

# NOVAGUM-P HFR MINERAL

WPBIT0442.b

|                               |  |
|-------------------------------|--|
| <b>DESCRIPTION</b>            | <p>NOVAGUM-P HFR MINERAL is a elastomeric modified bitumen waterproofing membrane (SBS), industrially manufactured by impregnation of the reinforcement with the waterproofing compound based on distilled bitumen modified with elastomeric polymers and integrated with a special fire resistance additive, which gives to the compound superior technical characteristics.</p> <p>The composite reinforcement, made of nonwoven spunbond polyester in combination with fiberglass, conveys high mechanical characteristics, excellent dimensional stability, isotropic behaviour and elastic performance. Shaping of sheets, straightness, dimensional and surface uniformity are accomplished by hot calendaring of the mass at hot melt fluid state.</p> <p>It is a self-protected membrane, the upper surface is coated with coloured slate chips and selvedge slate free at one side for easy welding overlap. Lower surface is coated with a thermo-fusible polyolefin film.</p> <p>Special feature is the coating REFLECTA of the upper face with special white slate flakes with high solar reflectance. The high reflection property combined with a high emissivity allows the covering which the membrane is applied, on a lower heat absorption during the day and subsequently to transmit and emit such thermal energy in the infrared field. This determines a lowering of the operating temperature of the waterproofing system and consequently of the indoor environments underneath the roof, with benefits in terms of energy saving and longer membrane lifespan.</p> |
| <b>FIELD OF APPLICATION</b>   | <p>NOVAGUM-P HFR MINERAL is particularly suitable to be applied exposed sigle layer and as top layer in multi-layer waterproofing systems, with compatible membranes, for roof coverings exposed to external fire (product class: B-roof (t2) in accordance with CEN TS 1187 and EN 13501-5). General roofing on every substrate (concrete, masonry, steel, wood, insulation panel, etc.) a valid examples of the design application of this product.</p> <p>It is very appropriate where the substrate undergoes significant and frequent movements. It is not suitable to waterproof roof garden.</p> <p>The excellent mechanical characteristics and high level thermo-dynamic stability make it suitable for any climate conditions and all the situations where a barrier against water is required or as underlayers for discontinuous roofing.</p>  |
| <b>METHOD OF INSTALLATION</b> | <p>The excellent thermoplastic properties of the waterproofing compound allow the application with torch-on system or hot air generator. In particular situations, it could be applied with appropriate sealants or mechanical fastenings.</p> <p>The application of the membrane must be carried in good weather conditions and after the substrate has been adequately cleaned and prepared.</p>   |
| <b>PACKING AND STORAGE</b>    | <p>The product is packed as standing rolls on wooden pallets wrapped with thermoshrinking protective hoods. Rolls must be stored in the upright position, without stacking the pallets to avoid deformations which can compromise the correct application of the membrane. The product must be stored indoor, protected from heat and frost.</p>   |
| <b>INTENDED USE OR USES</b>   | <p>Flexible sheets for waterproofing. Reinforced bitumen sheets for roof waterproofing</p> <p>Flexible sheets for waterproofing. Bitumen damp proof sheets including bitumen basement tanking sheets</p> <p>Flexible sheets for waterproofing. Underlays for discontinuous roofing</p>   |

1. Selvedge
2. Mineral protection
3. Waterproofing mass
4. Reinforcement
5. Waterproofing mass
6. Torch-off film



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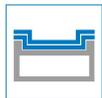
## TECHNICAL DATA

|  | Norm                   | Value           | Unit      | Tolerance    |
|--|------------------------|-----------------|-----------|--------------|
| Thickness  | EN1849-1               | 4 (on selvedge) | (mm)      |              |
| Roll length  | EN1848-1               | 7,5             | (m)       | -1%          |
| Roll width   | EN1848-1               | 1               | (m)       | -1%          |
| Straightness   | EN1848-1               | PASSED          | -         | 20 mm / 10 m |
| Flexibility at low temperature (pliability)  | EN1109                 | -25             | (°C)      | ≤            |
| Heat flow resistance   | EN1110                 | 90              | (°C)      | ≥            |
| Watertightness   | EN1928-B               | 60              | (kPa)     | ≥            |
| Watertightness   | EN1928-A W1            | PASSED          | (kPa)     | 2 kPa/24h    |
| Water vapour transmission properties   | EN1931                 | 20.000          | (μ)       | -            |
| M.d. C.d.  |                        |                 |           |              |
| Tensile properties: maximum tensile strength   | EN12311-1              | 800 / 700       | (N/50 mm) | -20%         |
| Tensile properties: elongation at break  | EN12311-1              | 40 / 40         | (%)       | -15          |
| Resistance to tearing (nail shank)   | EN12310-1              | 300 / 300       | (N)       | -30%         |
| Dimensional stability  | EN1107-1               | ±0,2 / ±0,2     | (%)       | ≤            |
| Peel resistance of joints  | EN12316-1              | 100 / 100       | (N/50 mm) | -20          |
| Shear resistance of joints   | EN12317-1              | 800 / 700       | (N/50 mm) | -20%         |
| Resistance to static puncture  | EN12730-A              | 20              | (kg)      | ≥            |
| Resistance to impact   | EN12691-A              | 1250            | (mm)      | ≥            |
| External fire performance (note 1)   | EN1187/EN13501-5+A1    | Broof t2**      | Class     | -            |
| Reaction to fire   | EN11925-2/EN13501-1+A1 | E               | Class     | -            |
| Root resistance  | EN13948                | NPD             |           |              |
| Determination of adhesion of granules (Loss)   | EN12039                | PASSED          | (%)       | <30          |
| Visible defects  | EN1850-1               | PASSED          | -         | -            |
| Durability: Flexibility at low temperature after artificial ageing   | EN1296/EN1109          | -25             | (°C)      | +15          |
| Durability: Flow resistance at elevated temperature after artificial ageing  | EN1296/EN1110          | NPD             |           |              |
| Durability: Watertightness after artificial ageing   | EN1296/EN1928-B        | PASSED          | (kPa)     | ≥ 60         |
| Durability: Visual defects after artificial ageing   | EN1297/EN1850-1        | PASSED          | -         | PASSED       |
| Artificial ageing by long term exposure to the combination of UV radiation and elevated temperature and heat: Watertightness | EN1296/EN1928-A        | W1              | Class     | -            |
| Substances dangereuses (notes 2 and 3)   | -                      | CONFORMS        | -         |              |
| REFLECTA   |                        | REFLECTA        |           |              |
| Infrared emittance (IE)  | EN15976                | 0,911 *         | -         | ±0,020       |
| Solar Reflectance Index (SRI) at medium wind hc= 12 W/m2*K   | ASTM E1980             | 84,8 *          | (%)       |              |
| Solar Reflectance (SR)   | ASTM C1549             | 0,699 *         | -         | ±0,009       |

**NOTE** \* values refer to the coating of the upper surface with REFLECTA white slate flakes

**WARNINGS** \*\* Classification valid only for the application of the membrane for systems as indicated by certification available on request.

**NORMS** EN13707; EN13969; EN13859-1



Top layer in multi-layer systems



Fire Resistance



Under layers for discontinuous roofing



Cool Roof