

DIN EN ISO 12217-2:2026-04 (E)

Small craft - Stability and buoyancy assessment and categorization - Part 2: Sailing boats of hull length greater than or equal to 6 m (ISO 12217-2:2022)

Contents

Page

Foreword.....	v
Introduction.....	vi
1 Scope.....	1
2 Normative references.....	1
3 Terms and definitions.....	2
3.1 Primary.....	2
3.2 Hazards.....	4
3.3 Downflooding.....	4
3.4 Dimensions, areas and angles.....	5
3.5 Condition, mass and volume.....	6
3.6 Other terms and definitions.....	9
4 Symbols.....	12
5 Procedure.....	13
5.1 Maximum load.....	13
5.2 Sailing or non-sailing.....	13
5.3 Tests, calculations and requirements to be applied.....	13
5.4 Variation in input parameters.....	14
6 Requirements for monohull boats.....	14
6.1 Requirements to be applied.....	14
6.2 Downflooding.....	15
6.2.1 Downflooding openings.....	15
6.2.2 Downflooding height.....	18
6.2.3 Downflooding angle.....	19
6.3 Recess size.....	19
6.3.1 Application.....	19
6.3.2 Simplified methods.....	20
6.3.3 Direct calculation method.....	22
6.4 Minimum righting energy.....	22
6.5 Angle of vanishing stability.....	23
6.5.1 General.....	23
6.5.2 Normal requirement.....	23
6.5.3 Alternative requirement for design category B.....	23
6.6 Stability index (STIX).....	24
6.6.1 Method.....	24
6.6.2 Dynamic stability factor (FDS).....	25
6.6.3 Inversion recovery factor (FIR).....	25
6.6.4 Knockdown recovery factor (FKR).....	25
6.6.5 Displacement-length factor (FDL).....	26
6.6.6 Beam-displacement factor (FBD).....	26
6.6.7 Wind moment factor (FWM).....	26
6.6.8 Downflooding factor (FDF).....	27
6.6.9 Calculation of the stability index (STIX).....	27
6.7 Knockdown-recovery test.....	27
6.8 Wind stiffness test.....	28
6.8.1 General.....	28

6.8.2	Practical test.....	28
6.8.3	Compliance by calculation.....	30
6.8.4	Requirements.....	31
6.9	Flotation requirements.....	32
6.10	Capsize-recovery test.....	32
6.11	Detection and removal of water.....	34
7	Requirements for catamarans, trimarans and form-stable monohulls	35
7.1	Requirements to be applied.....	35
7.2	Downflooding openings.....	35
7.3	Downflooding height.....	35
7.4	Recess size.....	35
7.5	Stability information.....	35
7.6	Safety signs.....	36
7.7	Bare poles factor.....	37
7.8	Rolling in breaking waves.....	37
7.9	Pitchpoling.....	38
7.10	Diagonal stability.....	38
7.11	Habitable multihull boats.....	38
7.12	Buoyancy when inverted.....	40
7.13	Escape after inversion.....	41
8	Safety signs.....	42
9	Application.....	42
9.1	Deciding the design category.....	42
9.2	Meaning of the design categories.....	42
Annex A	(normative) Full method for required downflooding height.....	44
Annex B	(normative) Methods for calculating downflooding angle.....	46
Annex C	(normative) Determining the curve of righting moments.....	48
Annex D	(normative) Method for calculating reserve of buoyancy after inversion or swamping.....	51
Annex E	(normative) Flotation material and elements.....	53
Annex F	(normative) Information for the craft's owner's manual.....	55
Annex G	(normative) Determination of safe wind speed information.....	59
Annex H	(normative) Determination of longitudinal righting characteristics.....	62
Annex I	(informative) Summary of requirements.....	65
Annex J	(informative) Worksheets.....	68
Annex K	(informative) Illustration of recess retention level.....	87
Bibliography	88