



Standard Test Method for Determining Tribomechanical Properties of Grease Lubricated Plastic Socket Suspension Joints Using a High- Frequency, Linear-Oscillation (SRV) Test Machine¹

This standard is issued under the fixed designation D7420; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

INTRODUCTION

This test method was originally published as bilingual company standard TRW 62 051 301 in June 2002. TRW Fahrwerksysteme² transferred the copyright on Oct. 5, 2004 to standardization bodies. The DIN 51834 working group has modified this standard by adding precision information based on round robin tests.

1. Scope*

1.1 This test method covers a procedure for determining the friction and wear behavior of grease lubricated plastic socket suspension joints, for validation of suspension joint greases and quality inspection for those greases under high-frequency linear-oscillation motion using the SRV test machine.

1.2 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:³

A295 Specification for High-Carbon Anti-Friction Bearing Steel

D217 Test Methods for Cone Penetration of Lubricating Grease

D4175 Terminology Relating to Petroleum, Petroleum Products, and Lubricants

D5706 Test Method for Determining Extreme Pressure Properties of Lubricating Greases Using a High-Frequency, Linear-Oscillation (SRV) Test Machine

E45 Test Methods for Determining the Inclusion Content of Steel

G40 Terminology Relating to Wear and Erosion

2.2 DIN Standards:⁴

DIN 51631:1999 Special-boiling-point spirits - Requirements and testing

DIN EN 10025-1:2005 Hot rolled products of structural steels - Part 1: General technical delivery conditions

DIN EN ISO 683-17 Heat-treated steels, alloy steels and free-cutting steels - Part 17: Ball and roller bearing steels (replaces DIN 17230-1980)

DIN EN ISO 13565-2:1998 Geometrical Product Specifications (GPS) - Surface texture: Profile method - Surfaces having stratified functional properties - Part 2: Height characterization using the linear material ratio curve

3. Terminology

3.1 Definitions:

3.1.1 *break-in, n—in tribology*, an initial transition process occurring in newly established wearing contacts, often accompanied by transients in coefficient of friction or wear rate, or both, which are uncharacteristic of the given tribological system's long-term behavior. **G40**

¹ This test method is under the jurisdiction of ASTM Committee D02 on Petroleum Products, Liquid Fuels, and Lubricants and is the direct responsibility of Subcommittee D02.G0 on Lubricating Grease.

Current edition approved Dec. 1, 2011. Published March 2012. Originally approved in 2010. Last previous edition approved in 2010 as D7420-10. DOI:10.1520/D7420-11.

² TRW Fahrwerksysteme (Chassis Systems), D-50543, Düsseldorf, Germany.

³ For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

⁴ Available from Beuth Verlag GmbH (DIN-- DIN Deutsches Institut für Normung e.V.), Burggrafenstrasse 6, 10787, Berlin, Germany, <http://www.en.din.de>.