BS ISO 16548:2012

BSI Standards Publication

Ships and marine technology — Ship design — General guidance on emergency towing procedures

bsi.

...making excellence a habit.™

Document Sharing Hub

National foreword

This British Standard is the UK implementation of ISO 16548:2012.

The UK participation in its preparation was entrusted to Technical Committee SME/32/-/8, Ships & Marine Technology - Structure and ship design.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2013.
Published by BSI Standards Limited 2013.

ISBN 978 0 580 75435 7

ICS 47.020.01

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 January 2013.

Amendments issued since publication

Date	Text affected

Documents
Document Sharing Hub

Full document details: BS ISO 16548:2012

INTERNATIONAL STANDARD

ISO 16548

First edition
2012-10-15

Ships and marine technology — Ship design — General guidance on emergency towing procedures

Navires et technologie maritime — Conception du navire — Directives générales sur les procédures de remorquage d'urgence

Reference number
ISO 16548:2012(E)

Documents
Document Sharing Hub

© ISO 2012

Full document details: BS ISO 16548:2012

COPYRIGHT PROTECTED DOCUMENT

© ISO 2012

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

© ISO 2012 – All rights reserved

Documents
Document Sharing Hub

Full document details: BS ISO 16548:2012

Contents

Page

Foreword ..... **iv**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 General description **2**
4.1 General 2
4.2 Limitation during towing operation 2
4.3 Master's response 3
4.4 Safety considerations 3
4.5 Towing preparations 3
5 Decision matrix for determining towing pattern **4**
Annex A (informative) **Towing patterns and decision matrix** **5**
Annex B (informative) **Procedures for connecting towing lines** **12**
Annex C (informative) **Ship specific data** **22**
Annex D (informative) **Organization of tasks** **27**
Annex E (informative) **Current status** **29**
Bibliography **32**

© ISO 2012 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS ISO 16548:2012

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 16548 was prepared by Technical Committee ISO/TC8, *Ships and marine technology*, Subcommittee SC8, *Ship design*.

© ISO 2012 – All rights reserved
Documents
Document Sharing Hub
Full document details: BS ISO 16548:2012

INTERNATIONAL STANDARD ISO 16548:2012(E)

Ships and marine technology — Ship design — General guidance on emergency towing procedures

1 Scope

This International Standard gives guidance on towing procedures for cargo ships and passenger ships in emergency situations subject to SOLAS Regulation II-1/3-4.

Cargo ships which are constructed on or after 1 January 2010 shall be provided with a ship-specific emergency towing procedure and all passenger ships shall be provided with a ship-specific emergency towing procedure by 1 January 2010. For cargo ships constructed before 1 January 2010, they shall be provided with ship-specific emergency towing procedure by 1 January 2012 in accordance with SOLAS (Chapter II-1 Reg. 3-4).

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

SOLAS Regulation II-1/3-4, *Emergency towing arrangements and procedures*

IMO MSC.1/Circ.1255:2008, *Guidelines for Owners/Operators on Preparing Emergency Towing Procedures*

3 Terms and definitions

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

3.1
towing ship
vessel or boat that manoeuvres vessels by pushing or towing them

3.2
towed ship
vessel that is towed or pushed by a towing ship

3.3
emergency towing system
ETS
system (equipment and fittings) for emergency towing for liquid cargo vessels based on SOLAS Regulation II-1/3-4

EXAMPLE Chafing chain, towing wire, chain stopper, strong fairlead and pick-up gear etc.

3.4
towing line
strong rope that is used by a towing ship for pulling a vessel

3.5
messenger rope
rope that is located between the heaving rope and the towing line

3.6
heaving rope
rope connected to a messenger rope that is thrown to another vessel in order to prepare for towing

© ISO 2012 – All rights reserved

AVA Documents Document Sharing Hub
Full document details: BS ISO 16548:2012

3.7
chafing chain
chafing gear
stud link chain that is long enough to ensure that the towing line remains outside the fairlead during the towing operation

4 General description

4.1 General

This International Standard is prepared for use in emergency towing situations in accordance with SOLAS Regulation II-1/3-4 and related IMO MSC.1/Circ.1255.

4.1.1 The following information is included in this International Standard:

a) Drawings of fore and aft deck showing emergency towing arrangements;

b) Inventory of equipment on board that can be used for emergency towing;

c) Means and methods of communication;

d) Sample procedures to facilitate the preparation for and the conducting of emergency towing;

e) Organization of tasks; and

f) Communication plan listing all information that is required to be communicated to the towing ship.

4.1.2 A minimum of three copies should be kept on board and located in the following locations:

a) The bridge;

b) A forecastle space; and

c) The ship's office or cargo control room.

4.1.3 Owners, operators and crew should take into consideration that the nature of an emergency does not allow time for deliberation. Accordingly, the procedures should be practiced beforehand.

4.2 Limitation during towing operation

4.2.1 Not all ships have the same degree of shipboard equipment, so there may be limits to possible towing procedures. Nevertheless, the intention of this International Standard is to predetermine what can be accomplished.

4.2.2 The towing load should not exceed the safe working loads of deck fittings and the allowable working load of that deck structure as shown in Figures C.1 and C.2. When heavy weather which will significantly increase the towing load is forecasted, special considerations are to be paid to the towing speed, towing line arrangement, and the ship's stability.

4.2.3 The loading points on stand-rollers are so high that great bending moments are generally transferred to the supporting structures. Consequently, stand-rollers are not to be used in towing line arrangement as far as practicable.

© ISO 2012 – All rights reserved
Documents
Document Sharing Hub
Full document details: BS ISO 16548:2012

4.3 Master's response

4.3.1 The master of a ship or ship owner's representative, when recognizing that the ship is in distress and may need towing assistance, should make the initial notification of the incident to the following parties:

a) Flag states;

b) Nearest Coastal state; and

c) Other relevant parties (shipper, insurer, company, authorities, etc.).

4.3.2 The master should complete Tables E.1 through E.4 and prepare to communicate with the towing ship.

4.3.3 All information in Annexes C and D should be delivered to the towing ship.

4.3.4 The master should ensure that towing lines do not become taut until towing lines are tied to the connection system of the towing ship and that everyone on deck has been notified.

4.3.5 When the power system on board is not available or alternative connection procedures are introduced by the towing ship, the master should try to make the best decision possible considering the ship's current status in consultation with the towing ship.

4.3.6 When an alternative procedure is adopted, it should be clearly communicated to all crew.

4.3.7 The master should ensure that survival craft are made ready for use.

4.4 Safety considerations

4.4.1 The Chief Officer on the mooring deck should be in contact with the Bridge at all times.

4.4.2 Everyone on deck should be equipped with personnel life saving appliances and be alert to avoid hazardous situations such as slips, trips, falls, etc.

4.4.3 All crew should be well informed of the work procedures and tasks.

4.4.4 When the towing line becomes strained in tension, all on-deck staff should be evacuated to a safe location.

4.4.5 The crew should have a good knowledge of equipment stowage locations and their accessibility. Any identified improvements to stowage arrangements should be implemented.

4.4.6 While engaged in towing operations, the minimum number of crew essential to carry out duties are to be on deck, and they should never be exposed to a rope or wire under tension or load. Wherever possible, the deck should be cleared of crew while towing.

4.4.7 Regular maintenance of emergency towing equipment is of utmost importance for emergency readiness.

4.5 Towing preparations

4.5.1 The towed ship is to display the navigation lights, shapes and, if manned, make sound signals required by the International Regulations for Preventing Collisions at Sea, 1972, as amended. Due

Documents
Document Sharing Hub

© ISO 2012 – All rights reserved

Full document details: BS ISO 16548:2012

consideration should be given to the reliability of the lights and sound signals and their ability to function for the duration of the voyage.

4.5.2 Prior to sailing, the watertight integrity of the towed ship should be confirmed by an inspection of the closing arrangement for all hatches, valves, air pipes, and other openings through which water might enter. It should also be confirmed that any watertight doors or other closing arrangements within the hull are securely closed and that any portable closing plates are in place.

4.5.3 The securing arrangements and weather protection for the cargo, equipment and store carried on the towed ship should be carefully examined to ensure that they are adequate for the voyage.

4.5.4 When appropriate, the rudder should be secured in the amidships position and measures should be taken to prevent the propeller shaft from turning.

4.5.5 The towed ship should be at a suitable draught for the intended voyage.

4.5.6 The towed ship should have adequate intact stability in all the loading and ballast conditions to be used during the voyage.

4.5.7 Life saving appliances in the form of lifejackets and lifebuoys should be provided whenever personnel are likely to be on board the towed ship even if only for short periods of time. When personnel are expected to remain on board for longer periods of time, life rafts should be provided. Other life saving appliances, including distress signals, fire appliances and radio equipment, including means of communication with the towing ship, should be provided whenever the towed ship is continually manned.

5 Decision matrix for determining towing pattern

The towing pattern should be decided by the ship's master, in consultation with the master of towing ship, by using the following decision matrix (see Annexes A and B).

The ship should be towed from the bow as far as possible. If it is not possible to tow from the bow because of grounding, collision, etc., towing from the stern may be selected as an alternative.

For determining the towing pattern, the following status and surrounding conditions should be taken into account:

a) Ship's position;

b) Weather and sea conditions;

c) Short-term marine forecast for the area of the incident;

d) Direction and rate of drift;

e) Weather forecast for the area of emergency towing operation;

f) Distance and estimated time to any possible towing position;

g) Availability of propulsion system; and

h) Availability of power supply for deck machinery.

© ISO 2012 – All rights reserved
Documents
Document Sharing Hub
Full document details: BS ISO 16548:2012

Annex A
(informative)

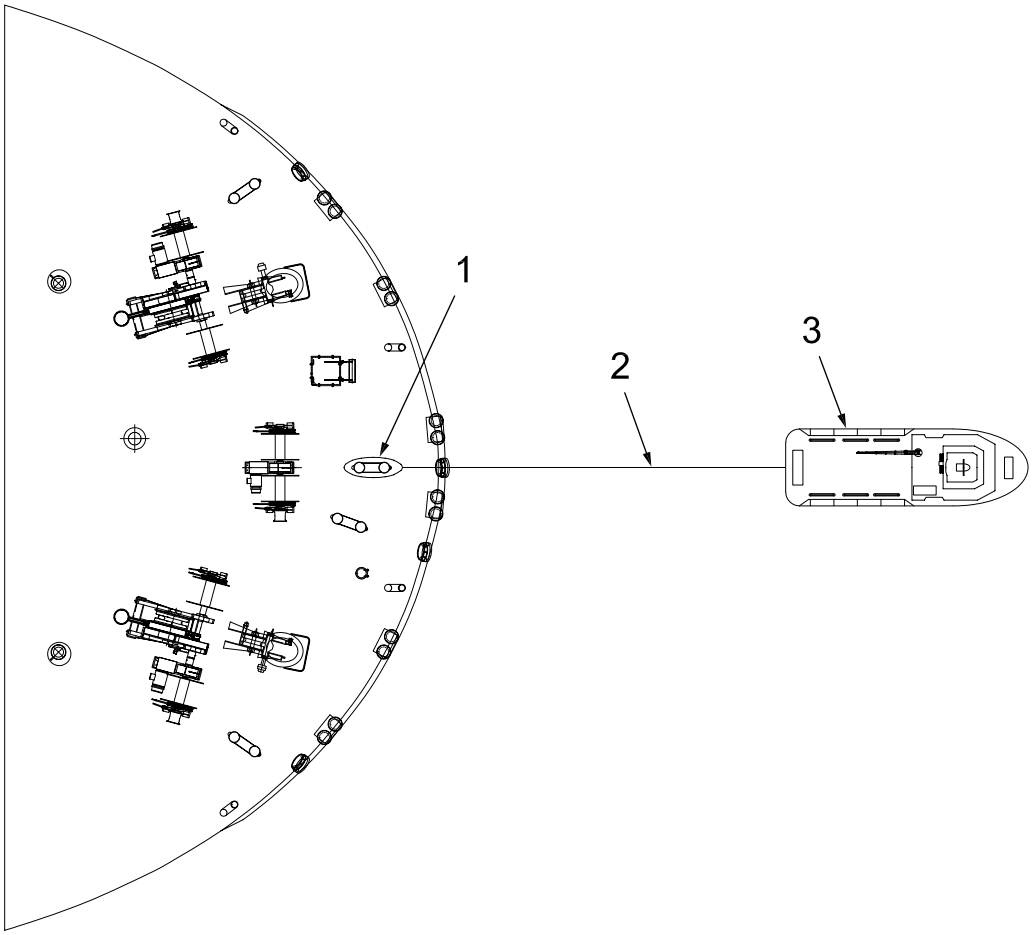
Towing patterns and decision matrix

A.1 General

Typical towing patterns stated either in this Annex or in IMO DE52/INF.2 are applicable.

A.2 Towing from bow

Figures A.1, A.2 and A.3 show the typical arrangements of a towing line connection for towing from bow.



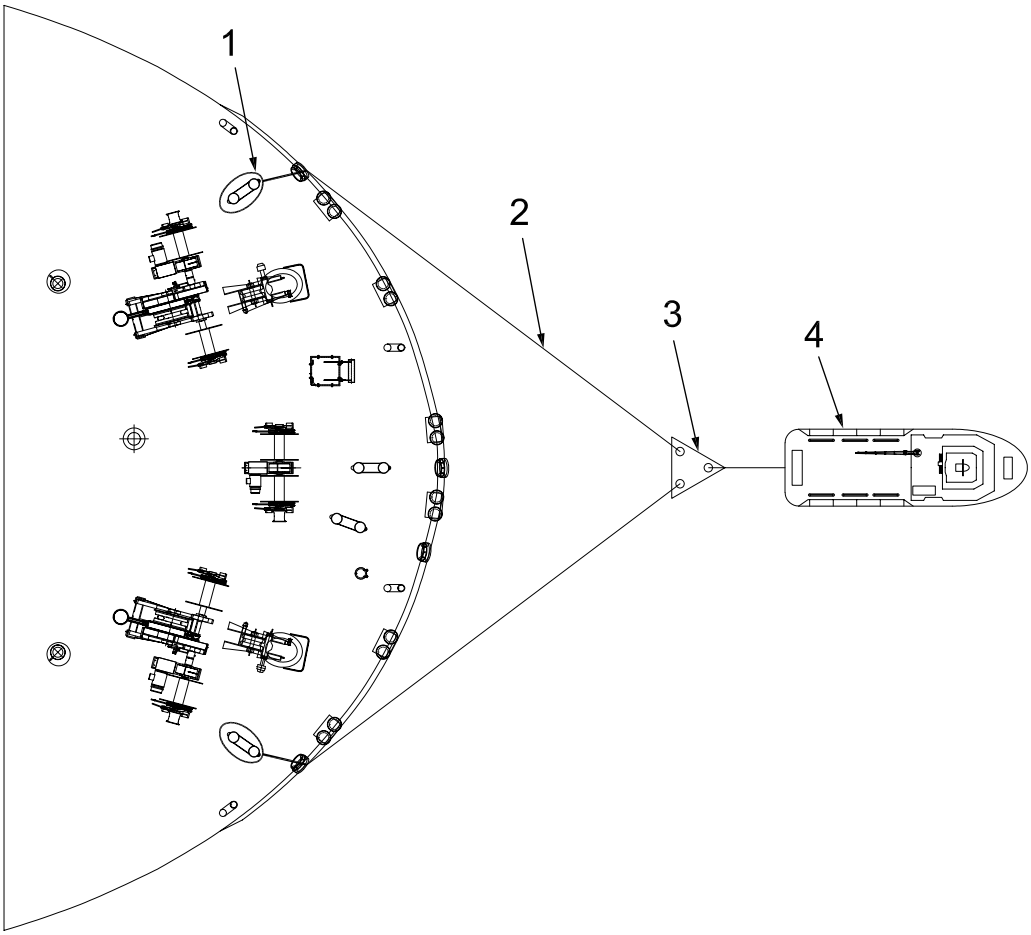
Key

1 bollard
2 towing line
3 towing ship

Figure A.1 — Pattern F1

© ISO 2012 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS ISO 16548:2012

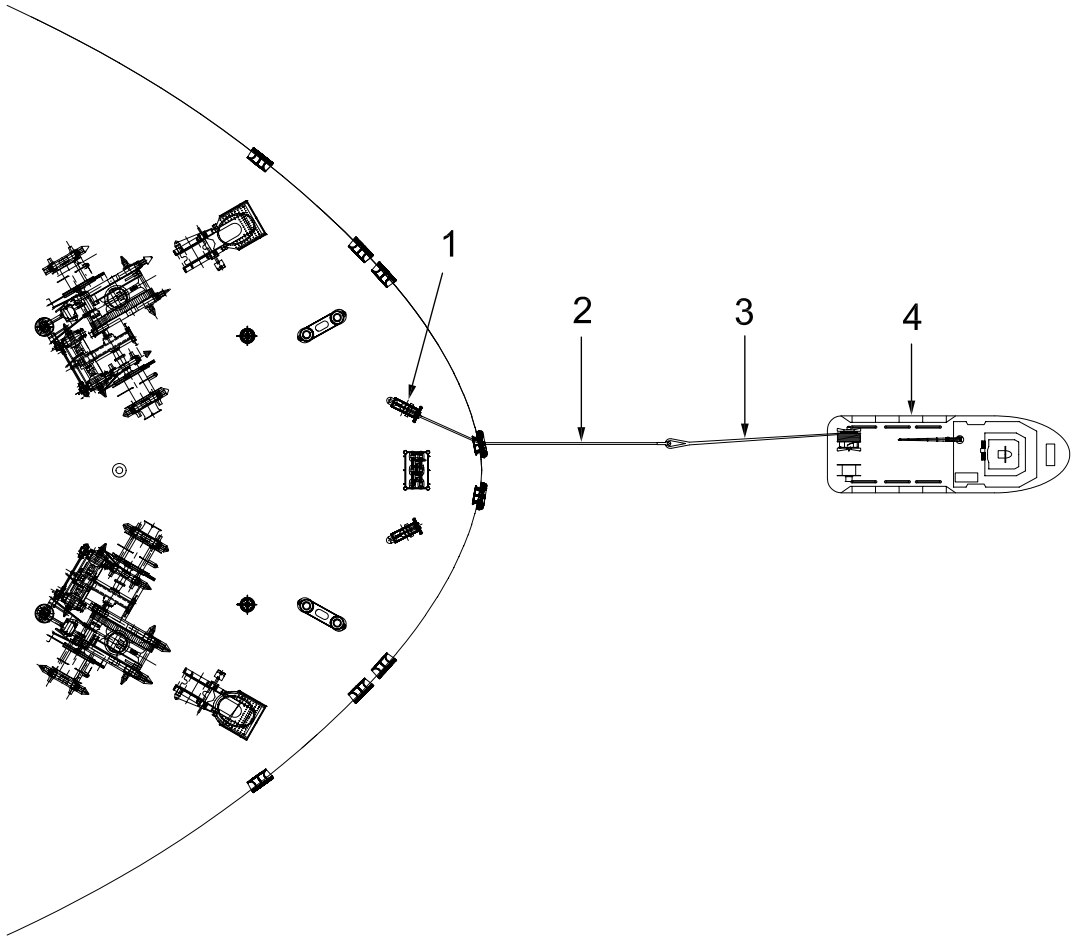


Key

1 bollard
2 towing line
3 delta plate
4 towing ship

Figure A.2 — Pattern F2

© ISO 2012 – All rights reserved
Documents
Document Sharing Hub
Full document details: BS ISO 16548:2012



Key

1 chain stopper
2 chafing chain
3 towing line
4 towing ship

Note Use a chafing chain from a chain stopper or Smit bracket (if ETS is fitted).

Figure A.3 — Pattern F3

A.3 Towing from stern

Figures A.4, A.5 and A.6 show the typical arrangements of a towing line connection for towing from stern.

© ISO 2012 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS ISO 16548:2012