



**ATLANTIS-PAK**

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# AMITAN PRO CASING

Process Operating Manual



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## 1. APPLICATION

The **AMITAN® type PRO** casing is designed for production of all kinds of cooked sausages and hams made by technological processes that involve smoking (smoke roasting), which makes it possible to obtain products with the traditional organoleptic characteristics typical of products in cellulose casings.

The **AMITAN® type PRO** casing is made by an original technology from blends of high-quality materials of synthetic and natural origin.

## 2. ADVANTAGES

**2.1.** The **smoke-permeable AMITAN® type PRO** casing makes it possible to roast and smoke the products to impart to them the characteristic pleasant taste and flavor, and to create the coagulated protein crust and glossy surface of the products under the casing.

**2.2.** The **high mechanical strength** of the **AMITAN® type PRO** casing makes it possible to mold chubs not only by manual tying, but also with the use of various clippers, which provides for a high speed of production. In contrast to cellulose casings, the probability of the clip damaging the casing is substantially lower. The **AMITAN® type PRO** casings can be filled with emulsion faster than cellulose casings.

**2.3.** The **high elasticity** of the casing makes it possible to overstuff the **AMITAN® type PRO** casing by 13-15%.

**2.4.** The **high oxygen barrier capacity** compared with the cellulose casings ensures the following advantageous properties:

- reduction of the oxidation processes, in particular, rancidification of speck;
- preservation of the individual flavor of spices in the finished products throughout the shelf life.

**2.5.** With its **low water vapor transmission rate**, the **AMITAN® type PRO** casing is an economic alternative to cellulose casings, because moisture losses are reduced during the thermal processing and storage (it has been found in practice, that thermal processing losses of products in the **AMITAN® type PRO** casings are 2.0-2.5 times lower than those for cellulose casings).

The vapor transmission rate of the **AMITAN® type PRO** casing is 2.0-2.5 times lower than that for cellulose casings, a level which makes it possible to:

- achieve the required degree of smoking of sausage products with characteristic taste and flavor, and the coagulated protein crust on the surface;
- reduce the moisture losses during the thermal processing and storage of sausage products in the **AMITAN® type PRO** casing.

**2.6.** The **high heat resistance** of the polymers used for production of the **AMITAN® type PRO** casing significantly extends the temperature range of use of this casing in comparison with cellulose casings. The casing is resistant not only to high temperatures of smoking (up to 80-85°C), but also to their prolonged effect.



## 2.7. Microbiological resistance.

The polymers used for production of the **AMITAN® type PRO** casing are inert to the action of bacteria and mold fungi. This improves the hygienic characteristics of both the casing itself, and the finished products.

## 3. ASSORTMENT

The casing calibers are 50 - 120mm.

Colors of the **AMITAN® type PRO** casing: white, clear, claret, cherry, smoke, brown, red orange, red, cream, cream 1, salmon, mahogany, orange, pink, light brown, light brown 1, light smoke, dark brown.

The color range is subject to change.

Single- or double-sided printing is possible on the **AMITAN® type PRO** casing. The number of print colors varies from 1 to 6. CMYK printing is optional.

For comparison: the Cellophane casing is supplied with labels inserted between the layers. The material of the label is either moisture-proof parchment or white cellophane. The label can be printed, at the customer's option, with single - or multi-color marks (up to 4 colors).

The **AMITAN® type PRO** casing is supplied in rolls of 1,000m (calibers 50-90) or 500m (calibers 91-120), or in shirred sticks, each containing 38m or 50m of shirred strand.

Optional services:

- printing: edge-to-edge printing;
- shirring: manufacture of shirred sticks with a loop under the rear clip;
- optional length of the shirred sticks and strands.

## 4. UTILIZATION TECHNOLOGY

### 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 heating devices, and free of any strong-smelling or corrosive substances, at a temperature not exceeding 25°C.

**4.1.2.** It is recommended not to expose the casing to direct sunlight or high temperatures during storage or transportation.

**4.1.3.** Open the manufacturer's packing immediately before processing of the casing. If the integrity of the manufacturer's packing is compromised during storage, exclude any possibility of premature humidification (wetting) of the casing during the subsequent storage, since it may cause adhesion of the casing in the process of drying and rupture during the unwinding of the roll.



- 4.1.4.** Never stack casing rolls without cardboard spacers between the roll end parts.
- 4.1.5.** If the casing was transported or stored at a temperature below 0°C, then hold it at room temperature for not less than 24 hours before use.
- 4.1.6.** Never drop the boxes with casings or subject them to impacts.

## 4.2 Preparation of the casing for use

The procedure for preparation of the **AMITAN® type PRO** casing for stuffing consists in the following.

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

Soak in potable water at a temperature of 20-25 °C. Do not soak the casing in hot water, otherwise it will shrink as early as during the soaking process.

The casing in rolls must be first cut into lengths, then soaked. When shirred sticks of the **AMITAN® type PRO** casing are used, keep the shirred stick fully submerged in water. Water must freely penetrate inside the shirred stick, driving out the air.

Soak during not more than 2-5 minutes ***immediately before stuffing and molding.***

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

Do not soak more casing than is required. If too much casing was soaked, take the casing out of the water (after 2-5 minutes), remove the excess water, and leave the casing until the eventual processing in a cold room (shop) away from any sources of heat or air draft. In contrast to the hygroscopic Cellophane casing that loses up to 80% of its strength as the humidity grows, easily stretches and becomes totally unsuitable for production, the **AMITAN® type PRO** casing can be re-used after re-soaking by dipping.

If these requirements are observed, the casing will acquire a high elasticity, which significantly facilitates the stuffing process, and provides for uniform filling through the entire length of the chub.

## 4.3 Preparation of the emulsion

For the production of cooked sausages and hams in the **AMITAN® type PRO** casing, the quantity of water added to the emulsion shall be the same as when cellulose casings are used.

In the development of new recipes according to the regulatory documentation, 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., to avoid any water pockets.



#### 4.4 Molding of sausage products

Start molding of the **AMITAN® type PRO** casing with inspection of the equipment and the work table.

Make sure that there are no burrs on the equipment parts, or sharp objects, dents, or rough areas on the working surface of the table, in order to avoid damage to the casing.

Do not allow any rubbing of the casing roll end against rough surfaces during the processing.

Never puncture the casing of the chubs. 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 molding of the sausage products, take care to fill the casing as tight as possible, without air trapped inside. It is recommended to fill the **AMITAN® type PRO** casing with 13-15% overstuffing (when the 65mm nominal caliber casing is used, the recommended stuffed caliber should be 73-75mm, depending on the emulsion consistence and temperature, and the filling pressure). The lower the emulsion temperature and the denser the consistence, the less is the stuffed caliber.

Use of the recommended stuffed caliber provides for a good appearance of the finished product, increases the stuffing capacity, and reduces the risk of water or fat pockets.

In case of manual tying of sausage chubs, pay special attention to the quality of the tying material, and pre-soak the string, whenever necessary, to soften the hard inclusions and prevent damaging the casing.

The clip must securely hold the ends of the chub, without damaging the casing (see Table 2).

#### Recommended clip types

Table 1

Caliber	POLY-CLIP		TECHNOPACK		COMPO	ALPINA		Tool		
	Clip interval 15 interval 18	Clip series S	Clip series E	Clip series G	Clip series B	Clip interval 15 interval 18	Wire diameter			
50-75	15-7-4×1.25	524	210	175	B1	15-7-5×1.5	2.2	2.0		
	15-7-5×1.5	528	212	370		15-7-5×1.75				
	15-7-5×1.75	625	410	18-7-5×1.5						
	18-7-5×1.5	628	18-7-5×1.75							
	18-7-5×1.75									
76-120	15-8-5×1.5	632	212	175	B2	15-8-5×1.5	2.2	2.0		
	15-7-5×1.5		220	200		15-7-5×1.75				
	18-7-5×1.5		222	370		18-7-5×1.5			2.4	2.4
	18-7-5×1.75		410	18-7-5×1.75						



## 4.5 Thermal processing

Thermal processing of cooked sausages and hams in the **AMITAN® type PRO** casing is carried out in universal heat chambers.

Each manufacturer should choose his individual thermal processing modes, because the equipment capacity (fixed shaft chamber or universal chamber) 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.

The following table contains a comparison of the thermal processing conditions for sausages in the **AMITAN® type PRO** casing, and in Cellophane.

Two-frame Vemag heat chamber, alder+beech chips

Table 2

Process stage	Casing type	
	AMITAN® type PRO	Cellophane casing
Drying	55°C – 30 min.	55°C - 20 min
Drying		60°C – 10 min.
Smoking	60°C – 10 min.	-
Smoking	65°C – 10 min.	65°C – 15 min.
Smoking	70°C – 10 min.	-
Cooking	78°C – to 72°C in chub core	78°C – to 72°C in chub core
Drying	65°C – 10 min.	-
Thermal processing losses	6%	15%
Total time	1 hr 40 min.	1 hr 25 min



## 4.6 Cooling

Upon completion of the thermal processing, the sausages and hams in the **AMITAN® type PRO** casing must be immediately cooled. Cooling can be carried out under running water or shower, or by means of spraying with time-delayed equipment, until the chub core temperature is down to 25 - 35°C .

Cold air cooling is not allowed. Exclude any exposure of the finished products to air drafts until complete cooling of sausages, because this may cause wrinkles on the surface of the product.

## 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 guarantee term of storage of the casing is 2 years from manufacture, subject to integrity of the manufacturer's packing.



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