

New guideline for testing the adhesion of thermoplastic elastomers on substrates

For adhesion tests of TPEs on substrates a VDI Committee has developed a new guideline. In the past there has been no independent test available to analyse the adhesion of TPE to substrates. The new guideline VDI 2019 closes that gap.

A committee worked on that test (title "Testing the adhesion of TPE on substrates") firstly as chapter 1 the adhesion to injection moulded substrates.

The following companies and institutions were involved in the committee:

- Allod Werkstoff GmbH & Co. KG
- API S.p.A.
- A. Schulman GmbH
- BASF Polyurethanes GmbH
- Freudenberg Forschungsdienste KG
- Kraiburg TPE GmbH & Co. KG
- Müller Kunststoffe GmbH & Co. KG
- VDI.

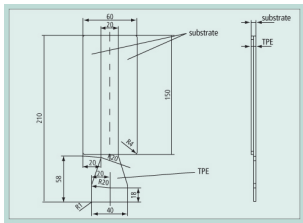


Fig. 1: Scheme of the test specimen dimensions in mm

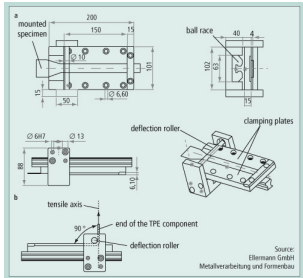


Fig. 2: Test sledge

In the market there are several tests with corresponding specimen. A new overmoulding test specimen has been developed that matches the wide range of TPEs and hard products best possible (fig. 1). With this test specimen the peel resistance is tested mounted in a sledge with deflection roller. Using that sledge a standard tensile testing machine can be used and the specimen can be easily clamped (figs. 2, 3). The peel resistance W_s [N/mm] is calculated by dividing the peel force by the width of the TPE:

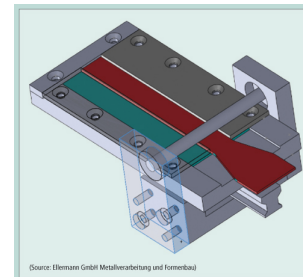


Fig. 3: Scheme of test installation

$$W_s = F / b$$

F = peel force according to DIN ISO 6133 standard
b = width of the TPE (20 mm)

The described report for TPE/thermoplastic combination contains beside the value for peel resistance and some boundary conditions a staggered classification for the fracture appearance.

The Green-Draft of the **VDI Guideline 2019, Blatt 1** will be presented at K 2010 at the VDI stand (hall 5, stand B40). During the K fair test specimens will be injection-moulded in an multi injection process at the stand of NPM, Plastic Metal S.p.A. (hall 15, stand B58). On 27 and 28 October the peel test will be demonstrated on the VDI stand.

At the seminar **VDI TPE Expertenforum Haftung und thermoplastische Verbundsysteme** on the 26 October 2010, Lindner Hotel Airport Düsseldorf, the new VDI Guideline will also be presented.

Adresse:

<http://www.gupta-verlag.com/general/news/k-2010/8763/new-guideline-for-testing-the-adhesion-of-thermoplastic-elastomers--on-substrates>