DIN EN ISO 12215-9:2019-02 (E)

Small craft - Hull construction and scantlings - Part 9: Sailing craft appendages (ISO 12215-9:2012)

Contents

Page

Foreword 5

Introduction 6

1 Scope 7

2 Normative references 7

3 Terms and definitions 8

4 Symbols 9

5 Design stresses 10

6 Structural components to be assessed 12

7 Load cases 12
7.1 General 12
7.2 Load case 1 -- Fixed keel at 90° knockdown 13
7.3 Load case 2 -- Canted keel steady load at 30° heel with dynamic overload factor 14
7.4 Load case 3 -- Keelboat vertical pounding 15
7.5 Load case 4 -- Keelboat longitudinal impact 16
7.6 Load case 5 -- Centreboard on capsize recoverable dinghies 17
7.7 Load case 6 -- Centreboard or dagger board upwind 17
7.8 Other load cases 18

8 Computational methods 21
8.1 General 21
8.2 General guidance for assessment by 3D numerical procedures 21
8.3 Assessment by strength of materials/non-computational-based methods 22

9 Compliance 22

Annex A (normative) Application declaration 24

Annex B (informative) Information on metal for appendages and fasteners and "established practice" for fastening and welding 25

Annex C (informative) "Established practice" structural arrangement for ballast keels 36

Annex D (informative) "Established practice" calculation of keel fin strength (fixed or canting) and fixed ballast keel connected by bolts 50

Annex E (informative) Geometrical properties of some typical appendage foil shapes 67

Annex F (informative) Simplified fatigue strength assessment 70

Bibliography 82