

**ISO**

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

**ISO RECOMMENDATION  
R 1049**

CONTINUOUS MECHANICAL HANDLING EQUIPMENT  
FOR LOOSE BULK MATERIALS

VIBRATING CONVEYORS AND FEEDERS  
WITH RECTANGULAR OR TRAPEZOIDAL TROUGH

1st EDITION

April 1969

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## BRIEF HISTORY

The ISO Recommendation R 1049, *Continuous mechanical handling equipment for loose bulk materials – Vibrating conveyors and feeders with rectangular or trapezoidal trough*, was drawn up by Technical Committee ISO/TC 101, *Continuous mechanical handling equipment*, the Secretariat of which is held by the Association Française de Normalisation (AFNOR).

Work on this question, based on documents set up by the Fédération Européenne de la Manutention, Section II, led, in 1966, to the adoption of a Draft ISO Recommendation.

In December 1967, this Draft ISO Recommendation (No. 1254) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

|                |                       |                |
|----------------|-----------------------|----------------|
| Belgium        | Greece                | Switzerland    |
| Brazil         | India                 | Turkey         |
| Canada         | Israel                | U.A.R.         |
| Chile          | Italy                 | United Kingdom |
| Czechoslovakia | Japan                 | U.S.S.R.       |
| Finland        | Netherlands           | Yugoslavia     |
| France         | South Africa, Rep. of |                |
| Germany        | Sweden                |                |

One Member Body opposed the approval of the Draft :

U.S.A.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in April 1969, to accept it as an ISO RECOMMENDATION.

## FOREWORD

Four ISO Recommendations specify the characteristics of the following continuous mechanical handling equipment for loose bulk materials :

- ISO/R 1049,     *Vibrating conveyors and feeders with rectangular or trapezoidal trough;*
- ISO/R . . . ,\*     *Oscillating conveyors and shaking or reciprocating feeders with rectangular or trapezoidal trough;*
- ISO/R . . . ,\*\*     *Vibrating conveyors and feeders with tubular trough;*
- ISO/R . . . ,\*\*\*     *Oscillating conveyors and shaking or reciprocating feeders with tubular trough.*

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• At present Draft ISO Recommendation No. 1807.

\*\* At present Draft ISO Recommendation No. 1815.

\*\*\* At present at the stage of draft proposal.

CONTINUOUS MECHANICAL HANDLING EQUIPMENT  
FOR LOOSE BULK MATERIALS  
VIBRATING CONVEYORS AND FEEDERS  
WITH RECTANGULAR OR TRAPEZOIDAL TROUGH

1. SCOPE

This ISO Recommendation establishes the basic characteristics of vibrating conveyors and feeders with rectangular or trapezoidal trough.

2. FIELD OF APPLICATION

This ISO Recommendation applies to vibrating conveyors and feeders, with

- rectangular (see Fig. 1 and 3) or trapezoidal (see Fig. 2 and 4) trough;
- flat bottom (see Fig. 1 and 2) or dished bottom (see Fig. 3 and 4) trough.

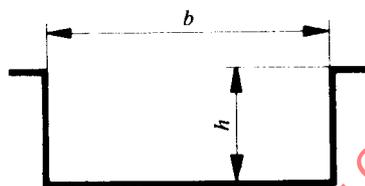


FIG. 1 - Rectangular flat bottom trough

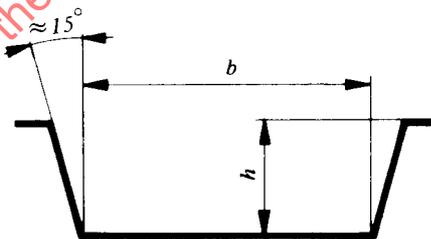


FIG. 2 - Trapezoidal flat bottom trough

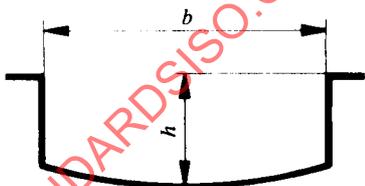


FIG. 3 - Rectangular dished bottom trough

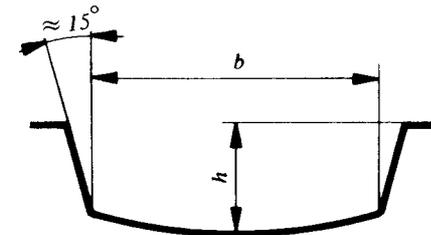


FIG. 4 - Trapezoidal dished bottom trough

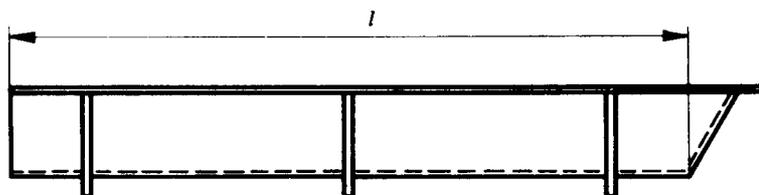


FIG. 5 - Length of trough

### 3. SPECIFICATIONS

#### 3.1 Geometrical specifications

The following dimensions are given in millimetres.

3.1.1 *Width of trough.* The width of the trough is the inside width  $b$  of the bottom.

|     |     |     |     |     |     |     |     |     |     |      |      |      |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| $b$ | 125 | 160 | 200 | 250 | 315 | 400 | 500 | 630 | 800 | 1000 | 1250 | 1600 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|

These numbers are taken from the R 10 series of preferred numbers.\*

3.1.2 *Height of trough.* The height of the trough is the vertical distance  $h$  between the bottom and the upper part of the trough.

|     |    |     |     |     |     |     |     |     |
|-----|----|-----|-----|-----|-----|-----|-----|-----|
| $h$ | 80 | 100 | 125 | 160 | 200 | 250 | 315 | 400 |
|-----|----|-----|-----|-----|-----|-----|-----|-----|

These numbers are taken from the R 10 series of preferred numbers.\* It is permissible to use the R 20 series of preferred numbers\* for intermediate values.

3.1.3 *Length of trough.* The length of the trough is the inside length  $l$  of the bottom.

|     |     |     |      |      |      |      |      |      |      |      |      |
|-----|-----|-----|------|------|------|------|------|------|------|------|------|
| $l$ | 500 | 750 | 1000 | 1250 | 1500 | 1750 | 2000 | 2500 | 3000 | 3500 | 4000 |
|-----|-----|-----|------|------|------|------|------|------|------|------|------|

It is also permissible to use the R 5 series of preferred numbers\* and, for intermediate values, the R 10 or R 20 series of preferred numbers.\*

#### 3.2 Physical specifications

3.2.1 *Vibrations.* The frequencies  $f$  to apply on the trough and the corresponding oscillation distances  $a$  determined with regard to the flow, the characteristics of the carried material, the length of the trough, and the type of appliance, should be chosen among the values given in the following Table.

TABLE – Frequencies and oscillation distances

|                     |         |           |          |          |           |
|---------------------|---------|-----------|----------|----------|-----------|
| Oscillations/minute | 750     | 1000      | 1500     | 3000     | 6000      |
| $f$ (Hz)            | 12.5    | 16.7      | 25       | 50       | 100       |
| $a$ (mm)            | 5 to 32 | 2.5 to 17 | 1.2 to 8 | 0.3 to 3 | 0.07 to 1 |

NOTE. – The specifications of vibrations given above are based on the frequency of electric current of 50 Hz.

#### 3.3 Specification of construction

For vibrating conveyors, it is possible to allow for several inlet and discharge points.

\* See ISO Recommendation R 3, *Preferred numbers – Series of preferred numbers.*