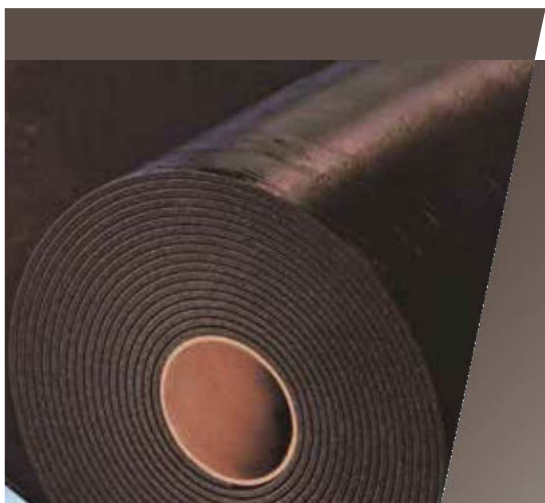


Industrial Asphalts



On the basis of careful selection, both of its initial crude oil basket and the currents of refined petroleum products obtained, Repsol is making advances in the production and innovation of its line of **Industrial Asphalts** and is commercialising the following products in the national and exportation market:

- **Redaspol:** bitumen specially formulated to create polymeric sheets combined with rubber for waterproofing.
- **Special emulsions:** emulsion for the priming and sealing of surfaces, as well as the manufacture of other products for waterproofing. These emulsions are designed with the specific needs of the customer in mind.

/ APPLICATIONS

- Asphalt sheets for waterproofing.
- Bituminous waterproofing systems.
- Acoustic insulation for the automotive industry.
- Waterproofing mortars and industrial flooring.
- Bituminous sealants and paints.
- Sealing of joints.
- Pipe lining.
- Industrial bituminous emulsions.
- Other applications: treatment of waste, waterproofing of construction elements, adhesives, dune stabilization, crop protection...

/ PRODUCT CHARACTERISTICS

The following table shows the characteristics of the Industrial Asphalts that are specially formulated for creating polymeric waterproofing sheets combined with SBS:

| CHARACTERISTICS | UNIT | STANDARD | REDASPOL 15 | REDASPOL 30 | REDASPOL 35 |
|---------------------------------|--------|----------|-------------|-------------|-------------|
| Original Bitume | | | | | |
| Penetration, 25 °C | 0,1 mm | EN 1426 | 15 - 25 | 160 - 220 | 35 - 50 |
| Softening Point (Ring and Ball) | °C | EN 1427 | 61 - 71 | 35 - 43 | 50 - 58 |
| Fraass fragility Point | °C | EN 12593 | ≤ 0 | ≤ -15 | ≤ 5 |

| CHARACTERISTICS | UNIT | STANDARD | REDASPOL 55 | REDASPOL 90 | REDASPOL Flex |
|----------------------------------|--------|-------------|-------------|-------------|---------------|
| Original Bitume | | | | | |
| Penetration, 25 °C | 0,1 mm | EN 1426 | 50 - 70 | 70 - 100 | 275 - 350 |
| Softening Point (Right and Ball) | °C | EN 1427 | 46 - 54 | 43 - 51 | ≥ 30 |
| Fraass fragility Point | °C | EN 12593 | ≤ -8 | ≤ -10 | ≤ 20 |
| Flash Point | °C | EN ISO 2592 | - | - | ≥ 275 |