

IS 14472 (Part 5) : 1997
ISO 9374-5 : 1991

भारतीय मानक

क्रेन — प्रदान की जाने वाली सूचना

भाग 5 शिरोपरि परिवहन क्रेन और निर्वाहिका बाँध क्रेन

Indian Standard

CRANES — INFORMATION TO BE PROVIDED

PART 5 OVERHEAD TRAVELLING CRANES AND PORTAL BRIDGE CRANES

ICS 53.020.20

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NEW DELHI 110002

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Price Group 4

NATIONAL FOREWORD

This Indian Standard which is identical with ISO 9374-5 : 1991 'Cranes — Information to be provided — Part 5 : Overhead travelling cranes and portal bridge cranes', issued by International Organization for Standardization (ISO), was adopted by the Bureau of Indian Standards on the recommendations of the Cranes, Lifting Chains and Its Related Equipment Sectional Committee, and approval of the Heavy Mechanical Engineering Division Council.

This standard is being published in five parts. Other parts of the standard are as follows:

Part 1 General

Part 2 Mobile cranes

Part 3 Tower cranes

Part 4 Jib cranes

The text of ISO standard has been approved for publication as Indian Standard without deviations. Certain terminology and conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

- a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.
- b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a full stop (.) as a decimal marker.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standard which is to be substituted in its place is listed below along with its degree of equivalence for the editions indicated:

<i>International Standard</i>	<i>Corresponding Indian Standard</i>	<i>Degree of Equivalence</i>
ISO 7363 : 1986	IS 14471 :1997 Cranes and lifting appliances — Technical characteristics and acceptance documents	Identical

In reporting the results of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'.

Indian Standard
CRANES — INFORMATION TO BE PROVIDED
PART 5 OVERHEAD TRAVELLING CRANES AND PORTAL BRIDGE CRANES

1 Scope

This part of ISO 9374 specifies information to be provided

- a) by a purchaser in enquiring about or ordering an overhead travelling crane or portal bridge crane; and
- b) by a manufacturer in tendering for or supplying an overhead travelling crane or portal bridge crane.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO 9374. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this part of ISO 9374 are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 7363 : 1986, *Cranes and lifting appliances — Technical characteristics and acceptance documents.*

3 Information to be provided by the purchaser with the enquiry or order

The purchaser shall provide the information given in annex A to enable the crane manufacturer to offer or to supply the most

suitable overhead travelling crane or portal bridge crane and equipment to satisfy the duty requirements and service conditions.

4 Information to be provided by the manufacturer

4.1 Technical information

The information provided by the manufacturer shall include:

- a) technical information and test certificates for the crane to facilitate its installation, testing and use in accordance with ISO 7363 and as appropriate for the appliance;
- b) an instruction manual which shall include details of routine servicing, inspection and maintenance of the crane;
- c) erection information, when requested.

4.2 Dimensions

The manufacturer shall provide general arrangement drawings, with dimensions, showing that the purchaser's requirements, including the restrictions stated in figures 1 to 3, are met.

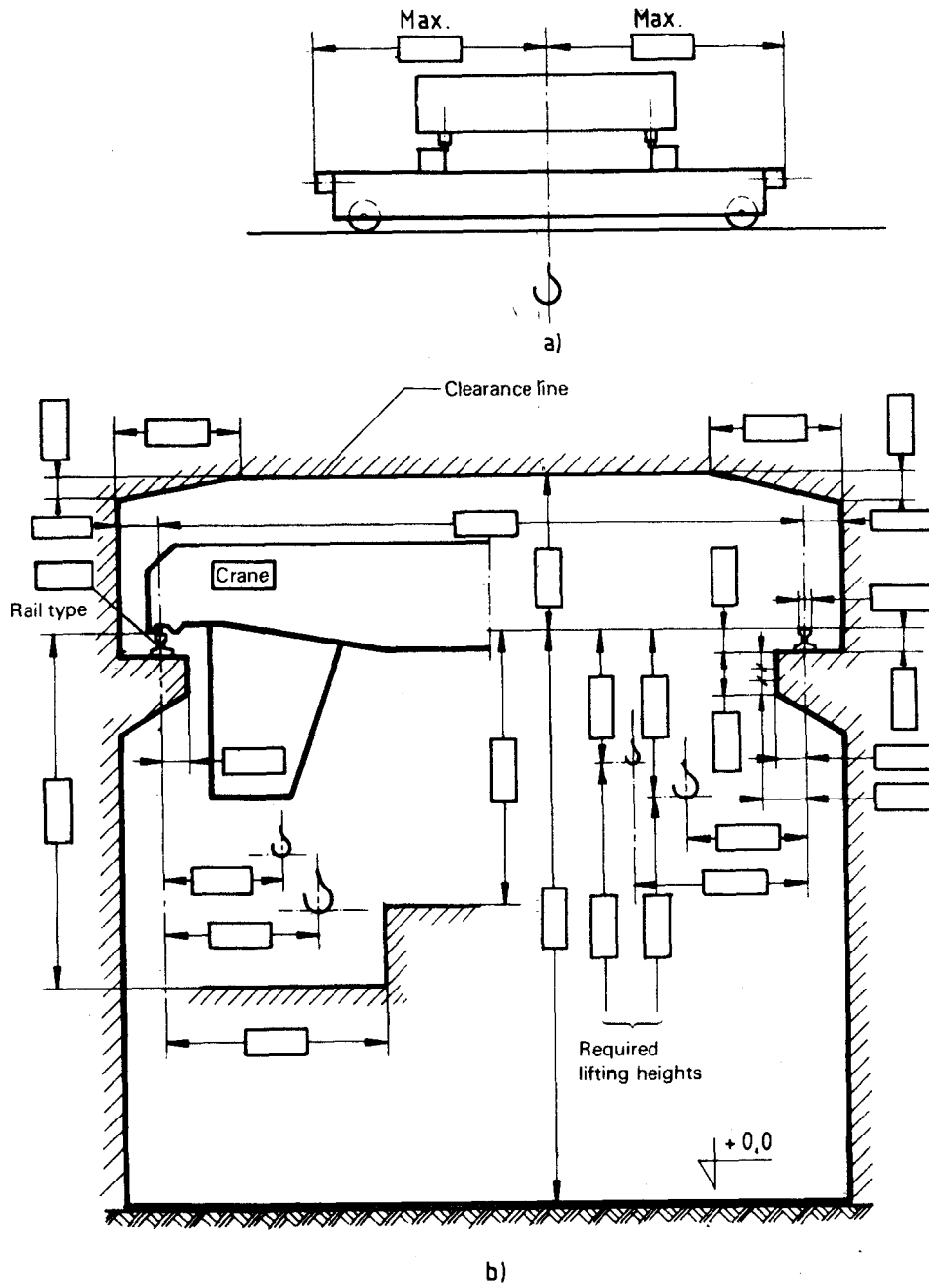
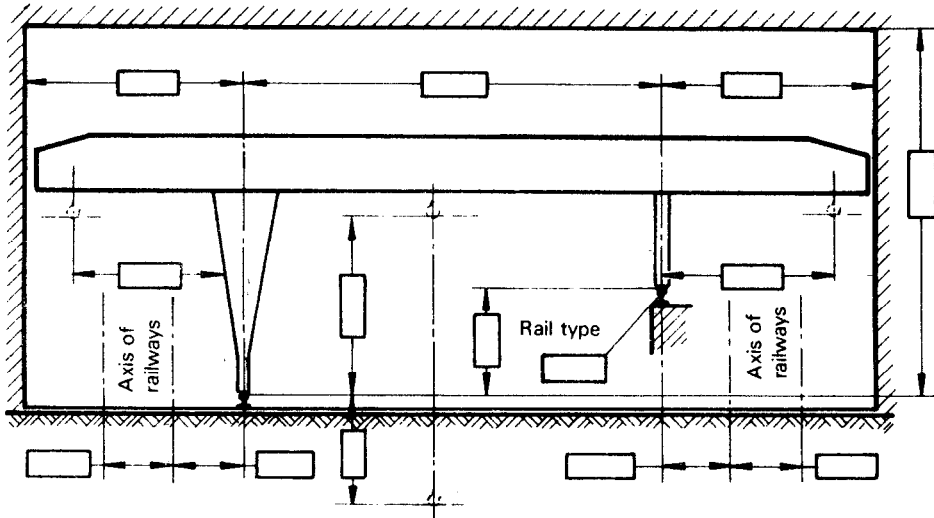
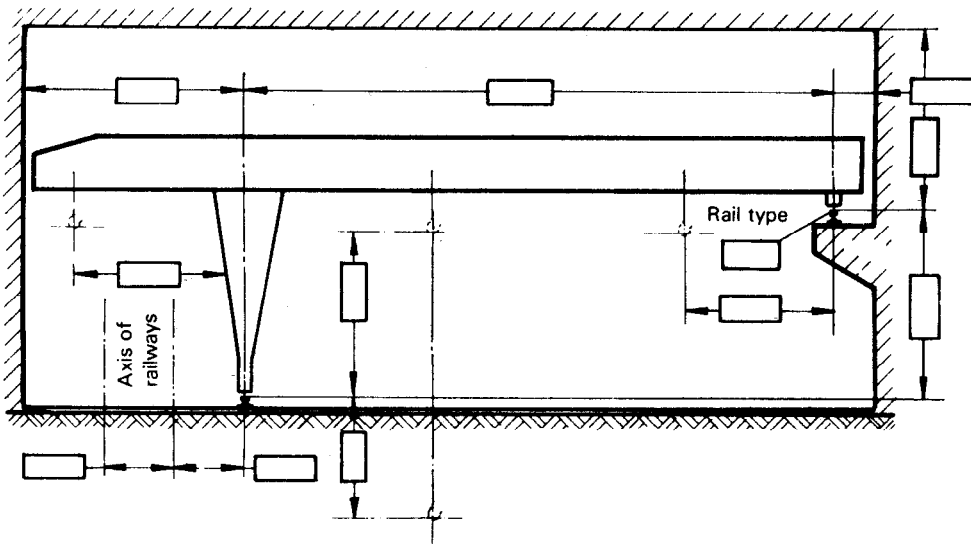


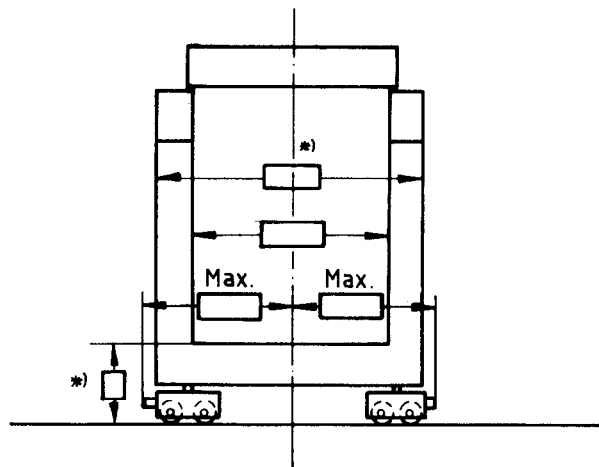
Figure 1 – Overhead travelling crane



a) Portal bridge crane



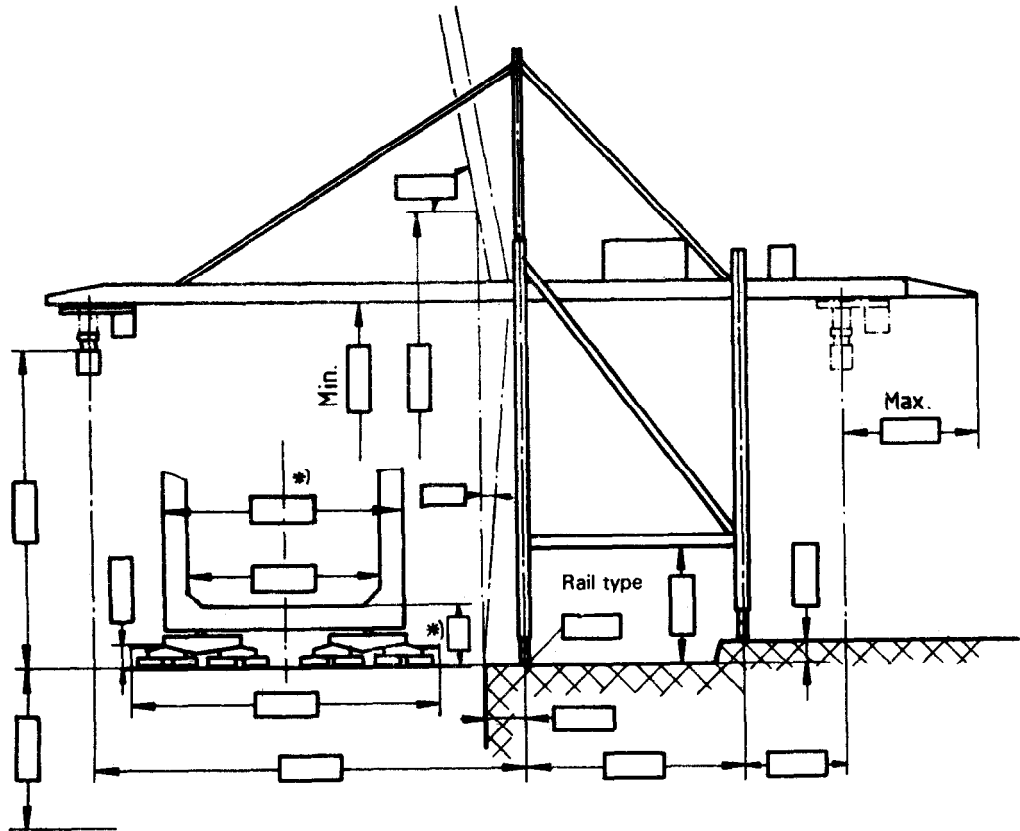
b) Semi-portal crane



c) End view

*) Max., if restricted.

Figure 2 — Portal bridge crane and semi-portal bridge crane



*) Max., if restricted.

Figure 3 – Typical ship-to-shore container crane

Annex A
 (normative)

**Format for information to be provided by the purchaser
 with the enquiry or order**

Purchase enquiry or order form

Name of company:
 Address:
 Name of person who may be contacted:
 Telephone number:
 Telex number:
 Telefax number:
 Crane to be installed in: (town) (country)
 Number of cranes required:

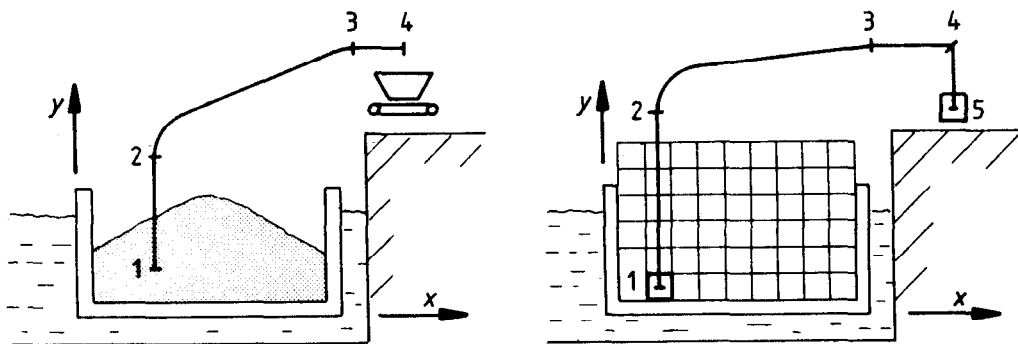
Required rated capacity (payload plus non-fixed lifting attachment)

- a) Main hoist: t
- b) Auxiliary hoist: t

Throughput

- a) Path of movements (coordinates)

<i>i</i>	1	2	3	4	5	
x_i						(m)
y_i						(m)



- b) Time of one working cycle: s
 - c) Number of working cycles per hour: h⁻¹
 - d) Throughput with 100 % rated payload: t/h
- Span, centre-to-centre of gantry rail(s): m
- Description of type of crane and crab:
- Are platforms required on the bridge?
- Position of access point(s):
- Type of payload:
- Material to be handled:
- Specific weight of bulk material: t/m³
- Type of hook or lifting device:

Operating speeds	Nominal speed	Slow or creep speed (if required)	Maximum speed with reduced load (if required)
Main hoist:	..... m/min	..... m/min	..... m/min
Auxiliary hoist:	..... m/min	..... m/min	..... m/min
Traverse:	..... m/min	..... m/min	..... m/min
Travel:	..... m/min	..... m/min	..... m/min

Use of crane and its mechanisms

a) Where detailed information is available about the operations that the appliance is expected to perform and the individual loads to be carried at each stage of the operations, it should be provided as follows.

Utilization :

- 1) Main hoist
 Average lift: m
 Average number of lifts per hour:
- 2) Auxiliary hoist
 Average lift: m
 Average number of lifts per hour:
- 3) Traverse
 Average movement: m
 Average number of moves per hour:
- 4) Travel
 Average movement: m
 Average number of moves per hour:

Crane operating hours per day:
 or per month:

If the operation of a movement of the crane is not evenly distributed over the day or over the hour, indicate the maximum rate of lifts:

Payloads:

- 1) Percentage of lifts with approximately full load:
- 2) Percentage of lifts with approximately 75 % load:
- 3) Percentage of lifts with approximately 50 % load:
- 4) Percentage of lifts with approximately 25 % load:

Weight of the non-fixed lifting attachment t

Intended design life: years

b) Where insufficient information is available about the operations that the appliance is expected to perform, the purchaser should request the manufacturer to recommend the most suitable classification for the appliance as a whole and each mechanism for the anticipated duty.

State any special environmental conditions (for example, humidity, wind):

Air temperature conditions

- a) ambient: °C
- b) maximum: °C
- c) minimum: °C

Crane is situated: indoors , under shelter , or outdoors

For outdoor cranes, a layout drawing of the site with the points of the compass is required.

Special service conditions

Specify any special conditions that apply, such as:

- a) handling molten metal;
- b) use in hazardous gases, vapours, solids or volatile liquids;
- c) use in mines and quarries;
- d) use for processes such as galvanizing, pickling and hot dipping;
- e) use in satine atmospheres, where the degree of exposure shall be stated;
- f) the presence of any local heat sources such as furnaces or radiant space heating panels;
- g) the need for special precautions against termites;
- h) any physical obstructions not apparent from the dimensions provided for clearances (see figures 1 to 3);
- i) in the case of pedestrian-controlled cranes, any differences in the operating floor level;
- j) any variation in electrical supply greater than $\pm 6\%$ on nominal voltage;
- k) any particular requirements concerning headroom above servicing platforms and if the crane servicing platforms are to be used for other activities. The need, if any, for fine mesh screen to prevent the dropping of articles from the servicing areas;
- l) limitations in use of radio control;
- m) any other conditions.

Type of rails:
 Allowable wheel loading: kN
 Allowable load per metre of rail: kN/m

Controls

Control is:

- a) from cabin
- b) by pendants
- c) radio
- d) remote
- e) other (specify)

If a):

Position on crab:
 or, independently movable, on bridge:
 or fixed on bridge (position to be given):

Type of cabin: open
 closed

Special features:

If b):

From fixed point on bridge:

From crab:

Mobile on separate track:

Any special control requirements:

Power supply system

- a) Cable drum , current collector system or festoon cable
- b) Power supply: existing , or new system required
- c) Length of cable: m
- d) Position description:

Power supply

- a) Voltage: V
- b) Phases:
- c) Frequency: Hz
- d) Conductors:
- e) Is there a neutral?
- f) Earthing system:

Limiting devices

State requirements:

.....

.....

Any special requirements, statutory or technical:

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Are there any other cranes on the track?

.....

If so, advise if:

- a) devices are required to prevent collision of the cranes or their loads:
 - b) provision is to be made for cranes to be separated by a minimum distance in order not to overstress the track or bridge structure:
 - c) there are any other cranes in the vicinity:
-

Clearances and dimensions (for example see figures 1 to 3). This information is indicative only and should be checked by the manufacturer.

Bureau of Indian Standards

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Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Handbook' and 'Standards : Monthly Additions'.

This Indian Standard has been developed from Doc : No. HMD 14 (0411).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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