COMPENDIUM OF INDIAN STANDARDS

HDPE/PP SACKS FOR PACKAGING OF FOOD AND NON-FOOD ITEMS

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INTRODUCTION

Packaging textiles is a vital aspect of the textile industry that has evolved over time to meet the demands of production, protection, and transportation. High Density Polyethylene/Polypropylene based plastic packaging ensures that products remain free from damage caused by environmental factors such as moisture, dirt, or physical abrasion

This compendium aims at providing the list of the Indian Standards on HDPE/PP sacks for packaging of food items along with referred Indian Standards on test method for evaluation of technical requirements.

The formulation of Indian Standards on HDPE/PP sacks for packaging of food items are undertaken by the Textile Materials made from Polyolefin Sectional Committee (TXD 23) constituted under Textile Divisional Council of Bureau of Indian Standards.

By compiling relevant standards on HDPE/PP sacks for packaging of food items in a single document, this compendium serves as a ready reference for professionals involved in manufacture of HDPE/PP sacks for packaging of food items which are efficient, reliable and safe.

LIST OF INDIAN STANDARDS ON HDPE/PP SACKS FOR PACKAGING OF FOOD AND NON-FOOD ITEMS

1. **IS 14887 : 2014 Textiles - HDPE/PP woven sacks for packaging of foodgrains – Specifications (*first revision*)**

   This standard prescribes the constructional and performance requirements (including food-grade raw materials) of HDPE/PP woven sacks suitable for packaging all types of foodgrains (wheat, paddy, rice, pulses, millet, etc) with a nominal filling capacity of 50 Kg.

2. **IS 14968 : 2015 Textiles - HDPE/PP woven sacks for packaging of 25 Kg/50 Kg Sugar – Specifications (*first revision*)**

   This standard prescribes the constructional and performance requirements (including food-grade raw materials) of HDPE/PP woven sacks suitable for packaging sugar with nominal filling capacities of 25 kg and 50 kg. This Standard specifies the use of tubular fabric woven on circular loom or flat-bed loom for manufacturing of sack which shall also comprises of loose liner to prevent water penetration.

3. **IS 16208 : 2015 Textiles - HDPE/ PP woven sacks for packaging 10 kg, 15 kg, 20 kg, 25 kg and 30 kg foodgrains – Specification**

   This standard prescribes the constructional and performance requirements (including food-grade raw materials) of HDPE/PP woven sacks suitable for packaging all types of foodgrains

(wheat, paddy, rice, pulses, millet, etc.) with a nominal filling capacity of 10 Kg, 15 kg, 20 kg, 25 kg and 30 Kg.

4. **IS 12100 : 1987 Textiles – HDPE woven sacks for packaging of flour – Specifications**

   This standard prescribes requirements of HDPE woven sacks suitable for packaging flour with a nominal filling capacity of 5 Kg, 10 kg, 25 kg, and 50 Kg. This Standard specifies the use of tubular fabric woven on circular loom or flat-bed loom for manufacturing of sack which shall also comprises of loose liner to prevent water penetration.

5. **IS 16187 : 2014 Textiles – HDPE/PP leno woven sacks for packaging and storage of fruits and vegetables – Specification**

   This standard prescribes the requirements of high-density polyethylene (HDPE)/polypropylene (PP) leno woven sacks for packaging and storage of fruits and vegetables with nominal filling capacity of 25 kg and 50 kg.

6. **IS 16703: 2017 Textiles – HDPE/PP woven sacks for packaging of 25 Kg polymers – Specifications**

   This standard prescribes requirements of HDPE/PP woven sacks suitable for packaging of 25 kg polymer materials in powder and granulated form, extrusion pelleted compounded materials and master batches. This standard defines terminology commonly used, sack description, sack dimensions, fabric construction details, testing and analysis and, performance criteria for sacks.

7. **IS 16709 : 2017 Textiles — Polypropylene (PP) Woven, Laminated, Block Bottom Valve Sacks for Packaging of 50 kg Cement — Specification**

   This standard prescribes the requirements of block bottom valve sacks made from PP woven laminated fabric for packaging, storage and distribution of 50 kg cement. This Standard specifies the use of laminated tubular fabric woven on circular loom for manufacturing of sack which shall also be perforated to facilitate the release of entrapped air during cement filling.

8. **IS 18482 : 2023 Textiles — Sandwich Extrusion Laminated Polypropylene (PP) Woven Sacks for Packaging Bulk Commodities — Specification**

   This Standard prescribes requirements of polypropylene (PP) woven sacks sandwich extrusion laminated with printed BOPP film or PP Nonwoven fabric for packaging bulk commodities such as, rice, wheat, soya beans, grains, pulses, cereals, sago, tapioca, coffee beans, dried fruits and nuts, seeds, flour, milk powder, sugar, salt, animal feedstuff, chemicals, detergents, cement, wall putty and, fertilizer, etc. This standard covers sacks of nominal filling capacities 5 kg, 10 kg, 20 kg, 25 kg, 30 kg, 40 kg and 50 kg.

9. **IS 9755 : 2021 Textiles — High Density Polyethylene (HDPE) / Polypropylene (PP) Woven Sacks for Packaging Fertilizers — Specification (*sixth revision*)**

This standard prescribes the requirements of HDPE/PP woven sacks of 45 kg capacity for packaging of neem coated urea fertilizers and 50 kg capacity for packaging of other than neem coated urea fertilizers, either produced indigenously or imported in bulk and repacked in sacks.

10. **IS 17399 : 2020 Textiles — Polypropylene (PP)/High Density Polyethylene (HDPE) Laminated Woven Sacks for Mail Sorting, Storage, Transport and Distribution — Specification**

This standard prescribes requirements of polypropylene (PP) and high-density polyethylene (HDPE) laminated woven sacks for mail sorting, storage, transport and distribution. This standard categorizes the sacks into three types based on the bulk density of parcels with minimum weight carrying capacity of 35 kg. The dimensions of the three types of the laminated sack are: Type I – 350 mm × 350 mm × 750 mm; Type 2 – 350 mm × 350 mm × 1050 mm; and Type III – 455 mm × 455 mm × 1220 mm.

11. **IS 11652 : 2017 Textiles - High density polyethylene (HDPE)/ polypropylene (PP) woven sacks for packaging of 50 kg cement - Specification (*third revision*)**This standard prescribes the requirements of high density polyethylene (HDPE)/ polypropylene (PP) woven sacks suitable for packaging of 50 kg cement for the domestic market. This standard prescribes two types of woven sacks i.e. gusseted and pillow sacks including the requirement of a valve on the mouth of the sack to prevent loss of cement during the filling process.

12. **IS 14252 : 2015 Textiles - High density polyethylene (HDPE)/polypropylene (PP) woven sack for filling sand - Specification (*second revision*)**

This standard specifies requirements for high density polyethylene (HDPE)/polypropylene (PP) woven sacks used for filling sand. This Standard specifies the use of tubular fabric woven on circular loom for manufacturing of sack which shall also comprises of tying cord made up of 3-strand hawser laid polypropylene rope for tying of sand bags.

13. **IS 14738 : 2017 Flexible intermediate bulk containers (FIBCs) - Specification (*first revision*)**

This standard specifies materials, construction design and performance requirements for flexible intermediate bulk containers (FIBCs) intended to contain non-dangerous solid materials in powder, granular or paste form and designed to be lifted from top by integral or detachable devices.

14. **IS 17279 : 2019 Textiles - Polypropylene (PP) nonwoven sacks for packing bulk commodities - Specification**

This standard prescribes requirements of spun-bond polypropylene (PP) nonwoven fabric sacks for packaging bulk commodities, such as, rice, wheat, soya beans, grains, pulses, cereals,

sago, tapioca, coffee beans, dried fruits and nuts, seeds, flour, milk powder, sugar, salt, animal feedstuff, chemicals, detergents and fertilizer etc. This standard covers sacks of nominal capacities 20, 25, 30, 45 and 50 kg. This standard does not cover sacks produced from PP nonwoven fabric laminated with paper.

15. **IS 8069 : 2023 Textiles - High density polyethylene (HDPE) polypropylene (PP) woven sacks for packing pesticides - Specification (*third revision*)**

This Standard prescribes requirements of HDPE/PP woven sacks suitable for packing of pesticide, insecticide and fungicide materials in powder, granular and flake form. This standard specifies six types of woven sacks based on nominal filling capacity of sack and bulk density of pesticides which are as follows:

- Type I — Small size sacks having a filling capacity of 5 kg.
- Type II — Small size sacks having a filling capacity of 10 kg.
- Type III — Medium size sacks having filling capacity of 25 kg, for packing of high bulk density pesticides.
- Type IV — Medium size sacks having filling capacity of 25 kg, for packing of low bulk density pesticides.
- Type V — Large size sacks having filling capacity of 50 kg, for packing of high bulk density pesticides.
- Type VI — Large size sacks having filling capacity of 50 kg, for packing of low bulk density pesticides.

LIST OF REFERRED INDIAN STANDARDS ON TEST METHOD FOR EVALUATION OF TECHNICAL REQUIREMENTS

1. **IS 1969 (Part 1): 2018 Textiles - Tensile properties of fabrics – Part 1 Determination of maximum force and elongation at maximum force using the strip method (*fourth revision*)**

This Indian Standard specifies the test method for evaluation of fabric breaking strength and elongation of fabrics based on strip method using constant rate of elongation and Constant rate of traverse principles.

2. **IS 9030 : 2024 Textiles – Seam strength of jute fabrics including their laminates – Methods of test (*first revision*)**

This Indian Standard specifies the test method for evaluation of seam strength of stitched or laminated fabrics based on strip and grab method using constant rate of elongation principle.

3. **IS 1964 : 2001 Textiles – Methods for determination of mass per unit length and mass per unit area of fabrics (*second revision*)**

This Indian Standard prescribes the test method for evaluation of fabric mass per unit area (in g/m^2) based on gravimetric principle using a test specimen of 100 mm^2 area.

4. IS 6359: 2023 Method for Conditioning of Textiles (*first revision*)

This Indian Standard outlines the method for conditioning all textile materials. For tropical countries like India, a conditioning relative humidity of 65 ± 4 percent and temperature of 27°C ± 2°C is specified, differing from the 20°C ± 2°C in international standards, which is often impractical to maintain in India.