velocity is used, which results in high values for the elongation at break up to 88%. No anisotropy was visible for the flexural strength but a slight tendency for the flexural modulus. The highest compressive modulus is noticeable in Z-direction with a layer thickness of 254 µm. For the compressive strength, there are only slight differences recognizable. As thermal properties of the Polyamide 12, the flowability is determined (MVR) and the melting behavior by means of DSC analyze. The Melt Volume Rate (MVR) indicates an increase of the flowability due to the processing in the FDM process. The reason for this might be a reduction of the chain lengths of the polymer by the thermal load. With a subsequent heat treatment the MVR is reduced to a value below the virgin material. So the tempering leads to a reorganization and/or recrystallization of the molecular chains. The exact reason has to be determined in further investigations. The results of the DSC analyze showed that there are two endothermic peaks for the first heating. This might have different reasons which have to be clarified in further investigations. The maximum temperature could be reduced to a temperature between the two peaks. Furthermore, the DSC analyze has to be done with a lower heating rate e.g. 5 K/min to see which influence the heating rate has on the crystallization. Finally, there should also be some investigations with processed PA 12 material.

Acknowledgements

The authors want to thank all industry partners of the DMRC as well as the federal state of North Rhine-Westphalia and the University of Paderborn for the financial and operational support.

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