

## Adhesives for JoinTec project

- Structural adhesive for metal and epoxy bonding

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## Agenda

Adhesive solutions

Modified solutions

Tensile results

Adhesion

Further Development



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## Modifications

Results from last trials showed solution SF-07-051-3 (Red L50) – PU 156 as being the more promising adhesive according to wettability.



Modifications are made in order to increase elongation and tensile strength.



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## Tensile results 23°C

Modification	1	2	3	4	5	6	7	8	9	10	std
TSx [MPa]	6	25	9	6	22	8	16	18	20	9	18
%Elongb [%]	26	1,5	46	29	1	56	7	3	3	29	4
E-modulus [MPa]	N.A	2470	N.A	N.A	2500	N.A	N.A	1170	1590	N.A	2240

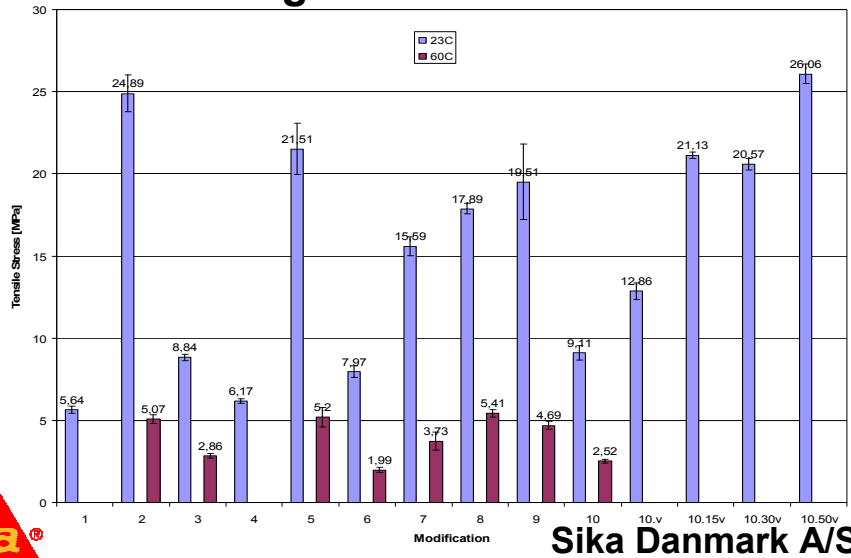
Modification	10vac	10,c1v	10c3v	10c5V	10	std
TSx [MPa]	13	21	21	26	9	18
%Elongb [%]	28	7	7	8	29	4
E-modulus [MPa]	N.A	N.A	N.A	N.A	N.A	2240

TS = Tensile Strength  
 %Elong = elongation  
 X = at max load  
 B = at break



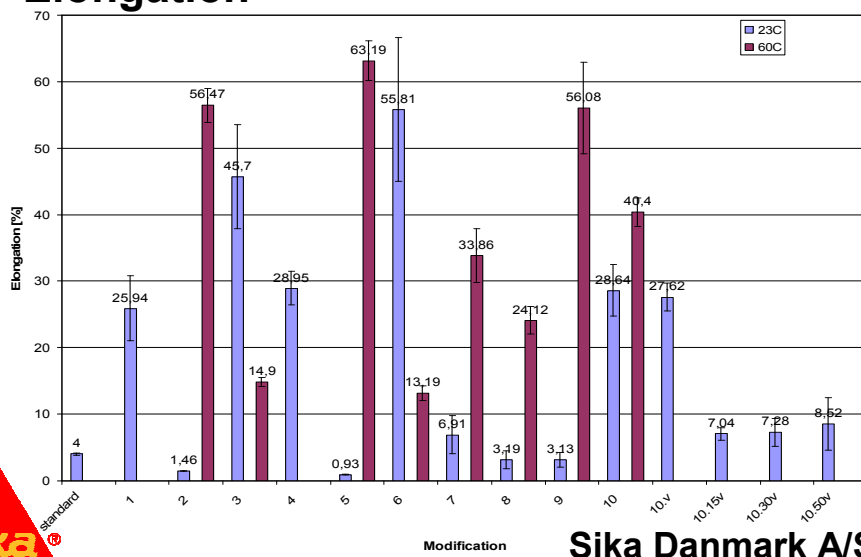
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### Tensile Strength



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### Elongation



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## Adhesion



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## Further Developments of the adhesive

### Tensile Properties

- Strength?
- Elongation?

### Temp. Stability

- Max. Temp.?
- Min. Temp.?

### Adhesion

- Surface Tension

### Permeability

- Type of matter in tubes?

### Rheology

- Sagging/non-sagging
- Thixotropy?
- low/high viscosity?

### Pot-life

- Long vs. Short?

### Materials

- Steel/epoxy coated steel
- Others?

### Toxicology

- Special needs? FDA?



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