



Food Safety Assurance Unit, May 2024

## Technical Expectations – PP Woven Bag Manufacturers

### Purpose

WFP technical requirements provide a technical guide for a better understanding of WFP's expectations in the manufacturing of polypropylene woven bags for packing commodities.

#### 1. Manufacturing Site

The Manufacturer shall upon request forward a copy of the Manufacturing License for the products issued by its National Regulatory Authority. Any visit / audit reports from the Regulatory Authority shall be available.

#### 2. Packaging materials

Packaging materials that are procured for the manufacturing of the bags (e.g., pellets, additives, inks) must be controlled at reception:

- Review compliance of the CoA received by the plastic compounder supplier.
- Packaging material raw materials including polypropylene resin, ink, ink thinners, lubricating oil for looms shall have certificate of compliance for food grade material in accordance with EU law Regulation (EC) No 1935/2004, (EU) No 10/2011 and (EU) No 2023/1442, FDA law Regulation included in the 21 CFR regarding food contact or other applicable National Standards
- Materials must be stored in a clean, well ventilated, and dry area.
- The shelf life of packaging materials shall be indicated on packaging supplier's specifications.

#### 3. Packaging production

Production controls shall be performed and food contact material certificate for packaging shall be available.

##### Controls at production

- o Check tape width conforms with WFP requirements from extrusion/tape winding at every 2 hours.
- o Monitor grammage of tape before and after weaving meets WFP requirements every 2 hours.
- o Check weft and warp density every 4 hours on 5 samples.
- o Seaming: The bottom stitch must be controlled to meet requirements of 4 tapes/10cm for double stitching. Seam height, space between first and second stitching, must comply with WFP requirements.
- o Printed bags: For good quality print, corona treatment of print surface and use of UV curable ink is recommended. Regular cleaning of plates/dye-block every 3 - 4 hours is required for good adhesion. Print registration on PP bags should also be monitored at regular intervals. Tape test<sup>1</sup> should be done at 4 hours intervals on 5 samples of printed bags to monitor ink adhesion on bags.
- o Check dimensions of bags conform with WFP requirements every 4 hours on 5 samples. Length "Cut to Cut" and "Effective length" must meet WFP requirements in capacity and dimension of bag.
- o Weight of bag must be monitored every 4 hours on 5 samples.
  - For laminated bags, weight before and after lamination must be controlled every 4 hours on 5 samples.
- o Breathability test must be carried out at every 4 hours on 5 samples of laminated bags.

<sup>1</sup> Tape test for print quality - <https://docs.wfp.org/api/documents/WFP-0000159285/download/>.



- o Tensile strength should be monitored on 5 bags for a day production.
- o For any non-conformity, production must be stopped, and immediate corrective actions should be carried out before resuming production.

#### **4. Certificate of analysis**

PP woven bag manufacturers shall include the following parameters on certificate of analysis for each consignment of bags supplied to the food manufacturers.

- o Bag Length Cut to Cut (cm)
- o Bag Effective length (cm)
- o Bag width (cm)
- o Length of bottom fold (cm)
- o Tape width (mm)
- o Grammage of bag (g/m<sup>2</sup>)
- o Empty bag weight (g)
- o Warp and Weft density
- o Tape test result for print quality
- o Stitch rate (dots per inch)
- o % CaCO<sub>3</sub>
- o Ash content for UV stabilized bag (%)
- o Tensile strength of bag (g/denier)
- o Elongation at break of fabric (length and width wise) (%)
- o Titer minimum (denier)
- o Shelf life and storage condition of bag

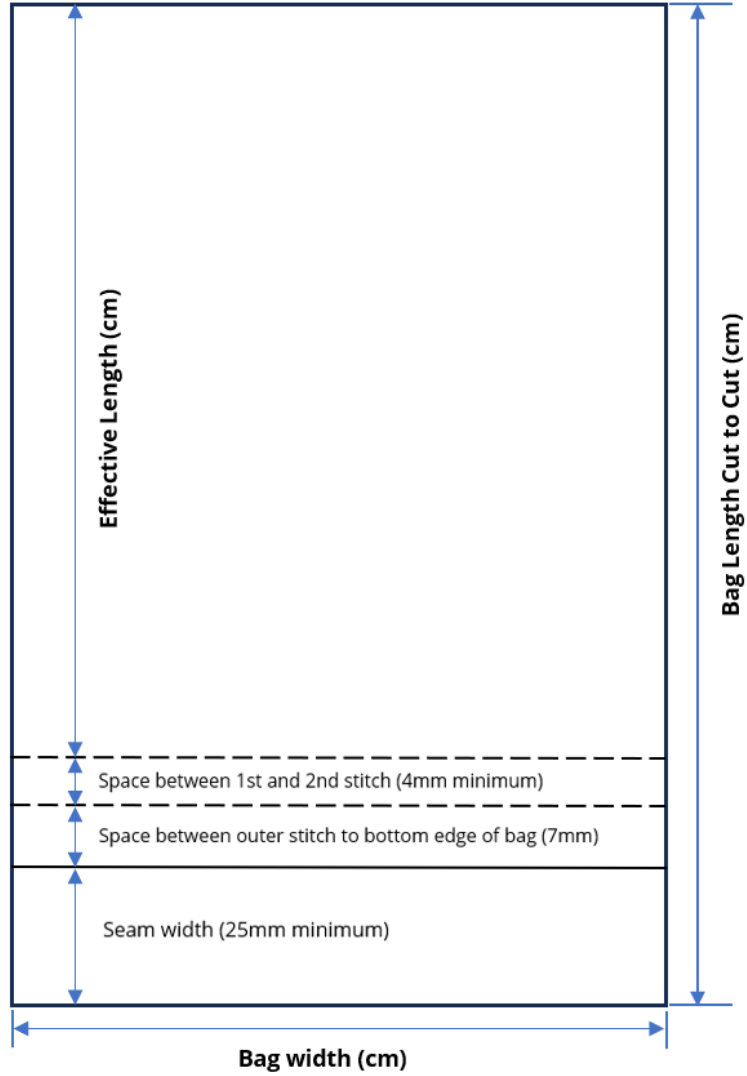
#### **5. Certificate of conformity**

PP woven bag manufacturers shall provide certificate of conformity indicating all raw materials (polypropylene resin, fillers, UV stabilizers, CaCO<sub>3</sub>, inks, thinners, lubricants for looms, yarns for stitching) used for production of bags meet food grade requirements for every consignment supplied to food suppliers. Certification can also be indicated directly on the certificate of analysis.

#### *Annexes*

Packaging - PP Woven bag with or without PE inner liner specification -  
<https://docs.wfp.org/api/documents/WFP-0000140775/download/>

Capacity and dimension of bag -  
<https://docs.wfp.org/api/documents/WFP-0000138723/download/>



**Figure 1:** Bag dimension requirements