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Investigation of Surface Properties of Plugs for Thermoforming

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In most thermoforming applications up to 90% of the total stretching are realised with plug assist. This pre-stretching phase is hence the most important step of the forming process. Therefore, the properties of the plug have a big influence on final part quality.

In many thermoforming applications, very short cycle times are achieved, so the thermoforming plugs are subjected to high mechanical and thermal load.

Until now, it is unknown, how the plug materials behave under these charges over a longer period of time.

In this work, plugs that have been subject to different loads were investigated concerning the properties of their surface.