# **SINGAPORE STANDARD**

# Code of practice for shore-based mooring and unmooring activities





SS 691:2022

(ICS 47.020; 47.020.99)

SINGAPORE STANDARD

# Code of practice for shore-based mooring and unmooring activities

Published by Enterprise Singapore

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilised in any form or by any means, electronic or mechanical, including photocopying and microfilming, without permission in writing from Enterprise Singapore. Request for permission can be sent to: standards@enterprisesg.gov.sg.

© Enterprise Singapore 2022

ISBN 978-981-5118-37-7

# SS 691:2022

#### **Contents**

		Page
Foreword		
1	Scope	5
2	Normative references	
3	Terms and definitions	
4	Roles and responsibilities	
5	Operation planning and management	
6	Operational safety of mooring and unmooring operations	23
7	Risk assessment and management	31
8	Training and certification of mooring personnel	35
9	Mooring personnel working on-board mooring boat/workboat	35
Anne	exes	
Α	Training of mooring personnel	36
В	Guidance to number of personnel in a mooring and unmooring team	39
С	Personal protective equipment (PPE)	40
D	Types of port designs	41
Е	Forces impacting the ship	42
F	Disposition of mooring lines	43
G	Hand signals for mooring and unmooring operations	44
Н	Ship's propellers and thrusters	46
I	Boat handling	47
J	Pre-operational briefing	48
K	Exceptions to mooring personnel working hours	49
L	Communication procedure between pilot and mooring supervisor at the typical container terminal	50
M	Rope work	52
Table	es	
A.1	Types and designs of fittings on boat and ship	37
B.1	Guidance to a mooring and unmooring team size	39
F.1	Name and purpose of mooring lines	43
H.1	Characteristics of fixed pitched propeller, CPP and thruster	46
L.1	Berthing operations	50
L.2	Contingency	50
L.3	Unberthing operations	51
M.1	Types and designs of rope work	52

# SS 691:2022

		Page
Figui	res	
1	Types of quay or jetty	13
2	Type of fenders	14
3	Shore bollards	15
4	Shore capstan/winch	
5	SBM/SPM	
6	Pure car carrier (Ro-Ro ship)	19
7	VLCC mooring (top view)	20
8	Quick release hook load alarm panel	21
9	Dipping of mooring lines	30
10	Danger zone	33
F.1	Mooring lines deposition at berth	43
M.1	Parts of a rope	52
M.2	Examples of ropes in good and bad conditions	55
Biblio	ography	57

#### **Foreword**

This Singapore Standard was prepared by the Working Group on Shore-based Mooring and Unmooring set up by the Technical Committee on Personal Safety and Health under the purview of the Quality and Safety Standards Committee.

Shore-based mooring and unmooring processes are hazardous operations involving parties on ship, onshore and on tugboats or workboats. A well-coordinated operation among these parties and members within each party is needed for ensuring a safe and controlled mooring and unmooring operation.

This standard outlines requirements and recommendations for all stakeholders involving in the shore-based mooring and unmooring operations, and the competency needed for persons to discharge their respective duties.

It is presupposed that in the course of their work, users will comply with all relevant regulatory and statutory requirements. Some examples of relevant regulations and acts are listed in the Bibliography. The Singapore Standards Council and Enterprise Singapore shall not be responsible for identifying all of such legal obligations.

The following contents from this standard have been reproduced with the permission of the Singapore Maritime Academy, Singapore Polytechnic:

- Annex G
- Table A.1
- Table M.1
- Figure 7
- Figure F.1

Acknowledgement is made for the use of information from the above publications.

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

#### NOTE

- Singapore Standards (SSs) and Technical References (TRs) are reviewed periodically to keep abreast of technical changes, technological developments and industry practices. The changes are documented through the issue of either amendments or revisions. Where SSs are deemed to be stable, i.e. no foreseeable changes in them, they will be classified as "mature standards". Mature standards will not be subject to further review unless there are requests to review such standards.
- 2. An SS or TR is voluntary in nature except when it is made mandatory by a regulatory authority. It can also be cited in contracts making its application a business necessity. Users are advised to assess and determine whether the SS or TR is suitable for their intended use or purpose. If required, they should refer to the relevant professionals or experts for advice on the use of the document. Enterprise Singapore and the Singapore Standards Council shall not be liable for any damages whether directly or indirectly suffered by anyone or any organisation as a result of the use of any SS or TR. Although care has been taken to draft this standard, users are also advised to ensure that they apply the information after due diligence.
- 3. Compliance with a SS or TR does not exempt users from any legal obligations.

# Code of practice for shore-based mooring and unmooring activities

### 1 Scope

This standard covers basic safety principles that can be applied to mooring and unmooring activities in general. Additionally, it contains precautions that can be taken to ensure safe mooring operations for several common types of mooring and unmooring procedures/methodology.

#### 2 Normative references

There are no normative references in this standard.