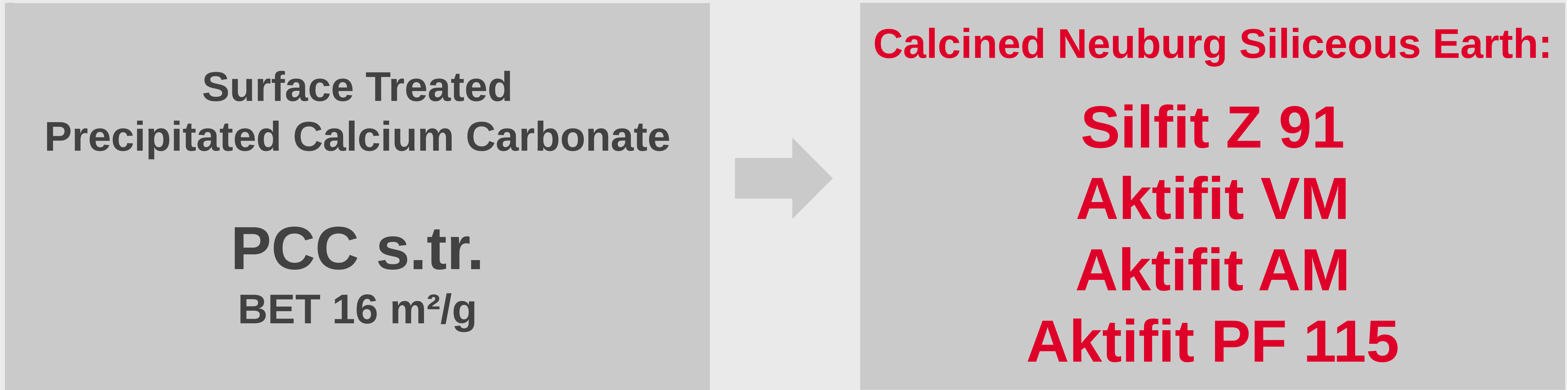


CALCINED NEUBURG SILICEOUS EARTH IN HIGH STRENGTH ADHESIVES BASED ON KANEKA MS POLYMER™

OBJECTIVE

Improvement of strength vs. calcium carbonate



BASE FORMULATION

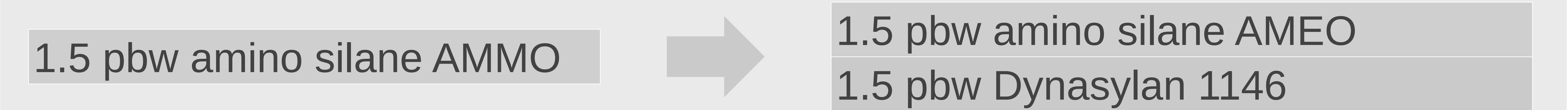
		% by weight
Kaneka Silyl™ SAX750	Polymer: MS Polymer™, high strength	42.0
Filler PCC s.tr. or CNSE	Precipitated calcium carbonate, surface treated or Calcined Neuburg Siliceous Earth	52.7
Vinyl silane VTMO	Drying agent	2.3
Amino silane AMMO	Adhesion promoter	1.5
Neostann S1	Catalyst	1.5
Total		100.0

TEST DESIGN

Replacement of Calcium Carbonate



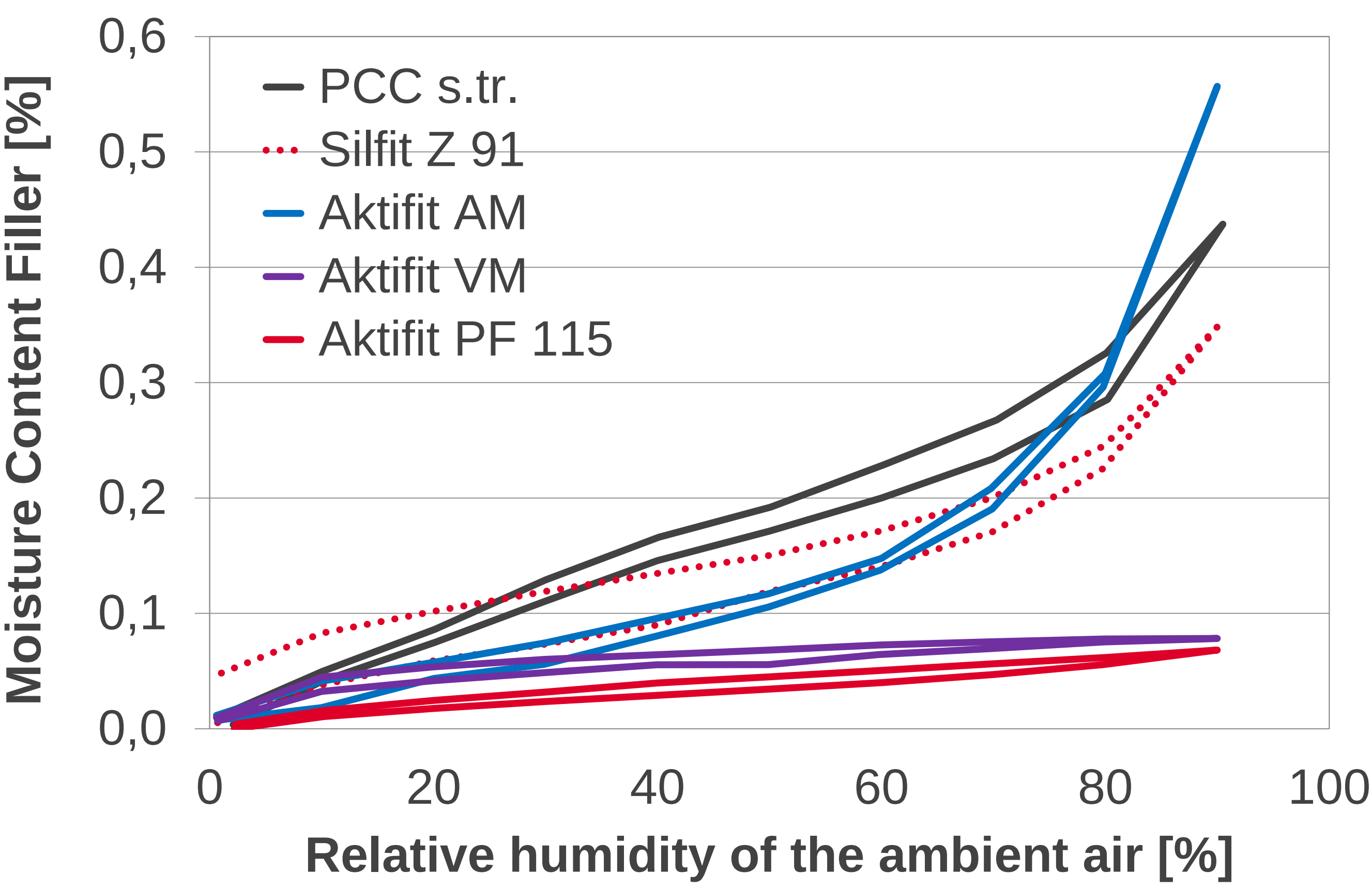
varied / increased adhesion promoter (using **Aktifit AM**)



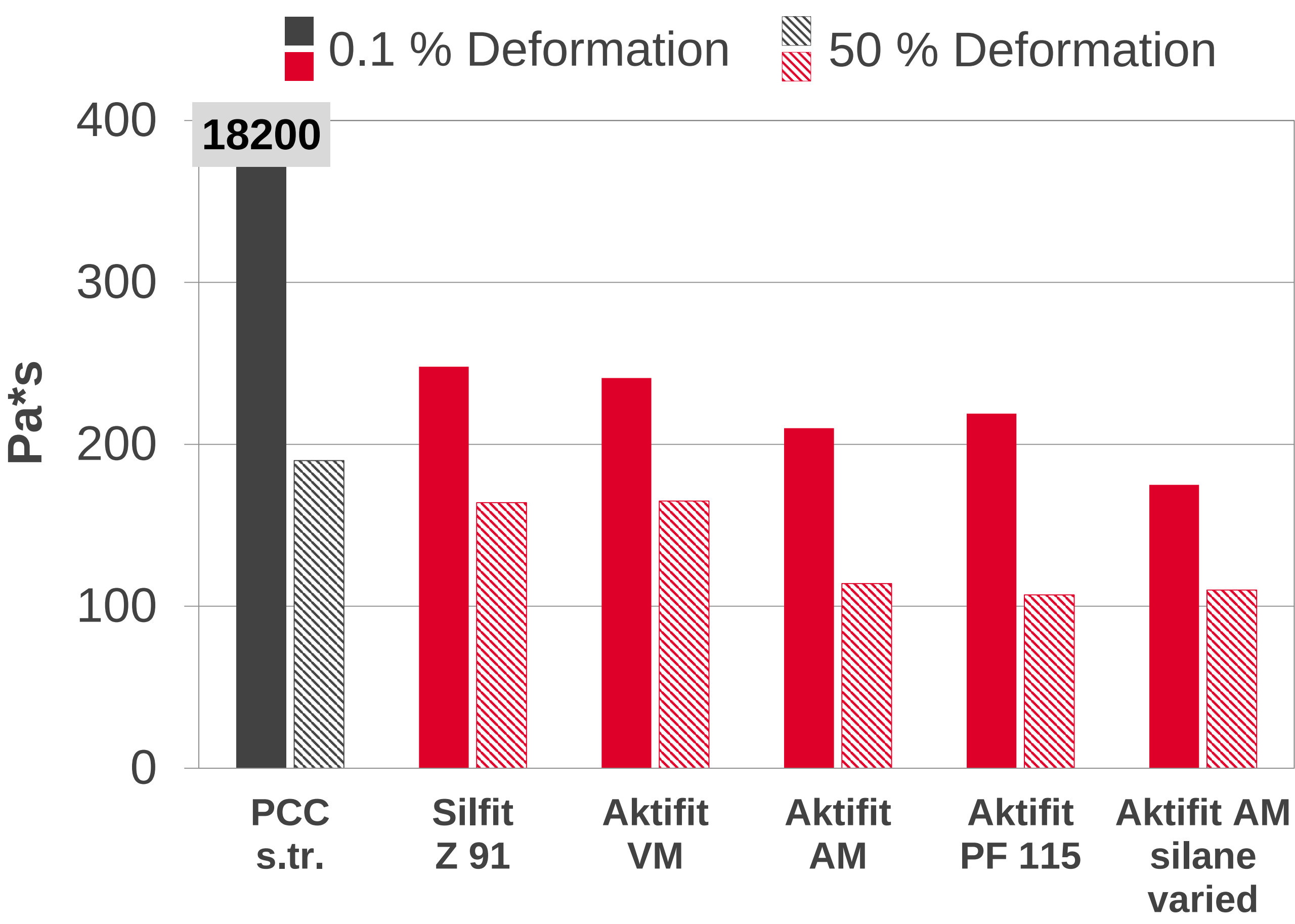
CALCINED NEUBURG SILICEOUS EARTH IN HIGH STRENGTH ADHESIVES BASED ON KANEKA MS POLYMER™

RESULTS

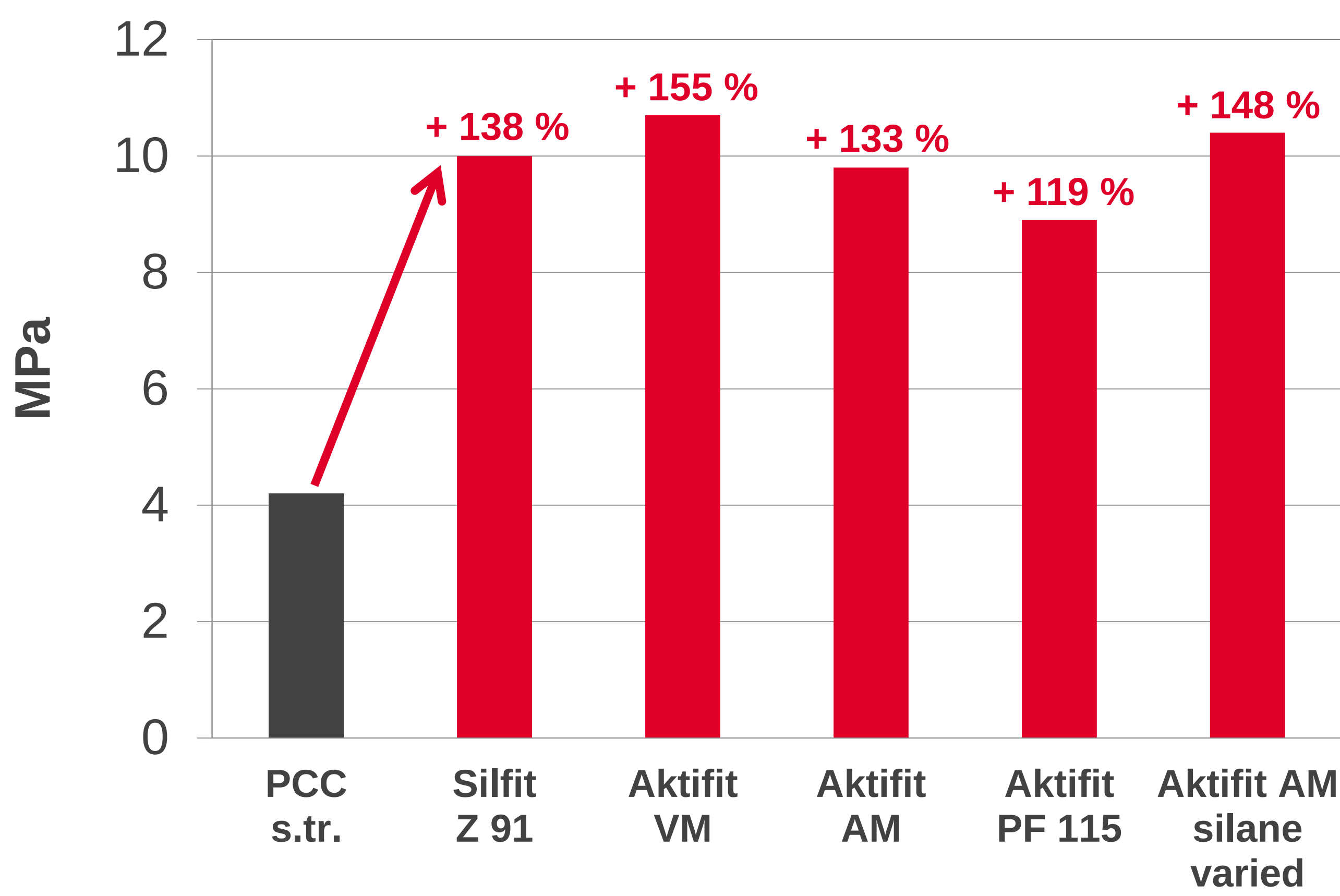
Moisture Content of Fillers
vs. Ambient Air Humidity



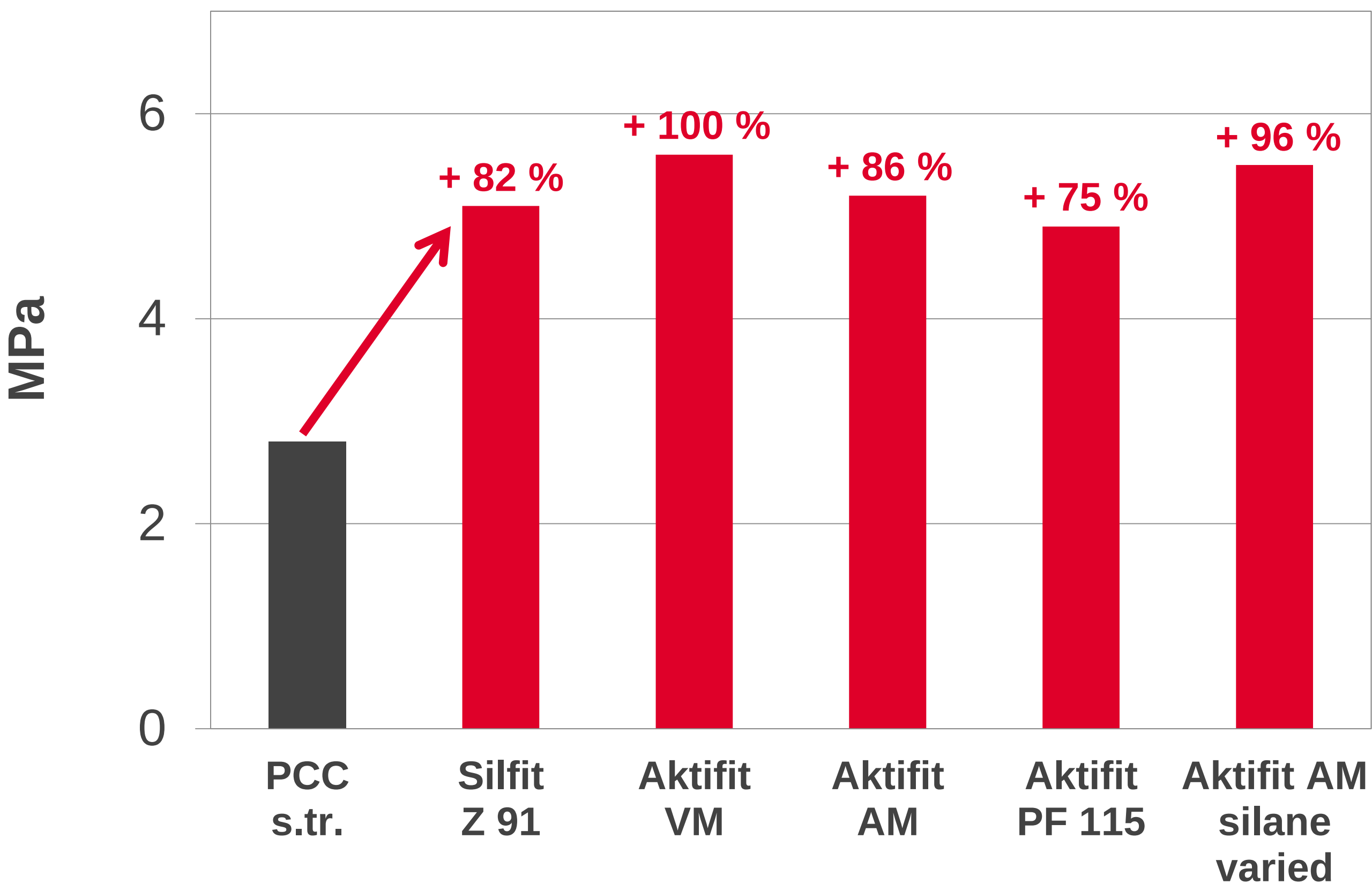
Complex Viscosity



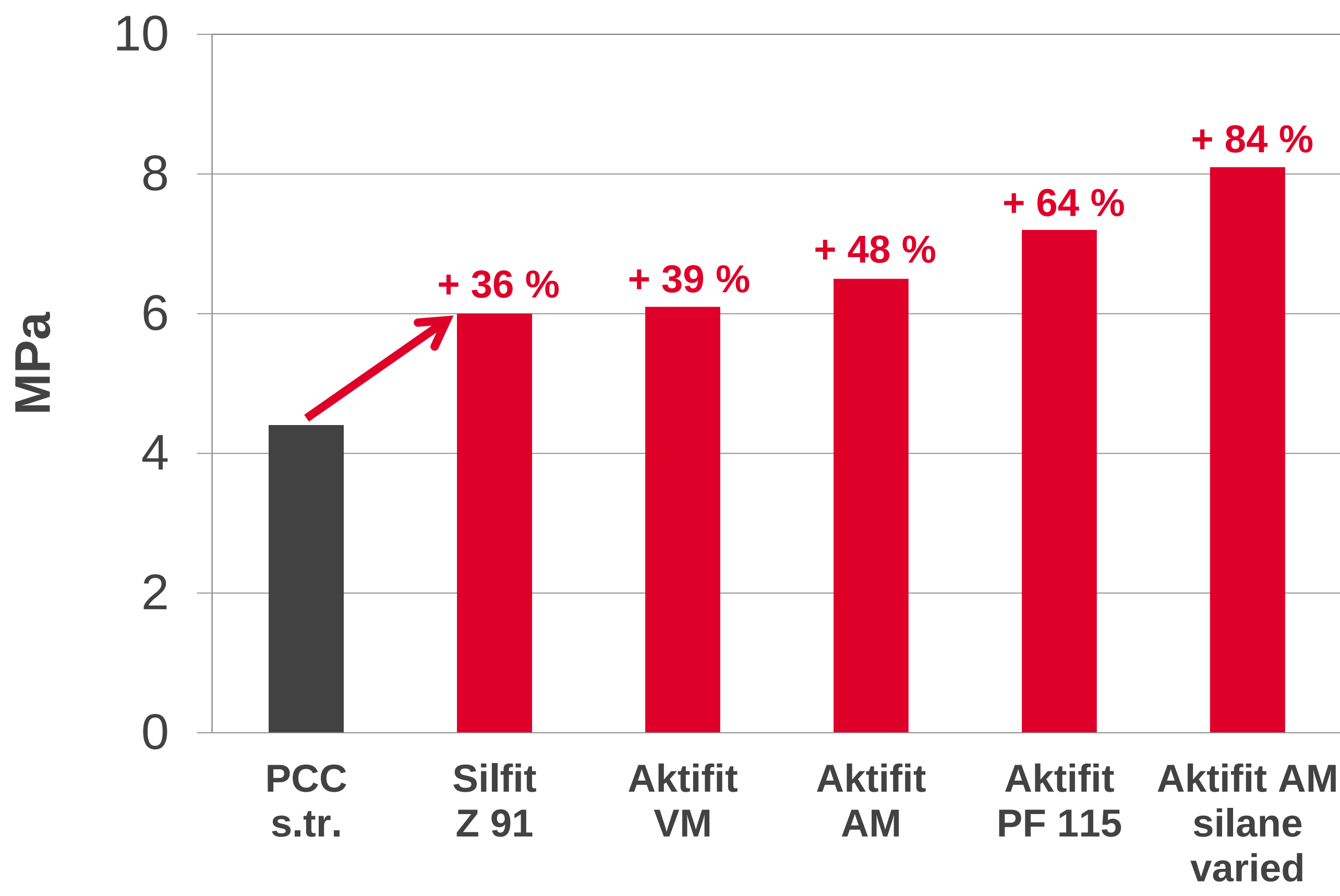
Tensile Strength



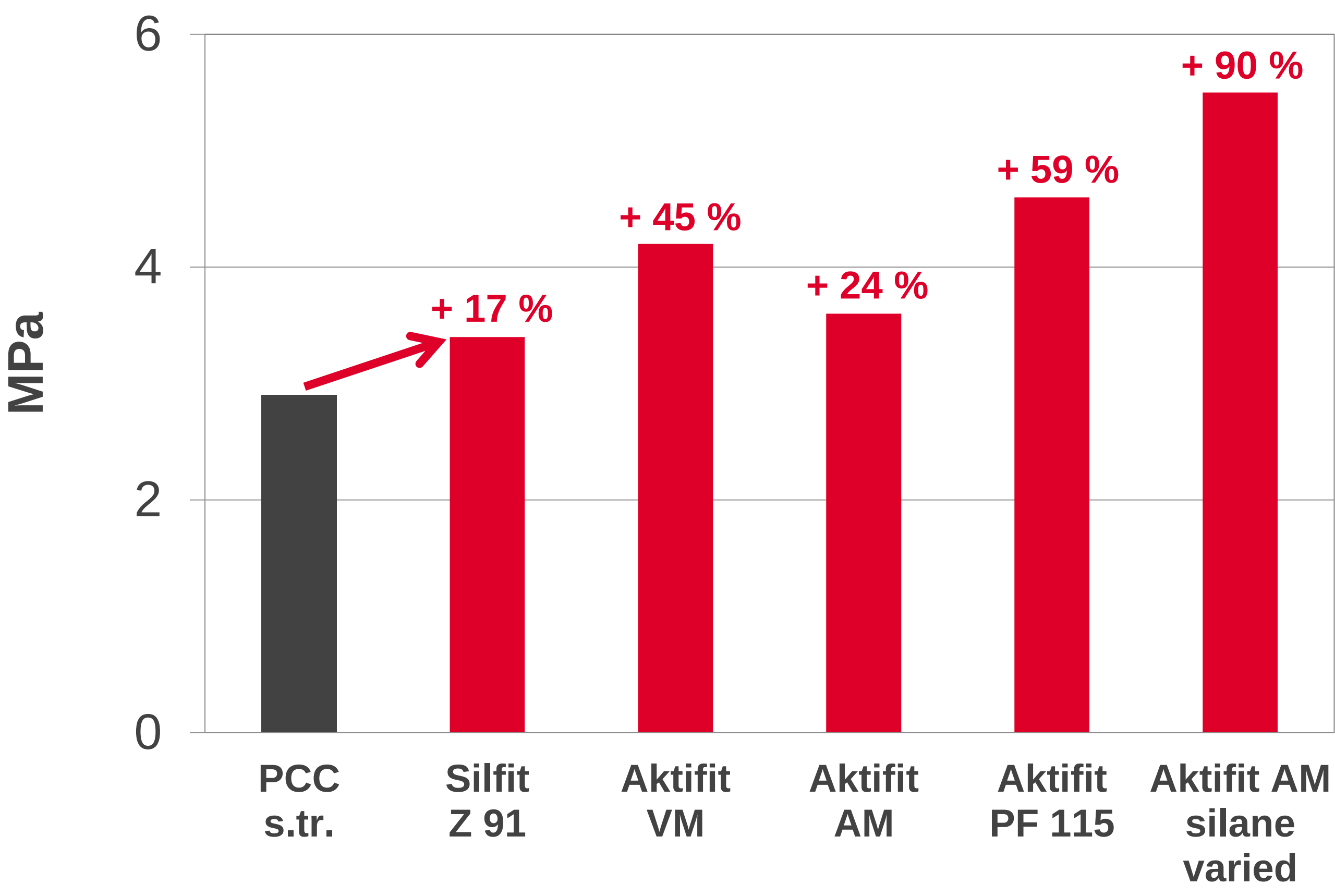
Lap Shear Strength
Aluminum, 28d, 1 mm



Lap Shear Strength
Beech Wood, 7d, 0.1 mm



Lap Shear Strength
Beech Wood, 28d, 1 mm



CALCINED NEUBURG SILICEOUS EARTH IN HIGH STRENGTH ADHESIVES BASED ON KANEKA MS POLYMER™

SUMMARY

Benefits of **CALCINED NEUBURG SILICEOUS EARTH** compared to precipitated calcium carbonate:

- ✓ Very low moisture content and very low moisture absorption even under humid conditions (especially with Aktifit VM and Aktifit PF 115)
- ✓ Significant lower viscosity at higher deformation, thereby easier application
- ✓ Viscosity at low deformation / yield point variably adjustable
- ✓ Increased tensile strength of up to 11 MPa or improvement of up to 150 %
- ✓ Marked increase of lap shear strength, more than 8 MPa or improvement of up to 100 % possible
- ✓ Especially on wood substrates, lap shear strength can be optimized by varied/increased adhesion promoter

FILLER RECOMMENDATION

Silfit Z 91

- Low moisture content
- White and color-neutral
- Cost-effective
- Good mechanical properties

Aktifit AM

- Low moisture content
- White and color-neutral
- Low and thereby adjustable viscosity
- Especially for thin joints in wood

Aktifit VM

- Very low moisture content and extremely low moisture absorption even under humid conditions
- White and color-neutral
- Especially for thick joints in wood and metal

Aktifit PF 115

- Very low moisture content and extremely low moisture absorption even under humid conditions
- White and color-neutral
- Low and thereby adjustable viscosity
- For highest requirements on thin joints in wood