Bending Under Tension Test with Direct Friction Measurement - DTU Orbit (07/01/2019)

Bending Under Tension Test with Direct Friction Measurement

A special Bending-Under-Tension (BUT) transducer has been developed in which friction around the tool radius can be directly measured when drawing a plane sheet strip around a cylindrical tool-pin under constant back tension. The front tension, back tension and torque on the tool-pin are all measured directly, thus enabling accurate measurement of friction and direct determination of lubricant film breakdown for varying normal pressure, sliding speed, tool radius and tool preheat temperature. The transducer is applied in an experimental investigation focusing on limits of lubrication in drawing of stainless steel showing the influence of varying process conditions and the performance of different lubricants.

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