# PRODUCT QUALITY SPECIFICATIONS FOR CUSTOMERS 

## 1. GENERAL PROVISIONS

## The following definitions are used in this document: <br> Manufacturer (Supplier) - Jelgavas Pakotajs Rupnica MARSS, SIA

Buyer (Customer) - any natural person or legal entity, which has expressed a wish to order the Product from the Manufacturer-.

Product - any product made of corrugated cardboard, the production and sale of which has been agreed upon by the Manufacturer and the Buyer, incl. sheets, spacers and other cardboard elements.

The product must meet the quality criteria described below. By placing an order, the Buyer automatically agrees to these conditions and criteria. In examination of any disputes that may arise in connection with the quality and use of the delivered product, the circumstances are first evaluated, taking into account these conditions. These conditions apply both to direct, individual orders according to the customer's specifications and to orders in the online store www.pakoshop.lv when buying ready-made packaging.

## 2. TERMS OF DELIVERY AND SERVICE

1. Delivery service and delivery costs, if such determined, include the unloading of the goods from the vehicle, but DO NOT include the carrying of the goods to the Buyer's warehouse.
2. In case where the Buyer has chosen to receive the goods in the warehouse, the Supplier stores them for 30 calendar days from the moment when the Buyer was informed about taking of the Goods. In case where the Goods are not taken within 30 calendar days, the Seller disposes of the goods without warning, without refunding the payment for the goods.
3. When placing an order, the Buyer confirms that the Buyer has read the PRODUCT QUALITY SPECIFICATIONS for customers, Cardboard Sheet Specifications and this and accepts them.
4. The Buyer must report claims in respect of the quality and/or quantity in writing to the e-mail address: pasutijumi@pako.lv, as soon as possible, however not later than within 7 working days from the date of receipt of the Goods, including and especially those relating to the quantity of goods, assortment (type) and inaccuracies in accompanying documents. In case of claims, a Complaint Form (sent by the Supplier) must be filled in. The Seller individually examines the cases of hidden defects, which cannot be detected immediately upon receipt and use of the package.
5. Price offers are valid from the date of preparation and sending until the specified term. In case of force majeure circumstances, the Supplier is entitled unilaterally and at any time to withdraw from the price offer or change the price level. Also in the kind where the prices of raw materials and production factors increase by more than $5 \%$ in the last 3 months. The Buyer specifies the prices before placing the order.
6. The Supplier keeps the Buyer's product manufacture aids: samples, cutting and printing forms for 12 months from the date of receipt of the last order. After 12 months, the Supplier is entitled to destroy them without warning (limited storage possibilities).
7. Before manufacture of the first order for the new products, an agreed manufacture specifications, description and, preferably, a packaging sample for non-standard products must be agreed, otherwise the Manufacturer does not assume responsibility for the compliance of the packaging with the Buyer's needs.
8. In case where the Buyer requires to deliver the packaging only on wooden pallets, the Supplier is entitled to charge an additional payment for the delivery, having agreed the costs with the Buyer in advance.
9. The Buyer can make changes to the order within one working day from the day of placing the order, including cancel it.
10. Allowable deviation of manufacture from internal dimensions for the finished products: 3 -layer cardboard $+/-2 \mathrm{~mm}, 5$-layer cardboard $+/-3 \mathrm{~mm}$ and flexo printing colour within one tone up and down according to the PANTONE catalogue. The printing tone may also differ on white and brown cardboard.
11. The delivered volume for orders over 300 pcs. (compl.) may differ by $+/-5 \%$ of the ordered volume, if the Parties have not agreed otherwise. The Buyer undertakes to fully pay for the entire amount of the packaging actually delivered by the Supplier according to the delivery consignment note. The Supplier refunds the overpayment, if any occurred, to the Buyer's account within 10 days.
12. The performance time is approximate and may change depending on the manufacture load level. The performance term for each manufacture order is determined separately. The price of the offer may change depending on the package specifications, quantity and cardboard strength indicators (cardboard grade).
13. Larger quantities of one order have a more favourable price. A service fee of EUR 5.00 is applicable to orders with an amount under EUR 15.00 (VAT excl.).

## 3. TECHNICAL REQUIREMENTS AND MECHANICAL PROPERTIES OF CORRUGATED CARDBOARD SHEETS AND PACKAGING

## Basic raw materials - the properties of corrugated cardboard packaging are characterised using various indicators. <br> The main indicators are: <br> Area weight of corrugated cardboard ( $\mathrm{g} / \mathrm{m} 2$ ). <br> ECT - Corrugated cardboard resistance to longitudinal compression <br> Mullen - Corrugated cardboard resistance to puncture <br> Moisture - Corrugated cardboard moisture content <br> Mechanical property tests should be performed in 50+/-2\% relative humidity and 23+/-1 C climatic conditions.



The nomenclature of types of sheets used in the company TECHNICAL SPECIFICATIONS OF CORRUGATED CARDBOARD SHEETS is given in accordance with the Annex 1 of this document.

It is important to choose the most suitable type of corrugated cardboard. The higher the values of ECT, MT, area weight indicators, the more resistant the cardboard is to mechanical effects, but it also costs more. In order to choose the optimum type of cardboard, the necessary information about the product to be packed is usually:
what is packed (bulk cargo, dimensional goods, etc.);
product weight in one box;
logistics chain: shipping by courier, on pallets, manual handling, reuse, exposure to condensation or moisture.

The service specialist of our company will choose the most suitable type of cardboard. It is possible to make samples for testing.
Only specially marked products (also in all documents of the order process, including price offers and delivery notes) with the FD sign are suitable for direct contact with food and these conditions are separately stipulated with the buyer.

### 3.1. The mechanical properties of sheets are defined by the following parameters:

1. Sheet profile (E to BC) and thickness, mm;
2. Grade designation (name);
3. Area weight $(\mathrm{g} / \mathrm{m} 2)$;
4. Composition: depending on the types of cardboard layers (paper) (testliner, Eurocraft, fluting, etc.)
5. ECT (cardboard resistance index under pressure from above); $\mathrm{kN} / \mathrm{m}$; min.
6. Cardboard strength index in compression (Mullen, kPa; average)
7. Cardboard outer surface colour (brown or white)

The assortment of all usable sheets with parameters of mechanical properties can be found in Annex 1.

### 2.2. Curvature of CCB sheets and box blanks



The ratio of the height of the curvature $\mathbf{u}$ to the length of the sheet or box blank $\mathbf{L}$ is called the curvature of the sheet or box blank.

The curvature of the sheet or box blank $\mathbf{u}$ must not be greater than $4 \%$ of the $\mathbf{L}$ dimension.

### 3.3. Linear dimensions and permissible deviations of sheet and box blanks

| PARAMETER | Dimensions | Precision |
| :---: | :---: | :---: |
| Length of CCB sheets <br> and blanks (incl. spacers, <br> separators, etc.) | $\leq 1 \mathrm{~m}$ | $+/-3 \mathrm{~mm}$ |
| Width of CCB sheets <br> and blanks (incl. spacers, <br> separators, etc.) | $>1 \mathrm{~m}$ | $+/-0,3 \%$ of length |
| sen | $\leq 1 \mathrm{~m}$ | $+/-2 \mathrm{~mm}$ |

*Dimensions in relative humidity of $50 \pm 10 \%$
2.4. Sheet thickness parameters depending on grade and tolerance*:

| Cardboard type | Thickness limits (before sheet <br> recycling) |
| :---: | :---: |
| E | $1.2-1.7 \mathrm{~mm}$ |
| B | $2.6-3.2 \mathrm{~mm}$ |


| C | $3.7-4.2 \mathrm{~mm}$ |
| :---: | :---: |
| $B C$ | $6.5-7.8$ |

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## *Note:

1. After processing of sheets (cutting, sawing, printing, etc.), sheet thickness may change (decrease).
2. The colour shade of both brown and white corrugated cardboard sheets may vary from batch to batch.
3. In a stack of sheets, the outer liner (flat layer) of the sheet is always with the outer surface down. The upper (inner) liner may be visually different.
4. After mechanical processing, the edge of the sheet may be slightly compressed and visually different from the edge of the mechanically non-processed sheet (see picture). This does not affect the Product properties.

## 4. PARAMETERS AND PRINTING OF BOXES

### 4.1. General requirements

a) The flat layers of the corrugated cardboard at the fold after crimping (pressing the fold) may only crack in the first (top) layer of the sheet paper and only inside the product for cardboard grade $B C$ and/or thickness from 6 mm . Exception - products made of sheets with a thickness of 7 mm and more, if it is bent along the bend by 180 degrees.
b) In the area of gluing, the box must be held together mechanically or by packing the product manually; in the area of perforation, the box must withstand the load of the automatic packaging line.
c) There may be mechanically non-separated cardboard scraps in the notch places of the boxes, but they should be separated as much as possible in the production process.

### 4.2. Printing

Flexo printing on the corrugated cardboard box must meet the following quality requirements:

- the print must be placed on the box according to the conditions of the agreed specifications and the indicated position; the permissible deviation in the print design is $+/-2 \mathrm{~mm}$; Exception production using a round (rotary) cutting form, then the deviation of the print position is permissible within +/- 4 mm.
- the colour used in the print must comply with the instructions of the agreed specification. The print should be evenly applied, without smears, paint blurs.
- $\quad$ differences in the print shade for different orders of the same product are allowed within the framework of one shade (according to the Pantone catalogue); the same Pantone shade will be different when printed on white and brown cardboard, as well as it will vary from batch to batch.
- The top and bottom corrugated cardboard product packed in individual bundles may be damaged by the packing tape.
4.3. Permissible deviations from the internal dimensions of the order for finished products (cut boxes):

Products made of 3-layer cardboard - +/- 2 mm (length, width, height)
Products made of 5-layer cardboard - +/- 3 mm (length, width, height)
*The inside dimensions of the box are measured from the inside when the box is folded and is ready to be packed. Internal dimensions do not include allowances for cardboard thickness and other product elements.

### 4.4. Glued products - cut-out boxes - permissible deviations:



The m 1 and m 2 dimensions must be smaller than the thickness of the corrugated cardboard and in any case less than 5 mm

The notches may be slightly finned, however cut straight.
After mechanical processing, except with cutting forms, the cut edges may be slightly finned, uneven, visually different from the edge of the original sheet.

Product parameters are recorded in the Manufacturer's internal system under the product code.
Goods are recorded in accompanying documents under the same product code. At the customer's request, the Manufacturer provides the Buyer with a detailed specifications of the product.

## 5. USE OF THE PACKAGING IN CONDITIONS OF HIGH HUMIDITY.

To make it easier for the CCB user to evaluate the suitability of each type of cardboard for use in high humidity (usually above relative humidity of $70 \%$ ), based on the technical characteristics of the CCB and accumulated experience. In practice, it is accepted that in conditions of high humidity, packaging should be used, which is made from sheets containing: fresh fibre "semi-chemical flutings" or craft paper (as little admixture of waste paper as possible). The buyer must be warned that the package is intended for use in
conditions of high humidity (condensate, frozen products, etc.), otherwise the Manufacturer does not guarantee the durability and functionality of the package.

## 6. TRANSPORTATION AND STORAGE REGULATIONS

6.1. The manufacturer guarantees the preservation of the specified mechanical strength of the corrugated cardboard and its products within 3 months after the manufacture, provided that the corrugated cardboard and/or its products are stored and transported in compliance with the following regulations:

- is not mechanically damaged during transportation;
- is stored on a pallet horizontally or as packaged by the Manufacturer;
- the storage temperature is $+5-+35 \mathrm{C}$;
6.2. The relative humidity in the storage area is within 40-60\%; (irreversible deformation of the sheet wave (fluting) and a significant decrease in the mechanical strength of sheets is possible in excessively humid rooms (relative humidity above 70\%));
6.3. If the sheets or its products are stored for a long time in excessively dry rooms (relative air humidity below 40\%) or cold rooms (temperature below 0 C ), cracking of the cardboard during making or folding of a box, reduction of geometric dimensions and twisting of sheets are possible.

When storing the package, the buyer must ensure that:

- the corrugated cardboard product is not exposed to direct water;
- the formation of a layer of water condensate on any of the walls of the box is not allowed;
- the pallet with cardboard boxes is unpacked immediately before use.
- when exposed to direct sunlight, the top layer of brown corrugated cardboard can change its shade


## 7. MANUFACTURE AIDS

Product manufacture aids - Cutting and printing dies are the property of the manufacturer. The manufacturer provides storage and technical maintenance of manufacture aids.

All other matters not mentioned in these provisions, are discussed between the Manufacturer and the Buyer by mutual agreement in writing.
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