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## **Instructions for Use**

### **Multilayer Synthetic Heat-Shrink Casing**

### **PentaFlex® Extra N® (No Soaking) for Dairy Products Packaging**

#### **Purpose**

PentaFlex® Extra N® casing is manufactured in accordance with TU U 25.2-20620489-006-2003 and is intended for packaging processed cheeses, butter, spreads, mixed dairy products, and ice cream.

#### **Advantages**

Compared to viscose-reinforced, natural, and collagen casings, PentaFlex® Extra N® features:

biological inertness;

high barrier properties;

high mechanical strength;

elasticity;

low oxygen and water vapor permeability;

operating temperature range of products in casing from  $-30^{\circ}\text{C}$  to  $+110^{\circ}\text{C}$ ;

no product losses during thermal processing;

extended shelf life of packaged products.

**The guaranteed shelf life of the casing is 36 months.**

#### **Storage at the Facility**

The casing is supplied in reels and in shirred (corrugated) form.

To maintain stable casing properties during possible temperature fluctuations occurring during transportation, the casing in reels or shirred form is placed into a protective bag before being packed into cartons.

The casing must be stored in the manufacturer's original packaging, in clean, dry warehouse premises free from foreign odors and aggressive substances, protected from direct sunlight, at a distance of at least 1 meter from heating devices, at an ambient temperature not exceeding  $+25^{\circ}\text{C}$  and relative humidity not exceeding 80%.

The casing is frost-resistant and withstands temperatures down to  $-30^{\circ}\text{C}$ .

Mechanical friction of the casing must be avoided.

It is strictly prohibited to drop cartons with casing or subject them to impacts.

#### **Preparation of the Casing for Use**

Casings stored at temperatures **of  $0^{\circ}\text{C}$  or below** must be kept at room temperature for at least 24 hours before opening the packaging and use.

Conditioning the casing at room temperature is required to adapt it to production conditions and ensure readiness for use.

**To accelerate preparation** during the cold season, it is recommended to transfer the casing from the main warehouse to a suitable room (temperature and humidity compliant) at least one day before packaging, and hold it under these conditions.

Shirred casing should be conditioned **in these conditions after opening the carton and the packaging bag.**

**Cutting the casing before use must be performed outside the production area, as high humidity may cause sticking inside the reel and tearing during unwinding or stuffing.**

During preparation (unwinding the reel, cutting into lengths), friction between the reel edges and the casing surface against uneven or rough objects must be avoided.

It is recommended to unwind the casing with the reel positioned vertically.

After cutting, remaining casing on reels must be stored in the original packaging (polyethylene bag).

**The casing may be used with partial surface moistening, provided that during stuffing, clipping, and thermal processing (depending on the product type), no ruptures, deformation of logs, or other defects unacceptable to the customer occur.**

**Technological Recommendations for Dairy Products Packaged in Polyamide Casings**

Production of dairy products must comply with the applicable technological instructions, depending on the product type.

Multilayer polyamide heat-shrink casing PentaFlex® Extra N® is strong, elastic, and has excellent gas- and moisture-barrier properties.

It ensures high product yield by eliminating losses and protects the product from mechanical damage, contamination, moisture penetration, microorganisms, and other factors that may cause spoilage.

The casing gives the product a defined shape and size, convenient for technological processing and retail sale.

#### **Stuffing the Casing**

When using the casing without soaking, the stuffing level is selected experimentally and may be within 2–3% overfilling relative to the nominal casing diameter.

Control of the Recommended Filling Diameter (RFD) is performed periodically by measuring the product diameter using a calibrated tape and adjusting mass dosing on automatic stuffing equipment.

The strength and sufficient elasticity of PentaFlex® Extra N® casing allow easy stuffing, resistance to hydraulic shock during clipping, and prevention of rupture during thermal processing (hot filling, freezing).

**Depending on the characteristics of the packaged product, it is permissible to reduce overfilling or to fill within the nominal casing diameter, provided that the product appearance meets customer requirements.**

#### **Clipping**

PentaFlex® Extra N® casing is suitable for use on:

automatic equipment (POLI-CLIP, ALPINA, TECHNO-PACK);

semi-automatic equipment;

manual tying.

#### **Thermal Processing of Products in Casing**

(hot filling, freezing, or other processes)

Thermal processing of products must be carried out in accordance with the applicable technological instructions, depending on the product type.

#### **Packaging and Storage**

Dairy products packaged in PentaFlex® Extra N® casing, after cooling or freezing, are transferred to storage for distribution.

Storage temperature must comply with the technological instructions for the specific product type.

In retail outlets, appropriate temperature conditions must be maintained.

Product logs must be removed from transport packaging and placed in refrigerated cabinets, display cases, or other appropriate storage equipment.