



<b>Title</b>	<b>Lifejackets for abandonment from an offshore installation</b>		
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## Introduction

This sheet identifies the various features of abandonment lifejackets, which should normally be provided for offshore installations, in addition to those lifejacket features provided for compliance with SOLAS. Duty holders should review their lifejacket assessments in accordance with this guidance.

This sheet applies specifically to lifejackets to be used for abandonment from an offshore installation. It does not apply to lifejackets used for other purposes, such as for helicopter travel or for overside working.

This revision updates Offshore Information Sheet 7/2009 published in June 2009 which is now withdrawn.

## Background

In emergency conditions, the course of events is not fully predictable and a single system to enable persons to leave an offshore installation could fail. The Offshore Installations (Prevention of Fire, Explosion and Emergency Response) Regulations 1995 (PFEER)<sup>1</sup> recognise this by requiring the provision of three complementary systems on an offshore installation: (i) arrangements for evacuation, (ii) means of escape in case arrangements for evacuation fail, and (iii) arrangements for recovery and rescue of persons. Provision of suitable lifejackets is a key element of each of these systems.

The features of abandonment lifejackets should take account of the severe weather conditions which may be encountered in the North Sea, that typical North Sea performance standards allow up to two hours for recovery of a person from the sea, and that persons will be wearing immersion suits.

To comply with PFEER, duty holders carry out an assessment to determine the types, numbers and locations of personal survival equipment to be provided on the installation. In the past, this has usually resulted in the selection of SOLAS approved auto-inflating lifejackets, although in many cases with additional features such as spray hoods, and crotch or thigh straps.

Knowledge of required lifejacket performance has improved as follows:

- Those designing or buying immersion-protective equipment need to ensure that their chosen combination of immersion suit and lifejacket performs as an integrated survival system<sup>2</sup>.
- The British/European standard for personal flotation devices, BS EN ISO 12402-2 2006 +A1:2010<sup>3</sup>, indicates that a 275 Newton lifejacket is likely to be necessary to right an unconscious person wearing an immersion suit. (However, this passive self-righting ability will also depend on the immersion suit type and on the lifejacket design, so that a lesser buoyancy may still be sufficient in some circumstances).
- Published information<sup>2,4</sup> indicates that a lifejacket spray hood should be provided if a person is to be given the best chance of survival in rough seas. This provides protection of the airways from water splash.
- Published information about fatal accidents, for example about the loss of the Ouzo<sup>5</sup>, highlights the importance of crotch straps or thigh straps or equivalent solution to ensure the lifejacket stays in place and does not rise up during use.
- Like any other equipment, a lifejacket auto-inflating system or buoyancy chamber can fail. However, commercial lifejackets are now available which are intended to significantly reduce the vulnerability of the lifejacket to a single component failure. These lifejackets have a duplicated auto-inflation system and a second buoyancy chamber, or are a hybrid which combines auto-inflation with some inherent lifejacket buoyancy.
- Inherently buoyant lifejackets impose a significant limitation on the height from which a wearer can safely jump or fall into the water. The upward force on an inherently buoyant lifejacket can be considerable and may be transmitted to the user's head and neck. In any event, all types of lifejacket and survival suit are normally only tested to 4.5 metre jump height. Emergency plans should not rely on persons jumping into the sea from above this height.
- Because they are bulky, inherently buoyant lifejackets may compromise the correct securing of persons in a lifeboat, especially in a freefall lifeboat. Inherently buoyant lifejackets may also contribute to difficulties in ensuring adequate space for persons in a freefall or davit lifeboat.
- In addition to compliance with SOLAS requirements, selected lifejackets are now likely to comply with the European standard for personal flotation devices (EN ISO 12402). This standard defines various required features of lifejackets, but it covers many differing types of lifejackets for a wide variety of uses. As per EN ISO 12402-10 Section 4.4, a suitable lifejacket must be selected depending on an evaluation of the risks to which the user is likely to be exposed. Note also that this standard does not define every lifejacket feature which may be appropriate, such as provision of a suitable light, or provision of a buddy line.

### Required features of abandonment lifejackets

Lifejackets for abandonment from offshore installations should normally have the following features, in addition to any other features selected as a result of the duty holder's assessment which has been conducted for compliance with PFEER.



1) Lifejacket design should be such that, when worn over the installation immersion suit, the lifejacket will ensure adequate airway protection. The features required to ensure adequate airway protection are:

- (a) Lifejacket chamber configuration/buoyancy such as to ensure the righting of an unconscious person wearing the installation immersion suit.
- (b) Neck support and buoyancy such as to ensure sufficient mouth-to-water distance (120 mm) for an unconscious person wearing the installation immersion suit.
- (c) A suitable spray hood which is easy to deploy with cold or gloved hands, designed to sit away from the face, and which limits the opportunity for the build up of CO<sub>2</sub> from exhaled breath.
- (d) A suitable lifejacket securing system (such as crotch or thigh straps) which prevents the lifejacket rising up.

Features (a) and (b) depend on the lifejacket/suit compatibility, and provision of these features will need to be demonstrated. HSE has previously issued guidance on how compatibility tests may be carried out<sup>6</sup>, although test details may need to be modified to suit the duty holder's circumstances. The testing assumes increased importance if the lifejacket provides less than 275 Newton buoyancy.

It will also be necessary to check that (a) and (b) are achieved when the abandonment lifejacket is worn with the helicopter transit suit, if this transit suit is to be used during abandonment to sea.

Note: SOLAS requires that an immersion suit, either on its own or worn in conjunction with a lifejacket if necessary, shall have sufficient buoyancy and stability in calm fresh water to:

- Lift the mouth of an exhausted or unconscious person clear of the water by not less than 120mm, and
- Allow the wearer to turn from face down to a face up position in not more than 5 seconds.

This is compatible with the requirement in (a) above.

2) Auto-inflating abandonment lifejackets should have a twin buoyancy system to ensure adequate reliability. This should normally involve twin buoyancy chambers, twin gas bottles each providing 100% of the required buoyancy, and twin water activation heads. Note that although SOLAS requires lifejackets to have twin chambers, a SOLAS compliant design does not necessarily provide the other features.

3) If the lifejackets include inherent buoyancy, the duty holder will have to show that this will not prevent the correct securing of persons in the offshore installation lifeboats.



4) Other lifejacket features should be considered and included depending on the duty holder's assessment. Various features are defined by SOLAS, and by BS EN ISO 12402. Further features for consideration include a buddy line; and a light which can withstand a jump into water from 4.5 metre, which comes on automatically on contact with water, and which can be relocated by the wearer to an optimum position. Account should also be taken of whether the lifejacket may be worn while using an escape chute.

## References

1. The Offshore Installations (Prevention of Fire and Explosion, and Emergency Response) Regulations 1995 Regulation 5 "Assessment"; and the associated Approved Code of Practice, paragraph 69, L65 Third edition HSE Books 2016 ISBN 978 0 7176 6326 2 <http://www.hse.gov.uk/pubns/books/l65.htm>
2. Essentials of Sea Survival Golden F, Tipton M. Human Kinetics Press 2002 ISBN 0 7360 0215 4
3. BS EN ISO 12402-2 2006 +A1:2010 Person Flotation Devices – Part 2 Lifejackets, performance level 275 – Safety Requirements.
4. <https://www.rya.org.uk/knowledge-advice/safe-boating/look-after-yourself/Pages/buoyancy-aids-lifejackets.aspx>
5. Report on the investigation of the loss of the sailing yacht Ouzo and her three crew South of the Isle of Wight during the night of 20/21 August 2006 MAIB Report No 7/2007 April 2007 <https://www.gov.uk/maib-reports/sinking-of-sailing-yacht-ouzo-after-encounter-with-ro-ro-passenger-ferry-pride-of-bilbao-off-isle-of-wight-england-with-loss-of-3-lives>
6. Compatibility test protocol for lifejackets and immersion suits on offshore installation HSE Offshore Technology Report OTO 2002/021 HSE Books 2002 <http://www.hse.gov.uk/research/otopdf/2002/oto02021.pdf>
7. IMO LSA Code – International Life-Saving Appliance code – Resolution MSC.48(66) [http://www.imo.org/en/KnowledgeCentre/IndexofIMOResolutions/Maritime-Safety-Committee-\(MSC\)/Documents/MSA.48\(66\).pdf](http://www.imo.org/en/KnowledgeCentre/IndexofIMOResolutions/Maritime-Safety-Committee-(MSC)/Documents/MSA.48(66).pdf)

This guidance is issued by the Offshore Safety Directive Regulator (OSDR). Following the guidance is not compulsory and you are free to take other action. But if you do follow the guidance you will normally be doing enough to comply with the law. Inspectors seek to secure compliance with the law and may refer to this guidance as illustrating good practice.