

WACKER

CREATING TOMORROW'S SOLUTIONS



GENIOSIL®

SILANTERMINATED POLYMERS | ADHESIVES

EXPAND THE LIMITS
OF YOUR ADHESIVES –
WITH GENIOSIL® XT

WITH OUTSTANDING CHARACTERISTICS

GENIOSIL® XT grades expand your formulation capabilities with silane-terminated polymers. This is derived not only from their low viscosity but also by the virtue that they are compatible with all other available GENIOSIL® silane-modified polymers. They can be blended at various ratios depending on the desired property profile.

Model Formulation for a High Strength Transparent Coating

Base polymer GENIOSIL® XT 50

Shore D	36
Elongation at break [%]	250
Tensile strength [N/mm ²]	8.8
Skin formation time [mins.]	95
Tear resistance [N/mm]	50
Water absorption (after 28 days)	< 0.5%
Viscosity	800 mPa s

Model Formulation for a High Modulus Adhesive

Base polymer GENIOSIL® XT 55

Shore A	56
Elongation at break [%]	713
Tensile strength [N/mm ²]	5
Skin formation time [mins.]	95
Tear resistance [N/mm]	31
Recovery [ISO 738976] %	76
Viscosity	Paste-like

Both Types Display:

- Good adhesion to diverse substrates
- Low viscosity
- Unmatched transparency
- Exceptional elongation
- Outstanding tear resistance
- Extreme hardness yet elastic

Individual Formulations will

Yield:

- Tin-free systems if desirable
- Re-coatable coatings
- High recovery values
- Unparalleled performance under dynamic stress



DISCOVER A NEW CLASS OF SILANE-TERMINATED POLYMERS

For decades now silane-terminated polymers have become firmly entrenched in the bonding and sealing sector. Nevertheless, the market continued to use polyurethane based adhesives when the materials bonded were exposed to high dynamic stress. When it came to surface seals, where outstanding hardness is required, these systems favoured polymer concepts such as polymethyl methacrylates. This could now change.

The GENIOSIL® polymer range now sees 2 new members, notably the GENIOSIL® XT grades (XT 50 and XT 55). This product series when incorporated into adhesives, sealants or coatings, demonstrates mechanical properties of cured systems matching industrial grade products.

Combining Flexibility With Strength

The new GENIOSIL® XT grades are silane-terminated polyethers. As is typical for such polymers, these products crosslink and cure upon contact with atmospheric moisture.

The new polymers have been optimized so as to be low in viscosity but displaying a high number of silyl groups per unit volume. Consequently, the new polymers build up a solid, yet elastic network as they cure. The outcome is that adhesive layers and waterproofing membranes based on these polymers attain high inner strength, remain extremely elastic and exhibit outstanding tear resistance.



GENIOSIL® XT 50 FOR TIN-FREE, STRONG FORMULATIONS

GENIOSIL® XT 50 is an alpha-silane terminated polymer. It is based on WACKER's patented alpha silane technology and characterized by outstanding reactivity. Hence it does not require organo-tin compounds to catalyse the system to ensure rapid through-cure. It is thereby suitable for the manufacture of tin-free industrial adhesives and crack-bridging surface seals. The latter seeing the increased application of hybrid polymer based concepts. Using GENIOSIL® XT 50 in waterproofing or sealant formulations sees tensile strength of up to 9 N/mm² and tear strength values as high as 50 N/mm (measured in accordance with ASTM D 624 B-91).

GENIOSIL® XT 50		
Polymer		Silane terminated polymer
Flash point	ISO 2719	> 90 °C
Ignition temperature	DIN 51794	> 380 °C
Density		1.1 g/cm ³ [20 °C]
Viscosity	Brookfield	500 mPa s [25 °C]



GENIOSIL® XT 55 FOR HIGHLY ELASTIC YET STRONG ADHESIVES AND SEALANTS

GENIOSIL® XT 55 is a gamma-silane terminated polymer developed for use in strong structural industrial adhesives and sealants. These must be both elastic yet extremely tear resistant. Laboratory formulations based on GENIOSIL® XT 55 exhibited shear strength values of 5 N/mm², elongation at break measurements of some 500% with tear strength values of up to 30 N/mm (measure in accordance with DIN ISO 34-1).

GENIOSIL® XT 55		
Polymer		Silane terminated polymer
Flash point	ISO 2719	120 °C
Ignition temperature	DIN 51794	397 °C
Density		1.1 g/cm ³ [20 °C]
Viscosity	Brookfield	1200 mPa s [25 °C]



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