# DIN EN ISO 13590:2023-06 (E)

## Small craft - Personal watercraft - Construction and system installation requirements (ISO 13590:2022)

## 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** ... **7**

**1 Scope** ... **9**

**2 Normative references** ... **9**

**3 Terms and definitions** ... **9**

**4 Builder's plate** ... **12**

**5 Watercraft identification** ... **12**

**6 Fuel system** ... **12**
6.1 General ... 12
6.2 Fuel tanks ... 12
6.2.1 Materials prohibited for fuel tanks ... 12
6.2.2 Fuel level indication ... 12
6.2.3 Tank pressure limitation ... 13
6.2.4 Fill and vent openings ... 13
6.2.5 Fuel tank static-pressure test ... 13
6.2.6 Fuel tank shock test ... 13
6.3 Fuel tank installations ... 14
6.3.1 Non-encased metallic fuel tanks ... 14
6.4 Fuel tank filling system ... 14
6.5 Fuel pumps ... 14
6.6 Fuel stop valves ... 14
6.7 Fuel filters and strainers ... 14
6.8 Spud, pipe and hose fitting ... 14
6.9 Clips, straps and hose clamps ... 14
6.10 Metallic fuel line ... 15
6.11 Plugs and fittings ... 15
6.12 Vent and fuel distribution hoses and connections ... 15
6.13 Fuel fill system grounding ... 15
6.14 Fire test ... 15
6.15 Fuel-hose specifications ... 16
6.15.1 General ... 16
6.15.2 Tensile strength and elongation ... 16
6.15.3 Dry heat resistance ... 16
6.15.4 Ozone resistance ... 16
6.15.5 Oil resistance ... 16
6.15.6 Burst test ... 17
6.15.7 Vacuum collapse test ... 17
6.15.8 Cold flexibility ... 17
6.15.9 Adhesion test (reinforced hose with cover) ... 17
6.15.10 Fuel resistance ... 17

**7 Electrical system** ... **18**
7.1 Exemptions ... 18

7.2 Conductor type, size and identification ... 18
7.3 Conductor support and protection ... 20
7.4 External ignition protection ... 20
7.5 Overcurrent protection ... 20
7.6 Conductor terminations ... 21
7.7 Batteries ... 22
7.8 Secondary circuits of ignition systems ... 23

**8 Ventilation ... 23**

**9 Hull structure test ... 24**
9.1 Drop test ... 24
9.2 Testing ... 24
9.3 Passing or failing the test ... 24

**10 Floatation test ... 24**
10.1 General ... 24
10.2 Test conditions ... 24
10.3 Test procedure ... 24
10.4 Acceptance level ... 24
10.5 Floatation material ... 25
10.5.1 Introduction ... 25
10.5.2 Vapour test ... 25
10.5.3 Petrol test lasting 24 h ... 25
10.5.4 Petrol test lasting 30 days ... 25
10.5.5 Oil test lasting 24 h ... 25
10.5.6 Oil test lasting 30 days ... 25
10.5.7 Bilge cleaner test lasting 24 h ... 25
10.5.8 Bilge cleaner test lasting 30 days ... 26

**11 Steering-system test ... 26**
11.1 General ... 26
11.2 Axial force test ... 26
11.3 Tangential force test ... 26
11.4 Fatigue test ... 26
11.5 Impact test ... 26
11.5.1 Impact test 1 ... 26
11.5.2 Impact test 2 ... 26

**12 Stability ... 27**

**13 Propulsion engine cut-off device ... 28**
13.1 General ... 28
13.2 Cut-off device requirements ... 28
13.3 Mechanical devices employing a physical attachment to the operator ... 28
13.4 Testing ... 28

**14 Means of reboarding ... 29**

**15 Towing ... 30**

**16 Off throttle steering when underway ... 30**

**17 Flooding — Detection and removal of water ... 30**

**18 Owner's manual ... 30**

**Annex A** (normative) **Test conditions, procedures and performance requirements for evaluating the off throttle steering capabilities of personal watercraft ... 31**

**Bibliography ... 36**