



SURFACE VEHICLE RECOMMENDED PRACTICE

J1440™

SEP2025

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Superseding J1440 SEP1993

(R) Off-Road Tire and Rim Classification—Forestry Machines

RATIONALE

This standard is a total revision to include all classes of forestry tires. All load tables have been removed as they would have duplicated other existing standards. Information on where to obtain recommended loads and inflations has been added.

FOREWORD

Technological advances in forestry machine designs and applications have necessitated the inception of special tire designs and sizes. These tires form the classification LS (Log Skidder) which is defined as a low pressure tire utilizing a lug type tread to obtain good traction in soft soil conditions, flotation tires (3-part size designation) and metric sized tires may also be used. (They may not have the "LS" markings.) These tires are load capacity rated for operation at speeds up to and including 32 km/h (20 mph). Other types of off-road tires may be used on forestry machines (refer to SAE J751).

1. SCOPE

This SAE Recommended Practice describes the classification of off-road tires and rims designed specifically for forestry machines (refer to SAE J1116), defines related terminology in common use, and shows representative construction details of component parts.

1.1 Purpose

To establish a standard nomenclature for forestry tire and rim components.

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 J751 Off-Road Tire and Rim Classification—Construction Machines

SAE J1116 Categories of Off-Road Self-Propelled Work Machines

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2.1.2 ISO Publications

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

ISO 4223-1 Definition of Some Terms Used in the Tire Industry, Part 1—Pneumatic Tires

ISO 4251-1 Tires and Rims (Existing Series) for Agriculture Tractors and Machines, Part 1—Tire Designations and Dimensions

ISO 18804 Rim Dimensions

ISO 18805 Tire Classification and Nomenclature

ISO 18807 Log Skidder Tires

2.1.3 Tire and Rim Association Publications

Available from The Tire and Rim Association, Inc., 4000 Embassy Parkway, Suite 390, Akron, OH 44333, www.us-tra.org.

The Tire and Rim Association Year Book

2.1.4 The European Tyre and Rim Technical Organisation (ETRTO) Publications

ETRTO Standards Manual

3. DEFINITIONS

For the purposes of this document, the terms and definitions apply.

3.1 Logging or Forestry Machine Tire Applications

Tires for use on machines/equipment used in forestry applications, in high torque (HT) service (e.g., Skidders) or low torque (LT) service (e.g., Forwarders), and for short transports on roads.

3.2 Basic Tire Load Conditions

3.2.1 Code and Three Part Designated Tires

3.2.1.1 Tires in Non-Skidder Service

Maximum load of total vehicle mass with accessories plus mass transfer that is imposed on an individual tire due to total radial forces during operation are the basis for load determination. The reference speed is A6.

3.2.1.2 Tires in Skidder Service

Maximum load of total vehicle mass with accessories plus load increases due to log winching or grappling loads and mass transfer that are imposed on an individual tire due to total radial forces during operation are the basis for load determination. The reference speed is A2.

3.2.2 Metric Tires in High Torque or Low Torque Service

The maximum load a tire is permitted to carry under specific operating conditions is specified. The reference is the static condition of a fully loaded vehicle with accessories on a plain ground adapted for transport.

4. MARKING

4.1 Code Designated Tires with Ply Rating Marking

The marking of ply rating marked series of logging and forestry service tires shall consist of designations of the tire size and ply rating and optionally the suffix marking LS after the size designation.

4.1.1 Conventional Designated Sizes, Diagonal

For conventional size marked tires the designation consists of the nominal tire width code, the nominal rim diameter code and ply rating.

EXAMPLE 1: 24.5-32 18 PR or 24.5-32 LS 18 PR

For low section height tires, the letter L is added to the nominal tire width code.

EXAMPLE 2: 28L-26 16 PR or 28L-26 LS 16 PR

4.1.2 3-Part Designated Sizes, Diagonal

For 3-part size designation tires the size is shown as nominal OD code x nominal width code – nominal rim diameter code and ply rating.

These sizes may have an optional suffix of “NHS” after the size designation.

EXAMPLE 3: 67x34.00-26NHS 14 PR

If a specific rim contour is required for a given tire, it shall be added as a prefix to the size marking.

EXAMPLE 4: DH35.5L-32 26 PR or DH73x44.00-32 26 PR

4.2 Metric Designated Tires with Service Descriptions

4.2.1 Metric Diagonal Tires

The marking shall consist of nominal section width, nominal aspect ratio, nominal rim diameter code with the suffix marking LS and service description.

EXAMPLE 5: 710/55 -34 LS 161A8 161A2 HT / 168A2 LT For tires using 5° contour rims

EXAMPLE 6: 600/55 -26.5 LS 154A8 154A2 HT / 161A2 LT For tires using 15° contour rims

4.2.2 Metric Radial Tires

The marking shall consist of nominal section width, nominal aspect ratio, radial identification, nominal rim diameter code with the suffix marking LS and service description.

EXAMPLE 7: 710/45 R 26.5 LS 168A8 168A2 HT / 175A2 LT For tires using 15° contour rims

4.3 Tire Classification Codes

The classification codes LS-1 LS-2, LS-3, LS-4, HF-1, HF-2, HF-3, and HF-4 as defined in ISO 18805 apply to forestry and logging tires.

4.4 Construction

Tires may be of bias (or diagonal), belted bias or radial construction.