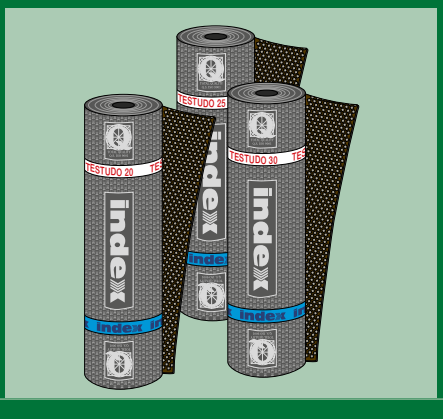


TESTUDO

# TESTUDO SPUNBOND POLYESTER 20
# TESTUDO SPUNBOND POLYESTER 25
# TESTUDO SPUNBOND POLYESTER 30

**ELASTOPLASTOMERIC DISTILLED POLYMER-BITUMEN WATERPROOFING MEMBRANES; BASE ON DISTILLED BITUMEN, PLASTOMERS AND ELASTOMERS**

## GRANTS *LEED* CREDITS

| CATEGORY | CHARACTERISTICS | | ENVIRONRMENTAL | | | | | | | METHOD OF USE | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EP | | Reazione al fuoco | | ASBESTOS FREE | TAR FREE | CHLORINE FREE | | | | | | | | |
| ELASTOPLASTOMERIC | WATERPROOF | REACTION TO FIRE | ECO GREEN | ASBESTOS FREE | TAR FREE | CHLORINE FREE | RECYCLABLE | NON DANGEROUS WASTE | EXHAUSTED OIL FREE | TORCH APPLICATION | HOT AIR APPLICATION | NAILING | COLD ADHESIVE BONDING | APPLICATION WITH MOLTEN BLOWN BITUMEN |

* For waterproofing membranes with TEXFLAMINA underface finish only

## DESCRIPTION

These are membranes reinforced with high weight, isotropic, thermally fixed, rot-proof, "non-woven" single strand Spunbond polyester fabric. The reinforcement is very strong, has a notable ultimate elongation and an optimal resistance to puncture and piercing. The **TESTUDO** membranes are made up of distilled bitumen, selected for industrial use, with a high content of elastomeric and plastomeric polymer additives to obtain a phase inversion compound whose continuous phase is formed by polymers in which the bitumen is dispersed, where the characteristics are determined by the polymeric matrix and not by the bitumen even if this is the most consistent ingredient. The performance of the bitumen is therefore incremented along with the durability and the resistance to high and low temperatures while the already optimum adhesive and impermeable qualities of the bitumen remain unchanged. The membranes are produced in various thicknesses and have the top face coated with a uniformly distributed, fine serigraphed talc, a patented treatment which makes it possible to quickly unroll the rolls and install the membranes with the reliable and quick welding of the joints and an optimal adherence to the hot asphalt of a fresh road surface. The underside of the membranes is coated with Flamina, a plastic film that melts when torched and which is embossed both to obtain the pre-tension and therefore the optimal retraction of the film and also to offer the torch a greater surface area for faster and more reliable installation. When the membrane is dry laid or spot bonded, the embossing diffuses the vapour.

## APPLICATION FIELDS

**TESTUDO** membranes are characterized by a high resistance to puncture and are therefore particularly suitable for waterproofing systems where high mechanical resistance is required, such as: **Foundations, earthquake-proof foundations, car parks, water works, bridges, viaducts, tunnels, subways, geological works, etc., anti–acid protection, roofing with or without thermal insulation and renovation work.**

**TESTUDO SPUNBOND POLYESTER 20** is in accordance to the tests of the "Central Laboratory for French Bridges and Roads" and is approved by the SNCF (French Railways).

**TESTUDO SPUNBOND POLYESTER 25** is in accordance to the tests of the "Central Laboratory for French Bridges and Roads", the Belgian Civil Engineering Test Laboratory and is approved by the SNCF (French Railways). **TESTUDO SPUNBOND POLYESTER 25** has been approved for application both under asphalt concrete and mastic asphalt by Ministry of transport of Czech Republic.

**TESTUDO SPUNBOND POLYESTER 30** is in accorance to the Italian Motorways Company's specifications.

### INTENDED USE OF "CE" MARKING SPECIFIED ACCORDING TO SITEB

**EN 14695 - REINFORCED BITUMEN MEMBRANES FOR WATERPROOFING CONCRETE BRIDGE STRUCTURES AND OTHER CONCRETE SURFACES SUBJECT TO TRAFFIC**

- **Under asphalt concrete**
  - TESTUDO SP. POLYESTER 20
  - TESTUDO SP. POLYESTER 25
  - TESTUDO SP. POLYESTER 30
- **Under mastic asphalt**
  - TESTUDO SP. POLYESTER 20
  - TESTUDO SP. POLYESTER 25
  - TESTUDO SP. POLYESTER 30

### INTENDED USE OF "CE" MARKING SPECIFIED ACCORDING TO THE AISPEC-MBP GUIDLINES

**EN 13707 - REINFORCED BITUMEN SHEETS FOR ROOF WATERPROOFING**

- **Under layer or intermediate layer in multi-layer systems without permanent heavy surface protection**
  - TESTUDO SP. POLYESTER 20
  - TESTUDO SP. POLYESTER 25
  - TESTUDO SP. POLYESTER 30
- **Upper layer in multi-layer systems without permanent heavy surface protection**
  - TESTUDO SP. POLYESTER 20
  - TESTUDO SP. POLYESTER 25
  - TESTUDO SP. POLYESTER 30
- **Exposed single-layer**
  - TESTUDO SP. POLYESTER 20
  - TESTUDO SP. POLYESTER 25
  - TESTUDO SP. POLYESTER 30
- **Single-layer under heavy protection**
  - TESTUDO SP. POLYESTER 20
  - TESTUDO SP. POLYESTER 25
  - TESTUDO SP. POLYESTER 30
- **Under heavy protection in multi-layer systems**
  - TESTUDO SP. POLYESTER 20
  - TESTUDO SP. POLYESTER 25
  - TESTUDO SP. POLYESTER 30

**EN 13969 - BITUMEN DAMP PROOF SHEET INCLUDING BITUMEN BASEMENT TANKING SHEETS**

- **Membranes for foundations**
  - TESTUDO SP. POLYESTER 20
  - TESTUDO SP. POLYESTER 25
  - TESTUDO SP. POLYESTER 30

### CERTIFICATIONS

Horský s.r.o.
Zpráva č. R 54/11

BUREAU VERITAS

# TECHNICAL CHARACTERISTICS

| | Standard | T | TESTUDO SPUNBOND POLYESTER 20 | | TESTUDO SPUNBOND POLYESTER 25 | | TESTUDO SPUNBOND POLYESTER 30 | |
|---|---|---|---|---|---|---|---|---|
| Reinforcement | | | Non-woven Spunbond polyester | | Non-woven Spunbond polyester | | Non-woven Spunbond polyester | |
| Thickness | EN 1849-1 | ±0,2 | 4 mm | 5 mm | 4 mm | 5 mm | 4 mm | 5 mm |
| Roll size | EN 1848-1 | -1% | 1×10 m | 1×10 m | 1×10 m | 1×10 m | 1×10 m | 1×20 m |
| Watertightness | EN 1928 – B | ≥ | 60 kPa | | 60 kPa | | 60 kPa | |
| Peel resistance | EN 12316-1 | -20 N | 50 N/50mm | | 50 N/50mm | | 50 N/50mm | |
| Shear resistance L/T | EN 12317-1 | -20% | 750/600 N/50 mm | | 900/800 N/50 mm | | 1 000/900 N/50 mm | |
| Maximum tensile force L/T | EN 12311-1 | -20% | 850/700 N/50 mm | | 1 000/900 N/50 mm | | 1 100/1 000 N/50 mm | |
| Elongation L/T | EN 12311-1 | -15% V.A. | 50/50% | | 50/50% | | 50/50% | |
| Resistance to impact | EN 12691 – A | | 1 250 mm | | 1 500 mm | | 1 500 mm | |
| Resistance to static loading | EN 12730 - A<br>EN 12730 - B | | 20 kg<br>25 kg | | 25 kg<br>30 kg | | 25 kg<br>30 kg | |
| Resistance to tearing (nail shank) L/T | EN 12310-1 | -30% | 200/200 N | | 250/250 N | | 250/250 N | |
| Dimensional stability L/T | EN 1107-1 | ≤ | –0.5/+0.3% | | –0.5/+0.3% | | –0.5/+0.3% | |
| Flexibility to low temp.<br>• after ageing | EN 1109<br>EN 1296-1109 | ≤ +15°C | –15°C<br>–5°C | | –15°C<br>–5°C | | –15°C<br>–5°C | |
| Flow resist. at high temp.<br>• after ageing | EN 1110<br>EN 1296-1110 | ≥ -10°C | 120°C<br>110°C | | 120°C<br>110°C | | 120°C<br>110°C | |
| UV ageing | EN 1297 | | Test passed | | Test passed | | Test passed | |
| Reaction to fire Euroclass | EN 13501-1 | | E | | E | | E | |
| External fire performance | EN 13501-5 | | F roof | | F roof | | F roof | |
| Thermal specifications | | | | | | | | |
| Thermal conductivity | | | 0.2 W/mK | 0.2 W/mK | 0.2 W/mK | 0.2 W/mK | 0.2 W/mK | 0.2 W/mK |
| Heat capacity | | | 5.20 KJ/K | 6.50 KJ/K | 5.20 KJ/K | 6.50 KJ/K | 5.20 KJ/K | 6.50 KJ/K |
| Technical specification for waterproofing of trafficked areas (**EN 14695**) | | | | | | | | |
| Dynamic watertightness | EN 14694 | ≥ | 500 kPa | | 500 kPa | | 500 kPa | |
| Compatibility by heat conditioning | EN 14691 | ≥ | 80% | | 80% | | 80% | |
| Bond strenght | EN 13596 | ≥ | 0.4 N/mm$^2$ | | 0.4 N/mm$^2$ | | 0.4 N/mm$^2$ | |
| Shear strenght | EN 13653 | ≥ | 0.30 N/mm$^2$ | | 0.30 N/mm$^2$ | | 0.30 N/mm$^2$ | |
| Resistance to compaction | EN 14692 | | Test passed | | Test passed | | Test passed | |
| Crack bridging ability - Type 1<br>Crack bridging ability - Type 3 | EN 14224<br>EN 14224 | ≥<br>≥ | –<br>– | | –20°C<br>–20°C | | –<br>– | |
| Water absorption | EN 14223 | ≤ | 0.5% | | 0.5% | | 0.5% | |
| Behaviour under mastic asphalt | EN 14693 | ≥ | Test passed | | Test passed | | Test passed | |

Conforme EN 13707 come fattore di resistenza al passaggio del vapore per le membrane bitume distillato polimero armate, ove non dichiarato, può essere assunto il valore μ = 20 000.

## PRODUCT FINISHING

**EMBOSSING FLAMINA**. The embossing on the lower surfaces of the membranes finished with Flamina film makes it possible to lay the product precisely and quickly; forming a smooth surface when melted with the torch. It indicates the correct melting temperature and lets the film retract faster. The embossing also enables optimal vapour diffusion; in spot bonded and loose laid installation, in the points where it remains intact, preventing blisters and swelling.

**TALC SURFACING.** The talcing of the top face is carried out with a technique which evenly spreads the very thin talc over the top surface with a special pattern, preventing accumulation or zones without talc. This new system allow a quick unroll and gives the surface a pleasant aspect, which enable to torch it faster if compared to the other coarser mineral finishes.

• FOR ANY FURTHER INFORMATION OR ADVICE ON PARTICULAR APPLICATIONS, CONTACT OUR TECHNICAL OFFICE • IN ORDER TO CORRECTLY USE OUR PRODUCTS, REFER TO INDEX TECHNICAL SPECIFICATIONS •


index
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TOTAL QUALITY index UNI EN ISO 9001
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index "GBC Italia" Associated




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