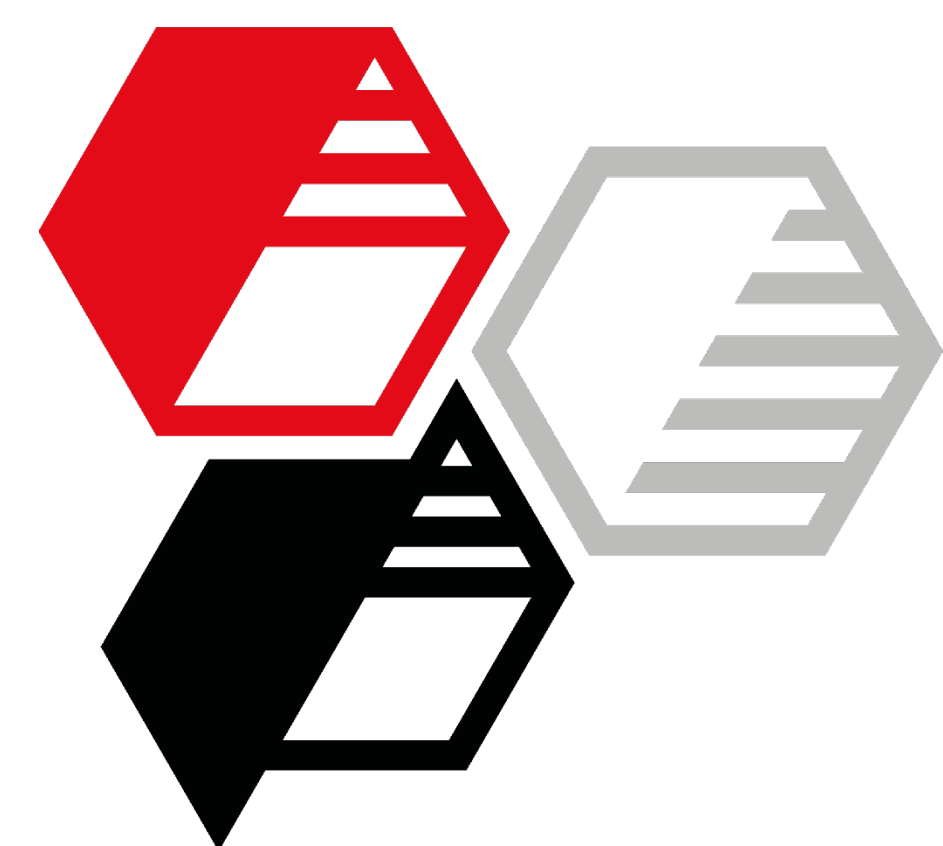


Neuburg Siliceous Earth (NSE) vs wollastonite and barium sulfate in peroxide cured FKM



Objective

Wollastonite	Barium sulfate
very weak	weak
acid resistance in peroxide cured FKM	
Carbon black N 990	
good, but not tintable	

Performance of **NSE** in peroxide cured FKM



Formulation

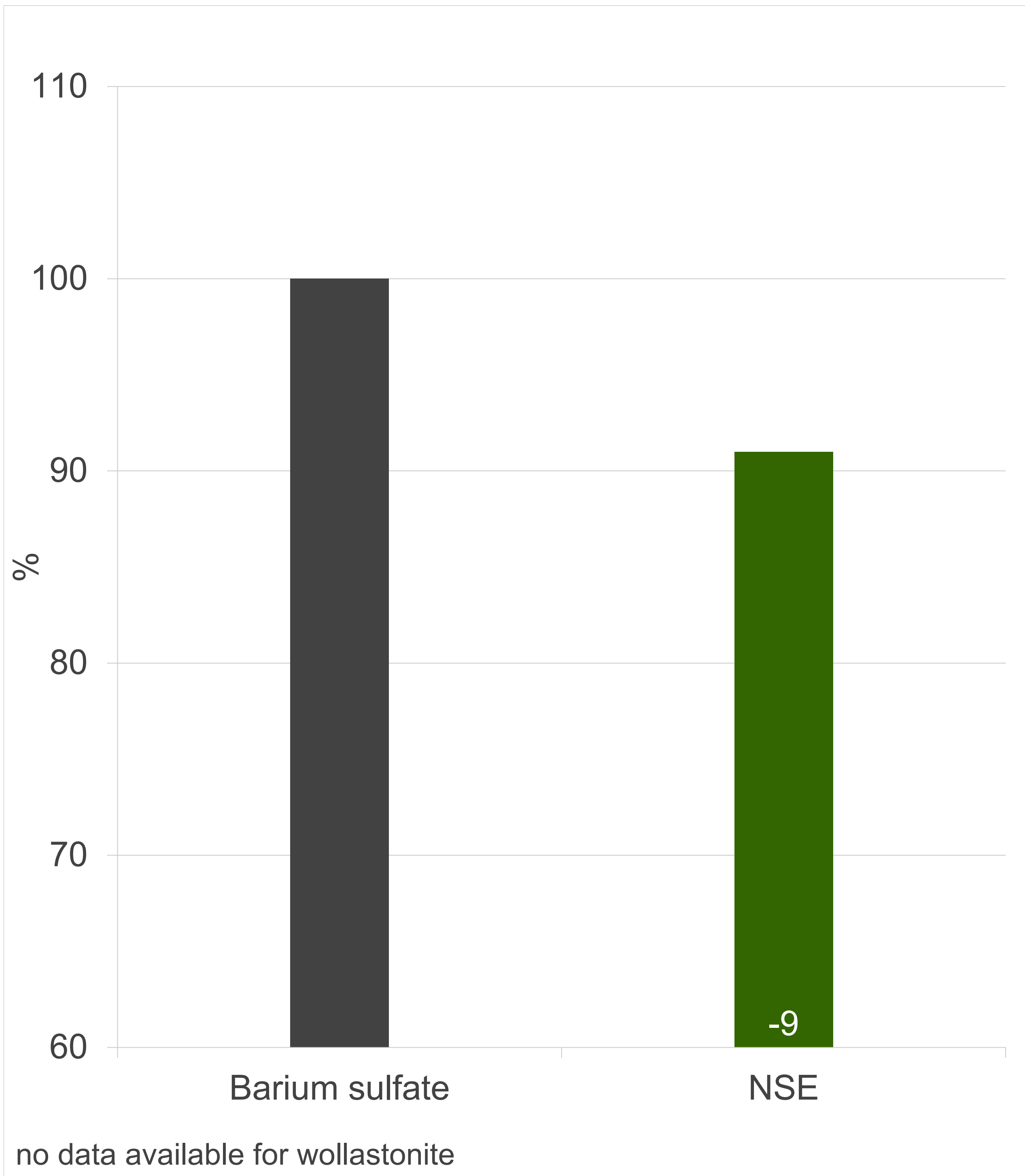
Hardness range: 65 Shore A		Wollastonite	Barium sulfate	NSE
Viton GAL-200S	66 % fluorine, 25 MU (ML1+10, 121 °C) terpolymer (HFP+VFD+TFE)	100	100	100
Zinkoxyd aktiv	ZnO	3	3	3
Diak No. 7	Coactivator TAIC	3	3	3
Varox DBPH-50	2,5-dimethyl-2,5-di(tertbutylperoxy)-hexane	2	2	2
Wollastonite	Calcium silicate	30	-	-
Barium sulfate	ppt. barium sulfate	-	49	-
NSE	Neuburg Siliceous Earth	-	-	30

Exposure to acetic acid

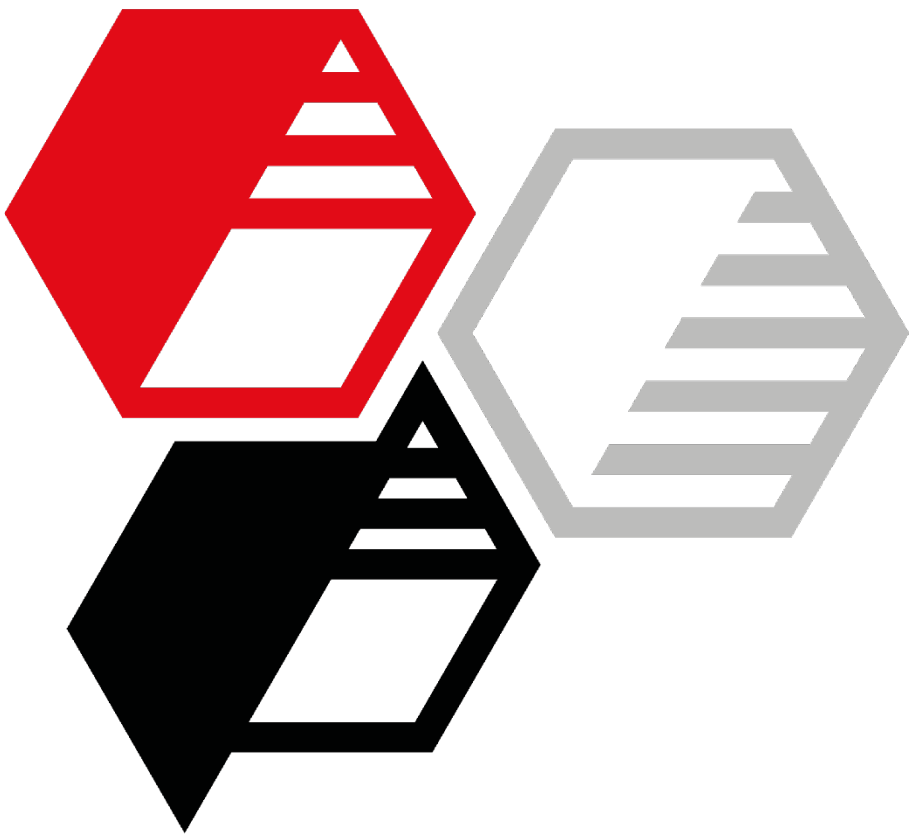
before	after exposure to acetic acid pH3, 168 h / 100 °C			
	Woll. AST	Woll. EST	Barium sulfate	Aktisil Q
Δ Weight:	+288 %	+227 %	+55 %	+23 %
Δ Volume:	+593 %	+500 %	+121 %	+43 %
Δ Hardness:	-30 Sh.A	n.d.	-32 Sh.A	-14 Sh.A
Δ TS:	-86 %	-86 %	-37 %	-3.0 %
Δ EaB:	-84 %	-79 %	-38 %	+1.2 %

Reduction of CO₂ eq.

... after replacing barium sulfate with NSE, volume based



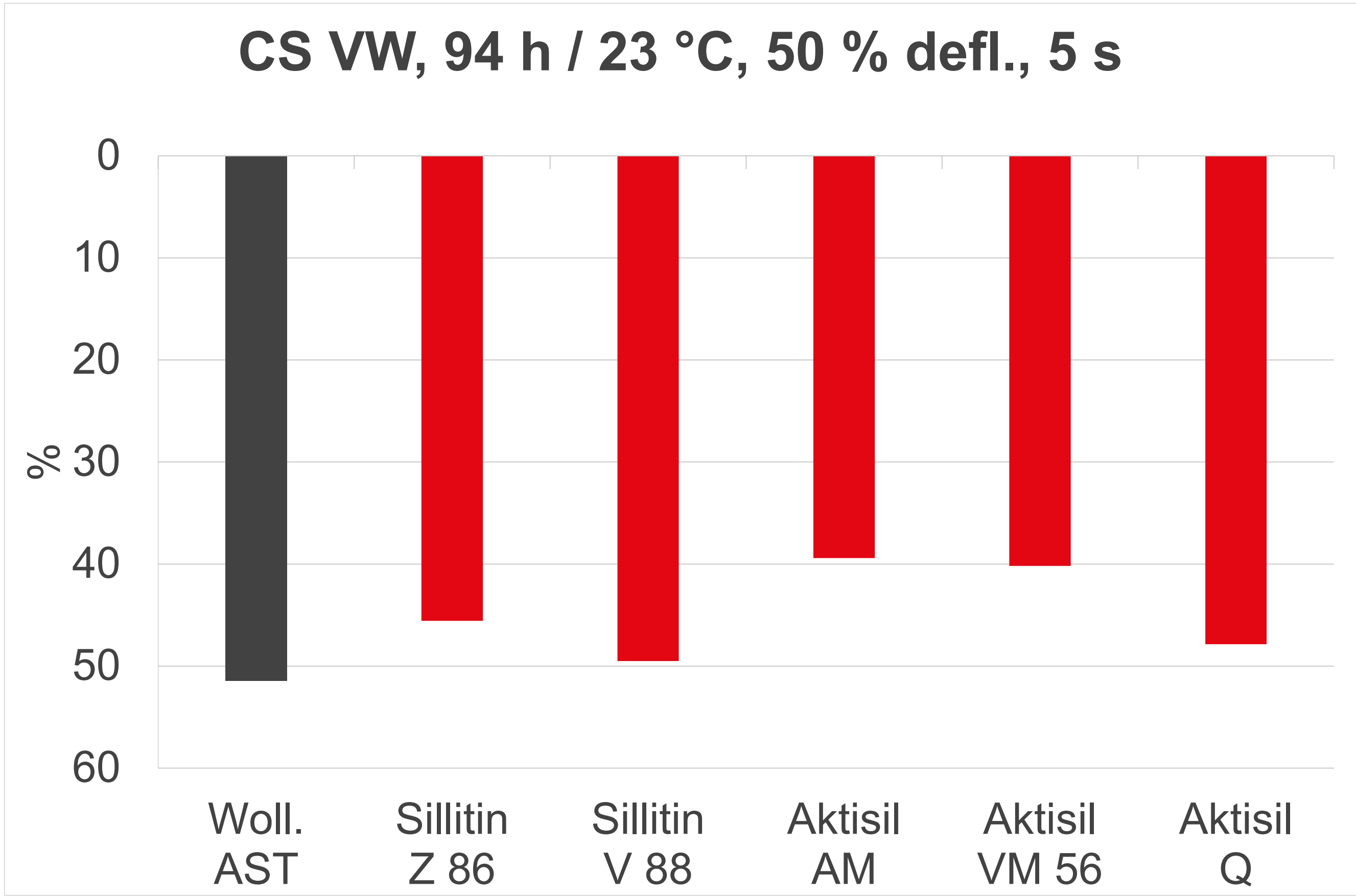
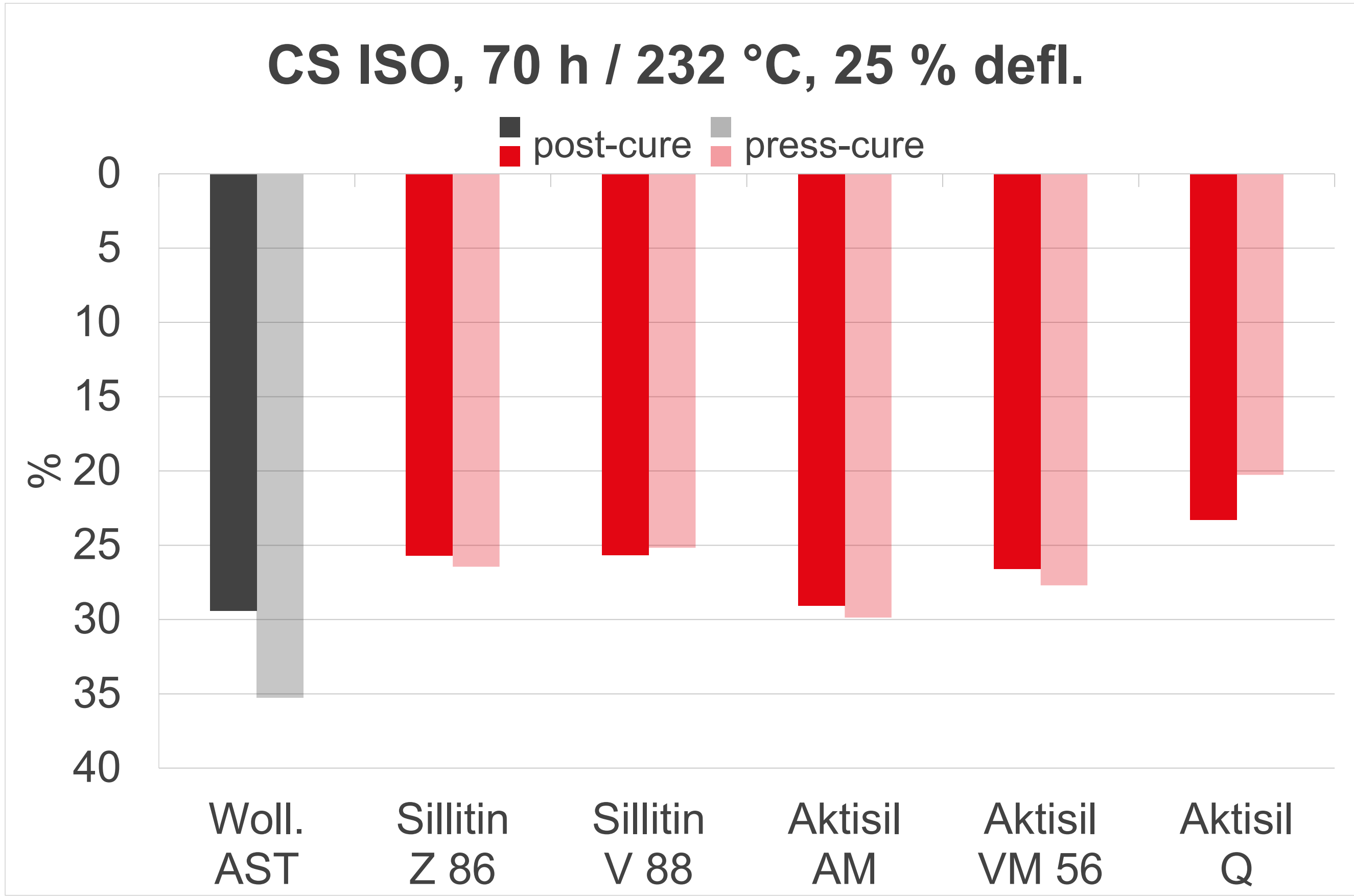
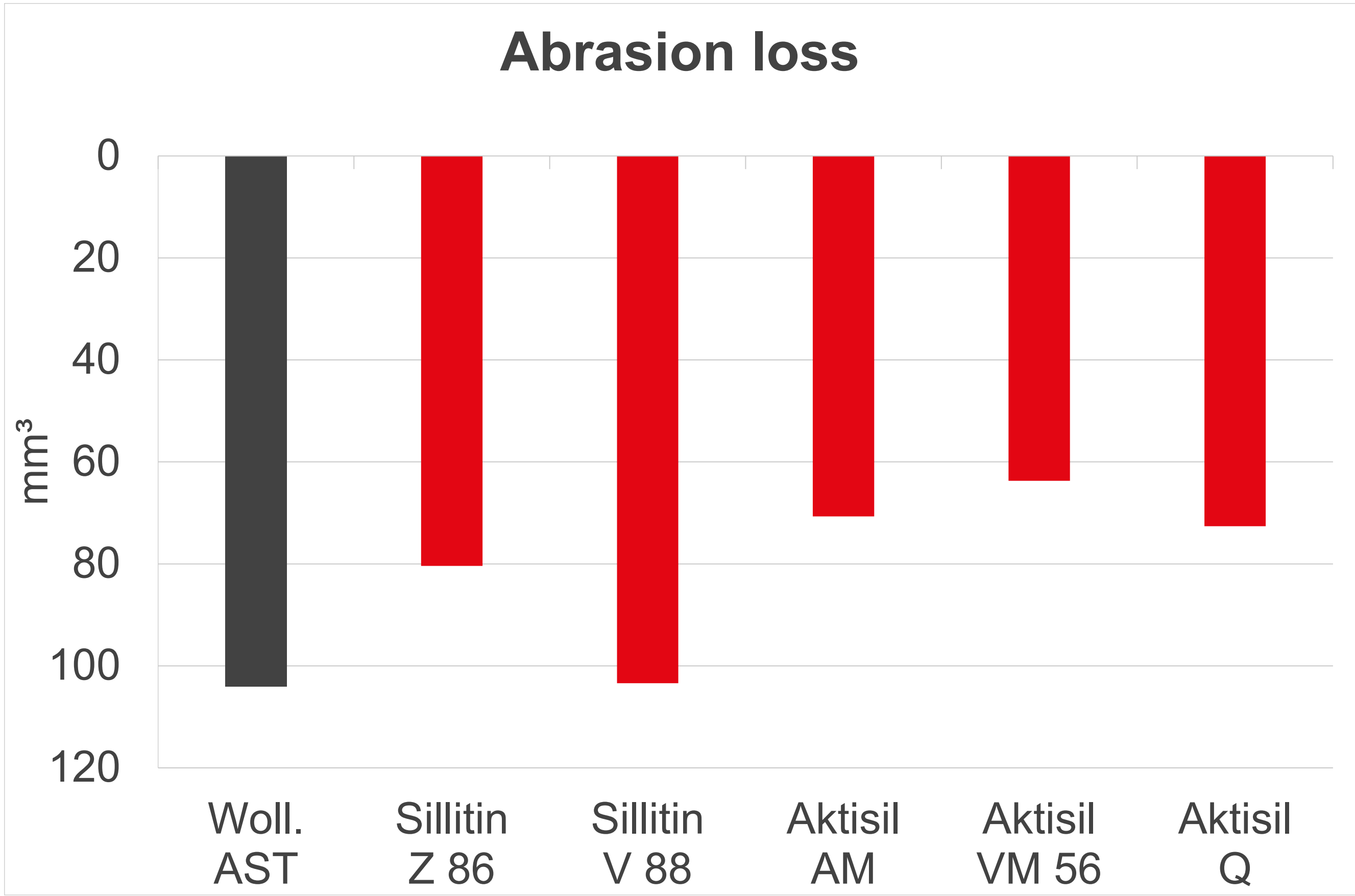
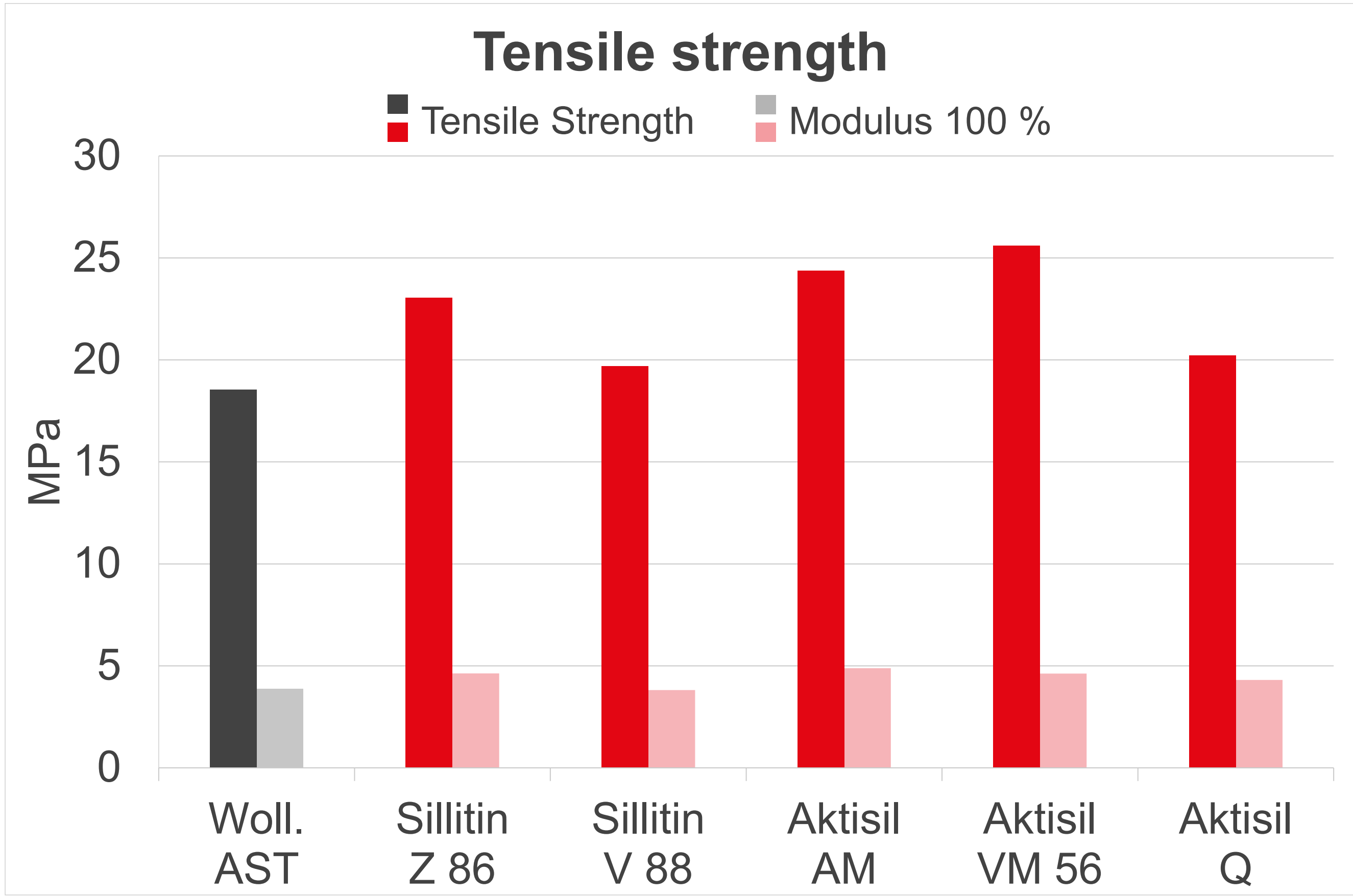
Neuburg Siliceous Earth (NSE) vs wollastonite and barium sulfate in peroxide cured FKM



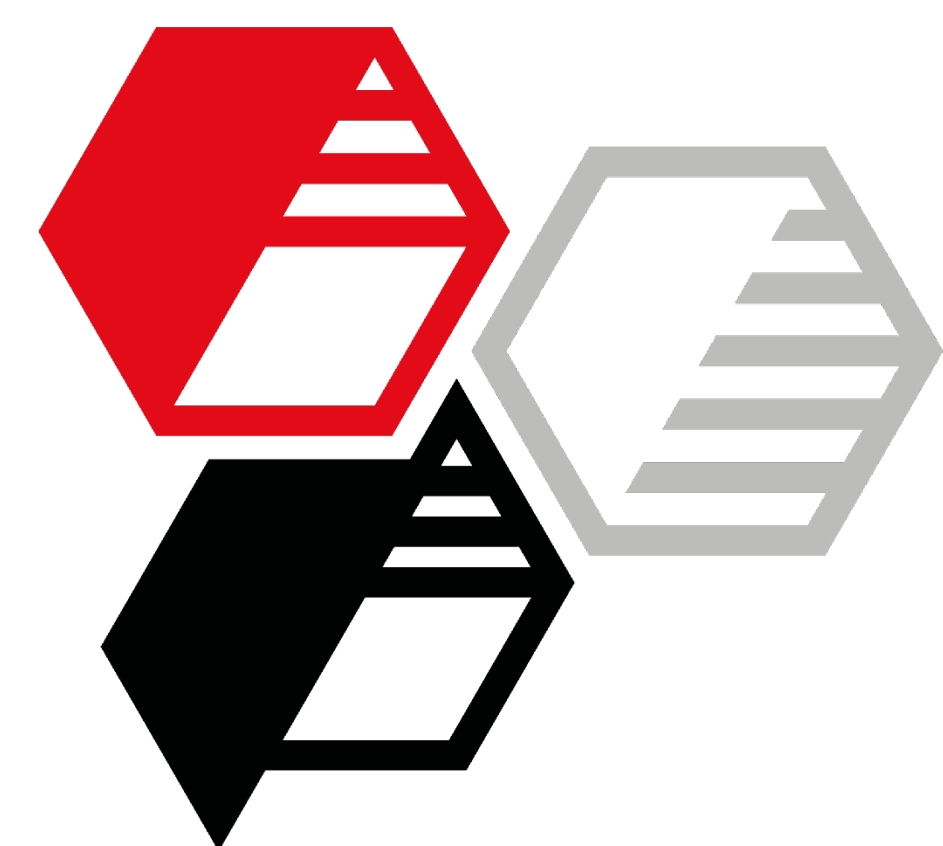
Benefits of NSE vs. Wollastonite AST

	Sillitin Z 86	Sillitin V 88	Aktisil AM	Aktisil VM 56	Aktisil Q
Cure speed			+		+
Viscosity	=	=	=	=	=
Tensile strength TS	+	=	+	+	=
Elongation at break	+	+	=	=	
Modulus 100 %	+	=	+	+	+
Tear resistance	=	+			
CS ISO 200 °C	=	=	=	=	=
CS ISO 200 °C, no post-cure	=	=	=	=	+
CS ISO 232 °C	=	=	=	=	+
CS ISO 232 °C, no post-cure	+	+	+	+	+
CS VW 23 °C	+	=	+	+	=
CS VW 150 °C		=	=		=
Abrasion resistance	+	=	+	+	+
Hot air resistance 210 °C			=	=	=
TS after hot air 210 °C	+	=	+	+	=
Hot air resistance 230 °C			=	=	=
TS after hot air 230 °C	+	=	+	+	=
Fuel resistance	=	=	=	=	=
TS after fuel	=	=	+	+	+
Oil resistance	=	=	=	=	+
TS after oil	+	=	+	+	+
Resistance to acetic acid	+	+	+	+	+

+ improvement
+ improvement, best grade
= no effect



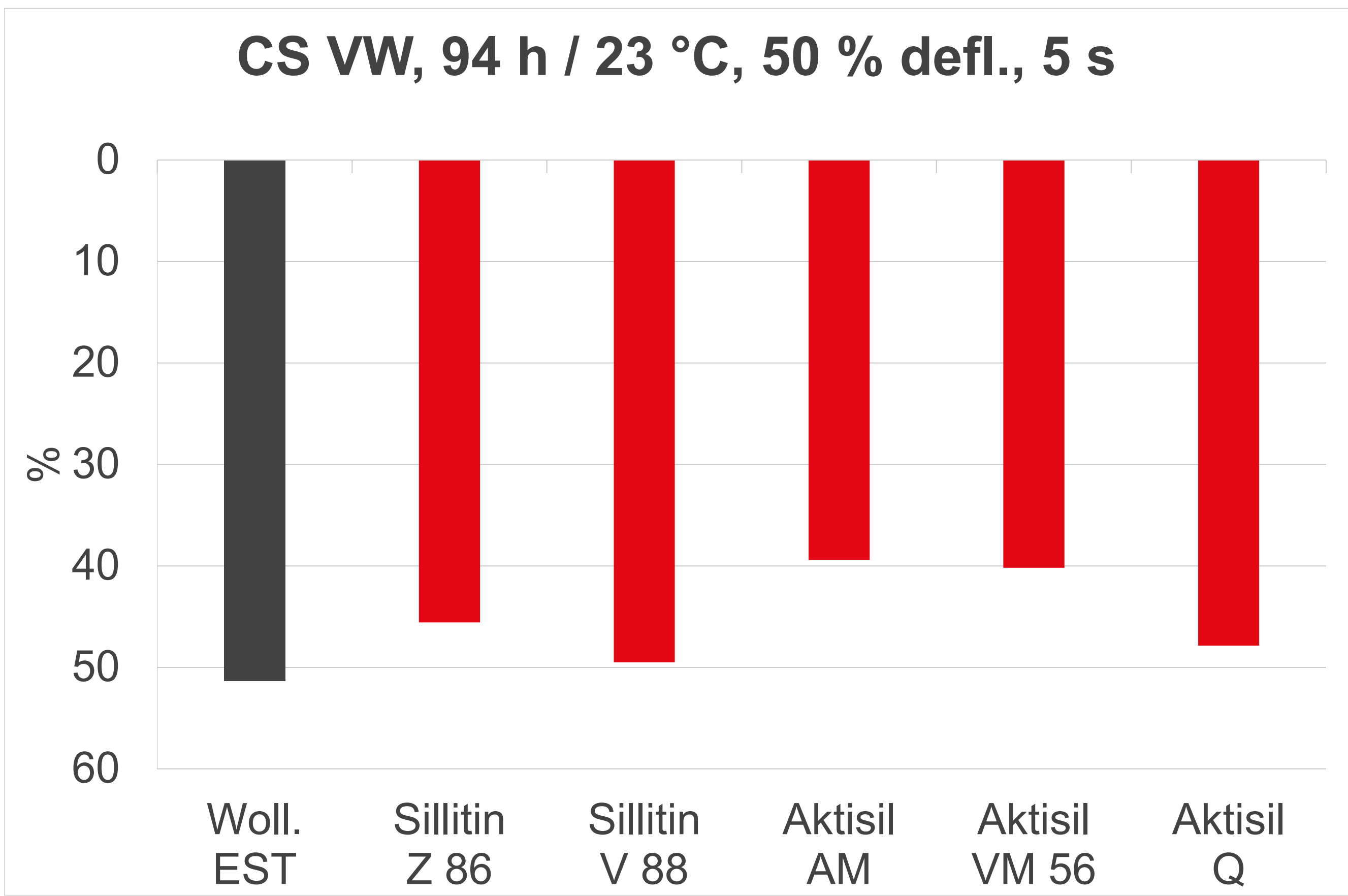
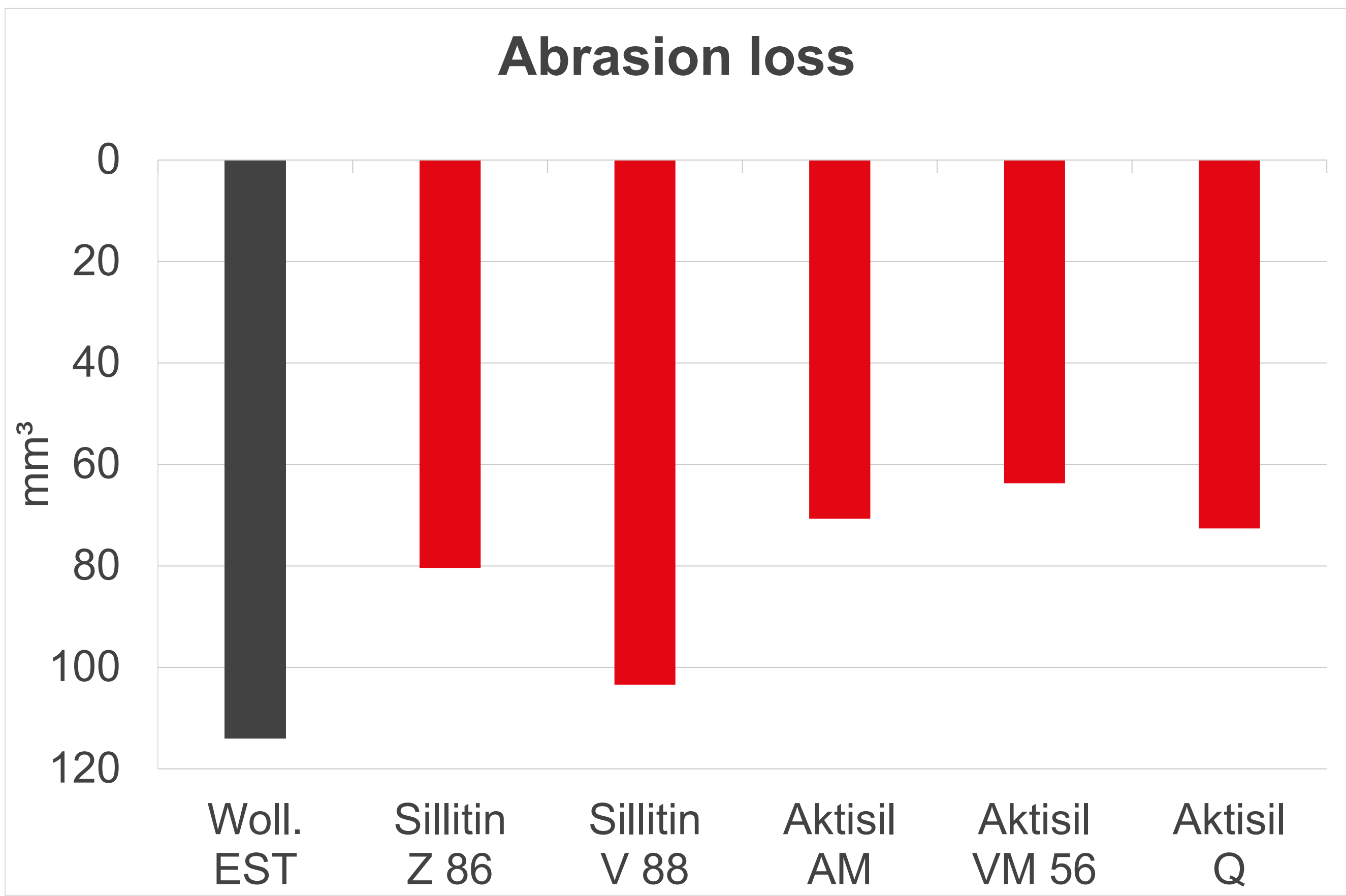
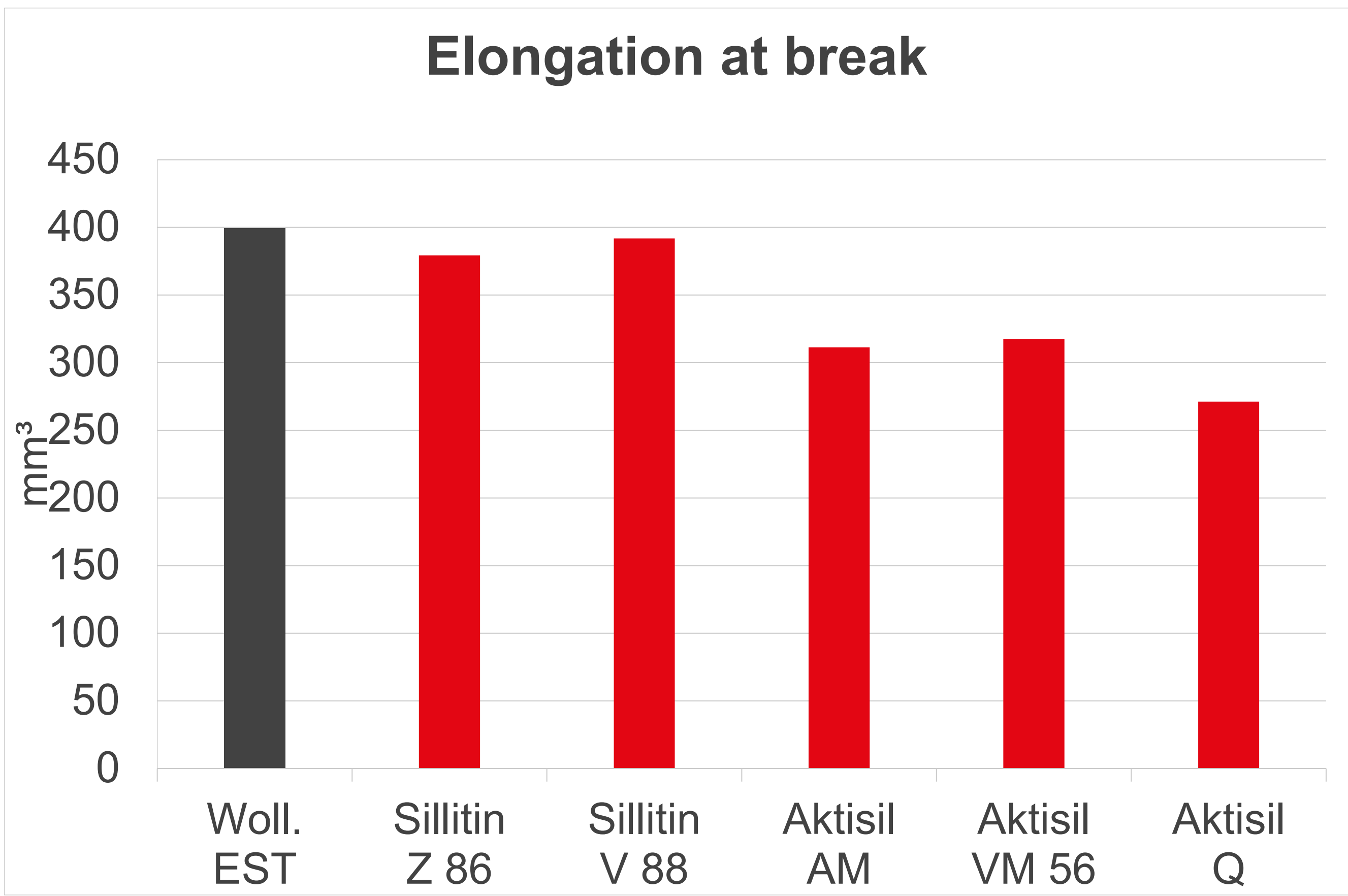
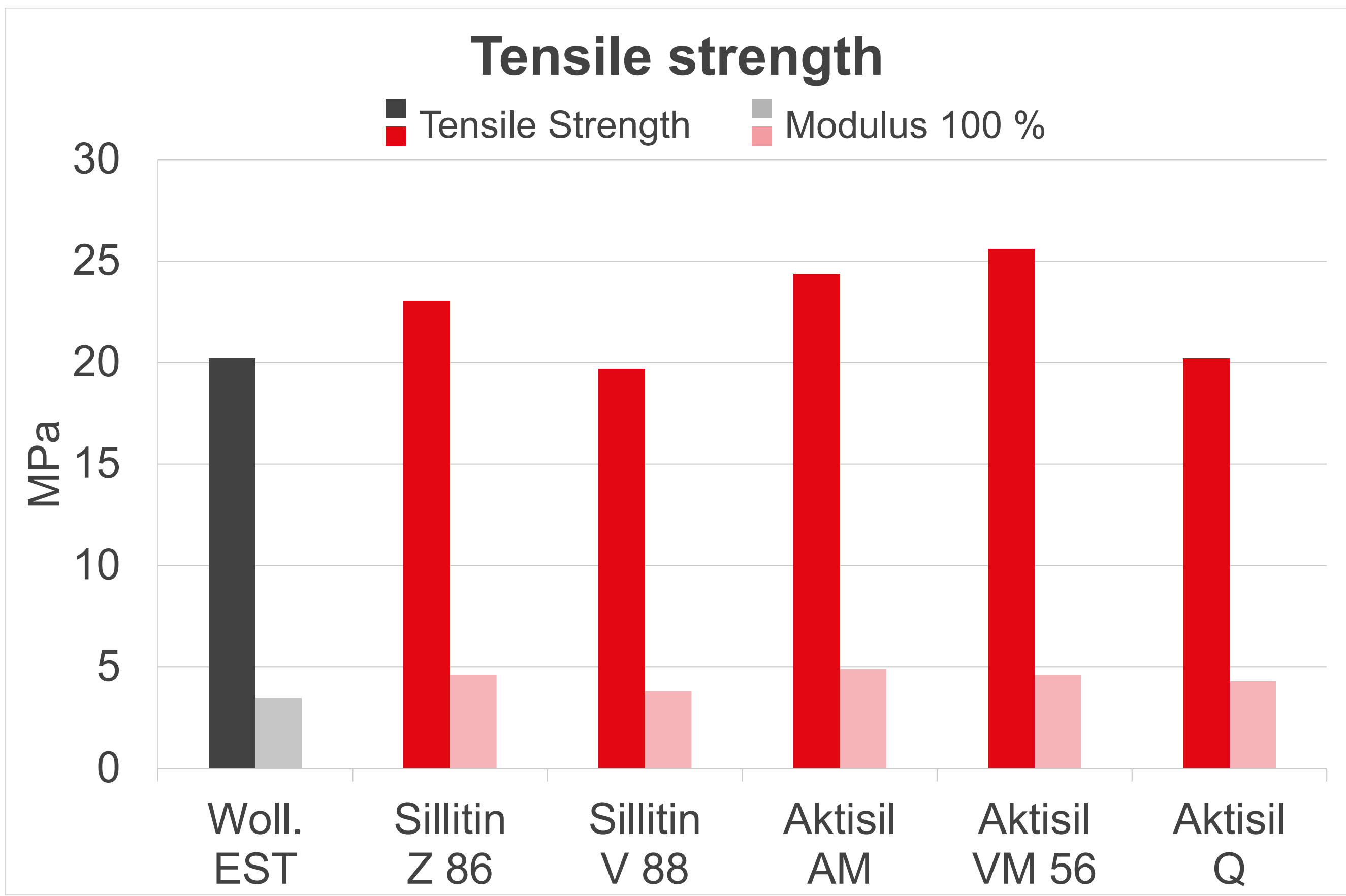
Neuburg Siliceous Earth (NSE) vs wollastonite and barium sulfate in peroxide cured FKM



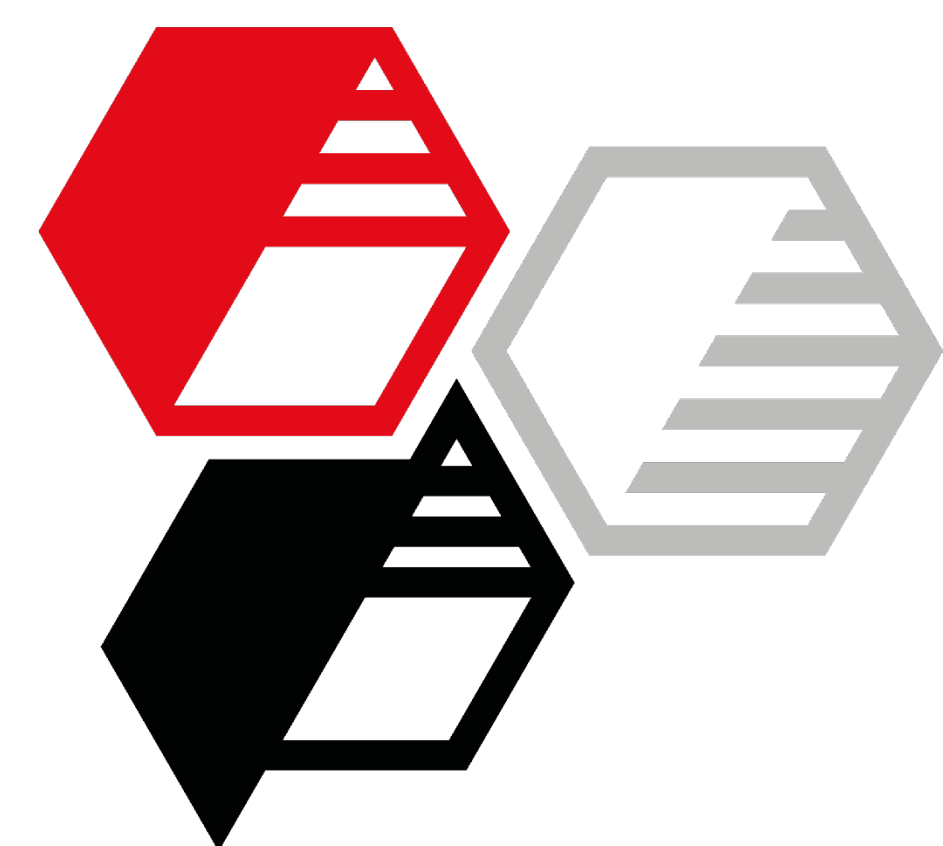
Benefits of NSE vs. Wollastonite EST

	Sillitin Z 86	Sillitin V 88	Aktisil AM	Aktisil VM 56	Aktisil Q
Cure speed	=	=	+	=	+
Viscosity	=	=	=	=	=
Tensile strength TS	+	=	+	+	=
Elongation at break	=	=			
Modulus 100 %	+	=	+	+	+
Tear resistance	=	=			
CS ISO 200 °C	=	=	=	=	=
CS ISO 200 °C, no post-cure	=	=	=	=	+
CS ISO 232 °C	=	=		=	=
CS ISO 232 °C, no post-cure	=	=	=	=	+
CS VW 23 °C	=	=	+	+	=
CS VW 150 °C		=	=		=
Abrasion resistance	+	=	+	+	+
Hot air resistance 210 °C			=	=	=
TS after hot air 210 °C	+	=	+	+	=
Hot air resistance 230 °C			=	=	=
TS after hot air 230 °C	+	=	+	+	=
Fuel resistance	+	+	+	+	+
TS after fuel	+	=	+	+	+
Oil resistance	+	+	+	+	+
TS after oil	+	+	+	+	+
Resistance to acetic acid	+	+	+	+	+

+ improvement
+ improvement, best grade
= no effect



Neuburg Siliceous Earth (NSE) vs wollastonite and barium sulfate in peroxide cured FKM



Benefits of NSE vs. Barium sulfate

	Sillitin Z 86	Sillitin V 88	Aktisil AM	Aktisil VM 56	Aktisil Q
Cure speed			+		=
Viscosity	=	+	+	+	+
Tensile strength	+	+	+	+	+
Elongation at break	=	=			
Modulus 100 %	+	+	+	+	+
Tear resistance	=	+			
CS ISO 200 °C	=	=	=	=	=
CS ISO 200 °C, no post-cure	=	=	=	=	+
CS ISO 232 °C	=	=	=	=	+
CS ISO 232 °C, no post-cure	+	+	=	=	+
CS VW 23 °C	+	=	+	+	=
CS VW 150 °C		=	=		=
Abrasion resistance	+	+	+	+	+
Hot air resistance 210 °C	=	=	+	+	=
Hot air resistance 230 °C	=	=	+	+	=
Fuel resistance	+	+	+	+	+
Oil resistance	+	+	+	+	+
Resistance to acetic acid	+	+	+	+	+

+ improvement
+ improvement, best grade
= no effect

