

ISO 11674:2019-11 (E)

Ships and marine technology - Heading control systems

Contents	Page
Foreword	v
1 Scope	1
2 Normative references	1
3 Terms, definitions and abbreviated terms	2
3.1 Terms and definitions	2
3.2 Abbreviated terms	4
4 Requirements	5
4.1 General	5
4.2 Operational requirements	7
4.2.1 Change-over from automatic to manual steering and vice versa	7
4.2.2 Operational controls including adjustment controls	7
4.2.3 Manual change-over from track control to heading control	8
4.3 Functional requirements	8
4.3.1 Rudder angle limitation	8
4.3.2 Heading monitor	8
4.3.3 Interfaces	8
4.3.4 Alert management	9
4.3.5 Mandatory displayed information	11
4.4 Control performance requirements	11
4.4.1 General	11
4.4.2 Heading keeping function under wave disturbance	12
4.4.3 Heading changing function	12
4.5 Display	14
5 Set-up	14
5.1 General	14
5.2 Ship motion simulator and starting condition	15
6 Tests of operational requirements	16
6.1 Change-over from automatic to manual steering and vice versa -- Method of testing and required test results	16
6.2 Operational controls including adjustment controls -- Method of testing and required test results	17
6.3 Manual change-over from track control to heading control	17
6.3.1 Application	17
6.3.2 Method of testing and required test results	17
6.4 Display test	18
7 Tests of functional requirements	18
7.1 Rudder angle limitation	18
7.1.1 Method of testing	18
7.1.2 Required test results	18
7.2 Heading monitor	18
7.3 Interfaces	19
7.3.1 Method of testing	19
7.3.2 Required test results	19
7.4 Alert management	19
7.4.1 Basic test for alert management	19

7.4.2	'Lost HDG control' alert and escalation to BNWAS	19
7.4.3	'Off-heading' alert	20
7.4.4	Alert detected by the heading monitor ('Doubtful heading' alert)	21
7.4.5	'No SPD adaptive' alert	22
7.4.6	'Low speed' alert	22
7.4.7	Failure or reduction in the power supply to the EUT or an external heading monitor ('HCS power fail' alert)	23
7.4.8	System failure of EUT or an external heading monitor ('HCS fault' alert)	24
7.5	Mandatory displayed information -- Method of testing and required test results	24
8	Tests of control performance	24
8.1	Heading keeping test under wave disturbance	24
8.1.1	Method of testing	24
8.1.2	Required test results	25
8.2	Heading changing test	25
8.2.1	Application	25
8.2.2	Small heading changing test	25
8.2.3	Heading changing test with preset turn rate	26
8.2.4	Heading changing test with preset turning radius	27
8.2.5	200° heading changing test	28
8.2.6	Heading changing test under wave disturbance	28
9	Information	29
Annex A (normative)	Use of IEC 62065 ship models and wave disturbances for the HCS performance tests	30
Annex B (normative)	Alerts definition for HCS	43
Annex C (normative)	IEC 61162 interfaces	44
Bibliography	47