

Corrosion

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$$\overline{CGR} \approx i_0 \cdot \frac{t_0^m}{\Gamma(m)} \cdot \left(\frac{t}{t_0}\right)^m \quad [1]$$

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$$CPR = \frac{D_s}{L} \left[e^{\frac{e a^*}{kT}} - 1 \right] \quad [2]$$

[3]

Fig. 1 - ma a | a | m a m

$$\overline{CGR}_{\text{min}} \approx 0.5 \cdot i_0 \cdot \sqrt{\frac{\sigma - \sigma_{TH}}{\sigma}} \quad [4]$$

$$\overline{CGR}_{CORR} = \frac{20}{N} \cdot \frac{I_C \Delta V}{\sigma_y} \cdot \frac{\sigma - \sigma_{TH}}{\sigma_y} \quad [5]$$

$$\overline{CGR}_{MECH} = \frac{\sigma - \sigma_{TH}}{\sqrt{T+273}} \cdot e^{-\frac{k_M \sigma_y}{T+273}} \quad [6]$$

$$\overline{CGR}_{CORR} = \frac{20}{N} \cdot \frac{I_C \Delta V}{\sigma_y} \cdot \frac{\sigma - \sigma_{TH}}{\sigma_y} \cdot \frac{\sigma - \sigma_{TH}}{\sqrt{T+273}} \cdot e^{-\frac{k_M \sigma_y}{T+273}} \quad [7]$$

Corrosion

Tab. 2 - a a a | m al

BCC ($k_M=5$)	Metal related data				Cathodic process data				Macrocell related data		
	T °C	σ_y MPa	$\Delta\sigma$ MPa	Ψ_{CH} V	i_{OH} A/m ²	i_{Cl} (850) A/m ²	[O ₂] ppm	i_{O_2} A/m ²	ρ Ωm	ΔV V	i_{sc} A/m ²
CO ₂ (HCO ₃ ⁻)	27	450	500	0.1	0.001	0.137				0.5	5.1
0.15=42	CS:OH			180	430	430	0.1	0.001	0.024		
SCC Crack Growth Rate (mm/y)											
Ref.	BCC ($k_M=5$)				CGR_{imp}	CGR_{imp}	CGR_{imp}			Experimental data	% co

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Tab. 3 - a a a | m al

[O ₂] ppm	Metal related data				Cathodic process data				Macrocell related data		
	i_{O_2} A/m ²	ρ Ωm	ΔE V	i_{OH} A/m ²	T °C	σ_y MPa	$\Delta\sigma$ MPa	ΔE V	i_{OH} A/m ²	i_{Cl} A/m ²	
150	0.0001	0.0001	10	0.001	30	300	300	0.001	0.001	0.001	
SCC Crack Growth Rate (mm/y)											
										Experimental data	% co

Tab. 4 - a a a | m al 3

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DISCUSSION AND CONCLUSIONS

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REFERENCES

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