Appendix C2　Corrosion in seawater

1.　Preface

Seawater contains a large amount of salts such as chlorides and sulfates, making it corrosive to many metals. For example, carbon steel exhibits uneven corrosion or general corrosion. Stainless steel undergoes localized corrosion (pitting, crevice corrosion, stress corrosion cracking). In addition, because it contains a large amount of salts, its electrical conductivity is high, which makes galvanic corrosion more likely to occur. When seawater is contaminated, copper alloys become particularly susceptible to corrosion. This page explains corrosion for carbon steel by normal, clean seawater.

2. Corrosion rate of carbon steel in seawater

Table 1 Relation between corrosion rate between temperature and flow rate

Temperature ℃	Flow rate　m/sec	Corrosion rate mm/year	Remarks
25	0	0.12	
	1	0.9	
	15	1.3	Pump impeller, ship propeller

Reference）Handbook for corrosion and protection, Ed by Society for Corrosion Engineer, Published by Maruzen,　Feb. 2000