



SURFACE VEHICLE STANDARD

J3107™

SEP2021

Issued 2020-07
Revised 2021-09

Superseding J3107 JUL2020

Vacuum Excavation and Sewer Cleaning Equipment - Safety Requirements

RATIONALE

There is much confusion and many different interpretations within the industry regarding the 3 m distance described in 8.1.1 of the 2020 published SAE J3107. After discussions with industry experts, it was agreed that (1) clarifications are needed and that 4 m is more appropriate for the distance (clarified to be from the ground) being described in this clause, and (2) additional requirements related to the manual contents, as well as markings, should be added.

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Full document details: SAE J3107_202109

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1. SCOPE

This SAE Standard provides safety requirements for vacuum excavation and sewer cleaning equipment. This document is not intended to cover equipment addressed by other on-road federal, state, and local regulations. Truck-mounted or trailer-mounted vehicles are required to meet local or regional on-road requirements, as applicable.

1.1 Purpose

The purpose of this document is to provide guidance for design and user information to mitigate hazards associated with the use and maintenance of vacuum excavation equipment and sewer cleaning equipment.

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 J3106 Vacuum Excavation and Sewer Cleaning Equipment Classification and Nomenclature

2.1.2 ISO Publications

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

ISO 2867 Earth-Moving Machinery - Access Systems

ISO 3457 Earth-Moving Machinery - Guards - Definitions and Requirements

ISO 6750-1 Earth-Moving Machinery - Operator's Manual – Part 1: Contents and Format

ISO 10533 Earth-Moving Machinery - Lift-Arm Support Devices

ISO 12508 Earth-Moving Machinery - Operator Station and Maintenance Areas - Bluntness of Edges

ISO 13766-1 Earth-Moving and Building Construction Machinery - Electromagnetic Compatibility (EMC) of Machines with Internal Electrical Power Supply - Part 1: General EMC Requirements Under Typical Electromagnetic Environmental Conditions

ISO 13850 Safety of Machinery - Emergency Stop Function - Principles for Design

ISO 13857 Safety of Machinery - Safety Distances to Prevent Hazard Zones Being Reached by Upper and Lower Limbs

ISO 15817 Earth-Moving Machinery - Safety Requirements for Remote Operator Control Systems

ISO 15818 Earth-Moving Machinery - Lifting and Tying-Down Attachment Points - Performance Requirements

2.1.3 API Publications

Available from API, 1220 L Street, NW, Washington, DC 20005-4070, Tel: 202-682-8000, www.api.org.

API 2219 Safe Operation of Vacuum Trucks in Petroleum Service

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 NASSCO Publications

Available from NASSCO, 1314 Bedford Avenue, Baltimore, MD 21208.

Jetter Code of Practice: A guide for the selection and operation of sewer jetter equipment

2.2.2 WJTA Publications

Available from WaterJet Technology Association, 906 Olive Street - Suite 1200, St. Louis, MO 63101-1448.

Industry Best Practices for the Use of High-Pressure Waterjetting Equipment

Recommended Practices for the Use of Industrial Vacuum Equipment

2.2.3 Association of Equipment Manufacturer Safety Material

Available from Association of Equipment Manufacturers, 6737 West Washington St - Suite 2400, Milwaukee, WI 53214-5650.

Vacuum Excavator Safety Manual

High-Pressure Sewer Cleaner Safety Manual

2.2.4 ASME Publications

Available from ASME, P.O. Box 2900, 22 Law Drive, Fairfield, NJ 07007-2900, Tel: 800-843-2763 (U.S./Canada), 001-800-843-2763 (Mexico), 973-882-1170 (outside North America), www.asme.org.

ASME B30.5:2018 Mobile and Locomotive Cranes

3. TERMS AND DEFINITIONS

Terms and definitions applicable to this SAE Standard can be found in SAE J3106 or as noted otherwise.

4. GENERAL

Equipment shall comply with the safety requirements of this standard.

5. ACCESS

5.1 Access systems shall be provided on the equipment for daily/weekly/monthly maintenance points as indicated in the operator's manual, all operational controls, and any relevant access points or locations. The access system shall:

- Minimize probability of a user being inadvertently restrained by devices such as protrusions, controls, steps, or handles catching or holding body appendages or user's wearing apparel.
- Minimize protrusions that could trip or increase severity of injury in case of a fall.
- Provide smooth hand grasp surfaces.
- Minimize probability of user contact with potential hazards such as extreme differentials in hot or cold, moving parts, electrical hazards, and sharp corners.