



Examination Standard for Non-Flame-Propagating Containers Used in Top-Loading Automatic Storage and Retrieval Systems (TL-ASRS)

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Foreword

This standard 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 this standard is to present the criteria for examination of various types of products and services.

Examination in accordance with this standard shall demonstrate compliance and verify that quality control in manufacturing shall ensure a consistent and reliable product.

TABLE OF CONTENTS

1 INTRODUCTION	1
1.1 Purpose.....	1
1.2 Scope.....	1
1.3 Basis for Requirements	1
1.4 Basis for Certification	1
1.5 Basis for Continued Certification	2
1.6 Effective Date	2
1.7 System of Units.....	2
1.8 Normative References.....	2
1.9 Terms and Definitions.....	2
2 GENERAL INFORMATION.....	3
2.1 Product Information	3
2.2 Certification Application Requirements	3
2.3 Requirements for Samples for Examination	3
3 GENERAL REQUIREMENTS.....	4
3.1 Review of Documentation	4
3.2 Markings	4
3.3 Manufacturer's Installation and Operation Instructions	4
3.4 Calibration	4
4 PERFORMANCE REQUIREMENTS.....	6
4.1 Fire Exposure Test for Non-Flame-Propagating Containers used in Top-Loading Automatic Storage and Retrieval Systems (TL-ASRS).....	6
4.2 Identification Tests - Standard Practice for General Techniques for Obtaining Infrared Spectra for Qualitative Analysis, ASTM E1252	7
4.3 Identification Test – FM Approvals Thermal Desorption Gas Chromatography Mass Spectrometry (TD/GC/MS).....	7
5 OPERATIONS REQUIREMENTS	8
5.1 Demonstrated Quality Control Program	8
5.2 Surveillance Audit	9
5.3 Manufacturer's Responsibilities	9
6 BIBLIOGRAPHY.....	9

1 INTRODUCTION

1.1 Purpose

- 1.1.1 This standard states testing and certification requirements for non-flame-propagating containers used in top-loading automatic storage and retrieval systems (TL-ASRS).
- 1.1.2 Testing and certification criteria may include performance requirements, marking requirements, examination of manufacturing facility(ies), audit of quality assurance procedures, and a surveillance program.

1.2 Scope

- 1.2.1 TL-ASRS storage arrangements consist of open-top containers that are maintained in a tightly packed vertically aligned solid-piled arrangement. A metal grid track, located above the storage area, is traversed by remotely controlled robots for material handling purposes. Due to this, aisles are not required for the functionality of this ASRS arrangement thus making it inaccessible to fire service personnel who are relied upon for final extinguishment. As a result, this standard evaluates the storage container's ability to prevent flame propagation to other surrounding containers of similar construction without the use of automatic or manual fire-fighting intervention.
- 1.2.2 This standard sets the fire performance requirements of non-flame-propagating containers used in a TL-ASRS configuration only and does not apply to other storage systems. In addition, it only applies to the storage or containment of Class 1, 2, 3, 4, and plastic (cartoned and uncartoned) standard commodities.
- 1.2.3 The fire exposure test evaluates a storage container's ability to prevent flame propagation away from the container of fire ignition. This may reduce, but not eliminate the need for ceiling sprinkler protection. Other factors can impact the fire scenario, including but not limited to the presence robots above the fire area, that increase the potential for flame propagation or impede access for manual intervention.

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 non-flame-propagating containers used in TL-ASRS for the purpose of obtaining certification.

1.4 Basis for Certification

Certification 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 for certification;
 - the durability and reliability of the product.
- 1.4.2 An examination of the manufacturing facilities and audit of quality control procedures may be conducted to evaluate the manufacturer's ability to consistently produce the product which is examined