



*Member of the FM Global Group*

# **Approval Standard for Oily Waste Cans and Containers for Combustible Waste**

**Class Number 6920/6921**

**August 2019**

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# Foreword

The FM Approvals certification mark is intended to verify that the products and services described will meet stated conditions of performance, safety and quality useful to the ends of property conservation. The purpose of Approval Standards is to present the criteria for FM Approval of various types of products and services, as guidance for FM Approvals personnel, manufacturers, users and authorities having jurisdiction.

Products submitted for certification by FM Approvals shall demonstrate that they meet the intent of the Approval Standard, and that quality control in manufacturing shall ensure a consistently uniform and reliable product. Approval Standards strive to be performance-oriented. They are intended to facilitate technological development.

For examining equipment, materials and services, Approval Standards:

- a) must be useful to the ends of property conservation by preventing, limiting or not causing damage under the conditions stated by the Approval listing; and
- b) must be readily identifiable.

Continuance of Approval and listing depends on compliance with the Approval Agreement, satisfactory performance in the field, on successful re-examinations of equipment, materials, and services as appropriate, and on periodic follow-up audits of the manufacturing facility.

FM Approvals LLC reserves the right in its sole judgment to change or revise its standards, criteria, methods, or procedures.

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# 1 INTRODUCTION

## 1.1 Purpose

- 1.1.1 This standard states Approval requirements for cans for temporarily holding oily waste or similar materials and for containers for combustible waste.
- 1.1.2 Approval criteria may include, but are not limited to, performance requirements, marking requirements, examination of manufacturing facilities, audit of quality assurance procedures, and a follow-up program.

## 1.2 Scope

- 1.2.1 This standard applies to any component intended to or for use in holding (temporarily) oily waste products or similar products.
- 1.2.2 This standard also applies to portable containers used for the temporary storage of Class A combustible (wood, paper, textile, etc.) waste material free of grease, oil, solvents, or other flammable liquids. The design of these containers is intended to isolate the discarded waste from the building occupancy so that a fire within the container will not communicate to the surrounding area.
- 1.2.3 Approval of oily waste cans and/or containers for combustible waste can be tested jointly or under separate Approval programs.

## 1.3 Basis for Requirements

- 1.3.1 The requirements of this standard are based on experience, research and testing, and/or the standards of other organizations. The advice of manufacturers, users, trade associations, jurisdictions and/or loss control specialists was also considered.
- 1.3.2 The requirements of this standard reflect tests and practices used to examine characteristics of Oily Waste Cans and Containers for Combustible Waste for the purpose of obtaining Approval. Oily Waste Cans and Containers for Combustible Waste having characteristics not anticipated by this standard may be FM Approved if performance equal, or superior, to that required by this Standard is demonstrated, or if the intent of the standard is met. Alternatively, Oily Waste Cans and Containers for Combustible Waste which meet all of the requirements identified in this Standard may not be FM Approved if other conditions which adversely affect performance exist or if the intent of this standard is not met.

## 1.4 Basis for Approval

Approval is based upon satisfactory evaluation of the product and the manufacturer in the following major areas:

- 1.4.1 Examination and tests on production samples shall be performed to evaluate
  - the suitability of the product;
  - the performance of the product as specified by the manufacturer and required by FM Approvals; and as far as practical,
  - the durability and reliability of the product.

- 1.4.2 An examination of the manufacturing facilities and audit of quality control procedures is made to evaluate the manufacturer's ability to consistently produce the product which is examined and tested, and the marking procedures used to identify the product. These examinations may be repeated as part of FM Approvals' product follow-up program.

## 1.5 Basis for Continued Approval

Continued Approval is based upon:

- production or availability of the product as currently FM Approved;
- the continued use of acceptable quality assurance procedures;
- satisfactory field experience;
- compliance with the terms stipulated in the Approval report;
- satisfactory re-examination of production samples for continued conformity to requirements; and
- satisfactory Surveillance Audits conducted as part of FM Approvals' product follow-up program.

Also, as a condition of retaining Approval, manufacturers may not change a product or service without prior authorization by FM Approvals.

## 1.6 Effective Date

The effective date of an Approval standard mandates that all products tested for Approval after the effective date shall satisfy the requirements of that standard. Products FM Approved under a previous edition shall comply with the new version by the effective date or else forfeit Approval.

The effective date of this standard is October 31, 2014 for compliance with all requirements.

## 1.7 System of Units

Units of measurement used in this Standard are United States (U.S.) customary units. These are followed by their arithmetic equivalents in International System (SI) units, enclosed in parentheses. The first value stated shall be regarded as the requirement. The converted equivalent value may be approximate. Conversion of U.S. customary units is in accordance with ANSI/IEEE/ASTM SI 10.

## 1.8 Normative References

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the cited edition applies. For undated references, the latest edition of the referenced document (including any amendments) applies:

ANSI/IEEE/ASTM SI 10, *American National Standard for Metric Practice*

ISO/IEC 17025, *General Requirements for the Competence of Testing and Calibration Laboratories*

FM Approvals Test Procedure Class 6920/6921: *Test Method of Water Leakage Resistance of Oily Waste Cans*

FM Approvals Test Procedure Class 6920/6921: *Test Method of Stability Resistance for Oily Waste Cans and Containers for Combustible Waste*

FM Approvals Test Procedure Class 6920/6921: *Test Method for Fire Exposure for Oily Waste Cans*

FM Approvals Test Procedure Class 6920/6921: *Test Method for Handle Strength for Oily Waste Cans*

FM Approvals Test Procedure Class 6920/6921: *Test Method for Impact Strength for Oily Waste Cans*

FM Approvals Test Procedure Class 6920/6921: *Test Method of Fire Exposure for Containers for Combustible Waste*

FM Approvals Test Procedure Class 6920/6921: *Evaluation Method of Adverse Conditions for Containers for Combustible Waste*

FM Approvals Test Procedure Class 6920/6921: *Test Method for Impact Testing for Containers for Combustible Waste*

## 1.9 Definitions

For purposes of this standard, the following terms apply:

*Oily Waste Can* – A container to temporarily store oily rags and other absorbing materials. The use of oily waste can reduces the risk of fire caused by spontaneous combustion.

*Container for Combustible Waste* – a receptacle designed to cut off the air supply and extinguish flames of any combustible substance. The receptacle can be supplied with or without a rigid or pliable liner.

*Drum covers/lid (for containers for combustible waste only)* – Re-moveable covers to convert 30 & 55 gallon (114 & 208 L) steel drums into fire-safe receptacles for combustible waste.

*Fusible link* - The fusible type link consists of two nickel alloy or steel plates joined together by a solder alloy. The solder melts at a predetermined temperature allowing the plates to separate

## 2 GENERAL INFORMATION

### 2.1 Product Information - Oily Waste Cans

#### 2.1.1 Design

An oily waste can shall have a maximum capacity of 40 gal (151 dm<sup>3</sup>) and shall be liquid-tight up to 6 in. (152 mm) above the bottom. Performance is further evaluated in the areas of stability, strength and fire exposure.

#### 2.1.2 Materials

Cans shall be made of material free from defects that would impair safety and serviceability over an expected temperature range of -40°F (-40°C) to 130°F (54°C).

#### 2.1.3 Bottom Support

2.1.3.1 If a cylindrical support is used, it should be an extension of the can body and suitably reinforced around its bottom edge. This cylindrical support shall be at least 3 in. (76 mm) in height and thoroughly ventilated.

2.1.3.2 If legs are used, they shall be regularly spaced and of such lengths that the bottom of the can is at least 3 in. (76 mm) from the floor. Legs shall be securely attached to both the shell and bottom of the can.

#### 2.1.4 Covers

2.1.4.1 A can shall be reasonably airtight when the cover is closed. The cover shall be prevented from opening more than 75° from the horizontal, closed position to permit closure by gravity. When released, the cover shall smother any combustion of contents.

2.1.4.2 The cover shall be made of one or two parts. In either case, the cover (or its stationary section) must be rigidly attached to the body by mechanical means, and the outside edge of the cover shall be lipped.

2.1.4.3 The cover shall be provided with a stop to prevent the cover from being opened to an angle greater than 75° from horizontal. This stop shall be of sufficient strength so that it is not bent when the cover is opened.

2.1.4.4 The moveable section of a two-part cover shall be attached to the rigid section by suitable hinges with permanently fixed hinge pin. Hinges shall be designed to allow free movement of the cover and hold it in proper alignment but not interfere with closure.

2.1.4.5 Foot actuated cover-lifting devices shall not interfere with the proper opening and closing of the cover when the back or side of the can is against a wall and shall not decrease the stability of the can.

#### 2.1.5 Handle

2.1.5.1 A suitable, securely attached handle shall be provided to make the can readily portable in an upright position.

2.1.5.2 Handles shall be designed allowing ample space to hold the can comfortably without cramping the hand.

2.1.5.3 Ears for the attachment of handles or lid-lifting covers shall be attached by mechanical means. If bolts are used, they shall be headed over to prevent the nut from working loose, or made secure by some equivalent method.

## 2.2 Product Information-Containers for Combustible Waste

- 2.2.1 A waste container is a complete assembly of body and cover (head). The container may have a partially open cover which, by design, will contain and suffocate an internal fire; a normally closed cover; or a cover held open by a fusible link which, when subjected to flame, will melt and allow the cover to close automatically. Separate covers are available for attachment to a standard open end steel drum.
- 2.2.2 Containers are available for the temporary storage of combustible (wood, paper, textile, etc.) waste material free of flammable liquids. The design of these containers is intended to isolate the discarded trash from other building occupancy.

## 2.3 Approval Application Requirements

To apply for an Approval examination the manufacturer, or its authorized representative, should submit a request to [information@fmapprovals.com](mailto:information@fmapprovals.com).

The manufacturer shall provide the following preliminary information with any request for Approval consideration:

- A complete list of all models, types, sizes, and options for the products or services being submitted for Approval consideration;
- General assembly drawings, complete set of manufacturing drawings, materials list, anticipated marking format, nameplate format, brochures, sales literature, spec. sheets, installation, operation and maintenance procedures and
- the number and location of manufacturing facilities.
- All documents shall identify the manufacturer's name, document number or other form of reference, title, date of last revision, and revision level. All documents shall be provided with English translation.

## 2.4 Requirements for Samples for Examination

- 2.4.1 Following authorization of an Approval examination, the manufacturer shall submit samples for examination and testing based on the following:
- Sample requirements are to be determined by FM Approvals following review of the preliminary information. Sample requirements may vary depending on design features, results of prior testing, and results of the foregoing tests. It is the manufacturer's responsibility to submit samples representative of production. Any decision to use data generated utilizing prototypes is at the discretion of FM Approvals. The manufacturer shall provide any special test fixtures which may be required to evaluate the Oily Waste Cans and Containers for Combustible Waste.
- 2.4.2 Requirements for samples may vary depending on design features, results of prior or similar testing, and results of any foregoing tests.
- 2.4.3 The manufacturer shall submit samples representative of production. Any decision to use data generated using prototypes is at the discretion of FM Approvals.

### 3 GENERAL REQUIREMENTS

#### 3.1 Review of Documentation

- 3.1.1 During the initial investigation and prior to physical testing, the manufacturer's specifications and details shall be reviewed to assess the ease and practicality of installation and use. The Approval investigation shall define the limits of the Approval.

#### 3.2 Physical or Structural Features-Oily Waste Cans

- 3.2.1 Approved Oily waste cans have self-closing, tightly fitting covers. When oil, paint or solvent-saturated waste is placed in them, any fire which starts from spontaneous ignition or other cause is confined within the can. The bottoms of the cans are raised so fires in the cans will not ignite combustibles beneath.

#### 3.3 Physical or Structural Features-Containers for Combustible Waste

- 3.3.1 A waste container shall be available as a complete and identifiable assembly. It shall be suitable and practical for the intended application and not necessitate unusual care in handling.
- 3.3.2 The bottom of the waste container shall be arranged to isolate the heat resulting from an internal fire in order to minimize the possibility of fire spread.
- 3.3.3 Waste containers having hinged covers shall have the cover limited mechanically to prevent opening beyond an angle that would prevent automatic closure. The arrangement shall be such that entire cover removal is required only for emptying the container contents. The area where the cover and the container join shall be secured physically by means of overlapping fit or other aligning and latching means.
- 3.3.3.1 Separate safety heads (covers) can be Approved for combustible waste container use if they meet the requirement of 3.3.3.
- 3.3.4 Handles, wheels, automatic lid closing (non-contact) or similar accessories shall be attached securely.
- 3.3.5 Internal receivers such as bags or liners.

#### 3.4 Markings

- 3.4.1 Marking on the product label or the product, shall include the following information:
- name and address of the manufacturer or marking traceable to the manufacturer;
  - date of manufacture or code traceable to date of manufacture or lot identification;
  - model number, size, rating, capacity, etc., as appropriate.
  - In addition, for oily waste cans, a large, legible sign reading "EMPTY EVERY NIGHT" shall be permanently attached to the front of the can.

When hazard warnings are needed, the markings should be universally recognizable. The model or type identification shall correspond with the manufacturer's catalog designation and shall uniquely identify the product as FM Approved. The manufacturer shall not place this model or type identification on any other product unless covered by a separate agreement.

- 3.4.2 The Approval Mark shall be displayed visibly and permanently on the product and/or packaging as appropriate. The manufacturer shall not use this Mark on any other product unless such product is covered by a separate report.
- 3.4.3 All markings shall be legible and durable.

### 3.5 Manufacturer's Installation and Operation Instructions

The manufacturer shall provide the user with:

- instructions for the installation, maintenance, and operation of the product;
- facilities for repair of the product and supply replacement parts; and
- services to ensure proper installation, inspection, or maintenance for products of such nature that it would not be reasonable to expect the average user to be able to provide such installation, inspection, or maintenance.

### 3.6 Calibration

- 3.6.1 Each piece of equipment used to verify the test parameters shall be calibrated within an interval determined on the basis of its stability, purpose, and usage. A copy of the calibration certificate for each piece of test equipment shall be submitted to FM Approvals for its records. The certificate shall indicate that the calibration was performed against working standards whose calibration is certified as traceable to the National Institute of Standards and Technology (NIST) or traceable to other acceptable reference standards and certified by an ISO 17025 "General Requirements for the Competence of Testing and Calibration Laboratories" calibration laboratory. The test equipment shall be clearly identified by label or sticker showing the last date of the calibration and the next due date. A copy of the service accreditation certificate as an ISO 17025 calibration laboratory is required for FM Approvals' records..
- 3.6.2 The calibration of new equipment is also required. Documentation indicating either the date of purchase or date of shipment, equipment description, model and serial number is required for identification. The new test equipment shall be clearly identified by label or sticker showing the date of initial calibration and the next due date.
- 3.6.3 When the inspection equipment and/or environment is not suitable for labels or stickers, other methods such as etching of control numbers on the measuring device are allowed, provided documentation is maintained on the calibration status of thus equipment.

## 4 PERFORMANCE REQUIREMENTS

### Oily Waste Cans

#### 4.1 Water Leakage Resistance Test

##### 4.1.1 Requirement

A sample can shall be filled with 6 in. (152 mm) of water and left for 5 minutes. At the end of this period, it shall be examined for evidence of leakage.

##### 4.1.2 Test/Verification

The sample can shall not show any signs of leakage. Testing for water leakage resistance shall be in accordance with FM Approvals Test Procedure Class 6920/6921: *Test Method of Water Leakage Resistance of Oily Waste Cans*.

#### 4.2 Stability Test

##### 4.2.1 Requirement

A sample can shall be filled with 6 in. (152 mm) of water, then tipped to an angle of 20° from horizontal and released.

##### 4.2.2 Test/Verification

The container shall return to the normal, upright position and no spillage shall occur. Testing for stability resistance shall be in accordance with FM Approvals Test Procedure Class 6920/6921: *Test Method of Stability Resistance of Oily Waste Cans and Containers for Combustible Waste*.

#### 4.3 Fire Exposure Test

##### 4.3.1 Requirement

A sample can shall be subjected to an internal fire exposure test using one pint of heptane floating on 6 in. (152 mm) of water.

##### 4.3.2 Test/Verification

The cover shall be held open for a 15 second pre-burn of the heptane and then allowed to close by gravity. The cover shall be opened 1 minute later and there shall be no visible flame in the can. Testing for Fire Exposure shall be in accordance with FM Approvals Test Procedure Class 6920/6921: *Test Method for Fire Exposure for Oily Waste Cans*.

#### 4.4 Handle Strength Test

##### 4.4.1 Requirement

The carrying handle shall withstand a test load of 250 lb (113 kg) by exerting a pulling force from the center of the normal carrying handle and parallel to the vertical axis of the can.

##### 4.4.2 Test/Verification

The handle shall remain securely attached to the body of the container and show no signs of disconnecting from the container body. Testing for Handle Strength shall be in accordance with FM Approvals Test Procedure Class 6920/6921: *Test Method for Handle Strength for Oily Waste Cans*.

#### 4.5 Impact Strength Test

##### 4.5.1 Requirement

The can cover, sides and bottom shall be subjected to the impact of a 5 lb (2.2 kg) weight (no sharp edges) dropped from a height of 3 ft (0.9 m) above the can over a temperature range of -40°F (-40°C) to 130°F (54°C).

##### 4.5.2 Test/Verification

The can shall remain intact and show no signs of cracking on any side of the can. Testing for Impact Strength shall be in accordance with FM Approvals Test Procedure Class 6920/6921: *Test Method for Impact Strength for Oily Waste Cans*.

### Containers for Combustible Waste

#### 4.6 Fire Exposure Test

##### 4.6.1 Requirement

There shall be no emission of flame, flying embers or other particles of combustion (excluding smoke) from the waste container such that neither a piece of cheesecloth supported 12 in. (305 mm) above the container head nor a sheet of newspaper laid under the container shall ignite. Internal burning shall be contained effectively by the container until either extinguished by suffocation or until the contents are consumed. The external surfaces of the container sides, top, and bottom shall not exceed 350°F (177°C) during this test.

##### 4.6.2 Test/Verification

The manufacturer shall supply a sufficient number of waste containers for exposure to a series of up to 10 tests involving combustion of the container contents at level fillings of 10, 50 and 100 percent of internal volume. Crumpled dry newspaper shall be used during these tests at a fill density of 5.1 oz/ft<sup>3</sup> (5.16 kg/m<sup>3</sup>), and combustion shall be initiated at various positions within the cans as required. Testing for Fire Exposure for Containers for Combustible Waste shall be in accordance with FM Approvals Test Procedure Class 6920/6921: *Test Method of Fire Exposure for Containers for Combustible Waste*.

#### 4.7 Adverse Conditions

##### 4.7.1 Requirement

A waste container shall be protected against corrosion or be constructed of corrosion inhibiting materials.

##### 4.7.2 Test/Verification

Adverse conditions affecting fire containment such as overfilling, partial cover removal, corrosion susceptibility, and durability of construction shall be the subject of special consideration and tests if considered necessary, due to the configuration or operation of a particular container design. Testing for Adverse Conditions for Container for Combustible Waste shall be in accordance with FM Approvals Test Procedure Class 6920/6921: *Evaluation Method of Adverse Conditions for Containers for Combustible Waste*.

#### 4.8 Stability Test

##### 4.8.1 Requirement

Waste containers shall return to the normal standing position after being tipped to an angle of 20 degrees to the vertical and released.

##### 4.8.2 Test/Verification

A waste container filled to capacity with paper scrap at a fill density of 5.1 oz/ft<sup>3</sup> (5.16 kg/m<sup>3</sup>) shall be tipped to an angle of 20 degrees to the vertical and released. The container shall return to its normal standing position. Testing for stability shall be in accordance with FM Approvals Test Procedure Class 6920/6921: *Test Method of Stability Resistance of Oily Waste Cans and Containers for Combustible Waste*.

#### 4.9 Impact Test

##### 4.9.1 Requirement

- A. A completely assembled container or drum cover for steel drums shall survive an impact test.
- B. The container cover shall withstand a pendulum impact test.

##### 4.9.2 Test/Verification

- A. A completely assembled container or a drum cover for steel drums shall be subjected to dropping a 5-lb (2.3 kg) weight (no sharp edges) from a height of 3 ft (0.9 m) above the test sample (all sides). Samples conditioned at temperatures of both -40°F (-40°C) and 130°F (55°C) shall be subjected to this test.
- B. The container cover shall be subjected to a pendulum impact generated by a 15-lb (6.8 kg) weight (no sharp edges) suspended on a cord 1 ft (0.3 m) in length displaced 1 ft (0.3 m) in the horizontal position. Upon release the weight shall impact the leading edge of the closed cover on its centerline. The container shall not be restrained. After five impacts, the cover shall remain intact and operate properly. The test shall be conducted on samples at 73°F (23°C).

Testing for abuse shall be in accordance with *Test Method for Impact Testing of Containers for Combustible waste*, FM Approvals, LLC. At the discretion of FM Approvals, this test can be waived if the container is produced with metallic components.

#### **4.10 Additional Tests**

Additional tests may be required, at the discretion of FM Approvals, depending on design features and results of any foregoing tests.

Any test following a failure shall be acceptable only at the discretion of FM Approvals and with a technical justification of the conditions or reasons for failure.

## 5 OPERATIONS REQUIREMENTS

### 5.1 Demonstrated Quality Control Program

5.1.1 A quality assurance program is required to assure that subsequent oily waste or containers for combustible waste produced by the manufacturer shall present the same quality and reliability as the specific containers examined. Design quality, conformance to design, and performance are the areas of primary concern.

- Design quality is determined during the examination and tests and is documented in the Approval Report.
- Continued conformance to this Standard is verified by the Surveillance Audit.
- Quality of performance is determined by field performance and by periodic re-examination and testing.

5.1.2 The manufacturer shall demonstrate a quality assurance program which specifies controls for at least the following areas:

- existence of corporate quality assurance guidelines;
- incoming quality assurance, including testing;
- in-process quality assurance, including testing;
- final inspection and tests;
- equipment calibration;
- drawing and change control;
- packaging and shipping; and
- handling and disposition of non-conforming materials.

#### 5.1.3 Documentation/Manual

There should be an authoritative collection of procedures/policies. It should provide an accurate description of the quality management system while serving as a permanent reference for implementation and maintenance of that system. The system should require that sufficient records are maintained to demonstrate achievement of the required quality and verify operation of the quality system.

#### 5.1.4 Records

To assure adequate traceability of materials and products, the manufacturer shall maintain a record of all quality assurance tests performed, for a minimum period of two years from the date of manufacture.

#### 5.1.5 Drawing and Change Control

- The manufacturer shall establish a system of product configuration control that shall allow no unauthorized changes to the product. Changes to critical documents, identified in the Approval Report, must be reported to, and authorized by, FM Approvals prior to implementation for production.
- The manufacturer shall assign an appropriate person or group to be responsible for, and require that, proposed changes to FM Approved or Listed products be reported to FM Approvals before implementation. The manufacturer shall notify FM Approvals of changes in the product or of

persons responsible for keeping FM Approvals advised by means of FM Approvals' Revision Request, FM Approved Product/Specification-Tested Revision Report or Address/Main Contact Change Report.

- Records of all revisions to all FM Approved products shall be maintained.

## **5.2 Surveillance Audit**

- 5.2.1 An audit of the manufacturing facility is part of the Approval investigation to verify implementation of the quality assurance program. Its purpose is to determine that the manufacturer's equipment, procedures, and quality program are maintained to ensure a uniform product consistent with that which was tested and FM Approved.
- 5.2.2 These audits shall be conducted at a defined frequency based upon the classification by FM Approvals or its representatives.
- 5.2.3 FM Approved products or services shall be produced or provided at or from the location(s) audited by FM Approvals and as specified in the Approval Report. Manufacture of products bearing the Approval Mark is not permitted at any other location without prior written authorization by FM Approvals.

## **5.3 Installation Inspections**

Field inspections may be conducted to review an installation. The inspections are conducted to assess ease of application, and conformance to written specifications. When more than one application technique is used, one or all may be inspected at the discretion of FM Approvals.

## **5.4 Manufacturer's Responsibilities**

The manufacturer shall notify FM Approvals of changes in product construction, components, raw materials, physical characteristics, coatings, component formulation or quality assurance procedures prior to implementation.

## 6 BIBLIOGRAPHY

FM Global Property Loss Prevention Data Sheet 7-29, Ignitable Liquid Storage in Portable Containers  
FM Global Property Loss Prevention Data Sheet 7-32, Ignitable Liquid Operations  
ISO/IEC 17025, *General Requirements for the Competence of Testing and Calibration Laboratories*