ISO 16784-1:2006-03 (E)

Corrosion of metals and alloys - Corrosion and fouling in industrial cooling water systems - Part 1: Guidelines for conducting pilot-scale evaluation of corrosion and fouling control additives for open recirculating cooling water systems

Contents

Page

Foreword iv

Introduction v

1 Scope 1

2 Normative references 1

3 Terms, definitions, symbols and abbreviated terms 2

4 Types of testing 2
4.1 Laboratory and off-site testing 2
4.2 On-site testing 2
4.3 On-line testing 2

5 Test unit design parameters 3
5.1 General 3
5.2 Construction materials 3

6 Operating parameters 5
6.1 General 5
6.2 Surface temperature 5
6.3 Water velocity 5
6.4 Residence time 5

7 Water quality 5
7.1 General 5
7.2 Natural versus synthetic water supplies 6
7.3 Fresh water 6
7.4 Seawater and brackish water 6
7.5 Recycle/reuse water 6
7.6 Dual and combined make-up systems 6

8 Contamination 7
8.1 General 7
8.2 Process leaks 7
8.3 Biological matter 7
8.4 Airborne solids and gases 7

9 Parameters to be evaluated in pilot test units 7
9.1 Corrosion 7
9.2 Fouling 9
9.3 Practical problems in operating systems -- Multiple combinations of problems 10
9.4 Water treatment additives 10

10 Design of pilot-scale performance testing facilities 11
10.1 Objectives 11
10.2 The importance of simulating specific application environments 11
10.3 Compromises in pilot-scale performance testing 11

11 Pilot-scale facility operations 13
11.1 Documentation of design 13
11.2 Repeatability of results and comparison with field performance 13
11.3 Record-keeping and reports 13

Bibliography 14