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**Series 1 freight containers — Rationale  
for structural test criteria**

**AMENDMENT 2**

*Conteneurs de la série 1 — Fondement des critères de résistance*

*AMENDEMENT 2*

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## Foreword

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

In exceptional circumstances, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example), it may decide by a simple majority vote of its participating members to publish a Technical Report. A Technical Report is entirely informative in nature and does not have to be reviewed until the data it provides are considered to be no longer valid or useful.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any of all such patent rights.

Amendment 2 to ISO/TR 15070:1996 was prepared by Technical Committee ISO/TC 104, *Freight containers*, Subcommittee SC 1, *General purpose containers*.

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# Series 1 freight containers — Rationale for structural test criteria

## AMENDMENT 2

*Cover page and page 1*

Change the title to

**Series 1 freight containers — Rationale for design and structural test criteria**

*Page iv, Introduction*

Replace the word “tests” with the words “design criteria and tests” in the four places it appears.

Add a new paragraph to the end of the Introduction that reads:

The various International Standards published by TC 104 are amended from time to time to reflect changing market needs, changes in the properties of materials typically used in container construction and for other reasons. These amendments and revisions, when they are published, are expressly intended to apply only to containers built after the effective date of the revised publication. Any change that is intended to be retroactive will specifically state so in the new text. Voluntary retrofit of existing containers to meet new requirements is acceptable.

*Page 1, Scope*

Broaden the Scope to read:

This Technical Report gives the rationale for design and test criteria for ISO series 1 freight containers, based on the tests and design criteria specified in ISO 1496-1.

*Page 14*

Create a new subclause with items 5.3.1, 5.3.2 and 5.3.3 as follows:

### **5.3 Door end security**

Container doors should be designed so that entry into the container via either of the doors can be detected by verifying the condition of the seal that has been affixed to the container. Means to circumvent door end design features and compromise the integrity of a freight container are constantly evolving and are not necessarily obvious. The following guidance is provided to allow for a better understanding of the performance requirements contained in ISO 1496-1:1990, subclause 5.7.

#### **5.3.1 Handle hub**

It has been shown that the door handle hub rivet on the right container door can be easily removed using simple hand tools (i.e. hammer and chisel) or drilled out with an electric drill. The removal of the rivet allows the door handle to be lowered and removed from the handle hub. Once the handle is removed, the right door is easily opened leaving the high security seal intact but ineffective.

An elongated handle hub, sometimes referred to as a security hub, that extends at least 25 mm below the rivet hole or pivot point, can help prevent the handle from being removed even if the rivet is removed. This simple design change helps ensure the security of the container.

### 5.3.2 Customs Plate

It is common practice for container manufacturers to install a securing plate, also known as a "Customs Plate," on the right door in order to prevent perpetrators from accessing the left door. Perpetrators, however, have utilized a specially constructed breaker bar which can bend the Customs Plate back at a 90° angle from the container door. The handles of the left door are then opened and the left door is forcibly pulled past the rubber gasket of the right door. The container is now open for theft, pilferage, or the insertion of unmanifested material. Once the doors are reclosed, the bar tool can again be used to bend the Customs Plate back to its original position. The only tell-tale signs of manipulation are a possible crack in the paint of the securing or Customs Plate, which can easily be overlooked in a container inspection.

Mounting the Customs Plate on the inside of the left door can make this type of security breach harder to achieve. Substantially strengthened Customs Plate designs that cannot be bent without visibly damaging the container would serve the same objective. Other design features that form an "interlock" between the two doors or otherwise preclude manipulation and opening of the unsealed door without breaking the seal would be equally acceptable. Where feasible, design features can be used in combination with a higher location of the plate on the outside of the right door; however, merely placing the Custom Plate with its current design in a higher location would not be sufficient.

Page 16, Bibliography

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Add an additional reference:

[22] *Cargo Container Vulnerabilities*. PJ Murray Associates, Inc., July 2005

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