



TARGET	TEST	RESULT
1 Rheological behaviour	Pumpability NFT 60139	✓
2 Behaviour in the pipe	Condat pressure drop test	✓
3 Behaviour in the brushes	Condat brush test	✓
4 Adherence on wet concrete surface	Condat adherence test	✓
5 Sealing ability, water pressure resistance	Matsumura test	✓
6 EPDM Joints compatibility	ISO 6072 Method	✓
7 Fire resistant	Condat fire resistance test	✓
8 More eco-friendly components anticipating future specification	Biodegradability keeping pace with OECD regulations	✓
9 Reduction by at least 10% of the consumption	On site validation	✓

### FOR A SUSTAINABLE DEVELOPMENT



# WR 89 NewGeneration

## TAIL SEAL GREASE

### PRESENTATION

Recognised throughout the industry, with more than 20 years of use, WR 89 has evolved to a new product : **WR 89 NewGeneration**.

**WR 89 NewGeneration** is a fire resistant tail seal grease dedicated to protect the tail of tunnelling machines (TBMs) against each

type of ingress eg groundwater, slurries, grouts.

**WR 89 NewGeneration** has been developed to bring the best protection to TBMs with optimised consumption and less environmental impact.



### ADVANTAGES

**WR 89 NewGeneration** offers many advantages such as :

- Fire resistance
- Resistance to water and waterlogging (wash out)
- Combined resistance to wash out and creep
- Compressibility
- Adhesion to any surface (metal and tunnel segments)
- Cohesion to itself
- Lower consumption (0,9 Kg/m<sup>2</sup>)

These combined properties ensure a perfect sealing of the TBM with no leakage.

The **WR 89 NewGeneration** rheology has been adapted in order to be able to pump the product over a wide range of temperature, so as to ensure a perfect filling of the chambers.

**WR 89 NewGeneration**, thanks to an adapted formulation, ensures a lower consumption (0,9 Kg/m<sup>2</sup>) and less environmental impact.

The **WR 89 NewGeneration** has passed a risk assessment indicating that **WR 89 NewGeneration** does not cause any relevant risk for public health and the environment.

### CHARACTERISTICS

Characteristics	Units	WR 89 NewGeneration
Colour		Beige
Odour		None
Appearance		Fibrous
Consistency at 25°C		220-250
Density at 20°C		1.30 ± 0.05
Base oil fire point	°C	> 250
Use temperature	°C	≤ 50
Environmental concerns		Risk assessment report available upon request
Torch test		Non flammable
Mechanical Characteristics	Units	WR 89 NewGeneration
Creep at 25°C as per MC 11	min	≥ 30
Pumpability. As per method MCC 20	g/min	40-55
Waterlogging, depending on method ASTM D4049, synthetic seawater at 38°C	%	≤ 7
Oil retention - Permeation width	mm	12
Waterproof, as per Matsumura method (35 bar)		Passes

