

## PRODUCT SPECIFICATION

PRODUCT NAME:	<b>ALNAT OP (OPTIMAL)</b>
DESCRIPTION:	Synthetic 5-layer heat-shrinking sausage casing produced from a composite of polyamides and high-pressure polyethylene by means of co-extrusion with biaxial orientation
MANUFACTURER:	TOO «ALNAT PRODUCT»
APPLICATION:	Cooked sausage, liver sausage, paste and brawn, melted cheese, frozen food and similar products that do not require smoking
CASING COMPOSITION:	Polyamide, polyethylene, adhesive, color masterbatches
PRINTED CASING COMPOSITION:	Polyamide, polyethylene, adhesive, color masterbatches, UV curing or solvent based printing inks

## TECHNICAL CHARACTERISTICS:

Caliber range:	32–90 mm, other calibers available upon request
Colors:	as shown in the color-book
Printing:	single-color, multicolor or UV printing
Supply form:	reels, shirred sticks

**Table 1. Technical parameters**

Parameters	Value
Thickness, $\mu\text{m}$	42 $\pm$ 4
Number of layers	5
Recommended overfilling from a nominal caliber	8-10 %
Thermal shrinkage (longitudinal), %	8.0
Thermal shrinkage (transverse), %	10.7
Oxygen permeability (T = 20 °C, 65% RH), cc/m <sup>2</sup> .day.atm	19.5 $\pm$ 0.3

**Table 2. Caliber to lay-flat width (LFW) ratio, LFW tolerance**

Nominal caliber, mm	LWF*, mm	Nominal caliber, mm	LWF*, mm
32	50.0 $\pm$ 2	65	102.0 $\pm$ 2
35	55.0 $\pm$ 2	70	110.0 $\pm$ 3
40	63.0 $\pm$ 2	75	118.0 $\pm$ 3
45	70.0 $\pm$ 2	80	126.0 $\pm$ 3
50	79.0 $\pm$ 2	85	133.0 $\pm$ 3
55	86.0 $\pm$ 2	90	141.0 $\pm$ 3
60	94.0 $\pm$ 2		

Please note, the values are provided for advisory purposes and applicable to non-shirred casing only (cannot be applied to shirred or printed casing).

## RECOMMENDATIONS FOR USE:

The pretreatment of casing, its stuffing, closing and heat treatment must be done in accordance with the recommendations below:

- Avoid bottom friction of reel to any surface while preparing the casing for processing (unwinding, cutting to pieces).
- Unwinding of the reel is to be made only in a vertical position supported by a cardboard frame.
- Casing must be soaked in water at temperature of 18–25 °C for 30 minutes.
- Before stuffing casing in reels should be first cut into pieces and then soaked in water. Internal layer of casing should be rinsed with water.
- Shirred casing is to be soaked completely dipped in water at temperature of 18–25 °C, for 40–60 minutes, without removing the net.
- To avoid casing shrinkage it is prohibited to soak the casing in water at temperature exceeding 25 °C.
- Puncturing of the casing is not allowed.
- Heat treatment can be conducted in all types of thermal chambers.
- Recommended stuffing diameters (RSD) — 8–10% of a nominal size — indicate the designed stuff diameters. Stuffing below or above these diameters can affect casing performance.

**Table 3. Stuffing**

Nominal caliber, mm	RSD, mm	Recommended stuffing horn outer Ø, mm	Nominal caliber, mm	RSD, mm	Recommended stuffing horn outer Ø, mm
32	34–35	28	65	70–72	36
35	38–40	28	70	75–78	48
40	43–45	28	75	80–83	48
45	49–51	28	80	86–89	48
50	54–56	28	85	91–94	48
55	59–61	36	90	97–100	48
60	65–67	36			

Consider stuffing diameter as the main attribute for choosing the right diameter of the casing.

## STORAGE CONDITIONS:

- Store Alnat OP indoor in a cool, dry place protected against daylight avoiding proximity to heat sources.
- Casings should be stored at temperatures < 25 °C, relative humidity not exceeding 75% and should remain in original packing until use.
- Avoid damage during storage, handling and transportation.
- Before using the casing that was stored at temperatures below 0 °C, it is to be kept in the ambient temperature for at least 24 hours before opening the package.
- Guaranteed storage life of casing—24 months from the date of manufacturing, provided the integrity of manufacturer's package is assured.

The manufacturer's guarantee remains valid provided the present recommendations for use and storage and handling conditions are observed.