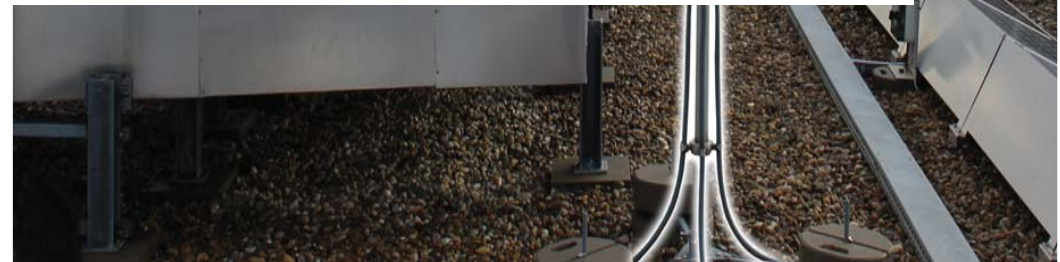




Isolated Lightning Protection Systems & HVI[®] Conductor



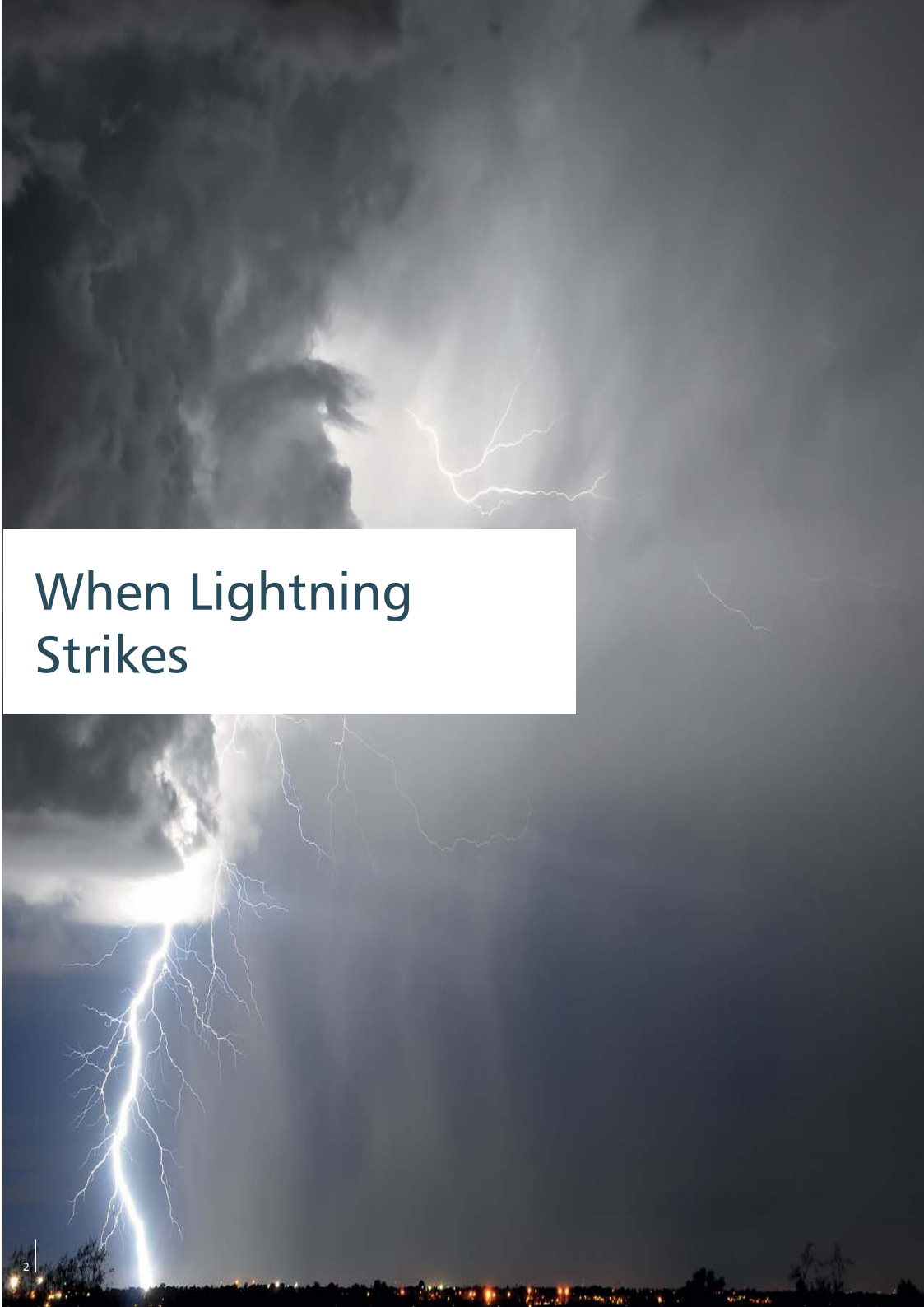
Surge Protection
Lightning Protection
Safety Equipment
DEHN Protects

DEHN (UK) Ltd

Unit N8b Meltham Mills
Meltham
Holmfirth, HD9 4DS

Tel. +44 1484 859111
Fax +44 1484 859222
info@dehn.co.uk
www.dehn.co.uk

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When Lightning Strikes

Contents

Isolated Lightning Protection Systems (LPS)	Page 4
DEHN Service	Page 6
HVI® Conductor	Page 8
DEHNiso Combi	Page 10
Isolated Air Termination Rods	Page 11
DEHNsupport Toolbox	Page 12
Isolated HVI® Projects	Page 13
DEHN Seminars	Page 15



Isolated Lightning Protection Systems (LPS)

Isolated LPS are defined within BSEN 62305-3:2011 section 3.3 as below:

LPS with an air-termination system and down-conductor system positioned in such a way that the path of the lightning current has no contact with the structure to be protected.

NOTE: In an isolated LPS, dangerous sparks between the LPS and the structure are avoided.

Isolated LPS keeps lightning currents out of the structure by maintaining the separation distance between the LPS and the structure/metallic services and has many advantages, in fact BSEN 62305-3:2011 shows several examples where they should be encouraged or considered:

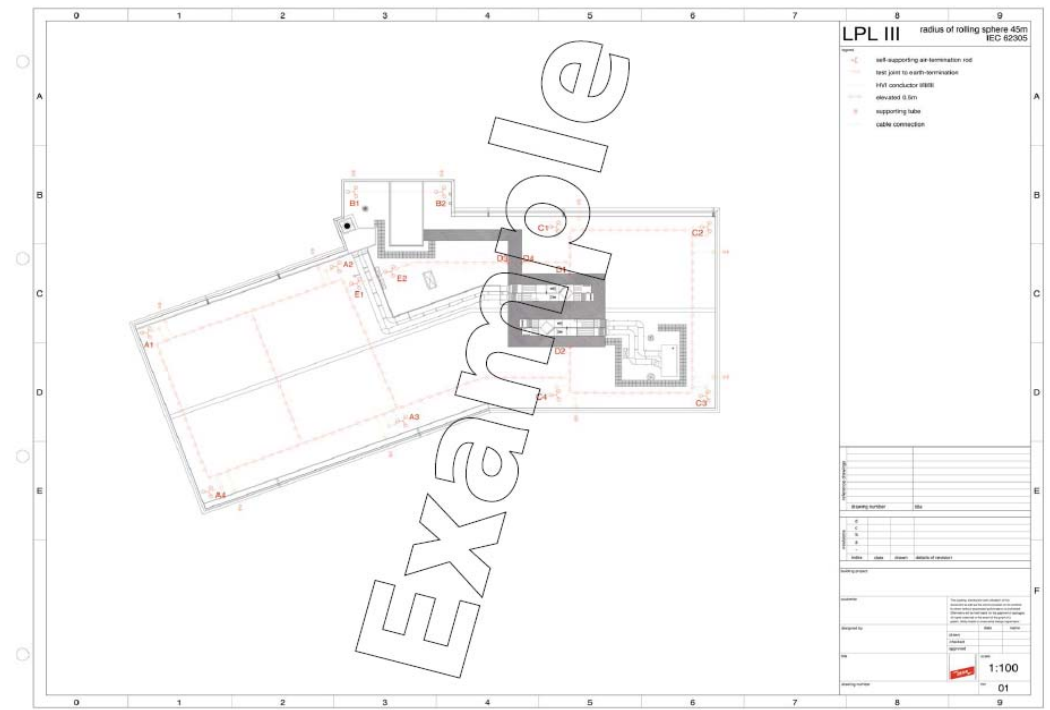
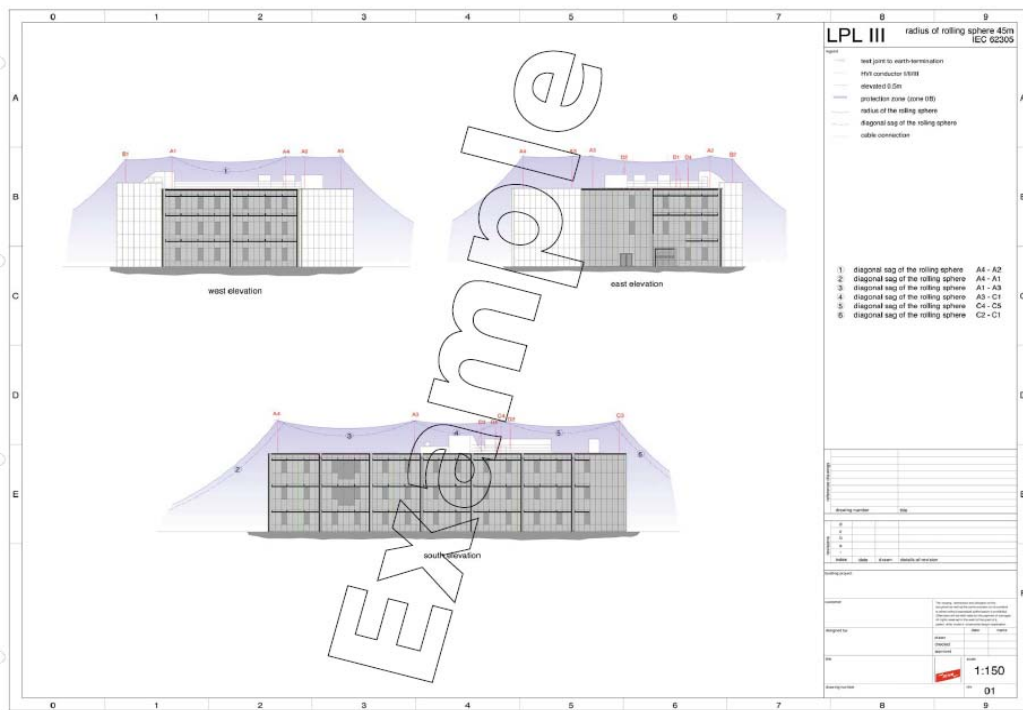
For structures containing solid explosive material, an isolated external LPS is encouraged.

Where it is predicted that changes in the structure, its contents or its use will require modification to the LPS.

When the susceptibility of the contents warrants the reduction of the radiated electromagnetic field associated with the lightning current pulse in the down conductor. Structures containing extensive electrical and electronic installations such as data centres are a good example.

When the thermal and explosive effects at the point of strike, or on the conductors carrying the lightning current, may cause damage to the structure or contents (see Annex E). Typical examples include structures with combustible covering, structures with combustible walls and areas at risk of explosion and fire.

Isolated LPS designs can be applied to the whole structure or parts of the structure where sparks between the LPS must be avoided, for example roof plant equipment, PV systems, cable trays etc.



DEHN Service

DEHN Service is a design service for isolated air-termination systems.

Our vast experience in designing lightning protection systems allows us to produce individual lightning protection designs for systems ranging from simple office buildings to large complex industrial plants, photovoltaic systems, biogas and petrochemical plants.

We will manage the complete design process including drawings, installation details, bill of material, specification texts, design descriptions and material offers.

You will receive the following as part of the DEHN Service package.

- A design offer
- Preparation of the lightning protection general drawings (CAD)
- Preparation for detailed installation drawings of the air-termination system (CAD)
- Calculation of the separation distance
- Bill of material and offer
- Description of the lightning protection concept



Product solutions for Isolated Air-Termination Systems

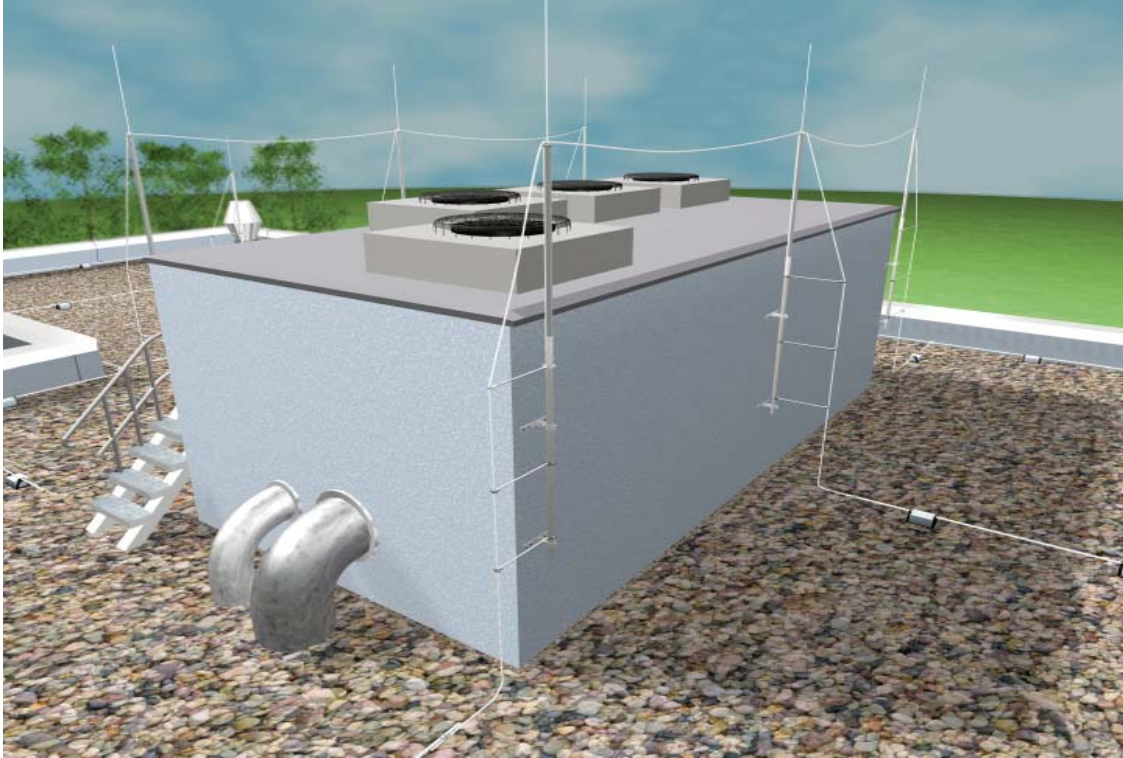
HVI® Conductor from DEHN is a high-voltage resistant insulated down conductor designed to maintain the separation distance to electrically conductive parts/structures according to BSEN 62305-3:2011.

The unique properties of HVI® Conductor give it an equivalent separation distance $\leq 0.75\text{m}$ (in air) or $s \leq 1.5\text{m}$ (in solid building material) which make it an ideal solution for applications in an isolated LPS.

HVI® Conductor is available in pre-cut customer defined lengths or supplied on 100m drums as HVI® Long Conductor. Available in black or grey, the HVI® Conductor meets the requirements of EN50164-2.

Also available as:
HVI® light Conductor for systems where a reduced separation distance is required.

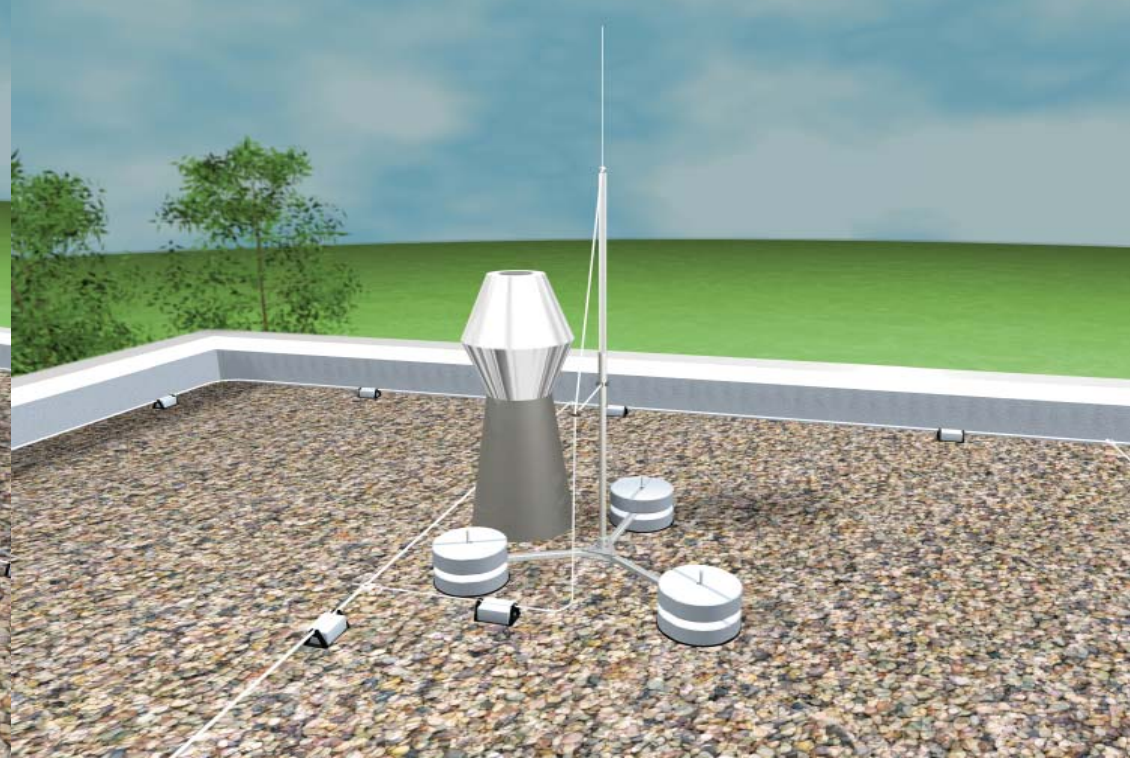
HVI® power Conductor with its increased separation distance properties meets the requirements of the most demanding systems.



DEHNiso Combi

DEHNiso Combi is a flexible, modular product range which can easily be adapted to individual site requirements to maintain the separation distance.

The GRP insulated standoffs and air-termination sets are ideally suited to maintaining the separation distance on roof mounted plant equipment, cable trays and PV systems.



Isolated Air-termination Rods

Isolated air-termination rods allow roof superstructures, air conditioning systems and PV systems etc to be integrated into lightning protection zone LPZ 0_B. The free standing tripods allow flexible installation with minimum mechanical disruption to the building structure and are available in lengths up to 14m.



DEHNsupport Toolbox

The DEHNsupport Toolbox is a comprehensive software package invaluable for lightning protection. The software incorporates country specific variations and the associated national standards and integrates the following tools into the software:

- DEHN Distance Tool - The key to isolated lightning protection system design is the calculation of the separation distance. The DEHN distance tool located within the Toolbox allows users to calculate the separation distances at any point of the structure without having to resort to complicated and time consuming manual calculation methods. Common building templates are included for more traditional

shaped structures which complex structures can be modelled with the 3D construction option.

- DEHN Risk Tool - Full risk assessment tool to BSEN 62305-2 to determine the class of LPS (Lightning Protection System) required.
- DEHN Earthing Tool - Calculation of the length of the earth electrodes for both Type A and Type B earthing systems.
- DEHN Air-termination Tool - Calculation of the length of the air-termination rods using both the rolling sphere and protective angle methods.

“Having been contracted to look at problems in attempted lightning protection systems installations to each of three 23 storey tower blocks in the London Borough of Hammersmith & Fulham, R.C Cuttings realised that the solution was not one that could be found by using standard materials.

A technical issue was evident as audio/visual cables were in close proximity to the lightning protection system down conductors and there was no control of the separation distance. No alternative locations were available, but with our knowledge of the DEHN HVI[®]Conductor, we were able to offer a solution to the customer that would better deal with the separation distance problem. The electrical consultant had not previously heard of the product so we provided the

information and documentation that DEHN provided us during our accredited installer training, and approval to proceed was quickly forthcoming.

The HVI[®]light product was selected, so that the head and tail ends could be made on site, and a timely delivery by DEHN (UK) Ltd helped us to ensure that the client didn't suffer any further delays to the project.

Works were carried out over a four week period and almost 600m of HVI[®]light were used.”

From John Jolly, Managing Director of R C Cuttings & Company Ltd



DEHN protects

DEHN Seminars.

Specialist 1/2, 1 and 2 day seminars are carried out at various locations around the UK, for anyone involved in surge & lightning protection, giving a clear, concise understanding of the requirements needed.

Available to professionals such as:
Consultants, designers, engineers, electrical contractors, lightning protection installers and many more.....

Some of the topics covered are:

- Railways
- Water treatment
- Process control
- Petro-chem
- Wind & PV generation

DEHN (UK) Ltd can tailor a seminar to suit your company needs or industry sectors

Please contact us on 01484 859111 or info@dehn.co.uk for more information.