



SURFACE VEHICLE INFORMATION REPORT

J2828™

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Off-Road Tire Fire Handling Guidelines

RATIONALE

Minor revisions have been made to better define underinflation and its associated hazards and to note the difficulty in extinguishing smoldering rubber. Appendix A, Tire Fire Report - Example, has been added.

FOREWORD

Off-road machine tire fires have been ignited due to machine faults or abnormal operation, poor maintenance practices, and adverse work site conditions. These fires have resulted in personnel injury, damage to equipment and the environment and disruption of operations. This information report provides guidelines to help prevent tire fires, provide guidance for immediate action by equipment operators and subsequently for firefighting personnel.

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Documents

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1. SCOPE

This SAE Informational report applies to tires used on off-road, rubber-tired work machines as identified in SAE J1116. This SAE document provides general guidelines for proper handling of potential and actual off-road tire fires and possible related explosions.

1.1 Purpose

The purpose of this SAE document is to provide guidelines for construction, mining, and industrial operations in the development of site specific plans to reduce the risk of injury to personnel, loss of equipment, or both as a result of a tire fire or related explosion. Tires with a diameter code of 20 or larger present a greater hazard.

2. REFERENCES

2.1 Applicable Documents

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 J1098	Ton Kilometer Per Hour Application
SAE J1116	Categories of Off-Road Self-Propelled Work Machines
SAE J1315	Off-Road Tire and Rim Selection and Application
SAE J1337	Off-Road Maintenance Procedures and Service Precautions

2.2 Related Publications

The following publications are provided for information purposes and are not a required part of this document.

2.2.1 International Fire Service Training Association (IFSTA) Publication

Available from International Fire Service Training Association, 930 N. Willis, Stillwater, OK 74078, Tel: 800-654-4055, www.ifsta.org.

Essentials of Fire Fighting

2.2.2 National Fire Protection Association (NFPA) Publications

Available from National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471, Tel: 617-770-3000, www.nfpa.org.

NFPA 600 Standard on Industrial Fire Brigades

NFPA 1001 Standard for Fire Fighter Professional Qualifications

NFPA 1500 Standard on Fire Department Occupational Safety and Health

2.2.3 Government of Western Australia Department of Mines and Petroleum Publication

Available from Department of Mines and Petroleum, Mineral House, 100 Plain Street, East Perth, Western Australia 6004, Tel: +61-8-9222-3229, www.dmp.wa.gov.au.

2005, Tyre Safety, Fires and Explosions—Guideline: Safety and Health Division, Department of Industry and Resources, Western Australia, 12 pp.

3. DEFINITIONS

3.1 SURFACE TIRE FIRE

Surface combustion of tire tread or sidewall area normally due to an outside heat source.

3.2 INTERNAL TIRE FIRE

Internal combustion of tire liner and associated components. Internal tire fires can be undetectable. Furthermore, accumulations of incomplete products of combustion (flammable gases) as well as tire pressure build-up within the tire can create a significant explosion hazard.

3.3 AUTO-IGNITION

The ignition of a material without the application of an external spark or flame. Auto-ignition can occur either when a combustible material comes in contact with a sufficiently hot surface, or when the material can undergo a self heating process or reaction. For both scenarios, oxygen or another oxidizer must be available to support combustion (spontaneous ignition).

3.4 INCOMPLETE PRODUCTS OF COMBUSTION

The products of combustion typically produced by burning rubber that are themselves ignitable under certain conditions. These products typically include many different hydrocarbon gases and carbon monoxide.