection of the supporting tubes / stands / EB elements to the nearest equipotential bonding point of the system			
Connection of the supporting tubes to the equipotential bonding via natural components (e.g. antenna supports, air-conditioning units, etc.)	☐ Yes (skip the questions below)	☐ Not relevant (HVI light / HVI light plus not mandatory – heed the installation instructions)	☐ No
Notes (connection via):			
Connection of the supporting tubes / stands via separate EB conductor (> 4 mm²)	☐ Yes	☐ Not relevant (HVI light / HVI light plus not mandatory – heed the installation instructions)	☐ No
Parallel arrangement EB conductor to HVI Conductor	☐ Yes (Heed note)	☐ Not relevant (HVI light / HVI light plus not mandatory – heed the installation instructions)	☐ No
Notes:			
Note: The HVI Conductor is a component for maintaining the separation distance. In terms of its design, it does not have a magnetic shielding effect. Look out for induction effects in secondary conductors/loops. If necessary, surge protection measures must be taken.			

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HVI Lightning Protection System Inspection

12. Continuity measurement

Continuity of the HVI Conductor
The continuity of a HVI Conductor can be measured in the case of a single down conductor between the entry and exit points and in the case of an intermeshed HVI system between the exit points.
Low-impedance continuity < 1.0 Ω is recommended.

Measurement results:

Test joint:	Notes:	HVI Conductor length [m]:	HVI Conductor value [Ω]:

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13. Insulation measurement			
Test	☐ Yes	☐ Not relevant	☐ No
Installed as per installation instructions for insulated connection elements	☐ Yes		☐ No
Safety assessment carried out and hazards eliminated	☐ Yes		☐ No

Measurement results:			
Test joint	Notes:	Test passed	
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
Notes:			

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HVI Lightning Protection System Inspection

14. Test report

The lightning protection system has no deficiencies	☐ Yes	☐ No

The test has revealed the following deficiencies:	

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15. Additional information / documentation

Next test in the year:		
Number of test report pages:		
Number of drawing pages:		
Number of test report photos:		
Number of attachment pages:		
Test report attachments, drawing no.		

Notes for the owner of the systems:

The owner must ensure that the deficiencies are rectified.
The need for additional measures for internal lightning protection must be checked.
In the event of structural changes or lightning strikes, the maintenance service must be informed immediately.
This test report does not constitute a comprehensive inspection within the meaning of the standard. Additional tests are required; for example, of the earthing system.

Location

Date

Inspector's signature

Company

Note:
The contents of the test report are based on DIN EN 62305-3 (VDE 0185-305-3). The test report does not claim to be correct, complete or up to date and does not constitute operating instructions for the installation and operation of an HVI system.
The user alone is responsible for carrying out the testing and assessment of the materials. The test report is subject to modifications.

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