PENTOPAK
ТОВ "ПЕНТОПАК УКРАЇНА"

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Instructions for Use
Multilayer Synthetic Heat-Shrink Casing
PentaFlex-Overstuff N® for Meat Products Packaging

Purpose

PentaFlex-Overstuff N® casing is manufactured in accordance with TU U 25.2-20620489-006-2003 and is intended for packaging all types of cooked sausages, blood sausages, liver sausages, pâtés, edible fats, head cheeses (aspics), unformed cooked hams, minced meat products (chilled and frozen), and other similar products.

Advantages

Compared to viscose-reinforced, natural and collagen casings, PentaFlex-Overstuff N® offers:
biological inertness;
high barrier properties;
high mechanical strength;
elasticity;
low oxygen and water vapor permeability;
operating temperature range of products in casing from –30°C to +115°C;
no losses during thermal processing;
extended consumer shelf life of sausages up to 60 days when stored at +0°C to +6°C.

Storage at the Facility

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 m from heating devices, at an ambient temperature not exceeding +25°C and relative humidity not exceeding 80%.

The casing must remain in the manufacturer's packaging until use to prevent premature moisture absorption in the roll. Failure to comply may cause the casing to stick together in the roll.

Guaranteed shelf life: 36 months.

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

The casing is frost-resistant and withstands temperatures down to –30°C. Mechanical friction of the casing must be avoided.

Casings stored at temperatures below 0°C must be kept at room temperature for at least 24 hours before opening the packaging.

Preparation of the Casing for Use

When preparing the casing (unwinding the roll, cutting into lengths), avoid friction of the roll edge and casing surface against any rough or uneven parts. It is recommended to unwind the casing in a vertical roll position.

Before use, PentaFlex-Overstuff N® must be cut into required lengths, soaked in water at +18°C to +25°C and kept for 30 minutes**. In winter, water at +25°C may be used to accelerate soaking.**

Cutting of the casing before use should be performed outside the production area, as high humidity in the workshop may cause sticking in the roll and tearing during unwinding and stuffing.

After cutting, the remaining casing in the roll must be stored in the factory packaging (in a polyethylene bag).

It is strictly prohibited to soak the casing in hot water. For uniform soaking, it is recommended to open one end of the cut piece and flush the sleeve so that wetting also occurs on the inner surface. This significantly increases elasticity, facilitates stuffing, and ensures uniform filling along the entire length of the chub.

When using shirred casing, the shirred sticks must be fully submerged in water at **+18°C to +25°C for at least 40 minutes.**

Casing consumption must be calculated according to the planned production volume. **If the casing is not fully used, it must be left in a container with cold water and used within 24 hours.**

Technological Recommendations for Sausage Production Using Polyamide Casings

Due to the gas- and moisture-impermeability of PentaFlex-Overstuff N®, no moisture loss occurs in the product during thermal processing.
To prevent broth-fat pockets and casing rupture during thermal treatment, it is necessary to comply with the applicable technological instructions for sausage production and the use of functional additives.

Stuffing

PentaFlex-Overstuff N® has unique overstuffing properties. Due to its high elasticity, the casing can be easily overstuffed by 60–70%. The overstuffing percentage is selected experimentally depending on production conditions and equipment type. The selected percentage must remain stable throughout the stuffing process.
By changing the chub length, the product shape can be changed from elongated to oval. For example, with a chub length of 12–13 cm and an overstuffing level of 60%, the product takes an "olive" shape, as close as possible to the shape of a natural bladder.
By increasing the chub length to 15–17 cm, a more elongated shape can be achieved. For example, when using casing with a diameter of 50 mm and overstuffing **60–70%**, it is recommended to reach a stuffed diameter of 80 mm.
To obtain the required shape, start forming a "garland" without engaging the knife; then individual chubs may be clipped.
Control of the recommended filling diameter is performed by measuring the chub diameter with a calibrated tape. If necessary, the meat dosing on the stuffer (in automatic equipment) is adjusted.
A high overstuffing percentage significantly increases the casing's filling capacity.

Clipping

PentaFlex-Overstuff N® can be used on automatic (ALPINA, POLI-CLIP, TECHNO-PACK), semi-automatic equipment, all types of KOMPO clippers, as well as manual clippers.

Thermal Processing

Thermal processing of sausage products must be carried out in accordance with the applicable technological instruction using the following scheme:

Preheating – Cooking – Showering – Cooling

Due to the gas impermeability of the casing, the roasting stage is excluded. To ensure proper color formation, stepwise cooking with gradual temperature increase should be applied. Cooking should begin at 50–55°C.
The final stage is cooking until readiness—achieving an internal product temperature of 72°C for 10–15 minutes.
The number of temperature steps depends on product diameter: the larger the diameter, the more steps required.
Heating step duration is determined by the enterprise based on technological requirements and equipment capabilities.
It is prohibited to cool sausages with cold air immediately after cooking. Rapid air cooling may dry the casing and cause wrinkling. Avoid drafts until products are completely cooled.
Sausages may also be cooked in kettles. In this case, observe the following:
load products into water at +55°C to +60°C;
it is strictly prohibited to load products into water at +80°C, as it may cause premature casing shrinkage and product deformation;
products must be fully submerged;
increase temperature gradually in intervals;
when loading subsequent batches, ensure water temperature does not exceed +60°C;
readiness is achieved at an internal temperature of +72°C.

Cooling

Cooling is carried out in two stages:
Stage 1: shower cooling with tap water to an internal temperature of +25°C to +30°C.
Stage 2: air drying at ambient temperature, followed by cooling in chambers at +4°C to +6°C.
Stepwise cooling ensures uniform shrinkage of both casing and batter, preventing surface wrinkling.

Slicing and Casing Removal

PentaFlex-Overstuff N® casing is easily removed from the sausage.
Before slicing, both clips must be cut off to prevent casing tearing and excessive tension.

Packaging and Storage of Sausages

After cooling, sausages are transferred to storage for distribution. Storage temperature must comply with the technological instructions for the specific product type.

Products with a clean and dry surface are packed into sanitized containers, observing maximum permissible net weight, and transferred for distribution. Large temperature fluctuations during storage must be avoided to prevent condensation on the product surface.
In retail outlets, sausages must be removed from transport packaging and placed in refrigerated cabinets, display cases, etc.