

DIN EN 13138-1:2022-03 (E)

Buoyant aids for swimming instruction - Part 1: Safety requirements and test methods for buoyant aids to be worn

Contents		Page
European foreword		5
0	Introduction	6
1	Scope	9
2	Normative references	9
3	Terms and definitions	10
4	Classification	12
5	Safety Requirements concerning design and material	13
5.1	General	13
5.2	Conspicuity	13
5.3	Buoyancy	13
5.4	Fit and positioning	15
5.5	Entire assembly and components	16
5.6	Materials — Mechanical properties	17
5.7	Markings on swimming devices	18
6	Test methods	19
6.1	Conditioning	19
6.2	Test procedure	20
7	Warnings and markings	20
7.1	General	20
7.2	Warnings and markings on the product	20
7.3	Information supplied by the manufacturer	21
7.4	Consumer information at the point of sale	21
8	Safety requirements concerning in-water performance	23
8.1	General	23
8.2	Category of users, test manikins, human test subjects	23
8.3	Prevention from sinking	24
8.4	Flotation angle (horizontal, vertical)	24
8.5	Displacement of the swimming device on the body	24
8.6	Retention of function after failure of an air chamber	24
9	Testing	24
9.1	Test methods	24
9.2	In-water performance test with a human test subject	24
9.3	In-water performance testing with free floating manikin	25
9.4	Testing for displacement of the swimming device on the body	26
9.5	Test method for retention of function after failure of an air chamber	26
Annex A (normative)	Procedures for testing resistance of markings to saliva	27
Annex B (normative)	Procedures for testing efficiency of valves of inflatable swimming devices	28
Annex C (normative)	Procedure for testing the security of the pressure release of buckles without double action (simultaneous/sequential) release	29
Annex D (normative)	Procedures for testing non-objectively measurable features like donning, adjustability, retention of function, edges, corners and points by assessment panel	30
D.1	General	30

D.2	Assessment of risks to the user	30
D.3	Re-assessment of instructions supplied with the swimming device	30
Annex E (normative)	Procedures for testing seam strength and durability of inflatable swimming devices	32
Annex F (normative)	Procedures for determining the puncture resistance of inflatable swimming devices	33
Annex G (normative)	Procedures for testing conspicuity.....	34
G.1	Test sequence.....	34
G.2	Test parameter.....	34
G.3	Photo tests boards or beamer projection	34
Annex H (normative)	Procedures for testing for integrity of the entire assembly.....	37
H.1	Test description	37
H.2	Test parameters.....	37
Annex I (normative)	Detailed illustrations regarding the layout of information symbols, general safety signs and their arrangement on the product.....	38
I.1	General	38
I.2	Graphical symbols characterizing the category of information and heading arrayed groups of symbols.....	38
Annex J (normative)	Procedure for testing entanglement on protruding parts.....	45
Annex K (normative)	Dimensions of manikins I to III.....	46
K.1	Dimensions of manikins I to III.....	46
K.2	Functional residual lung volume	48
K.3	Mass and density of components of manikins I to III.....	49
K.4	Centre of gravity of manikins I to III.....	49
Annex L (normative)	Dimensions of manikins IV to VII	51
L.1	Dimensions of manikins IV to VII.....	51
L.2	Density of manikin components.....	56
L.3	Functional residual lung capacity (FRC)	56
L.4	Calibration on land (dry), manikins III to VII.....	56
L.5	Calibration underwater (wet), manikins I to VII.....	56
Annex M (normative)	In-water performance test, measuring devices fitted to free floating manikins I to VII, measurement of floating angle	58
M.1	In-water performance test, measuring devices fitted to free floating manikins I to VII, measurement of floating angle	58
M.2	In-water performance test, free floating manikins I to VII, measurement of freeboard....	59
Annex N (informative)	Significant changes between this document and the previous edition of EN 13138-1:2014.....	60
Annex ZA (informative)	Relationship between this European Standard and the essential requirements of Regulation (EU) 2016/425 of the European Parliament and of the Council of 9 March 2016 on personal protective equipment aimed to be covered	61
	Bibliography.....	62