



Deliverable Report

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Executive Summary

The Deliverable Report D1.5 Part B “Tooling design and engineering for polymer components ready for large 120 cells module” provides an overview of the development activities and the realization of the support structure for the large 120 cells photovoltaic module (PV-modules) using injection molded parts.

The first design approaches were based on the modular hybrid support structure of the small prototype PV-module, which was developed, realized and successfully validated at the beginning of the SuMMiT project (see Deliverables D1.5 Part A und D1.6 Part A). Further requirements concerning the design of the new support structure result from the experiences made during the assembly of the prototype-modules. During the part development several design and simulation loops were carried out to further develop and adapt the parts of the support structure continuously. To ensure that the designed components are producible and that tool-specific conditions are observed, the development process was accompanied by a toolmaker.

As a result of this design and development process, an enhanced support structure for the 120 cells PV-module was developed. Analogous to the already existing prototype module, the 120 cells support structure is characterized by a hybrid and modular approach. As a material for producing the individual parts (beam, extension and connectors) a flame-resistant long-fiber reinforced Polypropylene should be used. The characterization of various materials is described in the Deliverable D1.2 Part B.

After completion of the injection molds, first parts and prototype PV-modules were manufactured and checked for functionality. Accordingly, D1.5 Part B is considered as successfully implemented.

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http://cordis.europa.eu/fp7/cooperation/home_en.html

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