

# ISO 12217-2:2013-03 (E)

## Small craft - Stability and buoyancy assessment and categorization - Part 2: Sailing boats of hull length greater than or equal to 6 m

---

<b>Contents</b>		<b>Page</b>
Foreword .....		v
Introduction .....		vi
<b>1</b>	<b>Scope .....</b>	<b>1</b>
<b>2</b>	<b>Normative references .....</b>	<b>1</b>
<b>3</b>	<b>Terms and definitions .....</b>	<b>2</b>
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
<b>4</b>	<b>Symbols .....</b>	<b>11</b>
<b>5</b>	<b>Procedure .....</b>	<b>13</b>
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 .....	13
<b>6</b>	<b>Requirements for monohull boats .....</b>	<b>13</b>
6.1	Requirements to be applied .....	13
6.2	Downflooding .....	14
6.3	Recess size .....	18
6.4	Minimum righting energy .....	21
6.5	Angle of vanishing stability .....	21
6.6	Stability index (STIX) .....	23
6.7	Knockdown-recovery test .....	26
6.8	Wind stiffness test .....	27
6.9	Flotation requirements .....	30
6.10	Capsize-recovery test .....	30
6.11	Detection and removal of water .....	32
<b>7</b>	<b>Requirements for catamarans, trimarans and form-stable monohulls .....</b>	<b>33</b>
7.1	Requirements to be applied .....	33
7.2	Downflooding openings .....	33
7.3	Downflooding height .....	33
7.4	Recess size .....	33
7.5	Stability information .....	33
7.6	Safety signs .....	34
7.7	Bare poles factor .....	35
7.8	Rolling in breaking waves .....	35
7.9	Pitchpoling .....	36
7.10	Diagonal stability .....	36
7.11	Habitable multihull boats .....	36
7.12	Buoyancy when inverted .....	38
7.13	Escape after inversion .....	38

<b>8</b>	<b>Safety signs .....</b>	<b>39</b>
<b>9</b>	<b>Application .....</b>	<b>40</b>
<b>9.1</b>	<b>Deciding the design category .....</b>	<b>40</b>
<b>9.2</b>	<b>Meaning of the design categories .....</b>	<b>40</b>
<b>Annex A (normative) Full method for required downflooding height .....</b>		<b>42</b>
<b>Annex B (normative) Methods for calculating downflooding angle .....</b>		<b>44</b>
<b>Annex C (normative) Determining the curve of righting moments .....</b>		<b>47</b>
<b>Annex D (normative) Method for calculating reserve of buoyancy after inversion or swamping .....</b>		<b>50</b>
<b>Annex E (normative) Flotation material and elements .....</b>		<b>52</b>
<b>Annex F (normative) Information for owner's manual .....</b>		<b>54</b>
<b>Annex G (normative) Determination of safe wind speed information .....</b>		<b>58</b>
<b>Annex H (normative) Determination of longitudinal righting characteristics .....</b>		<b>61</b>
<b>Annex I (informative) Summary of requirements .....</b>		<b>64</b>
<b>Annex J (informative) Worksheets .....</b>		<b>67</b>
<b>Bibliography .....</b>		<b>86</b>