

Instructions for Use

Multilayer Synthetic Heat-Shrink Casing

Pentaflex-Sinyuga N® for Packaging Meat Products

Purpose. Pentaflex-Sinyuga N® casing is manufactured in accordance with TU U 25.2-20620489-006-2003 and is intended for the production of all types of cooked sausages and hams in casing, aspics (head cheese), and other similar products.

Advantages. Compared to viscose-reinforced, natural, and protein casings, Pentaflex-Sinyuga N® offers:

- biological inertness;
- high barrier properties;
- high mechanical strength;
- elasticity;
- low permeability to oxygen and water vapor;
- operating temperature range of products in casing from -30°C to +115°C;
- no losses during heat treatment;
- extended shelf life of sausages (up to 60 days when stored at +2°C to +6°C).

Storage at the Plant

Store casings in the manufacturer's original packaging in clean, dry storage rooms free from foreign odors and aggressive substances.

Protect from direct sunlight and keep at least 1 m away from heating devices.

Storage temperature: up to +25°C; relative humidity: not more than 80%.

Keep casings in original packaging until use to prevent premature moisture absorption in the roll; violation may cause sticking of the casing.

Shelf life: 36 months.

Dropping or impacting boxes with casing is strictly prohibited.

The casing is frost-resistant and withstands temperatures down to -30°C. Avoid mechanical abrasion.

Casings stored below 0°C must be conditioned at room temperature for at least 24 hours before opening the package.

Preparation for Use

During preparation (unwinding the roll, cutting into lengths), avoid friction between the roll edges and the casing surface. **It is recommended to unwind the casing with the roll in a vertical position.**

Before use, cut Pentaflex-Sinyuga N® into required lengths and soak in water at +18°C to +25°C for 30 minutes. In winter, water at +25°C may be used to accelerate soaking.

Cutting 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, remaining casing on rolls must be stored in the original packaging (polyethylene bag).

Soaking in hot water is strictly prohibited.

For uniform soaking, open one end of the cut piece and flush the sleeve so that both inner and outer surfaces are wetted. This increases elasticity, eases stuffing, and ensures uniform filling along the entire baton.

When using Shirred casing, ensure that shirred sticks are fully submerged in water (covered with a grate) at +18°C to +25°C for at least 40 minutes.

Calculate casing consumption according to the production volume. If not fully used, keep the casing in cold water and use within 24 hours.

Technological Recommendations

Due to the gas- and moisture-barrier properties of Pentaflex-Sinyuga N®, no moisture loss occurs during heat treatment.

To prevent broth-fat pockets and casing rupture, strictly follow the current technological instructions for sausage production and the use of functional additives.

Stuffing

Recommended	overfilling	by	caliber:	28–30%.
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Example: for casing diameter 80 mm, the filled diameter should reach 102.5–104 mm.

The selected overfilling percentage must remain stable throughout stuffing.

Control the filled diameter using a calibrated measuring tape; if necessary, adjust the dosing on automatic stuffers.

Compliance ensures good appearance, increased effective filling capacity, and reduced risk of broth-fat defects.

Stuffing in Netting

To obtain curved products, use non-elastic netting.

Recommended overfilling when using netting: 20–22%.

Consider casing filling capacity and net stretch during stuffing and clipping. Proper compliance produces a pronounced relief with convex cells, enhancing product attractiveness at retail.

Clipping

Pentaflex-Sinyuga N® imitates natural bung casing and stretches easily. High mechanical strength allows use on:

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

semi-automatic equipment;

all types of KOMPO clippers;

manual tying.

Ensure correct clipper adjustment and selection of clips suitable for the casing type and diameter.

Clips must securely clamp the casing ends without shifting or damaging the casing.

Batons may be clipped:

with one loop for vertical hanging;

with two loops for horizontal hanging (two batons per hanger).

For manual tying, first tie or clip one end after cutting the casing to length. This simplifies tying and ensures the required overfilling percentage. Apply transverse ties every 10–15 cm along the baton. The final end is clipped or tied manually.

When clipping casing with netting, carefully control overfilling and clip pressure to achieve well-filled net cells.

Heat Treatment

Heat treatment must comply with the current technological instructions and follow the scheme:

Preheating – cooking – showering – cooling.

Due to gas impermeability, roasting is excluded. For proper color development, use stepwise cooking with gradual temperature increase, starting at 50–55°C with 100% humidity.

Final stage: cooking until readiness (72°C inside the baton for 10–15 minutes).

Number of heating steps depends on baton diameter (larger diameter → more steps).

Cooling with cold air immediately after cooking is not allowed; avoid drafts until fully cooled to prevent wrinkling.

Cooking in Boilers

Load batons into water at +55°C to +60°C.

Do not immerse batons into water at +80°C—this causes premature shrinkage and deformation.

Batons must be fully submerged.

Increase temperature gradually with intervals.

When loading subsequent batches, ensure water temperature does not exceed +60°C.

Readiness: +72°C in the center of the baton.

Cooling

Cooling is performed in two stages:

Showering with tap water until internal temperature reaches +25°C to +30°C.

Air drying at ambient temperature, then transfer to a cooling chamber at 0°C to +6°C.

Interval cooling ensures uniform shrinkage of casing and filling, preventing surface wrinkling.

Slicing and Casing Removal

Pentaflex-Sinyuga N® casing is easy to remove.

Before slicing, cut off both clips to reduce tension and prevent tearing.

Packaging and Storage of Sausage

After cooling, products are sent to storage and distribution. Storage temperatures must comply with the technological instructions for the specific product.

Batons with clean, dry surfaces are packed in sanitized containers, observing maximum allowable net weight. Avoid large temperature fluctuations to prevent condensation.

At retail, products must be removed from transport packaging and placed in refrigerated display cases.