American National Standard

*for Off-Road Ground-Supported Outdoor Power Equipment –*

# *Gasoline Fuel Systems – Performance Specifications and Test Procedures*

ANSI/OPEI B71.10-2018

Approved American National Standard

ANSI

**ANSI/OPEI B71.10-2018**
Revision of
ANSI/OPEI B71.10-2013

American National Standard
for Off-Road Ground-Supported
Outdoor Power Equipment –

# Gasoline Fuel System – Performance Specifications and Test Procedures

Sponsor

**Outdoor Power Equipment Institute**

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American National Standard

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## Contents

## Foreword (This foreword is not part of American National Standard ANSI/OPEI B71.10-2018.)

This standard is a revision of *American National Standard for Off-Road Ground-Supported Outdoor Power Equipment - Gasoline Fuel Systems - Performance Specifications and Test Procedures*, ANSI B71.10-2013. The first edition of this standard was approved and published by the American National Standards Institute in 2008. This is the second revision to the original standard.

The present revision was prepared by the Outdoor Power Equipment Institute's (OPEI) Fuel Systems Committee, as part of OPEI's continuing work on standards.

A summary of the principal changes included in this revision follows:

- The Scope was amended to identify typical equipment types for which this standard is intended;
- Added fuel tank impact resistance testing;
- Added a provision that non-metal fuel lines shall be qualified in compliance with the performance criteria of SAE J30;
- Added performance specifications for in-line, plastic fuel filters. New performance specifications include production leak testing, impact resistance testing, fuel resistance testing, and UV resistance testing;
- Added performance specifications for elastomeric component integrity. New performance specifications include elevated temperature fuel soak for all tanks assembly designs incorporating elastomeric components, fuel resistance testing, and ozone resistance testing;
- Added performance specifications for fuel shut-off valves. New performance specifications include production leak testing, impact resistance testing, fuel resistance testing, UV resistance testing, temperature testing, and actuation performance testing.

This standard contains two informative annexes, which are not considered part of this standard. Annex A provides additional details and rationale criteria and revisions of the standard. Annex B is the bibliography.

Consensus for this standard was achieved by use of the Canvass Method.

This standard contains two informative annexes that are not considered requirements of this standard.

Suggestions for improvement of the standard will be welcomed. They should be sent to the Outdoor Power Equipment Institute, 1605 South Patrick Street, 3rd Floor, Alexandria, VA 22314.

The following parties, recognized as having an interest in the standardization of safety requirements for off-road ground-supported outdoor power equipment were contacted prior to the approval of this standard. Inclusion in the list does not necessarily imply that the organization concurred with the submittal of the proposal to ANSI.

Mr. Jimmy Eavenson – User

Ms. Sabeena Hickman, National Association of Landscape Professionals – User

Mr. Virgil Huhmann – User

Mr. Dan Nielsen – User

Mr. Steve Points – User

Ms. Valerie Clayton, Testing Services Group – General Interest

Mr. Roger Gault, Truck and Engine Manufacturers Association – General Interest

Mr. Joseph Harding, Portable Generator Manufacturers Association – General Interest

Mr. Han Lim, Consumer Product Safety Commission – General Interest

Mr. Roland Riegel, Underwriters Laboratories – General Interest

Mr. Michael Huhman, Scag Power Equipment – Producer

Mr. Tom Kim, American Honda – Producer

Mr. Derek Lang, John Deere – Producer

Mr. Greg Marchand, Briggs and Stratton Company – Producer

Mr. Justin Noland, Kubota – Producer

# American National Standard for Off-Road Ground-Supported Outdoor Power Equipment –

# Gasoline Fuel Systems – Performance Specifications and Test Procedures

## 1. Scope

This standard describes safety specifications and test procedures applicable to the gasoline fuel systems for off-road ground-supported outdoor power equipment with spark ignition engines of less than one liter displacement. Off-road ground-supported outdoor power equipment for which this standard may apply include walk-behind and riding lawn-mowers, snow throwers, powered log-splitters, shredders/grinders and tillers. The effective implementation date of this standard shall be two (2) years after the publication date and shall apply to all products built after that date. Manufacturers may also comply with the requirements of this standard anytime after the publication date.

NOTE – The tests described in this standard involve the use of hazardous materials, operations, and equipment. This standard does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

## 2. Normative References

The following standards contain provisions which, through reference in this text, constitute provisions of this American National Standard. All standards are subject to revision, and parties to agreements based on this American National Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Where a revision date is noted, the specified revision shall be used.

EPA 40 CFR Part 1054, *Control of Emissions from New, Small Nonroad Spark-Ignition Engines and Equipment*

EPA 40 CFR Part 1060, *Control of Emissions from Nonroad Spark-Ignition Engines and Equipment*

NFPA 497-2004, *Recommended Practice for the Classification of Flammable Liquids, Gases, or Vapors and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas, 2004 Edition*

NFPA 70-2011, *National Electrical Code*®

SAE J30, *Fuel and Oil Hoses*

## 3. Terms and Definitions

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

### 3.1. Active Leakage

The presence of any re-formed bubbles and/or bubbles rising to the water's surface during the required test time of Table 1 during the test duration described in 5.1.1.

### 3.2. Class I, Group D Materials

Gases, vapors, or liquids that are explosive or pose a threat as ignitable mixtures as defined in NFPA 497-2004 and NFPA 70-2011.