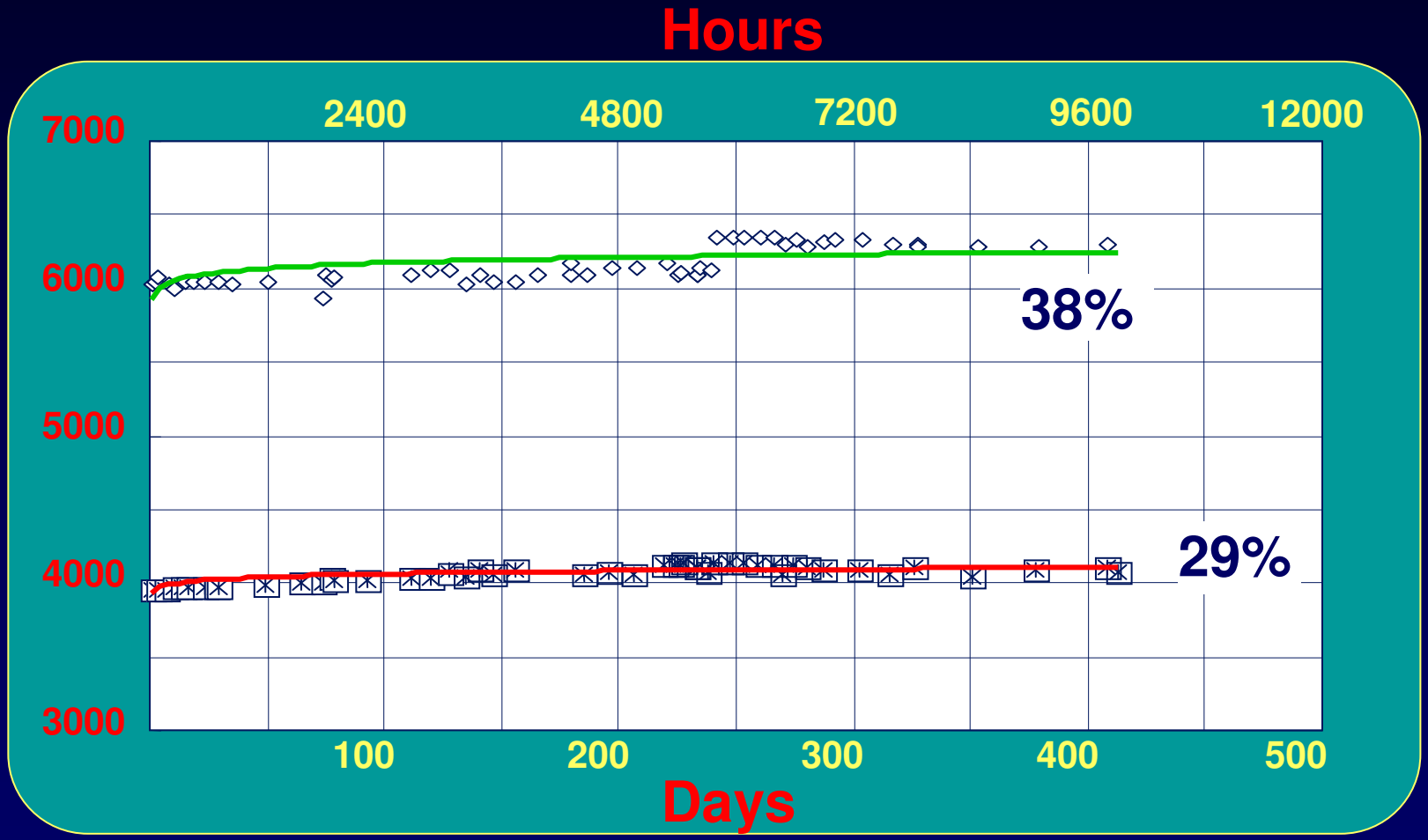
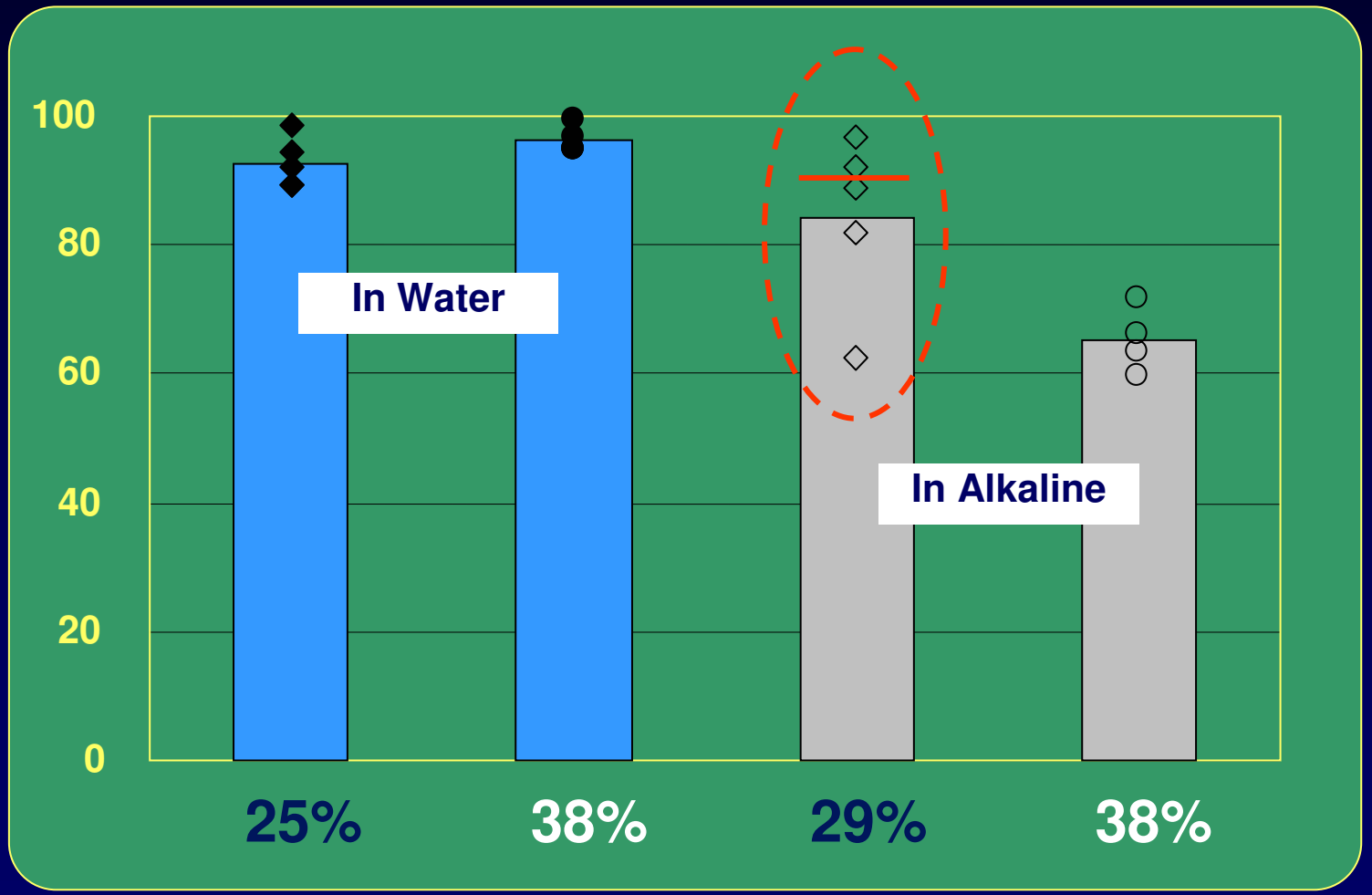
Strain in De-Ionized Water



Strength Retention

Strength retention %

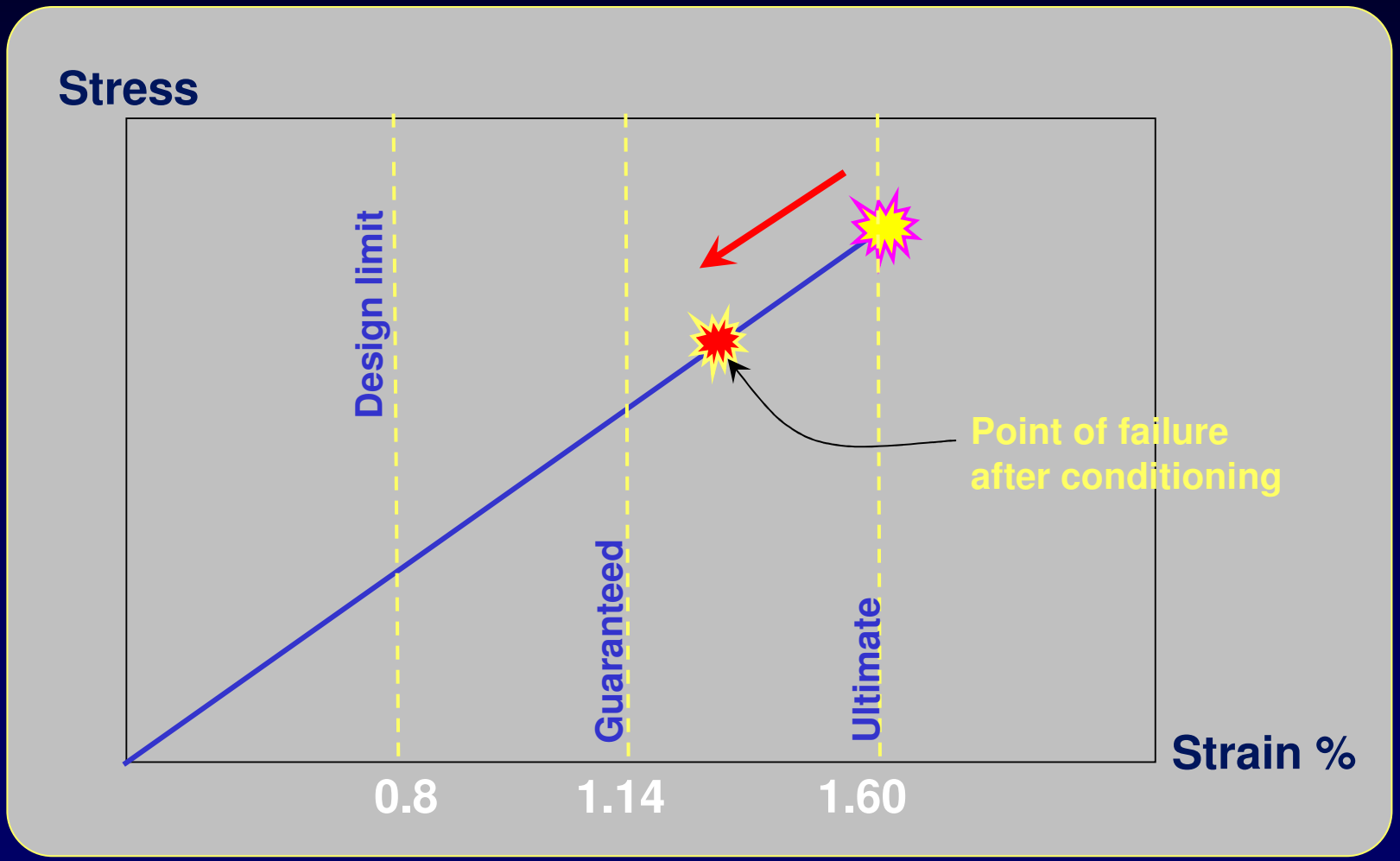
f_u^*



Change in Elastic Modulus

Medium	Stress Level	Original E_{frp}	Residual E_{frp}
Water	25%	40±2 MPa	40.9
	38%		40.2
Alkaline	29%		41.3
	38%		40.5

Behaviour Hypothesis



Conclusions

- ✓ Creep strain in the GFRP bars is less than 5% of the initial value after 10,000 of sustain tensile loading.
- ✓ Alkaline solution has more harmful effect on the bars than de-ionized water at higher stress level.
- ✓ The modulus of Elasticity of the bars is very stable.
- ✓ No single case of creep rupture was observed.
- ✓ Results are "Lower Boundary"

THANK YOU