Formulate Highly Flexible and Durable SMP-Based Adhesives and Sealants thanks to Dynasylan® 1189 Aminosilane

**Aminosilane:** Dynasylan® 1189

**Applications**
Adhesives and sealants in Silane Modified Polyurethane/Polyether (SMP)

**Markets**
Construction

**Key benefits**
- High flexibility for adhesives and sealants
- Improved moisture resistance
- Enhanced chemical resistance

**The challenge**
Bonding dissimilar and/or flexible substrates is always challenging for end users. They need an adhesive solution which exhibits high flexibility and long term performance.

**The solution**
Dynasylan® 1189 is an accompanied adhesion promoter for moisture curable SMP-based adhesives and sealants. When exposed to moisture and incorporated into the final siloxane network, Dynasylan® 1189 exhibits specifically high flexibilities. Further important side effects of formulating Dynasylan® 1189 are better chemical and moisture resistance of the finished products.

Moreover, Dynasylan® 1189 is used to functionalize-polymers with amino-reactive groups such as isocyanate pre-polymers. This functionalization results in new and environmentally friendly moisture curable binders.
**High flexibility for adhesives and sealants**
As shown in the graph below, a STPU sealant formulated with Dynasylan® 1189 exhibits a low modulus (100%) indicating that the sealant is not rigid:

![Modulus Graph](image)

Modulus (100%) with Dynasylan® adhesion promoters in cured STPU-sealant

In addition, thanks to Dynasylan® 1189, the final STPU sealant showed a high elongation at break highlighting the deformation capacity of the sealant:

![Elongation Graph](image)

Elongation at break with Dynasylan® adhesion promoter in cured STPU sealant

**Enhanced chemical resistance**
Not only when exposed to humid environments but also when in contact with harsh chemicals, adhesives or sealants formulated with Dynasylan® 1189 maintain their performance. When used in STPU sealants, Dynasylan® 1189 helps to improve the shear resistance even when joints are immersed 22 days in Isopropanol:

![Lap Shear Strength Graph](image)

Lap shear strength of an STPU sealant after 22 days aging in Isopropanol (Test performed on aluminum)

**Improved moisture resistance**
Dynasylan® 1189 enables formulators to keep adhesives or sealants overall performance (adhesion and other) even when they are exposed to a humid environment.

As an example, Dynasylan® 1189 helps to improve the shear resistance of a STPU sealant even when a joint is immersed 6 days in water:

![Lap Shear Strength Graph](image)

Lap shear strength of an STPU sealant after 6 days aging in water at RT (Test performed on aluminum at 23°C)
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