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|  | Product Technical Information | Number | IT.015 |
| | | Date of issue | 05.07.2021 |
| | | Version | 5.2 |
| | | AlphaThor | |

AlphaThor waterproofing membrane system for roof covering

1. **Technical specification:** PN-EN 13956:2013-06 Flexible sheets for waterproofing – Plastic and rubber sheets for roof waterproofing – Definitions and characteristics
2. **Manufacturer/Place of production:** Alpha Dam Sp. z o.o., 87-207 Dębowa Łąka 45
3. **Product description**
Three-layer (or single-layer), durable and highly efficient EPDM waterproofing membrane with core made of fibreglass. Due to use of an innovative technology, the **AlphaThor** membrane have very good mechanical properties and it is very resistant to UV radiation and ozone.
4. **Intended use and scope of application**
Product made of EPDM rubber intended for use as waterproof surface layer for covering of flat roof in conventional and inversed system, for terraces, balcony and flat roofs.
5. **The AlphaThor system consists of:**
 - 5.1. AlphaThor mmebrane reinforced with a grid made of fibreglass
 - 5.2. AlphaThor membrane without reinforcement
 - 5.3. AlphaThorix self-adhesive membrane reinforced with a grid made of fibreglass
 - 5.4. Flanges for pipes penetrations made of AlphaThor without reinforcement
 - 5.5. Covers made of AlphaThor reinforced with a grid made of fibreglass
6. **Information for the user**
 - 6.1. Assembly should be executed according to the good building practice, current technical knowledge and assembly manual.
 - 6.2. The **AlphaThor** membrane should be laid in conditions allowing normal roofing works and it is not recommended to lay it in temperatures below +5 °C.
 - 6.3. **AlphaThor** can be mechanically fixed to the base using connectors. Depending on type of the base it is necessary to select correct type of the fastener consisting of e.g. sleeve with wide head and screws; washer and screws. Overlap shall be equal to min. 8 - 10 cm. Overlap of membrane strips on joints should be finished with a weld to avoid penetration of water between membrane strips. Joints tightness connections should be carried out on an ongoing basis after its execution.
 - 6.4. **AlphaThor** may be fixed to the base using glue on the full area or not full area (partially). Overlap between the belts shall be equal to 5 cm at the minimum.
 - 6.5. **AlphaThor** may be joined using hot air welding. Overlap between the belts for the welding be equal to min. 5 cm. Nozzle used for hot air welding shall have 40 mm width. Test welding shall be carried out in case when weld is executed at the construction site. Inspection of weld tightness should be carried out after execution of the weld on an ongoing basis.
 - 6.6. External and internal corners and encasement pipes made of non-reinforcement **AlphaThor** (single-layer) shall be used for each method of fastening. Use commercial aluminium strips to finish connections with walls and parapet walls.

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- 6.7. Base shall be even, free from stresses, bubbles, waves, sharp edges, gaps, lips, roughness etc.
- 6.8. Requirements for the bases shall be considered before starting the works. Each base shall be checked with respect to material tolerances and allowable mechanical loads. Lay necessary protective layers made of fibreglass, polyester textile or plastics if necessary.
- 6.9. It is recommended to lead out the surface sealing on vertical surfaces to the height min. 15 cm to avoid penetration of water.
- 6.10. To ensure quicker discharge of storm water the drains shall be foreseen far from the welds of the **AlphaThor** roof covering.
- 6.11. Do not use drain components made of zinc or alloys containing zinc in case of unfavourable environmental conditions of the ambient, e.g. acidic mist or acid rain.
- 6.12. Inspections and maintenances in regular periods and in accordance with the national regulations shall be carried out to ensure optimum lifetime of the waterproof barrier.

7. Seasoning

Storage time for **AlphaThor** in original packaging equals to maximum of 24 months since date of production

8. Storage

AlphaThor rolls shall be stored and transported in cool and dry conditions (+5°C and +25°C) in vertical position. Pallets should not be stacked.

9. Warranty

Warranty covers waterproofness of the product for 10 years from date of purchase.

The condition for use of the warranty is:

1. Use of the product according to the Technical Information of the Product and Service Manual.
2. Storage of the product according to the Technical Information of the Product
3. The above guidelines are based on current state of the knowledge, experience and result of the tests. They do not bear the legal liability and do not release the contractor from the liability for executed works and necessity to adhere to the conditions on the construction site. Corresponding standards and generally accepted good building practices as well as conditions at the construction site shall be taken into account during works.
4. Documentation of purchase based on the purchase invoice or ID no. of the product

10. Information on the CE marking

In accordance with the requirements ensuing from the standard PN-EN 13956:2013-6



Certificate of Conformity of the Factory Production Control No **1434-CPR-0256** for AlphaThor

Certificate of Conformity of the Factory Production Control No **1434-CPR-0255** for AlphaThor NZB

Use of the CE marking is subject to Plant's Production Control by Polish Testing and Certification Center S.A., Testing and Certification Branch in Gdańsk, number certification body 1434.

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11. Product characteristics:

| Essential characteristics | Unit | Performance | |
|--|-------------------|-------------------------------------|-----------------|
| | | AlphaThor | AlphaThor (NZB) |
| Visible defects | - | none | none |
| Length | m | 20 (0% to +5%) | 20 (0% to +5%) |
| Width | m | 1,06 (0% to +5%) | 1,00 (0% to 2%) |
| Straightness | mm | ≤ 30/10 m | ≤ 30/10 m |
| Thickness | mm | 1,300 (±5%) | 1,300 (±5%) |
| Mass | kg/m ² | 1,350 (±5%) | 1,300 (±5%) |
| Water tightness | 10 kPa method B | watertight | watertight |
| Water tightness | 2 kPa method A | watertight | watertight |
| Reaction of fire | class | E | E |
| Influence of external - roof system with foamed polystyrene and membrane | class | B _{roof} (t ₁) | - |
| Influence of external fire - roof system with mineral wool and membrane | class | B _{roof} (t ₁) | - |
| Joint stripping strength: | | | |
| - transverse overlapping: | N/50 mm | ≥ 190 | ≥ 190 |
| - longitudinal overlapping | N/50 mm | ≥ 185 | ≥ 185 |
| Joint shearing strength: | | | |
| - transverse overlapping: | N/50 mm | ≥ 240 | ≥ 367 |
| - longitudinal overlapping | N/50 mm | ≥ 225 | ≥ 270 |
| Tensile properties: | | | |
| Maximum strength: | method A | | |
| - in longitudinal direction: | N/50mm | ≥ 500 | - |
| - in transverse direction: | N/50mm | ≥ 270 | - |
| Elongation: | | | |
| - in longitudinal direction: | % | ≥ 4 | - |
| - in transverse direction | % | ≥ 2 | - |
| Tensile properties: | | | |
| Maximum strength: | method B | | |
| - in longitudinal direction: | N/mm ² | - | ≥ 8,0 |
| - in transverse direction: | N/mm ² | - | ≥ 6,5 |
| Elongation: | | | |
| - in longitudinal direction: | % | - | ≥ 670 |
| - in transverse direction | % | - | ≥ 670 |
| Resistance to impact | mm method A | ≥ 500 | ≥ 500 |
| Resistance to static loading | kg method B | ≥ 20 | ≥ 20 |
| Tear resistance: | | | |
| - in longitudinal direction: | N | ≥ 200 | ≥ 105 |
| - in transverse direction | N | ≥ 120 | ≥ 80 |
| Dimensional stability: | | | |
| - in longitudinal direction: | ΔL [%] | ≤ -1,4 | ≤ -1,4 |

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| - in transverse direction | ΔT [%] | $\leq -1,0$ | $\leq -1,0$ |
| Flexibility at low temperature | $^{\circ}C$ | ≤ -40 | ≤ -40 |
| UV exposure | 1000 h 160 MJ/m ² | Fulfil test requirements | Fulfil test requirements |
| UV exposure | 3000 h 480 MJ/m ² | Fulfil test requirements watertight | - |
| Hail resistance | m/s | ≥ 19 | ≥ 19 |
| Durability - after artificial aging process - after exposure to alkalis | - - | Fulfil test requirements | Fulfil test requirements |
| Water vapour transmission properties: | | (± 30 %) | (± 30 %) |
| 1. Water vapour stream density: | g[kg/(m ² s)] | $4,44 \times 10^{-9}$ | $4,44 \times 10^{-9}$ |
| 2. Water vapour diffusion resistance: | (m ² s Pa)/kg | $5,06 \times 10^{+11}$ | $5,06 \times 10^{+11}$ |
| 3. Diffusion resistance coefficient: | μ | 98396,9 | 98396,9 |
| 4. Sd value: | Sd[m] | 98,397 | 98,397 |

Signed for and on behalf of the manufacturer by:



Proxy Iwona Majek

Dębowa Łąka, 5 July 2021