





Uncracked/Cracked Diffusion Curve Fitting Comparison



Chloride Diffusion Coefficient

Uncracked Lab Specimens

	1.5%	3.0%	4.5%	6.0%	9.0%			
	Brine	Brine	Brine	Brine	Brine			
[m²/s]	2.82E-12	2.58E-12	2.37E-12	4.32E-12	2.79E-12			

Cracked Lab Specimens

	1.5%	3.0%	4.5%	6.0%	9.0%	
	Brine	Brine	Brine	Brine	Brine	
[m ² /s]	6.68E-12	6.43E-12	7.39E-12	6.32E-12	1.12E-11	

Deck Specimen Cores Core Time 3 Month 3 Month 13 Month 13 Month Midspan | Fixed End | Midspan | Fixed End Location $[m^2/s]$ 1.11E-11 6.55E-12 2.38E-11 1.54E-11 Core Time 17 Month 17 Month Midspan Fixed End Location $[m^2/s]$ 8.92E-12 8.64E-12



Conclusions

- Cracked specimens reached threshold for corrosion initiation at an accelerated rate
 - Cracked specimens resulted in greater chloride ingress due to the dual mechanisms
- Greater chloride brine resulted in more chlorides present
- High early chloride content and diffusion coefficient in cores

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