



CONFORMITY OF DESIGN

File Ref.: 10218/2018-40444

Applicant: Esdec B.V.
Londenstraat 16
7418 EE DEVENTER
NETHERLANDS

Product: PV mounting system for flat roofs

Type: FlatFix Fusion mouting system for flat roofs for solar panels in a single landscape arrangement

Scope: Design review of Flat Fix Fusion mounting system according general requirements from IEC 60364 series with focus on protective earthing and functional bonding

Standard: General rules (IEC 60364 series) for electrical installations.

General:

VDE was requested to perform a design review for Esdec B.V.'s Flat Fix Fusion mounting system with a focus on requirements regarding equipotential bonding and lightning protection. For this purpose, Esdec shared a set of technical drawings and the related installation manual.

Conclusion

The evaluation team opines that the mounting system design and its related updated documentation meet all requirements regarding protective earthing and/or functional equipotential bonding set by the IEC 60364 series (which is the international basis of the harmonized national NEN 1010). Also, the standards do not specify any measures which need to be fulfilled by or are applicable for the design presented by Esdec B.V..

The evaluation team does not see a need for protective earthing under operation conditions in reference to the above-mentioned standards. Under certain circumstances, (functional) bonding of parts of the PV installation might be necessary. In the case that protective earthing or functional equipotential bonding is required for the individual project, measures to connect all metal parts of the mounting structure shall be described in the supplier's manual.

During this design review there were no measurements taken, nor was any kind of testing of components or the system performed by VDE, since such additional items were not requested by Esdec B.V. The design review did not encompass any topics regarding mechanical stability.

To meet the requirements for lightning protection which are defined in IEC 62305-3, additional measures need to be defined and installed for each installation on an individual basis. Esdec is aware of this requirement and has excluded this topic from the review carried out by VDE. Esdec is carrying out further investigations separately.

VDE Renewables GmbH

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D-63755 Alzenau, 2019-10-25





Annex

IEC 60364 series	Low-voltage electrical installations
IEC 60664-1	Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests
IEC 60364-4-41	Electrical installations of buildings - Part 4-41: Protection for safety; Protection against electric shock
IEC 60364-5-54	Low-voltage electrical installations - Part 5-54: Selection and erection of electrical equipment - Earthing arrangements and protective conductors
IEC 60364-7-712	Low-voltage electrical installations - Part 7-712: Requirements for special installations or locations - Photovoltaic (PV) systems
IEC 60417	Graphical symbols for use on equipment
IEC 61140	Protection against electric shock - Common aspects for installation and equipment
IEC 62305-3	Protection against lightning - Part 3: Physical damage to structures and life hazard
IEV ref 441-11-10	

<http://www.electropedia.org/iev/iev.nsf/display?openform&ievref=441-11-10>