



CHARIN

Recommendation of Charging Interface Initiative e.V.

CharIN recommendations on connector and cable tests for future applications related to IEC 62196-1:2014

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Introduction

CharIN is dedicated to develop and establish the Combined Charging System (CCS) as the standard for charging Battery Electric Vehicles (BEVs) of all kinds.

The Focus Group Charging Connection elaborates the findings of damages on charging infrastructure in the field and perceives it as a valuable discussion.

A list of potential improvements was created especially addressing frequently used high power charging stations in a public environment. The most promising recommendations will be presented in the following.

Drop Test

Current situation:

Observations in the field have shown, that many vehicle connectors get damaged by falling to the ground. This indicates that the drop test in IEC 62196-1:2014 (clause 26.3) is not severe enough to ensure product robustness.

Cause and why:



Objective – Problem definition:

- Sharpen the test parameters of the current drop test in the IEC norm. This shall reduce the probability of premature connector housing failure or damage.
- Simulate real life operational conditions that come as close as possible, with connectors and cables of use, using specified cable type & length per applicable power class. Drops are from hand held elevation (1.2meters high) at different orientations as indicated.

Proposal revised test

Dimensions in millimetres

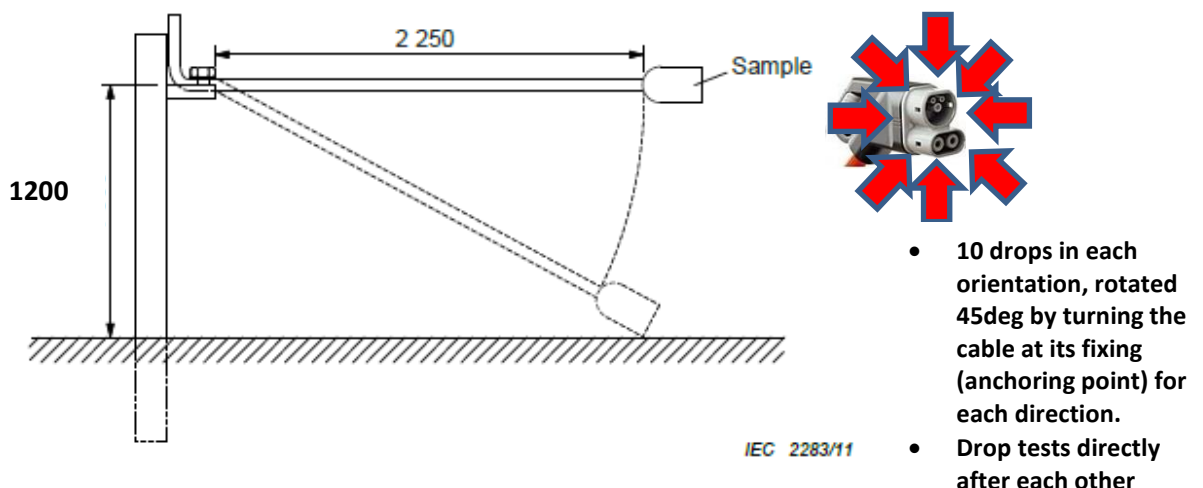


Figure 13 – Arrangement for mechanical strength test for plugs and vehicle connectors

- The cable (incl. cooling liquid, if any) to be used must be the same that is to be certified to the rated current power class or higher rated current.
- During test the ambient temperature is set at 20°C (+/-5 °C). Manufacturers can certify their product to lower and higher temperatures to demonstrate robustness and durability to material embrittlement and premature damage to connectors used in colder/warmer countries. Therefore, testing at ambient temperature is a minimum standard.
- It is recommended to certify products at lower ambient temps with regard to areas with general colder climate conditions.

Pass & Fail criteria are not changed (Please refer to 62196-1:2014)