HLWYM HEmails

From: Osvaldo Pensado
Sent: Thursday, January 18, 2007 6:44 PM
To: Ronald Janetzke; [redacted]'
Cc: Andy Jung; Pavan Shukla; Yi-Ming Pan; Xihua He
Subject: TPA parameter changes

Ron, there are some parameters that for some reason were not updated like 1.5 years ago. Here are revised values. I hope we can incorporate these changes in the next version of the TPA code. Thanks

Ebsflo.def		Adjust fwet column to 1.0 values
OuterOverpackErpIntercept	triangular 1541.2, 1591.2, 1641.2	mV_{SHE} Reference: CNWRA 2005-02, Table 5-2
TempCoefOfOuterPackErpIntercept	constant -13.1	mV/°C Reference: CNWRA 2005-02, Table 5-2
OuterOverpackErpSlope	constant -362.7	mV Reference: CNWRA 2005-02, Table 5-2
TempCoefOfOuterPackErpSlope	constant 2.3	mV/°C Reference: CNWRA 2005-02, Table 5-2
CritChlorideConcForFirstLayer[mol/L]	constant 1.0E-4	mol/L Reference: CNWRA 2005-02 Note that Table 5-2 recommends a value of 0.5. However, Figure localized corrosion at $[Cl^-]$=0.05 mol/L at 95°C in mill annealed Since critical chloride threshold does not appear to be well define and O. Pensado recommend to disregard such a threshold (setting concentration to a small value is equivalent to disregarding a thres that the minimum chloride concentration in Figure 5-4 is 4 mol/L parameter change has no effect in the total system results.
WeldCritChlorideConc[mol/L]	constant 1.0E-4	mol/L Reference: CNWRA 2005-02 Table 5-2 recommends a value of loguniform(0.01, 0.25). Allowi threshold value to be a distribution may artificially disregard situa the corrosion potential exceeds the repassivation potential. Figure

		localized corrosion at [Cl^-] as low as 10^{-3} mol/L in welded+soluti annealed material at 95°C. . Since critical chloride threshold does to be well defined, D. Dunn and O. Pensado recommend to disreg threshold (setting the concentration to a small value is equivalent disregarding a threshold). Note that the minimum chloride concen Figure 5-4 is 4 mol/L; thus, this parameter change has no effect in system results.

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