

PENEFOL® 950

TECHNICAL DATA SHEET PN 01-105-15
MANUFACTURER: LITHOPLAST, s.r.o.

LITHOPLAST

CZECH MANUFACTURER AND SELLER
OF INSULATIONS AND PLASTIC
PRODUCTS

This document applies to production, testing, receiving and delivery of PENEFOF® 950 product.

PENEFOF® 950 is a single-layer membrane produced from high-density HDPE polyethylene without UV stabilizers. PENEFOF® 950 membrane is available in form of rolls, stripes and plates.

1. Technical description

▪ Material

Ultimate raw material for production of PENEFOF® 950 is a high-density HDPE polyethylene. Colouring agent is added to input material in course of production.

▪ Lifetime

If the product is not exposed to UV radiation, its lifetime exceeds 50 years.

▪ Appearance

Surface of one side of product is smooth, the second side is rough with moderate unevenness within tolerance limits. After unwinding, the roll or stripe can prove corrugation based on ambient temperature. This undulation does not have any impact on product quality, as well as on physical and mechanical features. Reference sample must be approved in advance in case of customer-specific requirements on product appearance.

▪ Color

PENEFOF® 950 membrane is by default black.

2. Use

▪ Building industry

In building industry, the PENEFOF® 950 is used as insulation against moisture and pressurized water according to ČSN EN 13967 (insulation of dumps, anti-radon insulation, permanent protection and effective barrier against oil and oil products - petrol stations, service workshops, parking areas, insulation of sewage treatment plants, insulation of reservoirs for storage of sludge, insulation of silage gutters, insulation of chemical and irrigation vessels to avoid contamination of ground water, sealing of fire reservoirs).

Welding is realized with hot wedge using semiautomatic or automatic equipment. another option is to perform extrusion weld using manual equipment. Sufficient down-pressure on connected membranes must be ensured regardless of selected method. Hot air cannot be used to weld the membrane.

▪ Others

PENEFOF® 950 can be used for number of applications in other industrial branches. Examples: cut-outs and stiffeners for textile industry, leather manufacturing, sports industry, automotive and furniture making, sealing, cut-outs, woody plant protection, protection against plant roots, other packing and protection materials.

3. Package

▪ Roll

The membrane is wound up on cardboard tube to avoid its flattening during horizontal storage. The membrane is secured against unwinding with plastic wrap. Rolls with width 1000mm are placed vertically on pallet and tied up with polypropylene tape. Rolls with width 1400 mm are arranged on pallet horizontally in form of pyramid. Outside rolls in bottom layer are secured against rolling away with timber wedge.

▪ Stripes

Membrane stripes are wound in rolls and loaded on pallet in vertical position up to the maximum max. height 1m. The pallet is packed in foil wrap.

▪ Plates

Membrane plates are arranged on pallet horizontally in max. height of 0.5m and secured with polypropylene tape. The pallet is packed in plastic wrap.

4. Identification

▪ Roll

Each roll is identified with CE label, information tag containing dimensions, and handout with information for end user.

▪ Stripes

Each pallet with stripes is identified with CE label, information tag containing dimensions, and handout with information for end user.

▪ Plates

Each pallet with plates is identified with CE label, information tag containing dimensions, and handout with information for end user.

5. Handling and Storage

▪ Handling

PENEFOL® 950 membrane must be transported in vehicles providing sufficient protection of load (e.g. box truck). During the transport, the load must be secured against movements and contamination.

▪ Storage

PENEFOL® 950 membrane must be stored in area complying with ČSN 64 0090, i.e. dry, closed, warehouse protected from sunshine, at temperatures between +5°C and 35°C. On the site, the membrane must be protected against UV-radiation and contamination.

6. Warranty

- Warranty and complaints are governed by generally applicable regulations.

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7. Disposal

- Polyethylene waste is classified as „other waste“ according to Notice of Ministry of the Environment (MoE) No. 381/2001. Pure waste can be recycled. Contaminated waste must be handled according to the type of contaminant in accordance with Waste Management Law.
- This product is not hazardous in terms of Law No. 350/2011 of Coll. on chemical substances and chemical preparations, as amended.

8. Tests, standards and technical specifications

- Product tests and certifications are realized according to harmonized standard ČSN EN 13967 (Waterproofing stripes and membranes - Plastic and rubber stripes, as well as membrane for waterproofing insulation and rubber stripes and membrane for insulation against pressurized water). Individual requirements on product testing and inspection are described in internal operation documents and Production Management System Manual.
- Quality management system is certified according to ČSN EN ISO 9001:2009.

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9. Parameters of product

Identification		950/0.6/1000	950/0.8/1000	950/1.0/1000	Tolerance
Volumetric weight	kg/m ³	950	950	950	±50kg/m ³
Thickness	mm	0.6	0.8	1.0	±10%
Width	mm	1000	1000	1000	±5mm (roll) ±15mm (plate)
Length	lin.meter	100	50	40	±0.5m
Packing (roll)	m ²	100	50	40	±0,5m ²
Surface density	kg/m ²	0.57	0.76	0.95	±10%
Weight of package	kg	57.0	38.0	38.0	±10%

Identification		950/1.2/1000	950/1.3/1000	950/1.5/1000	Tolerance
Volumetric weight	kg/m ³	950	950	950	±50kg/m ³
Thickness	mm	1.2	1.3	1.5	±10%
Width	mm	1000	1000	1000	±5mm (roll) ±15mm (plate)
Length	lin.meter	40	40	40	±0.5m
Packing (roll)	m ²	40	40	40	±0,5m ²
Surface density	kg/m ²	1.14	1.235	1.425	±10%
Weight of package	kg	45.6	49.4	57.0	±10%

Identification		950/1.6/1000	950/1.7/1000	950/2.0/1000	Tolerance
Volumetric weight	kg/m ³	950	950	950	±50kg/m ³
Thickness	mm	1.6	1.7	2.0	±10%
Width	mm	1000	1000	1000	±5mm (roll) ±15mm (plate)
Length	lin.meter	40	40	30	±0.5m
Packing (roll)	m ²	40	40	30	±0,5m ²
Surface density	kg/m ²	1.52	1.615	1.90	±10%
Weight of package	kg	60.8	64.6	57.0	±10%



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Identification		950/0.6/1400	950/0.8/1400	950/1.0/1400	Tolerance
Volumetric weight	kg/m ³	950	950	950	±50kg/m ³
Thickness	mm	0.6	0.8	1.0	±10%
Width	mm	1400	1400	1400	±5mm (roll) ±15mm (plate)
Length	lin.meter	100	50	50	±0.5m
Packing (roll)	m ²	140	70	70	±0.7m ²
Surface density	kg/m ²	0.57	0.76	0.95	±10%
Weight of package	kg	79.8	53.2	66.5	±10%

Identification		950/1.2/1400	950/1.3/1400	950/1.5/1400	Tolerance
Volumetric weight	kg/m ³	950	950	950	±50kg/m ³
Thickness	mm	1.2	1.3	1.5	±10%
Width	mm	1400	1400	1400	±5mm (roll) ±15mm (plate)
Length	lin.meter	40	40	40	±0.5m
Packing (roll)	m ²	56	56	56	±0.7m ²
Surface density	kg/m ²	1.14	1.235	1.425	±10%
Weight of package	kg	63.84	69.16	79.8	±10%

Identification		950/1.6/1400	950/1.7/1400	950/2.0/1400	Tolerance
Volumetric weight	kg/m ³	950	950	950	±50kg/m ³
Thickness	mm	1.6	1.7	2.0	±10%
Width	mm	1400	1400	1400	±5mm (roll) ±15mm (plate)
Length	lin.meter	40	40	30	±0.5m
Packing (roll)	m ²	56	56	42	±0.7m ²
Surface density	kg/m ²	1.52	1.615	1.90	±10%
Weight of package	kg	85.12	90.44	79.8	±10%



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10. CE product label



1020

LITHOPLAST, s.r.o.

Company ID: 63496305

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1020 - CPR - 060024753

EN 13967

PENEFOL® 950

PN01

Anti-moisture insulation strip, type A, T
polyethylene waterproofing membrane

Flammability	NPA
Water-tightness	water-tight at 60kPa
Resistance against tearing	NPA
Strength of the joint	NPA
Resistance against impacts PENEFOL® 950/1.0	method A - max 800mm method B - max 1500mm
Resistance to tensile stress PENEFOL® 950/0.6	min. 600N/50mm
Resistance against static load	method B, meets requirements at 20kg
Durability PENEFOL® 950/0.6	Water-tightness after artificial weathering Water-tightness after exposure to chemical substances - NaCl, Ca(OH) ₂ , H ₂ SO ₃ solutions water-tight at 60kPa
Hazardous substances	Ingredients do not contain any hazardous substances.



11. MOREOVER, THE PRODUCT PROVES FOLLOWING FEATURES

PENEFOL® 950 membrane has higher volumetric weight than PENEFOL® 750, and thus it meets values specified for PENEFOL® 750.

Characteristic	Property	Technical specifications
Skid resistance PENEFOL® 950/1.0	avg. 904.6N/50mm	
Water steam penetration Equiv. dif. thickness s_d PENEFOL® 950/1.0	avg. 443m	ČSN EN 1931
Straightness	meets requirements	ČSN EN 1848-2
Water-tightness after exposure to chemicals- silage acids (PENEFOL® 950/0.8)	water-tight at 60kPa	ČSN EN 1847
Water-tightness after exposure to chemicals- oil products (PENEFOL® 950/0.8)	water-tight at 60kPa	ČSN EN 1847
Tolerance with asphalt PENEFOL® 500/1.0	water-tight at 60kPa	ČSN EN 1548
Coefficient of radon diffusion D acc. to methodology K124/02/95 PENEFOL® 950 PENEFOL® 950 joint	$4,3 \cdot 10^{-12} \pm 0,4 \cdot 10^{-12}$ $3,9 \cdot 10^{-12} \pm 0,4 \cdot 10^{-12}$	ČSN 73 0601
Cold flex temperature in flexion at temperature -20°C and higher, without cracks PENEFOL® 950/0.6	bodies intact	ČSN 64 0620
Inner resistivity PENEFOL® 950/0.6 Longitudinal direction Transversal direction	$\pm 2\%$ avg. -0.08% avg. +0.20%	ČSN 64 0610
Resistance against roots PENEFOL® 750/1.0	roots penetrated	ČSN CEN 14416
Resistance to tensile stress method A (thickness 1 mm) longitudinal direction transversal direction	800N/50mm 800N/50mm	ČSN EN 12311-2
Resistance to tensile stress corpusele according to ISO 1798 longitudinal direction transversal direction	19.0N/mm^2 19.0N/mm^2	ČSN EN 12311-2
Drawability, longitudinal	230%	
Drawability, transversal	230%	