

Combination Method	Σ of structural response	Σ of stress	Typical Use	
			Structure	Stress
Algebraic	Σx_i	$f(x_i)$	Traditional response summation	Expansion range
Scalar	Σx_i	$\Sigma \sigma_i$		Sustained + occasional
SRSS	SRSS(x_i)	SRSS (σ_i)		Spatial seismic summation
Absolute	$\Sigma x_i $	$\Sigma \sigma_i$		
Maximum	MAX of ($ x_i $), retain sign	MAX of (σ_i)	Collect maximum cyclic load	Collect maximum stress
Minimum	MIN of ($ x_i $), retain sign	MIN of (σ_i)		
Signed Maximum	MAX of (x_i)	MAX of (σ_i)	Used together to collect range of restraint load & pipe movement	
Signed Minimum	MIN of (x_i)	MIN of (σ_i)		

- Load Case 1 through Load Case n represented by L_i , where i=Load Cases that are combined
 - For example: L_1-L_2 or L_2+L_3
- Structural response ($\delta, \phi, F\&M$) in each load case represented by x_i
 - x is a vector (X, Y, Z) and is signed
- Stress in each load case represented by σ_i ; σ_i is unsigned
 - Combination stresses may also be a function of the load case components $=f(x_i)$
for example, $\sigma = M_{res}/Z$ where $M_{res} = \text{SQRT}[(M_{x1}-M_{x2})^2 + (M_{y1}-M_{y2})^2 + (M_{z1}-M_{z2})^2]$