ISO 20233-1:2018-03 (E)

Ships and marine technology - Model test method for propeller cavitation noise evaluation in ship design - Pa rt 1: Source level estimation

Contents

Page

Foreword iv

Introduction v

1 Scope 1

2 Normative references 1

3 Termsanddefinitions 1

4 Model test setup and conditions 3
4.1 Test setup 3
4.1.1 Test facility 3
4.1.2 Model propeller 3
4.1.3 Wake generation 3
4.2 Test conditions 4
4.3 Calibration 5

5 Noise measurement instrumentation 5
5.1 Hydrophone and signal conditioning 5
5.2 Data acquisition 6
5.2.1 General 6
5.2.2 Sampling frequency 6
5.2.3 Resolution 6
5.2.4 Synchronization for multiple channel sampling 6
5.2.5 Filtering 6
5.2.6 Acquisition time 6

6 Noise measurement procedure 6
6.1 Propeller cavitation noise measurement 6
6.2 Background noise measurement 6
6.3 Reference field measurement 7
6.3.1 Objective 7
6.3.2 Virtual source and input signal 7
6.3.3 Measurement condition 7

7 Post processing and scaling 7
7.1 Sound pressure level 8
7.2 Background noise adjustment 8
7.3 Transmission loss 8
7.4 Model scale source level 9
7.5 Scaling to the full-scale noise levels 9
7.6 Other option for full-scale noise prediction 10

8 Uncertainty 10

Annex A (informative) Wake extrapolation methods 11

Annex B (informative) Uncertainty assessments 12

Bibliography 13