



ATLANTIS-PAK

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AMITAN PRO-U CASING

Process Operating Manual



Address: 72 Onuchkina str., village
of Lenin, Aksay district,
Rostov region, 346703 Russian
Federation
Phones: Tel: +7 863 255-85-85 /
+7 863 261-85-80
Fax: +7 863 261-85-79
www.atlantis-pak.ru
export@atlantis-pak.ru

1. APPLICATION

AMITAN Pro-U is a smoke-permeable monolayer casing with a matte surface. The **AMITAN Pro-U** casing is designed for production of all types of cooked sausages, encased hams, and semidry sausages made by technological processes that involve smoking (smoke roasting), which makes it possible to obtain products with the traditional sensory characteristics. Products in such casings are distinguished by minimal moisture losses during the thermal processing and storage, and a good smoke aroma.

The **AMITAN Pro-U** casing is made by an original from blends of high-quality materials of synthetic and natural origin.

The recommended shelf life is:

-not more than 20 days for cooked sausages made in the **AMITAN Pro-U** casing at a storage temperature from 0°C to 6°C and air relative humidity not higher than 75%;

-not more than 60 days for semidry sausages made in the **AMITAN Pro-U** casing, at a storage temperature from 2°C to 6°C and air relative humidity of 75-78%;

The casing is supplied straight or ring-shaped, which makes it possible to extend the assortment of the products through diversification of the appearance of the sausages: rings, half-rings, festoons.

2. PROPERTIES AND ADVANTAGES

2.1. Advantages of the casing

2.1. Permeability to smoke. The smoke-permeable **AMITAN Pro-U** casing makes it possible to roast and smoke the products to impart to them the characteristic pleasant smoked 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 Pro-U** casing makes it possible to use high capacity automatic and semi-automatic clippers, which provides for a high rate of production and stability of the shape.

2.3. The high elasticity of the casing makes it possible to overstuff the **AMITAN Pro-U** casing by 10-12%.

2.4 High heat resistance. The utilization temperature range for the **AMITAN Pro-U** casing is significantly wider than that for cellulose and collagen casings. The casing is resistant not only to high temperatures of smoking (up to 75-80 °C), but also to their prolonged effect.

2.5. Microbiological resistance. The casing is impervious to microbiological damage. The polymers used for production of the **AMITAN Pro-U** 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 OF PRODUCTS

Straight casing calibers: 29 - 120mm.

Ring-shaped casing calibers: 29 - 51mm.

Colors of the **AMITAN PRO-U** casing: clear, light smoke, smoke, cream, red, brown, light brown, dark brown, orange, red orange, claret, pink, cherry, salmon.

The color range is subject to change.

Single- or double-sided printing is possible on the casing.

The number of print colors varies from 1 to 6. CMYK printing is optional.

Printing on the ring-shaped casing can be applied to the outer surface of the ring. Bespoke markings, such as printing on the lateral or the inner surface of the ring, and the exact location must be specified in the purchase order.

The inner ring diameter **d** of the sausage chubs may be the following, depending on the degree of overstuffing of the casing relative to the nominal caliber (Table 1):

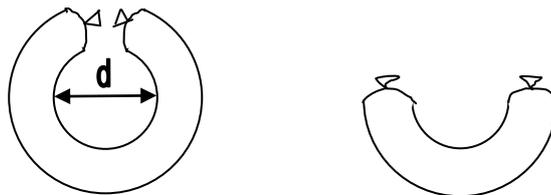


Table 1

Casing type	Caliber of casing, mm	Sausage chub ring diameter, mm
Pro-Uko	29-40	75-95 (90 -120)
	41-51	90-120

The casing is supplied in 500m or 1000m rolls, or in shirred sticks, each containing 38m or 50m of shirred strand (31m for the ring-shaped casing).

The optional services include:

-printing: edge-to-edge printing;

-shirring: manufacture of shirred sticks with a loop under the rear clip; bespoke 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 and air relative humidity of 50-60% .

4.1.2. During storage and transportation, the casing should not be exposed to direct sunlight or high temperatures.

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 processing.

4.1.4. If the casing was transported or stored at a temperature below 0 °C, then prior to use hold it at room temperature for not less than 24 hours.

4.1.5. Never drop the boxes with casings or subject them to impacts.

4.1.6. Never stack casing rolls without cardboard spacers between the roll ends.

4.2. Preparation of the casing for use

The procedure for preparation of the **AMITAN Pro-U** casing for stuffing consists in the following:

Bring the casing to the production 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 with a temperature of 20-25°C. Do not soak the casing in hot water, otherwise the casing will shrink during the soaking process.

The casing in rolls must be first cut into lengths, then soaked so that the water wets the inside of the tube. When shirred sticks of the **AMITAN Pro-U** 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 5-10 minutes ***immediately before stuffing and molding.***

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

Do not soak more casing than is required.



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

4.3. Preparation of the emulsion

For the production of cooked sausages and hams in the **AMITAN Pro-U** casing, and for the production of semidry sausages, the quantity of water added to the emulsion remains the same as when cellulose, collagen, or viscose-reinforced casings are used.

In the development of new recipes according to the regulatory documentation (specifications), determine the amount of the added water with regard to the moisture-retaining properties of the gelling agents used, such as carrageenans, plant proteins, animal proteins, etc., and comply with the instructions on use to avoid formation of water pockets.

4.4. Molding of sausage products

Start molding of the **AMITAN Pro-U** 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 Pro-U** casing with 10-12% overstuffing (when the 65mm nominal caliber is used, the recommended stuffed caliber should be 71.5-73.0mm).

Selection 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.

Automatic or semiautomatic clippers can be used for processing of the ring-shaped casing (**AMITAN Pro-Uko**). These must be fitted with string feeders and special receiver trays for the sausage rings. The string length between the ends of the sausages is adjusted by means of the string feeder.



However, if no string feeder is supplied with the equipment, this should not be an obstacle to the use of the ring-shaped casings. The string can be fed manually. When manual clippers are used, the string is fed into the clipper working zone from the side of the shirred stick and clipped together with the casing. When the casing is put over the stuffing horn, it must be positioned in such a way as to prevent the resulting rings twisting into the working parts of the clipper, and to guide them into the receiver tray.

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

Recommended clip types

Table 2

Caliber	POLY-CLIP		TECHNOPACK		COMPO	ALPINA
	FCA 3430 FCA 3441 FCA 3451 FCA 3461 FCA 3462	Semiautomat ic and manual clippers, series 500- 600	Series 200	Series 400	Clip series B	Clip interval 15 interval 18
29-65	15- 7/4×1.25	524	210	175	B1	15-7/5×1.5
	15-7/5×1.5	528	410	370	BP1	15-7/5×1.75
	15- 7/5×1.75	625				18-7/5×1.5
	18-7/5×1.5	628				18-7/5×1.75
	18- 7/5×1.75					
70-120	15-8/5×1.5	632	212	175	B2	15-8/5×1.5
	15-7/5×1.5		220	200	BP2	15-7/5×1.75
	18-7/5×1.5		222	370		18-7/5×1.5
	18-9/5×2.0		410			18-9/5×2.0



4.5. Thermal processing

Thermal processing of all types of cooked or semidry sausages made in the **AMITAN Pro-U** casing by methods that include smoking (smoke roasting) is carried out in shaft-type or universal heat chambers.

Each manufacturer should choose his individual thermal processing modes, because the capacity of the equipment (shaft-type or universal heat chambers) is all-important in this process.

We recommend the classical thermal processing, which includes the stages of curing, heating, drying, 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 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 best thermal processing conditions are achieved when the drying, smoking, cooking, and cooling are carried out in programmable units.

Examples of thermal processing conditions for the **AMITAN Pro-U** casing are shown below:

Example 1 (Table 3). Two-frame Termostar chamber. Beech chips.

Product: cooked sausage, dia 70mm (Table 3).

Table 3

No.	Stage	Temperature, °C	Time, minutes	Humidity (preset), %
1	Drying	55 °C	15	30

2	Drying	65 °C	15	20
3	Smoking	65 °C	20	50
4	Smoking	70 °C	20	60
5	Smoking	75 °C	20	70
6	Cooking	78 °C	until 72 °C in the core	99
7	Drying	65 °C	15	01

Example 2 (Table 4). Four-frame Vemag chamber.
Product: semidry sausage, dia 50mm.

Table 4

Process stage	T, °C	Time, min	Humidity, %	Fan speed	Actual humidity, %
Drying	60	35	50	-	35-38
Smoke roasting	60	20	35	-	40
Smoke roasting	65	15	40	-	40
Smoking	70	35	40	-	45-50
Cooking	80	until 72 °C in the core	100	-	100
Airing		7			
Drying	65	15			
Showering	-	until 25°C in the core	-	-	-

4.6. Cooling

Upon completion of the thermal processing, the sausages in the **AMITAN Pro-U** 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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