



Designation: D7420 – 23

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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:³

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.

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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.

[A295 Specification for High-Carbon Anti-Friction Bearing Steel](#)

[D217 Test Methods for Cone Penetration of Lubricating Grease](#)

[D4175 Terminology Relating to Petroleum Products, Liquid Fuels, 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 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](#)

[DIN EN 17022-4: 1998 Heat treatment of ferrous materials—Methods of heat treatment—Part 4: Nitriding and nitrocarburizing \(available in English\)](#)

3. Terminology

3.1 Definitions:

3.1.1 For definitions of terms used in this test method, refer to Terminology [D4175](#).

3.1.2 *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

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

*A Summary of Changes section appears at the end of this standard