



Deliverable Report

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Title: First pilot run of components for 300 PV modules for large 120 cells module

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Executive Summary

According to the scope of D1.6B, First pilot run of components for 300 PV modules for large 120 cells module, particular focus was set on the commissioning of the injection molding tools to prove the manufacturability of the polymer components for the back construction of the 120 cells module approach. For this reason, two pilot runs were performed in which the general functionality of the three new injection molding tools as well as the fact, that the polymer components for the back construction of a large 120 cells module can successfully be produced with the injection molding process could be verified.

Of course, in addition to the basic feasibility the focus was also to ensure the production of parts with the flame retardant material combination which was defined as final material combination in the course of the project.

Unfortunately, some problems occurred during processing of this flame-retardant material. It became clear that the material degrades whereby the material could be basically processed and parts were manufactured. This was particularly visible through white deposits in the injection molding tools as well as on the parts. These deposits led to so many problems due to revisions of the injection molding tools and further processing of the parts, so that it was decided not to continue using this flame-retardant material.

The first produced parts were used to check the part dimensions and the assembly approach which was the basis for minor adjustments of the injection molding tools. Also some initial loads tests were performed which unfortunately gave very disappointing results. The assembled beams showed an unexpected failure behavior in the connection area between connector and beam. However, this problem must be examined in further investigations in more detail.

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