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Respiratory equipment – Full-face snorkel masks – Specification

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Summary of pages

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Foreword

Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 31 October 2024. It was prepared by Subcommittee PH/4/7, *Underwater breathing apparatus*, under the authority of Technical Committee PH/4, *Respiratory protection*. A list of organizations represented on these committees can be obtained on request to the committee manager.

Relationship with other publications

The following standards provide further information on the testing and requirements of associated diving equipment that users of this standard might find useful:

- [BS EN 250:2014](#), *Respiratory equipment – Open-circuit self-contained compressed air diving apparatus – Requirements, testing and marking*
- [BS EN 1972:2015](#), *Diving equipment – Snorkels – Requirements and test methods*

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Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

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1 Scope

This British Standard specifies safety requirements and test methods for full-face snorkel masks (FFSM). This British Standard is applicable to FFSM which allows the user to breathe at the water surface while floating with the entire face fully enclosed when submerged.

This British Standard covers FFSM used by snorkellers at the water surface.

This British Standard does not cover diving masks, snorkels, diving full-face masks, respiratory breathing apparatus full-face masks and oro-nasal masks.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes provisions, or limits the application, of this document¹⁾. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

[BS EN 16805:2015](#), *Diving equipment – Diving mask – Requirements and test methods*

[BS ISO 16900-5:2016+A1](#), *Respiratory protective devices – Methods of test and test equipment – Part 5: Breathing machine, metabolic simulator, RPD headforms and torso, tools and verification tools*

[BS ISO 16900-12](#), *Respiratory protective devices – Methods of test and test equipment – Part 12: Determination of volume-averaged work of breathing and peak respiratory pressures*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1 breathing frequency

setting of the breathing simulator measured in cycles per minute

3.2 buckle

device allowing adjustment of the head strap tension

3.3 dead space

volume of the cavity formed between the mouth and the inhalation and exhalation parts

3.4 displaced (tidal) volume

volume of breathing gas displaced by the breathing simulator during one half cycle (inhalation or exhalation), measured in litres

3.5 faceblank

part of the FFSM that does not include the visor

3.6 face seal

part of a FFSM providing the seal against the face of the user

¹⁾ Documents that are referred to solely in an informative manner are listed in the Bibliography.

3.7 full-face mask

facepiece covering mouth, nose, eyes and chin which can be fitted with either a mouthpiece or an inner mask

3.8 full-face snorkel mask (FFSM)

facepiece that seals on the face, covers the eyes, nose and mouth, and allows the user to see and breathe, when swimming in a prone position, without having to raise the head, eyes and mouth out of the water

3.9 head harness

device used to maintain the FFSM on the face of the user

NOTE The head harness can be adjustable.

3.10 non-return valves

valves fitted within the mask to direct the inhalation and exhalation air flow

3.11 pressure volume diagram

diagram generated during one breathing cycle by plotting the respiratory pressure against the displaced volume

3.12 reference pressure

equilibrium pressure that exists in the face piece when there is no respiratory flow at the end of exhalation

3.13 respiratory minute volume (RMV)

product of the displaced (tidal) volume and breathing frequency measured in litres per minute

3.14 respiratory pressure

differential pressure in the face piece relative to the reference pressure measured during inhalation and exhalation

3.15 shut-off valve

valve fitted to prevent the ingress of water into the FFSM

3.16 visor

transparent part(s) of the FFSM which enables the user to see underwater

NOTE An FFSM can have more than one visor.

3.17 water draining valve

valve fitted in the area of the chin to expel water or exhale gas from the FFSM

NOTE This can also be known as an exhalation valve or a dump valve.

3.18 work of breathing (WOB)

external work expended during one breath divided by the tidal volume of that breath, measured in Joule per litre (J/l)

NOTE This is equivalent to volume average respiratory pressure (kPa). This work of breathing is, in general, proportional to the area bounded by the pressure volume diagram. Work associated with positive pressures during inhalation does not count towards the total work of breathing.