Appendix I
Corrosion rates by various authors

	Corresponding loss of cross-section in (mm/year)
1. Kenneth Clear, 1989 (with K.Clear instrument)	
< 0.5 μA/cm^2 – no corrosion damage expected	<0.006 mm/year
0.5 – 2.7 μA/cm^2 – corrosion damage possible after 10 to 15 years	0.006-0.030 mm/year
2.7 – 27 μA/cm^2 – corrosion damage expected in 2 to10 years	0.030-0.310 mm/year
>27 μA/cm^2 – corrosion damage expected in 2 years or less	>0.31 mm/year
2. Carmen Andrade, 2000 (with Gecor 6 instrument)	
< 0.1 μA/cm^2 – Negligible	<0.001 mm/year
0.1 – 0.5 μA/cm^2 – Low	0.001-0.006 mm/year
0.5 – 1 μA/cm^2 – Moderate	0.006-0.012 mm/year
> 1 μA/cm^2 – High	>0.012 mm/year
Threshold current density in carbonated structures 0.3 μA/cm^2	
3. Thomas Frolund, 2002 (with GalvaPulse instrument)	
< 0.5 μA/cm^2- passive areas	<0.006 mm/year
0.5 - 2 μA/cm^2 – negligible corrosion activity	0.006-0.023 mm/year
2 – 5 μA/cm^2 – low corrosion activity	0.023-0.058 mm/year
5 – 15 μA/cm^2 – moderate corrosion activity	0.058-0.174 mm/year
> 15 μA/cm^2 – high corrosion activity	>0.174 mm /vear

The transformation from corrosion current in μA/cm^2 is made in the following manner:

Faraday´s law of electrochemical equivalent states the 1 μA/cm^2 corresponds to a cross section loss for carbon steel of 11.6 μm/year (0.0116 mm/year).

The corrosion rate can, therefore, be estimated from the corrosion current and the area of polarization as:

Corrosion (μm/year) = 11.6 x I_{corr}/Area (μA/cm^2)

The corrosion current Icorr in (μA) is calculated from Stern Geary´s equation Icorr=25/Rp, where Rp is the measured polarization resistance