



ATLANTIS-PAK

Leader in Innovative
Packaging Solutions

CASINGS



AMIFLEX and AMITEX

for production of processed cheeses

Process Operating Manual



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1. APPLICATION

This process operating manual describes the process of production, transportation, storage and sale of processed cheeses packaged in various types of the **AMIFLEX** and **AMITEX** casings.

The **AMIFLEX** and **AMITEX** casings are multilayer plastic casings made of polyamide, polyolefin, and adhesive (modified polyethylene) duly approved for use in the food industry. The quality of the raw materials used to manufacture the **AMIFLEX** and **AMITEX** multilayer casings is confirmed by Russian and international certificates of quality.

The **AMIFLEX** and **AMITEX** casings may be used for production, transportation, storage and sale of hard and paste-like non-smoked processed cheeses with or without fillers, with or without additional treatment (pasteurisation).

The **AMIFLEX** casings are made according to Specifications TU 22.21.29-010-27147091-2000 (equivalent to TU 2290-010-27147091-2000).

The **AMITEX** casings are made according to Specifications TU 22.21.29-015-27147091-2004 (equivalent to TU 2290-015-27147091-04).

The **AMITEX** casing is made by a process, which makes it possible to obtain an **opaque surface**: there is no characteristic shine typical of plastic casings, which makes the **AMITEX** casing look like protein or viscose-reinforced casings.

The distinctive feature of the **AMIFLEX T** and **Amitex Ultra** casings is the **glossy surface**.

The distinctive feature of the **AMITEX Rondo 1** casing is its unique appearance achieved through the use of a novel extrusion technology. The seven-layer structure of this casing provides for the decorative effect of a 3D net pattern on the outermost layer, without compromising the barrier or mechanical characteristics.

The distinctive feature of the **AMIFLEX H** casing is its longitudinal and transverse stretchability, which makes it possible to manufacture ball-shaped products and diversify the assortment by shaping the processed cheeses in a variety of ways.

The distinctive feature of the **AMITEX EXPRESS** casing is its **dry processability without pre-soaking** (or pre-humidification), which facilitates storage of the day's leftover casing, because it



would not dry out or attract mold; this characteristic also saves time for preparation of the casing, reduces the production area and makes the **AMITEX Express** casing practically sterile.

All types of the **AMIFLEX** / **AMITEX** casings described above are intended for retail sale of products in the form of whole chubs.

According to GOST 31690-2013 the shelf life of processed cheeses packaged in various types of the **AMIFLEX** or **AMITEX** casings is fixed by the cheese producers subject to applicable regulations.

1. PROPERTIES AND ADVANTAGES OF THE CASING

2.1. High mechanical strength of the casings makes it possible to form the chubs with the use of high-capacity automatic or semi-automatic clippers, while ensuring shape stability and fixed weight of the chubs at a high rate of forming.

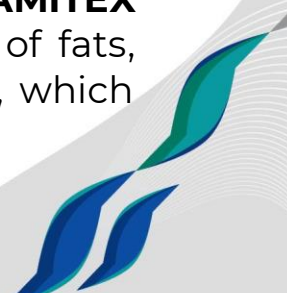
2.2. High elasticity of the casing in combination with the **high shrink ratio** provides for a tight fit of the casings over the cheese mass and a smooth surface of the chubs without wrinkles or folds.

2.3. Low permeability to oxygen and water vapor is ensured by a carefully selected combination of polymers, and provides for the following advantageous properties of the **AMIFLEX** and **AMITEX** casings:

- zero losses during the thermal processing and storage of processed cheeses;
- microbiological stability of the products during storage;
- retardation of the oxidation processes responsible for rancidification of fats and changes in the natural color of the product;
- excellent selling appearance (no wrinkles) of the finished products throughout the shelf life.

2.4. Heat resistance of the **AMIFLEX** and **AMITEX** casings makes them suitable for filling with hot cheese mass, and allows additional treatment of processed cheeses at temperatures of up to 100 °C.

2.5. Resistance to fats and oils: The **AMIFLEX** and **AMITEX** casings do not change when exposed to various types of fats, and themselves have no adverse effect on fats and oils, which



makes it possible to use the **AMIFLEX** and **AMITEX** casings for the manufacture and storage of products with a high mass fraction of fats (up to 70 %).

2.6. Physiological safety: the casings are impervious to microbiological degradation, since the materials used for their production are inert to the action of bacteria and mold fungi. This facilitates storage of the casing and improves the hygienic characteristics of both the casing itself, and of the production as a whole.

See the technical characteristics of the **AMIFLEX** casings in the corresponding Product Specifications and in TU 22.21.29-010-27147091-2000 (equivalent to TU 2290-010-27147091-2000).

See the technical characteristics of the **AMITEX** casings in the corresponding Product Specifications and in TU 22.21.29-015-27147091-2004 (equivalent to TU 2290-015-27147091-04).

2. ASSORTMENT OF PRODUCTS

Casing calibers, mm:

AMIFLEX T	29 – 200
AMIFLEX H	35 - 80
AMITEX	32 – 120
AMITEX Ultra	32 - 120
AMITEX Rondo 1	45 - 120
AMITEX Express	45 - 120

See the available casing colors in the Color Catalogues.

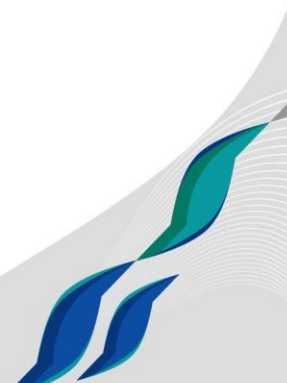
The **AMIFLEX T**, **AMIFLEX H**, **AMITEX**, **AMITEX Ultra**, **AMITEX Rondo 1** casings can be supplied in:

- reels
- sticks of shirred casing.

Ready-to-use (R2U) casing can also be supplied. Such casing needs no pre-soaking for processing, because its surface is pre-treated with a special solution.

The **AMITEX Express** casing can be supplied in:

- reels
- sticks of shirred casing.



The **AMIFLEX** and **AMITEX** casings are suitable for single- or double-side printing. Printing is made by flexography; the inks are resistant to high temperatures, fats and mechanical impacts.

Casing	Single-color	Multi-color	CMYK	UV	UV-CMYK
AMIFLEX T	✓	✓	✓	✓	✓
AMIFLEX H	✓	✓	✓		
AMITEX				✓	✓
AMITEX Ultra				✓	✓
AMITEX Rondo 1				✓	✓
AMITEX Express	✓	✓	✓	✓	✓

4. PROCESSING TECHNOLOGY

4.1. Storage and transportation of casing

4.1.1. The casing must be stored in the manufacturer's packing in dry, clean, and cool rooms (at a temperature from 5 to 35 °C, with the air relative humidity not exceeding 80%) compliant with the applicable sanitary and hygienic standards for the food industry.

4.1.2. It is recommended to open the manufacturer's packing just before processing of the casing.

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

4.1.4. If the casing was stored at a subzero temperature, then prior to use hold it at room temperature for not less than 24 hours without removal of the manufacturer's packing.

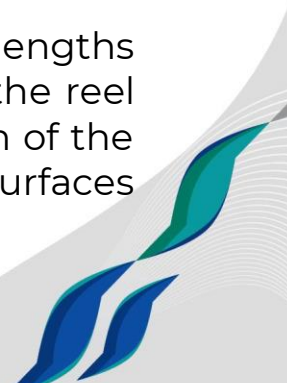
4.1.5. Never drop the boxes with casings or subject them to impacts.

4.1.6. Throughout the technological cycle it is important to protect the casing from damages.

4.1.7. During transportation, the casing should not be exposed to temperatures exceeding 40 °C or direct sunlight.

4.2. Preparation for processing

Unshirred casing must be cut into the required lengths before processing. During the unwinding of the casing the reel must be maintained in the vertical position. Avoid friction of the reel end or of the casing tube surface against uneven surfaces



during the preparation of the casing (unwinding of the reel, cutting into pieces)

The technology of production of processed cheeses presupposes the use of the casing without pre-soaking.

However, should any problems arise with passage of the casing through the braking unit, it is recommended to:

- switch to R2U (ready-to-use) shirred casing, which does not require pre-soaking and may be used immediately after opening of the manufacturer's packing;

- wet the external layer of the casing on the horn, which should exclude penetration of water inside the product.

4.3. Preparation of the cheese mass

The composition and the sequence of preparation of the cheese mass must be in accordance with the regulatory documentation applicable to production of processed cheeses.

4.4. Forming

The **AMIFLEX** and **AMITEX** casings are designed for automatic and semi-automatic equipment for stuffing and clipping.

Make sure there are no burrs on the equipment parts in contact with the casing. Never puncture the chubs (prick the casing). The casing will burst, if punctured.

After the cheese mass is completely melted and has reached the temperature of 85 °C, fill the **AMIFLEX** or **AMITEX** casing with the cheese mass and immediately close the ends of the chubs.

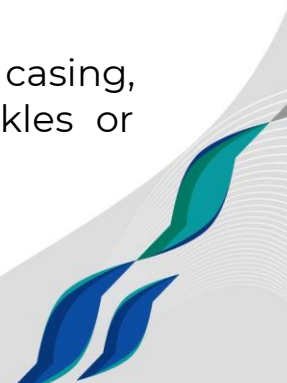
The **AMIFLEX T** casing should be overfilled by **8 – 12 %** relative to the nominal caliber.

The **AMIFLEX H** casing should be overfilled by **50 – 60 %** relative to the nominal caliber.

The **AMITEX** и **AMITEX Ultra** casings should be overfilled by **10 – 15 %** relative to the nominal caliber.

The **AMITEX Express** casing should be overfilled by **3 - 5 %** relative to the nominal caliber.

The inner heat of the cheese mass shrinks the casing, which makes the product look smooth (without wrinkles or folds).



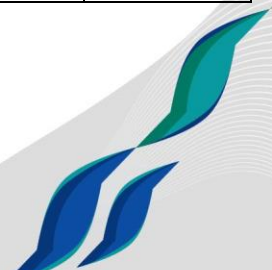
If the technological process (the process of stuffing of the casing) is interrupted, it is advisable to take the casing off the hot horn to avoid heat shrinkage.

The clip must securely hold the ends of the chub, without damaging the casing. Observe the recommendations of the clipping equipment manufacturers for secure fastening of the clips. See Table 1 for the best selection of the clips for **AMIFLEX** and **AMITEX** casings.

Recommended clip types

Table 1

Caliber	POLY-CLIP		TIPPER TIE	TECHNOPACK				COMPO	CORUND
	interval 12, 15, 18	series S	interval 12, 15, 18	series E	series G	series K	series T	series B, BP	
21 - 25	12×6/4×1 12×6/4×1,25 15×7/4×1,25	524 526 528	12×4/3×1 12×5/4×1 12×6/3×1,2			K-50 K-75	T-100 T-120 T-150	B1 BP1	
25 - 28	12×6/4×1 12×6/4×1,25 15×7/4×1,25	524 526 528	12×6/4×1 12×6/4×1,25 12×6/4×1,5 12×6/5×1,5			K-50 K-75	T-100 T-120 T-150	B1 BP1	
29-50	12-6-4×1.25 15-7-5×1.5 18-7-5×1.75	625 628 735	12/6-4×1.25 15/7-5×1.5 18/7-5×1.75	210 410	175			B 1, BP 2	XE210 2,5x13,6x14
55 - 60	15-7-5×1.5 15-8-5×1.75 18-7-5×1.75	628 632 735	15/7-5×1.5 15/8-5×1.75 18/7-5×1.75	210 410	175 370			B 2, BP 2	XE 210 XE 220 2,5x13,6x14
65-70	15-8-5×1.5 18-7-5×1.5 18-9-5×2.0	628 632 735	15/8-5×1.5 18/7-5×1.5 18/9-5×2.0	210 220 410	175 370			B 2, BP 2	XE 220 2,5x13,6x14 2,5x13,6x15
75-80	15-8-5×1.5 15-9-5×1.5 18-9-5×2.0	632 638 735 844	15/8-5×1.5 15/9-5×1.5 18/9-5×2.0	220 410 420	175 200 370			B 2, BP 2 B 3, BP 3	XE 220 2,5x13,6x15 2,5x13,6x16
85-100	15-9-5×1.5 15-10-5×2.0 18-9-5×2.0 18-10-5×2.5	740 844	15/9-5×1.5 15/10-5×2.0 18/9-5×2.0 18/10-5×2.5	220 420	200 370 390			-	XE 220 2,5x13,6x15 2,5x13,6x16
105-120	15-10-5×2.0 15-11-5×2.0 18-10-5×2.5 18-11-5×2.0	740 744 844	15/10-5×2.0 15/11-5×2.0 18/10-5×2.5 18/11-5×2.0	220 230 420	200 225 370 390			-	-
125 - 140	15-11-5×2.0 18-10-5×2.5 18-11-5×2.0	844 848	15 /11-5×2.0 18/10-5×2.5 18/11-5×2.0	420 430	390 400				
145 - 200	18-11-5×2.0 18-12-5×2.2	848 854	18 /11-5×2.0 18/12-5×2.5	430	400				



The POLY-CLIP FCA, TIPPER TIE TT1815, TT1512, SVF 1800 and COMPO KH-501 clippers use blocks, each of which corresponds to a certain clip type indicated in the Table. In order to determine whether the clip matches the block, see recommendations of the manufacturer and the technical description of the clipper.

4.5. Thermal processing

Upon completion of filling of the casing, the chubs of processed cheese are cooled, without additional processing, on frames (until the product core is down to 20 – 30 °C), then placed in cold stores at the temperature of 6 – 10 °C.

Processed cheeses subjected to pasteurization must be thermally processed in accordance with the applicable regulatory documentation.

4.6. Transportation and storage of products

Transportation and storage of products manufactured with the use of the **AMIFLEX** and **AMITEX** casings shall be in accordance with the regulatory documentation for the particular products (GOST, TU) at the temperature of 2 ± 2 °C and the air relative humidity not exceeding 85 %.

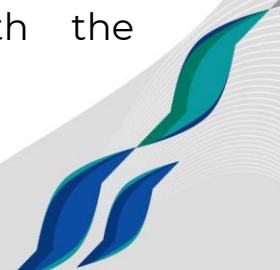
5. MANUFACTURER'S GUARANTEES

5.1. The Manufacturer guarantees conformity of the casing with the requirements of Specifications (TU) subject to compliance with the conditions of transportation and storage at the user's warehouses, and preservation of the integrity of the Manufacturer's packing.

5.2. The shelf life of the **AMIFLEX T**, **AMIFLEX H**, **AMITEX Rondo 1**, **AMITEX**, and **AMITEX Ultra** casings is 3 years from the date of manufacture.

5.3. The shelf life of the **AMITEX Express** casing is 1 year from the date of manufacture.

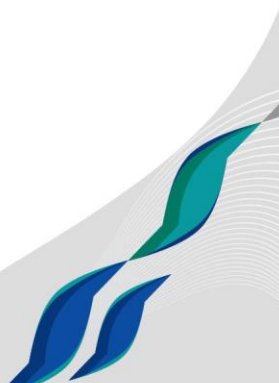
5.4. The shelf life of the R2U casing is 6 months from the date of manufacture subject to compliance with the Specifications.



If the ready-to-use (R2U) casing, which does not require any pre-soaking, has not been used within 6 months from the date of manufacture, it still can be processed in conformity with the requirements of this Process Operating Manual after the standard soaking procedure. In such case the guaranteed shelf life is extended to the standard term (3 years from the date of manufacture) subject to compliance with the provisions of the Specifications. .

6. APPENDICES

There are no appendices to this document.



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