

RC-9

Container Performance Test Guidelines

3rd Edition



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Version 3, Issued 10/2015



FOREWORD

The Container Standardization Team comprises Automotive OEMs, container suppliers, and testing providers. This group has refined the test procedures for analyzing containers. The test procedures provide container suppliers with a common, consistent means of testing containers. This consistency will help validate the test data received from those suppliers. Also, the test procedures are designed to assist engineers in their analysis and study of containers. The resulting data will support the engineer's container selection.

The following tests are not all-inclusive. Users must look at their own applications to determine if further testing is required.

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INTRODUCTION

The objective of this document is to provide a common test methodology by which containers can be compared on an objective one-to-one basis. The tests included are intended to challenge the containers with forces that are related to the hazards present in the typical handling environments. Because the tests outlined in this guideline are not validations, the test results should not be used to predict working load limits. True working load limits should be defined by trading partner agreement and confirmed by conducting validation testing with representative contents.

SCOPE

The scope of this document will include test procedures for:

- Bulk Container (Small); Container that does not require mechanical assistance to pick up and/or move
- Bulk Container (Large); Container that requires mechanical assistance to pick up and/or move
- Pallet; Base packaging component that is used in conjunction with other containers

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1 DEFINITIONS

Container Identification – Identify and document the sides of the container to help in the performance and reporting of each test step.

- Face 1 is the intended top
- Face 2 is the largest side face
- Face 3 is the side opposite face 1 (bottom)
- Face 4 is the largest side face opposite face 2
- Face 5 is the smallest side face
- Face 6 is the smallest side face opposite face 5

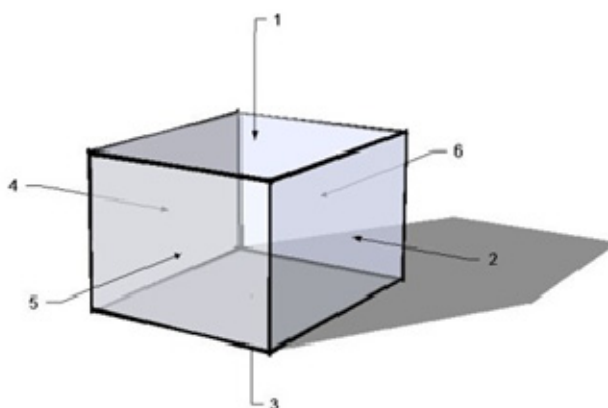


Figure 1. Container Identification

Bulk Container (Small) – Container that does not require mechanical assistance to pick up and/or move.

Bulk Container (Large) – Container that requires mechanical assistance to pick up and/or move.

Pallet – Base packaging component that is used in conjunction with other containers.

Failure – Detrimental damage. Unless otherwise specifically defined, detrimental damage is any separation of material, such as a crack, split, or disengagement of container parts. This will include any failure of wrap, banding, or cargo belts.

PSD – Power Spectral Density. A frequency domain representation of the average amplitude vibration experienced within a defined distribution mode.

Yield Load – The peak load in which an increase in deflection occurs without the increase in load. A valid yield load calculation can be derived by ensuring that the period immediately after the peak shows a 10 percent decrease in load.

Failure Load – The crushing load applied to a container that produces a failure by yield, fracture, or parting of the material in any portion of said container. It is expressed in kilograms (or pounds).

Deflection at Yield Load – The decrease in height of the container produced by the yield load expressed in centimeters (or inches).