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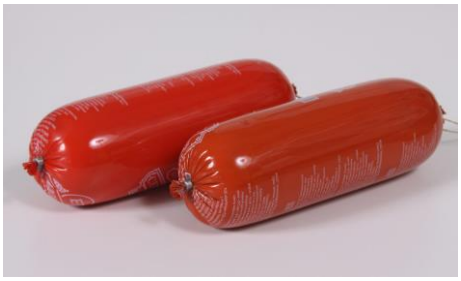
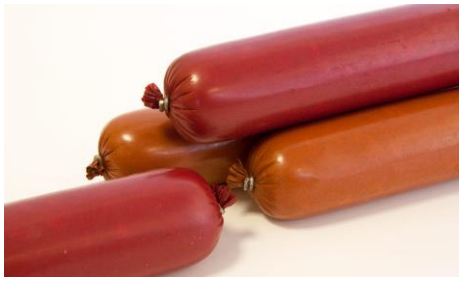
Packaging Solutions

Casings amitan

AMITAN Pro Stretch
AMITAN Pro-Beef Bung
AMITAN Pro-Beef Bung-Ko
AMITAN Pro-U-Beef Bung
AMITAN Pro-U-Beef Bung-Ko

Process Operating Manual





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1. APPLICATION

The **AMITAN Pro Stretch, AMITAN Pro-Beef Bung, AMITAN Pro-Beef Bung-Ko, AMITAN Pro-U-Beef Bung,** and **AMITAN Pro-U-Beef Bung-Ko** are monolayer plastic casings ***permeable to process smoke*** and imitating the natural gut materials (bung, bladders, rounds).

These casings are intended for production of all types of cooked sausages and hams made with the use of technologies that involve smoking, which makes it possible to obtain products with traditional organoleptic characteristics typical of products in natural casings.

The **AMITAN Pro Stretch, AMITAN Pro-Beef Bung, AMITAN Pro-Beef Bung-Ko, AMITAN Pro-U-Beef Bung,** and **AMITAN Pro-U-Beef Bung-Ko** are monolayer plastic casings permeable to process smoke and imitating the natural gut materials (bung, bladders, rounds). All casing types are made from blends of high-quality synthetic and natural materials.

2. ADVANTAGES OF PRODUCTS

2.1. Advantages of the casing

2.1.1. The **AMITAN Pro Stretch, AMITAN Pro-Beef Bung, AMITAN Pro-Beef Bung-Ko, AMITAN Pro-U-Beef Bung,** and **AMITAN Pro-U-Beef Bung-Ko** casings widen the assortment of products by diversification of the appearance of sausages (rings, half rings, links, bladders, etc.).

2.1.2. The **high mechanical strength** of the casings makes it possible to form chubs with the use of high-capacity automatic and semi-automatic clippers at high rates of production.

2.1.3 The **high elasticity** of the casing makes it possible to significantly overfill the casings relative to the nominal caliber. This reduces the consumption of casing per 1 ton of finished products in comparison with the traditional types of permeable casings.

2.1.4 The **high heat resistance** of the polymers used for production of the casings significantly extends the utilization temperature range in comparison with the natural or collagen casings.

2.1.5 The **low permeability to oxygen and water vapor** provides for the following advantages:

- the casings are an economic alternative to natural casings, because of reduced moisture losses during the thermal processing and storage;
- excellent selling appearance (no wrinkles) of the finished products throughout the shelf life;
- retardation of the oxidation processes that cause rancidification of fats and color changes.

2.1.6 Microbiological resistance. The polymers used for production of the **AMITAN Pro Stretch, AMITAN Pro-Beef Bung, AMITAN Pro-Beef Bung-Ko, AMITAN Pro-U-Beef Bung** and **AMITAN Pro-U-Beef Bung-Ko** casings are impervious to bacteria and mold fungi. This improves the hygienic characteristics of both the casing itself, and of the finished products.

3. ASSORTMENT OF PRODUCTS

The casing calibers are:
- **AMITAN Pro Stretch:** 35 – 65mm;
- **AMITAN Pro-Beef Bung, AMITAN Pro-Beef Bung-Ko, AMITAN Pro-U-Beef Bung** and **AMITAN Pro-U-Beef Bung-Ko:** 50 – 80mm.

The inner ring diameter of the curved casing is 20 – 50cm.

Colors of the casings: white, light smoke, smoke, orange, pink.

The customer may order double-side single-color imitation printing (two patterns: Bung1 or Bung2). Another option is multicolor single- or double-side printing (the number of print colors varies from 1 to 6), or CMYK printing.

The customer's purchase order should specify the location of the printing on the ring (the inner, the outer, or the lateral surface, or at 45° relative to the outer surface). By default, printing is applied on the outer surface of the ring.

The location of printing on the **AMITAN Pro-Beef Bung-Ko** and **AMITAN Pro-U-Beef Bung-Ko** is not specified.

The casing is supplied in the following forms:
- **AMITAN Pro-Beef Bung-Ko** and **AMITAN Pro-U-Beef Bung-Ko**: 100-800m in reels, or 25m in sticks of shirred casing;
- **AMITAN Pro Stretch, AMITAN Pro-Beef Bung** and **AMITAN Pro-U-Beef Bung**: 500m in reels, or 31m, 38m or 50m in sticks of shirred casing.

4. HOW TO USE THE CASING

4.1. Storage and transportation of the casing

4.1.1. The casing must be stored in the original packing in closed dry and clean rooms conforming to the sanitary-hygienic standards for the relevant sector of the food industry, at a distance of not less than 1m from any heaters, and in the absence of any strong-smelling or corrosive substances, at a temperature not exceeding 25 °C and the air relative humidity not exceeding 50-60%.

4.1.2. The casings should be transported at a temperature not exceeding +40 °C so as to exclude exposure to direct sunlight.

4.1.3. If the casing was transported or stored at a temperature below zero, then prior to use hold it at room temperature for not less than 24 hours.

4.1.4. Never drop the box or packaging that contains the casings or subject it to impacts.

4.1.5. Never stack casing reels without cardboard spacers between the reel ends.

4.2. Preparation of the casing for processing

Preparation of the casing for processing consists in the following:

Bring the casing to the production shop from the store, put it on a dry surface (floor, table), then open the manufacturer's packing immediately before use of the casing.

Soak in potable water with the temperature of 25-30 °C during 5-15 min. Do not soak the casing in hot water, otherwise it will shrink during the soaking process.

Reel casing must be first cut into lengths, then soaked. When sticks of shirred casing are used, keep the stick fully submerged in water. Water must freely penetrate inside the stick, driving out the air.

After soaking, remove the residual water from the tube, and put the casing over the stuffer horn.

Do not soak more casing than is required. If too much casing was soaked, take the leftover casing out, drain the excess water, and leave until the eventual processing in a cold room (shop) away from any sources of heat and air draughts. Such casing can be used subject to dipping in water before processing.

If these requirements are observed, the casing will acquire a high elasticity, which significantly facilitates the stuffing process, and makes it possible to shape the products in imitation of **balls, bladder or bungs**.

4.3. Forcemeat composition

For the production of cooked sausages and hams in these casings, the quantity of water added to the emulsion shall be the same as when cellulose casings are used.

When new recipes are developed according to the standard specifications, the amount of the added water should be determined with regard to the moisture-retaining properties of the gelling agents used (such as carrageenans, plant proteins, animal proteins, etc.), and the relevant instructions on use must be followed to avoid formation of water and fat pockets.

4.4. Forming

Forming of products in the casing starts with inspection of the equipment and of the work table.

Make sure there are no burrs on the equipment parts, or sharp objects, indentations, or rough places on the working surface of the table, in order to avoid damages to the casing.

Avoid any rubbing of the casing reel end against rough surfaces during the processing.

Never prick (puncture) the casing of frankfurters and wieners. The casing will burst, if punctured.

The ratio between the stuffed caliber and the nominal caliber of the casing is an important factor. In the process of forming of the sausage products, take care to fill the casing as tight as possible, without air trapped inside. The **AMITAN Pro Stretch** casing has been specially developed for **bladder**-shaped products, and can be considerably overfilled relative to the nominal caliber.

It is recommended to stuff the **AMITAN Pro Stretch** casing with 85-95% overfilling.

E.g., when the 50mm nominal caliber casing is used, the stuffed caliber may vary from 92.5 to 97.5mm, depending on the actual production conditions (emulsion consistence and structure, stuffing

pressure, etc.). This provides for a good appearance of the finished products, enhances the holding capacity, and reduces the risk of water and fat pockets.

The **AMITAN Pro Stretch** casing can be stuffed by several methods:

1. Stuffing of casing sections (pre-clipped on one side) with the required amount of emulsion, then clipping the other side of the chub. The casing section fixed on the stuffer horn is then stuffed until full. Start filling with a slight braking of the casing. Then 'brake' the casing more to increase the emulsion pressure in the casing and achieve the recommended stuffed caliber. After that reduce the emulsion pressure on the casing by easing-off the braking to obtain a chub in the desired shape (a '**bladder**', or a round or oval shape). When this method of stuffing is used, the forcemeat dispensing is done 'by eye', and the consumption of the casing is higher.

2. Stuffing, by means of automatic or semi-automatic clipping equipment, of a shirred or non-shirred casing tube, with simultaneous dispensing and clipping of the chub ends. This method of stuffing makes it possible to produce chubs of uniform weight.

The amount of emulsion stuffed into the casing depends on the caliber of the casing and the desired shape of the product. E.g., for the 50mm nominal caliber casing with the stuffed caliber of 92.5-97.5mm, the weight of the product may vary from 800 to 1000g, and the chub shapes may be different, depending on the length.

To obtain a product of the desired weight, take into account the moisture losses of the product during the thermal processing.

The **AMITAN Pro-Beef Bung, AMITAN Pro-Beef Bung-Ko, AMITAN Pro-U-Beef Bung** and **AMITAN Pro-U-Beef Bung-Ko** casings should be stuffed with 30-50% overfilling (e.g., for the 50mm nominal caliber casing the recommended stuffed caliber is 65.0 - 75mm), depending on the emulsion consistence and temperature, and the stuffing pressure. The less the emulsion temperature and the denser the consistence, the less is the stuffed caliber.

In case of manual tying of sausage chubs in the **AMITAN Pro-Beef Bung, AMITAN Pro-Beef Bung-Ko, AMITAN Pro-U-Beef Bung** and **AMITAN Pro-U-Beef Bung-Ko**, it is recommended to use the tying pattern typical of products in the natural bung, i.e. with loops spaced by a certain interval.

When automatic or semi-automatic clippers are used, consider the maximum diameter of the sausage chub that passes through the working part of the clipper. If the chub diameter exceeds the allowable clearance, it would be hard to guide it through the clipping unit, which increases the probability of damaging the casing, and contributes to the wear of the equipment

The clip must securely hold the ends of the chub, without damaging the casing. See the recommended clip types in Table 1.

Table 1

Casing caliber	**POLY-CLIP**		**TECHNOPACK**		**COMPO**	**ALPINA**
	Clip interval 15 interval 18	Clip series S	Clip series E	Clip series G	Clip series B	Clip interval 15 interval 18
35-65	15-7-5×1.5 15-8-5×1.75 18-7-5×1.75	524 528 625 628	210 410	175 370	B1 B2	15-7-5×1.5 15-8-5×1.75 18-7-5×1.75
66-80	15-8-5×1.5 15-7-5×1.5 18-7-5×1.75	632	212 220 222 410	175 200 370	B2 BP2	15-8-5×1.5 15-7-5×1.75 18-7-5×1.5 18-7-5×1.75

4.5. Thermal processing

Thermal processing of cooked sausages and hams in these casings is carried out in stationary shaft-type chambers, or in universal heat chambers.

Manufacturers should choose their own individual thermal processing modes, because the capacity of the equipment is all-important in this process.

We recommend the classical thermal processing, which includes the stages of drying (color formation), smoking, and cooking.

Drying should start at a temperature of 50 - 55 °C. As the drying cycle progresses, the temperature is gradually raised to 60 – 65 °C. At this stage coagulation of the emulsion proteins is achieved, and the 'protein crust' is formed.

The next stage is smoking at a temperature of about 70 - 75 °C. At this stage further consolidation of the crust occurs and the crust becomes colored under the effect of the smoke components.

Then the product is cooked at the air humidity of 100% and a temperature of 75 - 80°C until ready for consumption.

After completion of the cooking process, it is also recommended to carry out a short drying during 5-10 minutes at the temperature of 65 °C.

The processes of drying and smoking have a significant impact on the quality of the finished product. By adjusting the temperature and duration of these stages, the thermal processing losses, the crust thickness, the color and the taste of the product can be varied.

Table 3 shows an example of the thermal processing mode for the caliber 90mm sausage chubs.

Two-frame Vemag chamber, alder + beech chips.

Table 3

Process stage	**90mm caliber sausage chubs**
Drying	55 ˚C – 40 min.
Smoking	60 ˚C – 20 min.
Smoking	65 ˚C – 20 min.
Smoking	70 ˚C – 30 min.
Cooking	78 ˚C – до 72 ˚C in the chub core
Drying	65 ˚C – 10 min
Thermal processing losses	5-7%
Total time	2 hrs 40 min.

4.6 Cooling

Upon completion of the thermal processing, the products in the **AMITAN Pro-Beef Bung, AMITAN Pro-Beef Bung-Ko, AMITAN Pro-U-Beef Bung** and **AMITAN Pro-U-Beef Bung-Ko** casings must be immediately cooled. Cooling can be carried out under running water or shower, or by means of time-delayed sprinklers, until the chub core temperature is down to 25 - 35 °C.

Avoid any cold air cooling. Exclude any exposure of the finished products to air draughts until completely cooled, because this may cause wrinkles on the surface.

5. MANUFACTURER'S GUARANTEES

The Manufacturer guarantees conformity of the casing with the Specification requirements subject to compliance with the required conditions of transportation and storage at the user's warehouse.

The guaranteed shelf life of the casing is 2 years from the date of manufacture, subject to integrity of the manufacturer's packing.

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