



**International
Standard**

ISO 12480-1

Cranes — Safe use —

**Part 1:
General**

*Appareils de levage à charge suspendue — Sécurité d'emploi —
Partie 1: Généralités*

**Second edition
2024-08**

This document is a preview generated by EMS



COPYRIGHT PROTECTED DOCUMENT

© ISO 2024

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

	Page
Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Safe system of work	2
5 Personnel involved with crane activities	3
5.1 Competency of personnel.....	3
5.2 Duties of personnel.....	3
5.2.1 Duties of crane operator.....	3
5.2.2 Duties of slinger.....	4
5.2.3 Duties of signaller.....	4
5.3 Communication system.....	4
5.4 Personal protective equipment.....	5
5.5 Crane access and fire prevention.....	5
5.5.1 Boarding and leaving the crane.....	5
5.5.2 Fire prevention.....	5
6 Crane activities	5
6.1 Planning of crane activities.....	5
6.2 Crane selection.....	6
6.3 Crane placement.....	6
6.4 Crane erection and dismantling.....	7
6.4.1 Identification of components.....	7
6.4.2 Electrical supply.....	7
6.4.3 Lightning protection.....	7
6.5 Crane operation.....	7
6.6 Remote operation.....	9
6.7 Operation in the vicinity of overhead electric power lines.....	9
6.8 Environmental considerations.....	9
6.8.1 Wind.....	9
6.8.2 Visibility.....	10
6.8.3 Rain, snow or ice.....	10
7 Maintenance, inspection and condition monitoring	10
7.1 Malfunctions, issues and incidents.....	10
7.2 Leaving the crane unattended.....	10
8 Other lifting applications	11
8.1 Lifting with multiple cranes or multiple hoists.....	11
8.1.1 Multiple crane lifting.....	11
8.1.2 Multiple hoist lifting.....	11
8.1.3 Supervision.....	13
8.1.4 Coordination of crane motions.....	13
8.2 Non-fixed load-lifting attachments.....	13
8.2.1 Grab attachment.....	14
8.2.2 Magnet attachment.....	14
8.2.3 Vacuum lifting devices.....	14
8.2.4 Demolition (deconstruction) and other special lifting applications.....	14
8.3 Personnel lifting.....	14
Annex A (informative) Lifting and lowering of personnel	16
Bibliography	18

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 96, *Cranes*, Subcommittee SC 5, *Use, operation and maintenance*.

This second edition cancels and replaces the first edition (ISO 12480-1:1997), which has been technically revised.

The main changes are as follows:

- “driver” has been replaced by “operator” throughout the text;
- the requirements related to demolition ball operations have been removed;
- the requirements related to periodic checks have been removed;
- the requirements related to the communication system have been revised and incorporated into the main text (see [5.3](#));
- the requirements related to crane activities ranging from crane planning, selection, placement, erection and dismantling, operation, etc., have been combined into an independent clause (see [Clause 6](#));
- the requirements related to remote operation have been added (see [6.6](#));
- the requirements related to lifting and lowering of persons have been made into an informative annex (see [Annex A](#)).

A list of all parts in the ISO 12480 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Cranes — Safe use —

Part 1: General

1 Scope

This document establishes required practices for the safe use of cranes through implementing a safe system of work consisting of the task planning, selection, erection and dismantling, operation and maintenance of cranes, and the selection of operators, slingers and signallers.

This document does not cover manually operated (non-powered) cranes, cranes in which at least one of its motions is manually operated and cranes mounted on water-borne vessels, except in those circumstances where a land-based crane is temporarily affixed to a vessel.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ISO 4306 (all parts), *Cranes — Vocabulary*

ISO 4309:2017, *Cranes — Wire ropes — Care and maintenance, inspection and discard*

ISO 4310, *Cranes — Test code and procedures*

ISO 9927-1, *Cranes — Inspections — Part 1: General*

ISO 9927-3, *Cranes — Inspections — Part 3: Tower cranes*

ISO 9927-5, *Cranes — Inspections — Part 5: Bridge and gantry cranes, including portal and semi-portal cranes and their supporting structures*

ISO 12482, *Cranes — Monitoring for crane design working period*

ISO 15513, *Cranes — Competency requirements for crane drivers (operators), slingers, signallers and assessors*

ISO 16715, *Cranes — Hand signals used with cranes*

ISO 17096, *Cranes — Safety — Load lifting attachments*

ISO 23813, *Cranes — Training of appointed persons*

ISO 23814, *Cranes — Competency requirements for crane inspectors*

ISO 23815-1, *Cranes — Maintenance — Part 1: General*

IEC 60204-32, *Safety of machinery — Electrical equipment of machines — Part 32: Requirements for hoisting machines*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 4306 (all parts) and the following apply.