

DIN EN ISO 12217-2:2016-03 (E)

Small craft - Stability and buoyancy assessment and categorization - Part 2: Sailing boats of hull length greater than or equal to 6 m (ISO 12217-2:2015)

Contents	Page
European foreword	4
Annex ZA (informative) Relationship between this European Standard and the essential requirements of Directive 2013/53/EU aimed to be covered	5
Foreword	6
Introduction	8
1 Scope	9
2 Normative references	9
3 Terms and definitions	10
3.1 Primary	10
3.2 Hazards	12
3.3 Downflooding	12
3.4 Dimensions, areas and angles	13
3.5 Condition, mass and volume	14
3.6 Other terms and definitions	17
4 Symbols	20
5 Procedure	21
5.1 Maximum load	21
5.2 Sailing or non-sailing	21
5.3 Tests, calculations and requirements to be applied	22
5.4 Variation in input parameters	22
6 Requirements for monohull boats	22
6.1 Requirements to be applied	22
6.2 Downflooding	23
6.2.1 Downflooding openings	23
6.2.2 Downflooding height	26
6.2.3 Downflooding angle	27
6.3 Recess size	27
6.3.1 Application	27
6.3.2 Simplified methods	28
6.3.3 Direct calculation method	30
6.4 Minimum righting energy	30
6.5 Angle of vanishing stability	30
6.5.1 Normal requirement	31
6.5.2 Alternative requirement for design category B	31
6.6 Stability index (STIX)	32
6.6.1 Method	32
6.6.2 Dynamic stability factor (FDS)	33
6.6.3 Inversion recovery factor (FIR)	33
6.6.4 Knockdown recovery factor (FKR)	33
6.6.5 Displacement-length factor (FDL)	34
6.6.6 Beam-displacement factor (FBD)	34
6.6.7 Wind moment factor (FWM)	34
6.6.8 Downflooding factor (FDF)	35
6.6.9 Calculation of the stability index (STIX)	35
6.7 Knockdown-recovery test	36

6.8	Wind stiffness test.....	37
6.8.1	General.....	37
6.8.2	Practical test.....	37
6.8.3	Compliance by calculation.....	38
6.8.4	Requirements.....	38
6.9	Flotation requirements.....	39
6.10	Capsize-recovery test.....	40
6.11	Detection and removal of water.....	41
7	Requirements for catamarans, trimarans and form-stable monohulls.....	42
7.1	Requirements to be applied.....	42
7.2	Downflooding openings.....	42
7.3	Downflooding height.....	42
7.4	Recess size.....	42
7.5	Stability information.....	43
7.6	Safety signs.....	44
7.7	Bare poles factor.....	45
7.8	Rolling in breaking waves.....	45
7.9	Pitchpoling.....	45
7.10	Diagonal stability.....	46
7.11	Habitable multihull boats.....	46
7.12	Buoyancy when inverted.....	47
7.13	Escape after inversion.....	48
8	Safety signs.....	49
9	Application.....	50
9.1	Deciding the design category.....	50
9.2	Meaning of the design categories.....	50
	Annex A (normative) Full method for required downflooding height.....	52
	Annex B (normative) Methods for calculating downflooding angle.....	55
	Annex C (normative) Determining the curve of righting moments.....	58
	Annex D (normative) Method for calculating reserve of buoyancy after inversion or swamping.....	61
	Annex E (normative) Flotation material and elements.....	63
	Annex F (normative) Information for owner's manual.....	65
	Annex G (normative) Determination of safe wind speed information.....	69
	Annex H (normative) Determination of longitudinal righting characteristics.....	72
	Annex I (informative) Summary of requirements.....	75
	Annex J (informative) Worksheets.....	78
	Annex K (informative) Illustration of recess retention level.....	97
	Bibliography.....	98