



**T&C Packaging International  
Testing & Consultancy Packaging  
International  
Part of the IBE - BVI group**

Verlengde Poolseweg 16  
4818 CL Breda  
The Netherlands  
T.: +31- 76- 52 44 828  
[info@tc-pi.org](mailto:info@tc-pi.org)

**Guideline 01**

**Annex IBC02**

**Minimum requirements set for the quality plans of the  
quality assurance system for the production:**

Flexible Intermediate Bulk Containers made of plastics fabric  
or -film

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This annex is part of the guideline:

**Requirements to the quality assurance system for the  
production, reconditioning, repair and remanufacturing of  
packagings, Intermediate Bulk Containers and  
Large Packagings for the transport of dangerous goods.**

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# 1 Introduction

The production quality of each packaging for the transport of dangerous goods should be equal to the quality of the construction type approved.

The inspections required to ensure this are described in paragraphs 2 to 5.

For these inspections to be conducted, the nominal values of the relevant properties are to be recorded in the type test report.

The tolerances of the (average) values of various characteristics to be inspected as compared to the nominal values of the type test (to be provided by the manufacturer) are (as far as not specified otherwise in this annex):

±1% for the main dimensions of the packaging;

±3% for the other properties.

The necessary written instructions must be drawn up to ensure proper performance of the inspections.

## 2 Inspection of incoming goods

Prior to commencing the manufacture of the packagings, the raw materials, auxiliary materials and semi-manufactures required for the manufacturing process must be inspected to ensure that they correspond with those used in the samples for the UN-type test.

### 2.1 Raw material

#### 2.1.1 *By using a supplier's factory test report*

Each delivery of raw material, plastic thread, fabric, films and the hoisting gear, is to be inspected to check whether it corresponds with the permitted construction type, which has been subjected to a UN-type test. For this purpose, the products supplied are to undergo an identity check, comprising comparison with the supplier's factory test report (relating to the material as supplied) in accordance with EN 10204:2004 §4.1 (Type 3.1). A list of the properties to be inspected in this identity check is to be compiled jointly by supplier and producer and is to include at least the data stated in the stipulations described below (2.1.2).

#### 2.1.2 *By carrying out the identity checks*

As an alternative to 2.1.1, the identity check may be conducted by carrying out the following checks on each production series and at least once for each delivery:

For the thread (for both weaving and finishing):

- Mass per unit of length (ISO 2060);
- Tensile strength and elongation (ISO 2062).

For the plastic fabrics:

- Measurements (width and thickness);
- Mass per unit of surface area (ISO 3801);
- Tensile strength and elongation at maximum tensile force in the warp and woof direction (ISO 5081);
- Construction (number of threads at warp and weft (ISO 7211/2)).

For the coated plastic fabrics:

- Measurements (width and thickness);
- Mass per unit of surface area (ISO 3801);
- Tensile strength and elongation at maximum tensile force (ISO 1421);
- Adhesion of the coating to the fabric (ISO 2411);
- Construction (number of threads at warp and woof (ISO 7211/2)).

For the plastic films:

- Dimensions (width and thickness) (ISO 4593);
- Thickness (ISO 4593);
- Tensile strength and elongation at break parallel and perpendicular to the extrusion direction (ISO 1421);

For the lifting gear:

- Measurements (width and thickness);
- Mass per unit of length;
- Tensile strength and elongation (ISO 13934-1/2).

Note

Alternative test methods, equivalent to the methods described above, are allowed, provided that an identical method is used in both the type test and in the identity checks and that this method has been recorded by the manufacturer.

**2.2 Semi-manufactures and auxiliary materials not mentioned in paragraph 2.1.**

The semi-manufactures and auxiliary materials supplied are to be subjected to an identity check comprising comparison with the supplier's factory test report (which does not have to relate to the products as supplied) in accordance with EN 10204:2004 §3.2 (Type 2.2). A list of the properties to be inspected in this identity check is to be compiled by both supplier and producer. Each delivery is to be inspected to check whether the semi-manufactures and auxiliary materials correspond with the permitted construction type which has been subjected to a UN-type test.

Note

The supplier may also use test results of his supplier. This may be of importance for example for a check of the composition of certain applied raw materials and/or materials used.

**2.3 Procedure**

The organisation of the inspection of incoming goods is to be described in a procedure and the methods of inspection are to be laid down in inspection instructions.

## 2.4 Production Inspection

## 2.5 Production preparation

Prior to starting up the production process, all production machinery and accessory equipment are to be inspected to ensure that they are set correctly.

To this end, staff involved in the production process and inspection work is to have adequate and appropriate working and inspection instructions on the UN-approved construction type at their disposal, as well as the correct documentation.

Prior to starting up the production process, at least one packaging is to be subjected to the following inspections:

- Comparison with the construction type;
- General external condition;
- Dimensions in accordance with the construction drawing;
- Condition of the seams (stitch length, seam type, seal seam);
- Position and condition of the filling, closing and hoisting devices;
- Correctness and legibility of the identification markings.

## 2.6 During production

While the production process is running, the machines and systems are to be subjected to continuous inspection to ensure that they have been set accurately and that the work instructions are being observed. The following inspections are also required:

### 2.6.1 For woven fabric

The production inspection during confection comprises the following inspections:

Inspections to be performed	Frequency
Conditions of the seams	Once every 4 hours
Position and condition of the filling, closing and hoisting devices	Once every 4 hours
Determination of dimensions, external measurements, apertures, etc.	Once every 4 hours

If the production time of a particular type of packaging produced is less than the inspection interval stated, each property of the manufactured batch is to be tested/inspected at least once.

### 2.6.2 For films

The production inspection during confection comprises the following inspections:

Inspections to be performed	Frequency
The gross mass	Once every 4 hours
Conditions of the seams	Once every 4 hours
Position and condition of the filling, closing and hoisting devices	Once every 4 hours
Determination of dimensions, external measurements, apertures, etc.	Once every 4 hours

If the production time of a particular type of packaging produced is less than the inspection interval stated, each property of the manufactured batch is to be tested/inspected at least once.

## 2.7 Procedure

The organisation of the production inspections is to be described in a procedure and the methods of inspection are to be laid down in inspection instructions.

## 3 Final Inspection

### 3.1 Inspections required

The final inspection comprises the following inspections:

Inspections to be performed	Frequency
Correctness and legibility of the identification markings.	Once every 4 hours
Comparison with the construction type	Once every 4 hours

If the production time of a particular type of packaging produced is less than the inspection intervals stated, each property of the manufactured batch is to be tested/inspected at least once.

### 3.2 Procedure

The organisation of the final inspections is to be described in a procedure and the methods of inspection are to be laid down in inspection instructions.

## 4 Verification

### 4.1 Verification required

The verification comprises the following tests:

Tests to be performed	Frequency
Top lift test	Once every 1000 FIBCs
Drop test	Once every 1000 FIBCs

### 4.2 Testing method and sampling

The indicated tests are to be conducted in accordance with the regulations of the transport of dangerous goods and the test programme of the applicable UN-type test.

Sampling is to take place at a suitable point in the production period and to be spread evenly over the various UN-marks.

### 4.3 Procedure

The organisation of the verification is to be described in a procedure and the test methods are to be laid down in test instructions.