



Compendium of Indian Standards on Freight Containers



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TABLE OF CONTENTS

S No.	Title	Page No
	Introduction	4
	Product Standards	
1.	IS 10880:2006 Twistlocks for lifting freight containers	5
2.	IS 13112 : 1991 Cargo securing systems for general purpose freight containers general requirements	5
3.	IS 13288 (Part 1) : 2021 / ISO 1496-1 : 2013 Series 1 Freight Containers - Specification and Testing Part 1 General Cargo Containers for General Purposes	5
4.	IS 13288 (Part 4) : 1993 / ISO 1496-4 : 1991 Series 1 freight containers - Specification and testing part 4 non-Pressurized containers for dry bulk	5
5.	IS 13697 : 1993 / ISO 9669 : 1990 Series 1 freight containers - Interface connections for tank containers	5
6.	IS 17381 : 2021 / ISO 17712 : 2013 Freight containers Mechanical seals	5
7.	IS/ISO 18186 : 2011 Freight containers RFID cargo shipment tag system	6
8.	IS 19037 : 2023 / ISO 16111:2018 Transportable Gas Storage Devices Hydrogen Absorbed in Reversible Metal Hydride	6
9.	IS 7694 : 2021 / ISO 1161 : 2016 Series 1 freight containers Corner and intermediate fittings	6
10.	IS 7917 : 1994 / ISO 8323 : 1985 Freight containers - Air/surface (Intermodal) general purpose containers - specification and tests	6
11.	IS 9881 : 2007 Container spreaders – Specification	6
	Guidelines / Code of Practice	
12.	IS 11466 (Part 1) : 1985 Guidelines for packing, stowage and securing of cargo inside the freight container: Part 1 general cargo	6
13.	IS 11466 (Part 2) : 1985 Guidelines for packing, stowage and securing of cargo inside the freight containers: Part 2 dangerous goods	7
14.	IS 15739 : 2007 Freight containers - Refurbishing – Guidelines	7
15.	IS/ISO 18185-1 : 2007 Freight containers Electronic seals Part 1: Communication protocol	7
16.	IS/ISO 18185-2 : 2007 Freight containers Electronic seals Part 2: Application requirements	7
17.	IS/ISO 18185-3 : 2015 Freight Containers Electronic Seals Part 3: Environmental Characteristics	7
18.	IS/ISO 18185-4 : 2007 Freight containers Electronic seals Part 4: Data protection	7
19.	IS/ISO 18185-5 : 2007 Freight containers Electronic seals Part 5: Physical layer	8
20.	IS 6566 : 2020 / ISO 668 : 2020 Series 1 Freight Containers — Classification, Dimensions and Ratings	8
21.	IS 7622 : 2021 / ISO 3874 : 2017 Series 1 Freight Containers - Handling and Securing	8

22.	IS 15734 : 2007 Freight containers - Repair before refurbishing – Guidelines	8
	Other standards	
23.	IS 6928:2001 / ISO 6346:1995 Freight containers - Coding, identification and marking	8
24.	IS 6569:2004 / ISO 830:1999 Freight containers – Vocabulary	8
25.	IS/ISO 10368 : 2006 Freight Thermal Containers Remote Condition Monitoring	8
26.	IS 13288 (Part 2) : 2020 / ISO 1496-2 : 2018 Series 1 Freight Containers — Specification and Testing Part 2 Thermal Containers	8
27.	IS 13288 (Part 3) : 2024 / ISO 1496-3 : 2019 Series 1 Freight Containers - Specification and Testing Part 3 Tank Containers for Liquids, Gases and Pressurized Dry Bulk	9
28.	IS 13288 (Part 5) : 2020 / ISO 1496-5 : 2018 Series 1 Freight Containers — Specification and Testing Part 5 Platform and Platform-based Containers	9
29.	IS 13698 (Part 1) : 1993 / ISO 9711-1 : 1990 Freight containers - Information related to containers on board vessels: Part 1 bay plan system	9
30.	IS 13699 : 1993 / ISO 10374 : 1991 Freight containers - Automatic identification	9
31.	IS 13731 : 2003 / ISO 9897 : 1997 Freight containers - Container equipment data exchange (Cedex) - General communication codes	9
32.	IS/ISO/TR 15069 : 2018 Series 1 Freight Containers — Handling and Securing — Rationale for ISO 3874:2017 Annexes A To E	10
33.	IS/ISO 15070 : 1996 Series 1 Freight Containers - Rationale for Structural Test Criteria	10
34.	IS 15926 : 2012 / ISO 14829 : 2002 Freight containers - Straddle carriers for freight container handling - Calculation of stability	10
35.	IS/ISO 18625 : 2017 Freight containers Container Tracking and Monitoring Systems CTMS: Requirements	10
36.	IS/ISO 20854 : 2019 Thermal Containers Safety Standard for Refrigerating Systems Using Flammable Refrigerants Requirements for Design and Operation	10

INTRODUCTION

Freight containers, commonly known as shipping containers, are standardized, reusable steel boxes designed for the efficient storage and transportation of goods. They are a fundamental component of global trade, enabling the seamless movement of cargo across sea, land, and rail networks. By providing a uniform size and structure, containers simplify handling processes, improve safety, and reduce the need for manual loading and unloading, significantly enhancing supply chain efficiency.

The use of containers greatly reduces transit times, minimizes cargo damage, and lowers shipping costs. Today, containers are an essential part of multimodal transport systems, where they are transferred between ships, trucks, and trains with minimal delay or interference.

Freight containers come in a variety of types to accommodate different cargo needs - ranging from general-purpose dry containers to specialized ones such as refrigerated containers, tank containers for liquids and gases, and open-top or flat-rack containers for oversized goods.

This compendium aims at providing an overview of Indian Standards on Freight Containers sector, offering insights into their quality, safety and testing requirements. It is intended for use by common consumers, manufacturers, construction professionals, engineers, quality control personnel, academic professionals, and regulatory authorities to enhance understanding and compliance with industry standards.

For detail of standards, stakeholders are encouraged to visit www.bis.gov.in.

The list of Indian Standards related to Freight Containers and their short description is given as follows:

1. IS 10880:2006 Twistlocks for lifting freight containers

This standard specifies dimensions, material, testing and marking for twistlocks -that. are used with freight containers and are equipped with corner fittings. This standard also covers the testing of Twistlocks i.e. Ultrasonic testing, Proof Loading, Impact and Hardness etc.

2. IS 13112 : 1991 Cargo securing systems for general purpose freight containers general requirements

This standard specifies the general requirements, testing and marking of cargo securing devices for general purpose freight containers.

3. IS 13288 (Part 1) : 2021 / ISO 1496-1 : 2013 Series 1 Freight Containers - Specification and Testing Part 1 General Cargo Containers for General Purposes

This standard specifies the basic specifications and testing requirements for ISO series 1 freight containers of the totally enclosed general purpose types and certain specific purpose types (closed, vented, ventilated or open top) which are suitable for international exchange and for conveyance by road, rail and sea, including interchange between these forms of transport.

4. IS 13288 (Part 4) : 1993 / ISO 1496-4 : 1991 Series 1 freight containers - Specification and testing part 4 non-Pressurized containers for dry bulk

This standard specifies the basic specifications and testing requirements for ISO series 1 freight containers of the dry bulk container non-pressurized type which are suitable for international exchange and for conveyance by road, rail and sea, including interchange between these forms of transport.

5. IS 13697 : 1993 / ISO 9669 : 1990 Series 1 freight containers - Interface connections for tank containers

This Standard specifies the characteristics of interface connections for tank containers. This standard covers the definitions and the testing and welding requirements for interface connections, range of flange connections for tank containers, type codes 70 to 77 and 85 to 88. This standard also specifies the dimensions and characteristics of man-hole openings and man-hole lids for tank containers intended to contain liquids.

6. IS 17381 : 2021 / ISO 17712 : 2013 Freight containers Mechanical seals

This Standard establishes uniform procedures for the classification, acceptance, and withdrawal of mechanical freight container seals. It provides a single source of information on mechanical seals which are acceptable for securing freight containers.

7. IS/ISO 18186 : 2011 Freight containers RFID cargo shipment tag system

This Standard is applicable to freight containers as well as other associated containers and transport equipment. This Standard defines how freight container logistic transparency and efficiency can be improved through use of an RFID cargo shipment tag system and an Internet-based software package.

8. IS 19037 : 2023 / ISO 16111:2018 Transportable Gas Storage Devices Hydrogen Absorbed in Reversible Metal Hydride

This standard defines the requirements of material, design, construction, and testing of transportable hydrogen gas storage systems, referred to as “metal hydride assemblies” (MH assemblies). This standard is applicable to refillable storage MH assemblies where hydrogen is the only transferred media.

9. IS 7694 : 2021 / ISO 1161 : 2016 Series 1 freight containers Corner and intermediate fittings

This Standard establishes the basic dimensions and the functional and strength requirements of corner and intermediate fittings for series 1 freight containers. However, air mode containers are not covered in this standard.

10. IS 7917 : 1994 / ISO 8323 : 1985 Freight containers - Air/surface (Intermodal) general purpose containers - specification and tests

This Standard sets out the basic requirements for the specification and testing of air/surface (intermodal) containers for general cargo, which are suitable for international exchange and for conveyance by road, rail and sea as well as by freighter versions of high capacity fixed-wing aircraft, including interchange between these modes of transport.

11. IS 9881 : 2007 Container spreaders – Specification

This standard specifies types, dimensions, material and testing of spreaders for handling freight containers of 6 m (20 feet) and 12 m (40 feet).

12. IS 11466 (Part 1) : 1985 Guidelines for packing, stowage and securing of cargo inside the freight container: Part 1 general cargo

This standard gives guidelines for safe packing, stowage and securing of general cargo in a freight container.

13. IS 11466 (Part 2) : 1985 Guidelines for packing, stowage and securing of cargo inside the freight containers: Part 2 dangerous goods

This standard gives guidelines for the safe packing, stowage and securing of dangerous goods in freight containers.

14. IS 15739 : 2007 Freight containers - Refurbishing – Guidelines

This standard provide guidance to industries engaged in refurbishing of containers so as to enable them to make safe, efficient and economical containers.

15. IS/ISO 18185-1 : 2007 Freight containers Electronic seals Part 1: Communication protocol

This standard provides a system for the identification and presentation of information about freight container electronic seals. The identification system provides an unambiguous and unique identification of the container seal, its status and related information. The presentation of this information is provided through a radio-communications interface providing seal identification and a method for determining whether a freight container's seal has been opened.

16. IS/ISO 18185-2 : 2007 Freight containers Electronic seals Part 2: Application requirements

This standard specifies a freight container seal identification system, with an associated system for verifying the accuracy of use, having a seal status identification system, a battery status indicator, a unique seal identifier including the identification of the manufacturer, a seal (tag) type.

17. IS/ISO 18185-3 : 2015 Freight Containers Electronic Seals Part 3: Environmental Characteristics

This standard specifies test methods and conditions for environmental characteristics of electronic seals. This standard also prescribe the testing of container seal resistance to electrical and mechanical deterioration due to exposure to the shipboard environment or to the rigors of mishandling.

18. IS/ISO 18185-4 : 2007 Freight containers Electronic seals Part 4: Data protection

This standard specifies requirements for the data protection, device authentication and conformance capabilities of electronic seals for communication to and from a seal and its associated reader. These capabilities include the accessibility, confidentiality, data integrity, authentication and non-repudiation of stored data.

19. IS/ISO 18185-5 : 2007 Freight containers Electronic seals Part 5: Physical layer

This standard specifies the air interface between electronic container seals and Reader/Interrogators of those seals. This standard also describes the physical layer for supply chain applications of RFID for freight containers.

20. IS 6566 : 2020 / ISO 668 : 2020 Series 1 Freight Containers — Classification, Dimensions and Ratings

This standard establishes a classification of series 1 freight containers based on external dimensions, and specifies the associated ratings and, where appropriate, the minimum internal and door opening dimensions for certain types of containers.

21. IS 7622 : 2021 / ISO 3874 : 2017 Series 1 Freight Containers - Handling and Securing

This standard specifies the methods of handling and securing series 1 freight containers. In this standard, methods of handling and securing are described for both loaded and empty containers.

22. IS 15734 : 2007 Freight containers - Repair before refurbishing – Guidelines

This standard provides guidance for the repair of containers prior to refurbishing. However, this standard does not provide any details for preventive maintenance of containers.

23. IS 6928:2001 / ISO 6346:1995 Freight containers - Coding, identification and marking

This Standard provides a system for the identification and presentation of information about freight containers. The identification system is intended for general application, for example in documentation, control and communications (including automatic data processing systems), as well as for display on the containers themselves.

24. IS 6569:2004 / ISO 830:1999 Freight containers – Vocabulary

This Standard presents definitions of terms related to freight containers.

25. IS/ISO 10368 : 2006 Freight Thermal Containers Remote Condition Monitoring

This Standard establishes the information and interfaces required to permit complying central monitoring and control systems employed by one carrier or terminal to interface and communicate with complying remote communication devices of differing manufacture and configuration used by other carriers and terminals.

26. IS 13288 (Part 2) : 2020 / ISO 1496-2 : 2018 Series 1 Freight Containers — Specification and Testing Part 2 Thermal Containers

This standard provides the basic specifications and testing requirements for ISO series 1 thermal containers for international exchange and for conveyance of goods by road, rail and sea, including interchange between these forms of transport

27. IS 13288 (Part 3) : 2024 / ISO 1496-3 : 2019 Series 1 Freight Containers - Specification and Testing Part 3 Tank Containers for Liquids, Gases and Pressurized Dry Bulk

This standard provides the basic specifications and testing requirements for ISO series 1 tank containers suitable for the carriage of gases, liquids and solid substances (dry bulk) which can be loaded or unloaded as liquids by gravity or pressure discharge, for international exchange and for conveyance by road, rail and sea, including interchange between these forms of transport.

28. IS 13288 (Part 5) : 2020 / ISO 1496-5 : 2018 Series 1 Freight Containers — Specification and Testing Part 5 Platform and Platform-based Containers

This document specifies the basic specifications and testing requirements for ISO series 1 freight containers of the platform and platform-based types designated 1AAA, 1AA, 1A, 1AX, 1BBB, 1BB, 1B, 1BX, 1CC, 1C and 1CX which are suitable for international exchange and for conveyance by road, rail and sea, including interchange between these forms of transport.

29. IS 13698 (Part 1) : 1993 / ISO 9711-1 : 1990 Freight containers - Information related to containers on board vessels: Part 1 bay plan system

This standard specifies a method for identifying the locations in which containers may be carried on board a container ship. By setting up this uniform identification method, it is then possible to transmit information about the space assignments given to the specific containers being carried.

30. IS 13699 : 1993 / ISO 10374 : 1991 Freight containers - Automatic identification

This International Standard establishes a container identification system and data coding system which allows the transfer of information from a freight container to an automatic processing system by electronic means. This standard also covers performance criteria necessary to ensure consistent and reliable operation of the automatic equipment identification (AEI) system.

31. IS 13731 : 2003 / ISO 9897 : 1997 Freight containers - Container equipment data exchange (Cedex) - General communication codes

This international Standard specifies general communication codes for container equipment data exchange (CEDEX). It is intended for business entities for use in communications relating to freight container transactions.

32. IS/ISO/TR 15069 : 2018 Series 1 Freight Containers — Handling and Securing — Rationale for ISO 3874:2017 Annexes A To E

This technical report may be consulted to understand the background to the requirements specified in ISO 3874:2017, Annexes A to E.

33. IS/ISO 15070 : 1996 Series 1 Freight Containers - Rationale for Structural Test Criteria

This Standard specifies requirements and recommendations for the accessible design for packaging with a focus on ease of opening. It applies to reclosable and non-reclosable consumer packaging without using any other mechanical means. This Standard covers the design aspects addressing openability including opening location, opening methods, as well as evaluation techniques, both instrumented and user-based.

34. IS 15926 : 2012 / ISO 14829 : 2002 Freight containers - Straddle carriers for freight container handling - Calculation of stability

This Standard specifies the calculations to be carried out to determine the stability of a straddle carrier. The stability calculations specified in this Standard are intended to ensure that users of straddle carriers have adequate information about the behaviour of these carriers under various operating conditions.

35. IS/ISO 18625 : 2017 Freight containers Container Tracking and Monitoring Systems CTMS: Requirements

This standard is applicable to freight containers and ancillary equipment such as road and terminal chassis, generator sets and power packs. This standard provides guidance for the requirements (operational and otherwise) for a system, and its enabling devices, used to track, monitor and/or report the status of the container using Container Tracking and Monitoring System (CTMS).

36. IS/ISO 20854 : 2019 Thermal Containers Safety Standard for Refrigerating Systems Using Flammable Refrigerants Requirements for Design and Operation

This standard describes the design of the mechanical refrigeration unit (MRU) and operation of container refrigerating systems in all anticipated operational modes and locations. It describes the industry's best practices for the safe operation of flammable refrigerants in refrigerating systems used in thermal freight containers operated on board ships, in terminals, on road, on rail and on land.