



# SURFACE VEHICLE STANDARD

SAE J1116

REV.  
NOV2004

Issued 1975-07  
Revised 2004-11

Superseding J1116 MAR1999

## Categories of Off-Road Self-Propelled Work Machines

### Foreword

This Document has been updated to reflect the current machine categories for which the SAE Construction, Agricultural and Off-Road Machinery (ConAg) Council is responsible.

### 1. Scope

This SAE Standard applies to self-propelled off-road work machines. Included are the following categories:

Earthmoving  
Implements and Attachments  
Agricultural Tractors  
Forestry  
Road Building and Maintenance  
Specialized Mining  
Powered Industrial Trucks

In spite of the appearance of the same names, such as *tractors* in more than one category, further development of this and related standards will demonstrate that there are differences in the fully-equipped working machine that may require distinction as to intended end-point field usage. These differences include:

Names of optional implements  
Names of components of optional implements  
Definitions of specification terms as affected by installed optional implements  
Different mounting provisions on the machines for implements and other attachments  
Differences in design to achieve objectives for performance, durability, or operator or public safety

### 1.1 Purpose

This document establishes categories of self-propelled off-road work machines and their implements and attachments for standards development work within the SAE ConAg Council. See Table 1.

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**2. *References***

**2.1 Applicable Publications**

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

**2.1.1 SAE PUBLICATIONS**

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J990—Nomenclature—Agricultural and Industrial Mowers

SAE J1209—Identification Terminology of Mobile Forestry Machines

**2.1.2 ASAE PUBLICATION**

Available from ASAE, 2950 Niles Road, St. Joseph, MI 49085-9659.

ASAE S390—Classifications and Definitions of Agricultural Equipment

**2.1.3 ISO PUBLICATION**

Available from ANSI, 25 West 43<sup>rd</sup> Street, New York, NY 10036-6002.

ISO 6165—Earthmoving machinery—Basic types—Vocabulary

TABLE 1—OFF-ROAD WORK MACHINES

Earthmoving	Implements and Attachments	Agricultural Tractors	Forestry <sup>(4)</sup>	Road Building and Maintenance	Specialized Mining	Powered Industrial Trucks (For reference only. Powered industrial trucks are covered by standards developed by the American Society of Mechanical Engineers and are not covered by SAE standards.)
Loaders <sup>(1)(2)</sup>	Flail Mowers	Agricultural Tractors	Forwarders	Cold Planers	Continuous Miners	Fork Lift Trucks
Backhoe-Loaders <sup>(2)</sup>	Rotary Mowers	(All other agricultural implements and self-propelled machines are covered by standards developed by ASAE <sup>(3)</sup> .)	Fellers	Material Transfer Machines	Face Drills	Platform Trucks
Graders <sup>(2)</sup>	Power Rakes		Propelled Log	Pavers	Roof Drills	Motorized Hand Trucks
Tractor-Scrapers <sup>(2)</sup>	Backhoe Attachments		Loaders	Road Wideners	Loading Machines	Motorized Hand/Rider Trucks
Dumpers <sup>(2)</sup>	Sweeper Attachments		Feller-Bunchers	Self-propelled Loaders	Cutting Machines	Narrow Aisle Trucks
Trenchers <sup>(2)</sup>			Harvesters	Soil Stabilizers	Machines	Order Picker High Lift Trucks
Horizontal Earth Boring			Processors	Reclaimers	Rubber Tired Haulage	Pallet Trucks
Rollers and Compactors <sup>(1)(2)</sup>			Mobile	Rollers and Compactors,	Vehicles	Reach Trucks
Pipelaying <sup>(2)</sup>		Examples of such machines include combines, cotton pickers, hi-clearance sprayers, forage harvesters, beet harvesters, beet harvesters, balers, etc.)	Yarders	Asphalt(1)(2)	Locomotives	Side Loader Trucks
Rubber Tired Haulage Machines			Trailer-Mounted	Trimmers	Personnel Carriers	Straddle Trucks
Excavators			Log Loaders	Placers	Mechanics	Rough Terrain Forklift Trucks
Tractors <sup>(1)(2)</sup>			Forestry Excavators;	Texture and Cure Machines	Trucks	Aircraft Towing tractors
			Skidders	Cylinder Finishers	Rock Dusting Machines	Baggage Towing Tractors
			(tracked and wheeled – cable, grapple and clam bunk); Forestry Winches;	Resurfacing Machines	Blast-hole Drills;	Vehicle Mounted Forklift Trucks

Table 1 provides categories and examples of machines in each category. The lists are not intended to include all machines in current production.

1. Machines that appear in more than one category may have similar terminology but may have different performance, durability, or design requirements, and may have different provisions for optional attachments.
2. For machine identification terminology, see ISO 6165.
3. For clarifications and definitions of agricultural equipment, see ASAE S390.
4. For machine identification terminology, see SAE J1209.

### 3. Off-Road Work Machines—Earthmoving

#### 3.1 Scope

This category applies to off-road work used for moving earth and other material on projects such as roads, dams, open pit excavation, quarries, trenching, recycling, landscaping and building sites. Included are machines listed in Table 1.

Also included are loaders where the bucket has been replaced by a fork attachment. Not included are machines intended for use on improved surfaces such as in-plant material handling; highway, water, and air transport; or for agricultural purposes.

Refer to ISO 6165 for identification terminology.

### **3.2 Purpose**

This category provides identification terminology for earthmoving machines. Identification is determined by the end-point usage intended by the manufacturer's design objectives.

## **4. Off-Road Work Machines—*Implements and Attachments***

### **4.1 Scope**

This category applies to implements and attachments that are powered by machines of over 15 kW. They are used for mowing, public and commercial grounds keeping, and highway right-of-way maintenance. Included are machines listed in Table 1.

Refer to SAE J990 for nomenclature information for agricultural and industrial mowers.

### **4.2 Purpose**

This category provides identification terminology for implements and attachments used on self-propelled work machines of over 15 kW. Identification is determined by the end-point usage intended by the manufacturer's design objectives.

## **5. Off-Road Work Machines—*Agricultural Tractors***

### **5.1 Scope**

This category applies to agricultural tractors as defined in ASAE S390.

NOTE—Most standards relating agricultural tractors and implements are developed by ASAE.

### **5.2 Purpose**

This category establishes the category for agricultural tractors.

## **6. Off-Road Work Machines—*Forestry***

### **6.1 Scope**

This category applies to machines that are used in the harvesting, transporting, processing, plant, and site preparation for growing wood and wood fiber. Included are machines listed in Table 1.

Refer to SAE J1209 for Identification Terminology.

## 6.2 Purpose

This category provides identification terminology for forestry machines. Identification is determined by the end-point usage intended by the manufacturer's design objectives.

## 7. *Off-Road Work Machines—Road Building and Maintenance*

### 7.1 Scope

This category applies to machines that are used for constructing and maintaining highways, roads and streets. Included are machines listed in Table 1.

### 7.2 Purpose

This category provides identification terminology for road building and maintenance machines. Identification is determined by the end-point usage intended by the manufacturer's design objectives.

## 8. *Off-Road Work Machines—Specialized Mining*

### 8.1 Scope

This category applies to machines that are used in mining, excavation, and tunneling operations for the excavation, transportation, and handling of earth, ores, coal and other mineral substances. Included are machines listed in Table 1.

### 8.2 Purpose

This category provides identification terminology for specialized mining machines. Identification is determined by the end-point usage intended by the manufacturer's design objectives.

## 9. *Off-Road Work Machines—Powered Industrial Trucks*

### 9.1 Scope

This category applies to powered industrial trucks and is established for reference only. SAE standards are not considered applicable to these machines and these machines are exempt from the categories for which the SAE ConAg Council is responsible. Powered industrial trucks and their attachments are covered by standards developed by the American Society of Mechanical Engineers B56 Committees. They are primarily used for transporting, storing and retrieving material and goods in industry and commerce associated manufacturing, warehousing, processing, construction, and retail sales facilities. Included are machines listed in Table 1.

### 9.2 Purpose

This category provides identification terminology for powered industrial trucks for reference only. Identification is determined by the end-point usage intended by the manufacturer's design objectives.

**10. Notes**

**10.1 Marginal Indicia**

The change bar (I) located in the left margin is for the convenience of the user in locating areas where technical revisions have been made to the previous issue of the report. An (R) symbol to the left of the document title indicates a complete revision of the report.

PREPARED BY THE SAE CONSTRUCTION, AGRICULTURAL AND OFF-HIGHWAY COUNCIL

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