

Development of the Front- and Backsheet Standard IEC 62788-2(-1)

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Abstract

Front- and backsheets protect solar cells from environmental factors and play a critical role in the durability and safety of PV modules. Of particular concern are observations in the field of outerlayer cracking of backsheets. These concerns are (among other things) being addressed in the development of the front- and backsheets standards IEC TS 62788-2 and IEC 62788-2-1.

A second edition of IEC TS 62788-2 which describes test methods for front- and backsheets is close to being finalized and published. A new test method that will be included is a sequential UV/TC stress test ("Solder bump test") which aims to evaluate the propensity of front- and backsheets to crack under application conditions.

Safety (design) requirements for front- and backsheets will be described in the first edition of IEC 62788-2-1 which is also close to being finalized and published, in parallel with IEC TS 62788-2. This new standard will describe safety relevant properties of frontsheet and backsheet as required by the module safety standards IEC 61730. Newly introduced test requirements include a thermal failsafe test to evaluate endurance-to-thermal-stress performance based on elongation at break and UV weathering tests at component level.

This presentation will describe the developments for the front- and backsheet standards and explain the background in particular of the new test methods and requirements.

Short Bio

Peter Pasmans is Application Development Specialist at Endurans Solar, developing innovative material solutions for solar panels. After obtaining his PhD in Applied Physics at the Eindhoven University of Technology, he started in 2014 as Scientist at the DSM Materials Science Center and in 2019 became Application Development Specialist at DSM Advanced Solar. Earlier this year, the backsheet business of DSM was acquired by Worthen Industries (a family-owned, US-based business) and the business unit continues as Endurans™ Solar.

Within IEC TC82, Peter is project lead for the development of the Front- and Backsheet standards IEC TS 62788-2 and IEC 62788-2-1.