



SURFACE VEHICLE RECOMMENDED PRACTICE

J1992™

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Wheels/Rims - Military Vehicles Test Procedures and Performance Requirements

RATIONALE

This document has been revised to clarify procedures when manufacturer-specific data is available.

1. SCOPE

This SAE Recommended Practice provides minimum performance requirements and uniform laboratory procedures for fatigue testing of disc wheels, demountable rims, and bolt-together divided wheels intended for normal highway use on military trucks, buses, truck-trailers, and multipurpose vehicles. Users may establish design criteria exceeding the minimum performance requirement for added confidence in a design. For other (non-military) wheels and rims intended for normal highway use on trucks and buses, refer to SAE J267. For wheels intended for normal highway and temporary use on passenger cars, light trucks, and multipurpose vehicles, refer to SAE J328. For wheels used on trailers drawn by passenger cars, light trucks, or multipurpose vehicles, refer to SAE J1204. This document does not cover off-highway or other special application wheels and rims.

2. REFERENCES

2.1 Applicable Publications

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

SAE J393 Nomenclature - Wheels, Hubs, and Rims for Commercial Vehicles

2.1.2 Tire and Rim Association Publications

Available from The Tire and Rim Association, Inc., 175 Montrose West Avenue, Suite 150, Copley, OH 44321, Tel: 330-666-8121, www.us-tra.org.

Yearbook and Engineering Design Information Book (EDI), The Tire and Rim Association, Inc.

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https://www.sae.org/standards/content/J1992_202307/

Documents
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2.2 Related Publications

The following publications are provided for information purposes only and are not a required part of this SAE Technical Report.

2.2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

SAE J267 Wheels/Rims - Truck and Bus - Performance Requirements and Test Procedures for Radial and Cornering Fatigue

SAE J328 Wheels - Passenger Car and Light Truck Performance Requirements and Test Procedures

SAE J694 Disc Wheel and Hub or Drum Interface Dimensions - Truck and Bus

SAE J1204 Wheels - Recreational and Utility Trailer Fatigue Test Procedure and Performance Requirements

Kinstler, J., "The Science and Methodology of SAE Wheel Fatigue Test Specifications," SAE Technical Paper 2005-01-1826, 2005, <https://doi.org/10.4271/2005-01-1826>.

2.2.2 ISO Publications

Copies of these documents are available online at <https://webstore.ansi.org/>.

ISO 3894 Road Vehicles - Wheels/Rims for Commercial Vehicles - Test Methods

2.2.3 OSHA Publications

Available from U.S. Department of Labor/OSHA, 200 Constitution Avenue, Washington, DC 20210, Tel: 800-321-6742, www.osha.gov/pls/publications/pubindex.list.

29 CFR Part 1910.177 Servicing Multi-Piece and Single-Piece Rim Wheels

3. DEFINITIONS

3.1 BOLT-TOGETHER DIVIDED WHEEL

A wheel that has a removable wheel portion which is attached to the fixed wheel portion by wheel clamp bolts and nuts (see Figure 1).

3.2 FIXED WHEEL PORTION

The portion of a bolt-together divided wheel that fastens to the vehicle axle hub flange.

3.3 LUG NUT

Hardware designed for securing the wheel to the vehicle.

3.4 REMOVABLE WHEEL PORTION

The portion of a bolt-together divided wheel which can be removed from the fixed wheel portion in order to service the tire.

3.5 SEALING DEVICE

A component fitted between the removable and fixed wheel portions to prevent fluid (air or otherwise) from leaking out of the tire and bolt-together divided wheel assembly.

3.6 WHEEL CLAMP BOLT

An externally threaded fastener which when used with wheel clamp nuts serves to secure the removable wheel portion to the fixed wheel portion of a bolt-together divided wheel.

3.7 WHEEL CLAMP NUT

An internally threaded fastener which when used with wheel clamp bolts serves to secure the removable wheel portion to the fixed wheel portion of a bolt-together divided wheel.

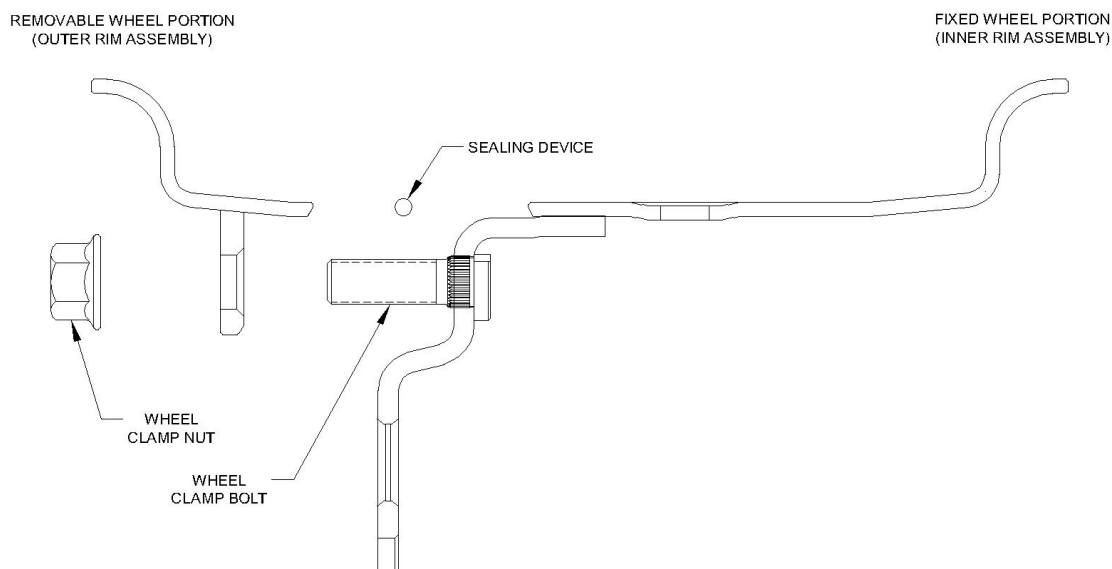


Figure 1 - Example of a bolt-together divided wheel

4. DYNAMIC CORNERING FATIGUE

The test wheels, when subject to the following test procedures, shall meet the minimum performance requirement specified in Table 1.

Table 1 - Cornering fatigue test - test load factors and cycle requirements

Wheel Description				Performance Requirements	
Material	Rim Diameter Code	Inset/Outset Millimeters	Inset/Outset Inches	Accelerated Test Factor	Minimum Cycle Life
Ferrous	16 and larger ⁽¹⁾	All	All	1.10	60000
				1.30	40000
				1.45	30000
Aluminum	16	127 or more	5 or more	1.35	250000
				1.63	80000
Aluminum	All	All	All	1.35	250000

⁽¹⁾ Exclude 17.5 and larger with rim width of 266.7 mm (10.50 inches) and wider (wide base tire wheels).