



**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 P01**

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

Packagings made of steel, including light metal

#### **Date**

June 1, 2013

#### **Number of pages**

7

All rights reserved.

No part of this publication may be reproduced and/or published by print, photoprint microfilm or any other means without the previous written consent of TCPI.

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.**

## Contents

1	Introduction	3
2	Inspection of incoming goods	4
2.1	Raw material	4
2.1.1	By using a supplier's factory test report	4
2.1.2	By carrying out the identity checks	4
2.2	Semi-manufactures and auxiliary materials not mentioned in paragraph 2.1.	4
2.3	Procedure	4
3	Production Inspection	5
3.1	Production preparation	5
3.2	During production	5
3.3	Procedure	5
4	Final Inspection	6
4.1	Inspections required	6
4.2	Procedure	6
5	Verification	7
5.1	Verification required	7
5.2	Testing method and sampling	7
5.3	Procedure	7

# 1 Introduction

The production quality of each construction type of packaging used in the transport of dangerous goods should be equal the quality of the construction type approved for the relevant UN-mark.

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 package's main dimensions;

±3% for its 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 should 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, sheets of metal, is to be inspected to check whether it corresponds with the permitted construction type, which has been subjected to a UN type inspection (specifications in accordance with current standards: European standard EN 10130, EN 10202 or equivalent). 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).

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

Control of the thickness. Thickness tolerances must conform to ISO 3574:1999.

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

The semi-manufactures and auxiliary materials (like closures and compound) 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 inspection.

#### 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.

### 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.

## 3 Production Inspection

### 3.1 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;
- Execution of the folded seams by inspecting a sawn cross-section; test based on internal standards;
- Leakproofness of the packaging for liquids;
- Weld inspection (e.g. tear test);
- Correctness and legibility of the identification markings.

### 3.2 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:

Inspections to be performed	Frequency
Dimensions in accordance with the construction drawing	Once every 4 hours
Execution of the folded seams by inspecting a sawn cross-section	Once every 4 hours
Weld inspection (e.g. tear test)	Once every 4 hours
<i>Fastenings and compound</i>	
- Punch calibre tests of the fastenings	Once every 4 hours
- Amount and regular spread of compound	Once every 4 hours
- Completeness test (sealing ring) of each flange	Every packaging, when necessary

If the total 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.

### 3.3 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.

## 4 Final Inspection

### 4.1 Inspections required

The final inspection comprises the following inspections:

Inspections to be performed	Frequency
Comparison with the construction type	Once every 4 hours
Correctness and legibility of the identification markings	Once every 4 hours
<i>Leakproofness test</i> (for packagings approved for liquids) In accordance with one of the following methods (method 3 applies to packagings with a wall thickness smaller than 0.5 mm):	
1. Leak tightness test in accordance with an appropriate method in combination with additional production controls, where necessary	Every packaging
2. Weld and folded seam inspections by means of suitable soap sud test (or equivalent method) combined with detection of pinholes in the sheet steel	Every packaging
3. Leak tightness test according to a suitable method, to be combined with weld inspection according to a suitable method and detection of pinholes in the sheet steel	Every packaging

If the total 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.

#### Note

The test parameters of the leakproofness tests are still to be established.

Light metal packagings with a RID/ADR-marking do not require individual leak tightness tests.

### 4.2 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.

## 5 Verification

### 5.1 Verification required

The verification comprises the following tests:

Tests to be performed	Frequency
Drop test	Once monthly for each production line
Leakproofness test (for packagings approved for liquids)*	Once monthly for each production line
Hydraulic pressure test (for packagings approved for liquids)	Once monthly for each production line

\*The leakproofness test at the verification can be cancelled when at the final inspection a leakproofness test is applied in a manner as given in 5.2 and when it can be demonstrated that this test detects a level at least corresponding with the level as mentioned in 5.2.

### 5.2 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.

The minimum number of samples to be tested is 1 for every test.

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

### 5.3 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.