Hissar och rulltrappor – System för registrering av olyckor med hissar, lyftplattformar, rulltrappor och rullramper

Accident recording system for lifts, lifting platforms, escalators and moving walks
Standarder får världen att fungera

SIS (Swedish Standards Institute) är en fristående ideell förening med medlemmar från både privat och offentlig sektor. Vi är en del av det europeiska och globala nätverk som utarbetar internationella standarder. Standarder är dokumenterad kunskap utvecklad av framstående aktörer inom industri, näringsliv och samhälle och befrämjar handel över gränser, bidrar till att processer och produkter blir säkrare samt effektivisera din verksamhet.

Delta och påverka
Som medlem i SIS har du möjlighet att påverka framtida standarder inom ditt område på nationell, europeisk och global nivå. Du får samtidigt tillgång till tidig information om utvecklingen inom din bransch.

Ta del av det färdiga arbetet

Utveckla din kompetens och lyckas bättre i ditt arbete

Vill du veta mer om SIS eller hur standarder kan effektivisera din verksamhet är du välkommen in på www.sis.se eller ta kontakt med oss på tel 08-555 523 00.

Standards make the world go round

SIS (Swedish Standards Institute) is an independent non-profit organisation with members from both the private and public sectors. We are part of the European and global network that draws up international standards. Standards consist of documented knowledge developed by prominent actors within the industry, business world and society. They promote cross-border trade, they help to make processes and products safer and they streamline your organisation.

Take part and have influence
As a member of SIS you will have the possibility to participate in standardization activities on national, European and global level. The membership in SIS will give you the opportunity to influence future standards and gain access to early stage information about developments within your field.

Get to know the finished work
We offer our customers everything in connection with standards and their application. You can purchase all the publications you need from us - everything from individual standards, technical reports and standard packages through to manuals and online services. Our web service e-nav gives you access to an easy-to-navigate library where all standards that are relevant to your company are available. Standards and manuals are sources of knowledge. We sell them.

Increase understanding and improve perception
With SIS you can undergo either shared or in-house training in the content and application of standards. Thanks to our proximity to international development and ISO you receive the right knowledge at the right time, direct from the source. With our knowledge about the potential of standards, we assist our customers in creating tangible benefit and profitability in their organisations.

If you want to know more about SIS, or how standards can streamline your organisation, please visit www.sis.se or contact us on phone +46 (0)8-555 523 00
Content

Foreword ........................................................................................................................................................... 4

1 Scope ........................................................................................................................................................ 4

2 Normative references ................................................................................................................................... 4

3 Terms and definitions .................................................................................................................................. 4

4 The table system for lifts, lifting platforms, escalators and moving walks .............................................. 6
   4.1 Overview over the table for lifts and lifting platforms ................................................................. 6
   4.2 Overview over the table for escalators and moving walks ........................................................... 7

5 The standardized columns for lifts and lifting platforms .......................................................................... 7
   5.1 Column 500 – Identification numbering (ID numbering) ........................................................... 7
   5.2 Column 501 – Date of accident ....................................................................................................... 7
   5.3 Column 502 – Location .................................................................................................................... 7
   5.4 Column 503 – Lift type ..................................................................................................................... 8
   5.5 Column 504 – Dangerous accidents .............................................................................................. 9
   5.6 Column 505 – Functions performed ............................................................................................... 10
   5.7 Column 506 – Cause of accident ................................................................................................... 10
   5.8 Column 507 – Primary lift part ....................................................................................................... 11
   5.9 Column 508 – Type of injury .......................................................................................................... 12
   5.10 Column 509 – Severity of injury .................................................................................................. 13
   5.11 Column 510 – ID of persons/materials involved .......................................................................... 13
   5.12 Column 511 – File attached – Additional information ................................................................ 14
   5.13 Column 512 – Coordinates of location ....................................................................................... 14
   5.14 Column 513 – EN 81-80 classification ......................................................................................... 14
   5.15 Column 514 – Hyperlink .............................................................................................................. 14
   5.16 Column 515 – Year of construction ............................................................................................. 14
   5.17 Format of records of accidents .................................................................................................... 14

6 The standardized columns for escalators and moving walks ..................................................................... 14
   6.1 Column 600 – Identification numbering (ID numbering) ........................................................... 14
   6.2 Column 601 – Date of accident ....................................................................................................... 14
   6.3 Column 602 – Location .................................................................................................................... 15
   6.4 Column 603 – Type of machinery .................................................................................................. 15
   6.5 Column 604 – Dangerous accident .............................................................................................. 16
   6.6 Column 605 – Function performed ............................................................................................... 16
   6.7 Column 606 – Cause of accident ................................................................................................... 17
   6.8 Column 607 – Primary machinery part .......................................................................................... 18
   6.9 Column 608 – Type of injury .......................................................................................................... 19
   6.10 Column 609 – Severity of injury ................................................................................................. 19
   6.11 Column 610 – ID of persons/materials involved .......................................................................... 20
   6.12 Column 611 – File attached – Additional information ................................................................ 20
   6.13 Column 612 – Coordinates of location ....................................................................................... 20
   6.14 Column 613 – EN 115-2 classification ......................................................................................... 20
   6.15 Column 614 – Hyperlinks ............................................................................................................ 20
   6.16 Column 615 – Year of construction ............................................................................................. 21
   6.17 Format of records of accidents .................................................................................................... 21

Annex A (informative) Example of template for accident recording for lifts and lifting platforms ....................... 22

Annex B (informative) Example of template for accident recording on escalators and moving walks ............. 23

Annex C (informative) Examples of accident recordings .................................................................................. 24
Example 01 Person trapped in a lift car without any car door ................................................................. 24
Example 02 Waste container in a lift without a car door ........................................................................... 25
Example 03 7 persons in a lift with a 4 persons car .................................................................................. 26
Example 04 Falling on escalator ............................................................................................................... 27

Bibliography ............................................................................................................................................... 28
Foreword

This standard INSTA 500-1 has been prepared by the INSTA lift group INSTA M HISS, consisting of members from legal authorities, notified bodies and lift companies from the Nordic countries: Denmark, Finland, Iceland, Norway and Sweden.

The secretariat was held by Dansk Standard and SFS since June 2013.

This standard shall be given the status of national standard either by an identical text or by endorsement in the Nordic countries.

1 Scope

This INSTA standard sets up a method of registration of data on user and worker incidents, accidents and near accidents with lifts, lifting platforms, escalators, moving walks and similar in a uniform way of describing and recording data.

NOTE In this standard incidents, accidents and near accidents are recorded as accidents.

The method can assist member states to fulfil the requirement in EU regulation 765/2008 by implementing suitable measures to survey accidents and impact on health from products.

By this method of registration it will be possible to compare and evaluate data on incidents, accidents and near accidents on lifting equipment as defined in this standard.

2 Normative references

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

EN 81-80, Safety rules for the construction and installation of lifts - Existing lifts — Part 80: Rules for the improvement of safety of existing passenger and goods passenger lifts.

EN 115-2, Safety of escalators and moving walks — Part 2: Rules for the improvement of safety of existing escalators and moving walks.


3 Terms and definitions

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

3.1 accessible goods only lift
accessible goods only lift permanently installed lifting equipment intended for the transport of goods only, serving fixed and permanent landing levels, comprising a load carrying unit accessible for loading and unloading, running along a fixed course, inclined not more than 15° to the vertical, for use only by authorized and instructed persons (users)

3.2 car
all types of load carrying units used in lifting equipment serving fixed landings
3.3 drum/chain drive
lift driven by an electric motor, a drum and ropes/chains, having a car for transport of passengers or passengers and goods with a balancing weight or no weight at all

3.4 hydraulic direct
lift driven by a hydraulic motor and a cylinder, having a car for transport of passengers or passengers and goods and a separate machine room

3.5 hydraulic indirect
lift driven by a hydraulic motor, a cylinder and ropes, having a car for transport of passengers or passengers and goods and a separate machine room

3.6 hydraulic MRL
hydraulic direct or indirect lift without a separate machine room

3.7 inclined lift
permanently installed electric lift, with traction or positive drive, serving defined landings levels, having a vehicle designed to convey passengers or passengers and loads, suspended by ropes or chains and traveling in strait path along guide rails that are inclined at an angle of between 15° and 75° in relation to the horizontal

3.8 inclined platform lift and stair lift
appliance for transporting person between two or more boarding points by means of a guided carriage moving on an inclined path

3.9 inspection lift
lifts only for transport of workers and their tools and other equipment to maintenance places in buildings or constructions (for instance wind mills, silos, communication masts)

Note 1 to entry: The lifts can be designed with or without a completely enclosed car.

3.10 machine room
a separate room where at least the motor for the lift is placed, which room has enough space for a person to enter the room and stand up in the room

3.11 MRL geared traction lift
lift with a car for transport of passengers or passengers and goods, having a gear box but no separate machine room

3.12 MRL gearless traction lift
lift with a car for transport of passenger or passenger and goods, having no gear box an no separate machine room

3.13 service lift
goods only lift, having a car which interior is regarded as inaccessible to persons on account of its dimensions and means of construction
3.14 supported chain drive
a lift driven by an electric motor and endless chains, supported by a surrounded guiding frame, so that the chains might move the car both in a supporting and in a dragging way. The lift is designed for transport of passengers or passengers and goods.

3.15 traction lift geared
lift driven by an electric motor with a gearbox and ropes, having a car for transport of passengers or passengers and goods and a separate machine room.

3.16 traction lift gearless
lift driven by an electric motor without gearbox and ropes, having a car for transport of passengers or passengers and goods and a separate machine room.

3.17 vertical platform lift
vertically moving platform for passengers or passengers and goods.

Note 1 to entry: Vertical platform lifts can be installed in a well or without any well.

4 The table system for lifts, lifting platforms, escalators and moving walks

This table system categorizes a number of possible accidents which can occur with lifts and lifting equipment covered by this standard and sets up in a table with 11 basic columns + 4 auxiliary columns. Multiple selections can be done in each column. This will affect the overview in clause 4.1 or 4.2.

It is intended to provide information on accidents and to analyse the reason for these accidents in order to give information to relevant institutions for development of preventive measures and more safe design for future equipment.

4.1 Overview over the table for lifts and lifting platforms

<table>
<thead>
<tr>
<th>Column 500 ID numbering</th>
<th>Column 501 Date of accident</th>
<th>Column 502 Location</th>
<th>Column 503 Type of lifts</th>
<th>Column 504 Dangerous accident</th>
<th>Column 505 Function performed</th>
<th>Column 506 Geared accident</th>
<th>Column 507 Primary lift part</th>
<th>Column 508 Type of injury</th>
<th>Column 509 Severity of injury</th>
<th>Column 510 Id of person/material</th>
<th>Column 511 File attached</th>
<th>Column 512 Coordinates of location</th>
<th>Column 513 EN 81-80 classification</th>
<th>Column 514 Hyperlink</th>
<th>Column 515 Year of construction</th>
</tr>
</thead>
</table>
4.2 Overview over the table for escalators and moving walks

| Post No. 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Column 600 | ID numbering | Column 601 | Date of accident | Column 602 | Location | Column 603 | Type of machinery | Column 604 | Dangerous accident | Column 605 | Function performed | Column 606 | Cause of accident | Column 607 | Primary machinery part | Column 608 | Type of injury | Column 609 | Severity of injury | Column 610 | Id of person/materials | Column 611 | File attached | Column 612 | Coordinates of location | Column 613 | EN 115-2 classification | Column 614 | Hyperlink | Column 615 | Year of construction |

Both tables consist of 11 basic columns and 5 auxiliary columns which are quite similar to each other except for columns 503 and 603 and columns 513 and 613.

Each single post represents data for one accident occurred with one lift/machine and must be filled out using the following reference lists and choosing the relevant text or number.

In most data systems, a reference list can be inserted in the system and the use of the reference list for each column is possible by clicking on the first available free post cell in the relevant column and the reference list pops up.

Columns 3-4-5-6-7-8-9 and 10 are provided with reference lists.

Choose the correct number/text and click on it. It will automatically be inserted in the relevant post in the column.

NOTE The reference lists can be extended to suit the purpose. If more possibilities are needed they can be added to the column but only the reference lists in this standard are valid in order to fulfill the standard.

5 The standardized columns for lifts and lifting platforms

5.1 Column 500 – Identification numbering (ID numbering)

The numbering counts the amount of accidents (posts) recorded and serves to identify them in the system. This column is normally provided when setting up any database systems.

5.2 Column 501 – Date of accident

Date of accident should be registered as YYYY-MM-DD. In many cases the exact date for the accident might be difficult to know exactly. In such case the year and month should be chosen and a note should be made in column 511.

5.3 Column 502 – Location

As the identity of the producer, installer and any of the persons involved must be kept anonymous, it was decided only to register the country in which the accident took place.

This column only contains the Nordic countries: DK, FI, IS, NO, SE in alphabetic order.

It is possible to insert other locations and countries in the reference column.
Most database programs provide for an "A reference list", in which all the possible and valid data are available. Below is shown the reference list for column 502 Location.

### Column 502 Location

<table>
<thead>
<tr>
<th>Reference list of Nordic countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 DK</td>
</tr>
<tr>
<td>02 FI</td>
</tr>
<tr>
<td>03 IS</td>
</tr>
<tr>
<td>04 NO</td>
</tr>
<tr>
<td>05 SE</td>
</tr>
</tbody>
</table>

5.4 **Column 503 – Lift type**

The lift types covered are shown in the reference list for Column 503 below:

### Column 503 Lift type

<table>
<thead>
<tr>
<th>Reference list of Lift type</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 Traction lift geared</td>
</tr>
<tr>
<td>02 Traction lift gearless</td>
</tr>
<tr>
<td>03 MRL geared</td>
</tr>
<tr>
<td>04 MRL gearless</td>
</tr>
<tr>
<td>05 Hydraulic direct</td>
</tr>
<tr>
<td>06 Hydraulic indirect</td>
</tr>
<tr>
<td>07 Hydraulic MRL</td>
</tr>
<tr>
<td>08 Screw drive</td>
</tr>
<tr>
<td>09 Rack and pinion</td>
</tr>
<tr>
<td>10 Supported chain drive</td>
</tr>
<tr>
<td>11 Drum drive</td>
</tr>
<tr>
<td>12 Service lift</td>
</tr>
<tr>
<td>13 Accessible goods only</td>
</tr>
<tr>
<td>14 Vertical platform lift</td>
</tr>
<tr>
<td>15 Inclined platform and stair lift</td>
</tr>
<tr>
<td>16 Inclined lifts with car</td>
</tr>
<tr>
<td>17 Inspection lifts</td>
</tr>
<tr>
<td>98 Other type</td>
</tr>
<tr>
<td>99 Not known</td>
</tr>
</tbody>
</table>

As all possibilities for a data column cannot be foreseen or known, the reference list gives spaces for other possibilities such as "others" as well as "Not known"

This reference list comprises lifting equipment machines covered by the Lifts Directive and the Machinery Directive. Escalators and moving walks are covered in clause 6 of this standard.
5.5 Column 504 – Dangerous accidents

This column assumes accidents which might occur with lifts.

It does not take into consideration people placed outside the well or machinery spaces.

**Column 504 Dangerous accidents**

<table>
<thead>
<tr>
<th>Reference list of possible dangerous accidents</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>01 Tripping when entering or leaving the car</td>
<td></td>
</tr>
<tr>
<td>02 Wheelchair/walking chair tipping over</td>
<td></td>
</tr>
<tr>
<td>03 Injured by doors</td>
<td></td>
</tr>
<tr>
<td>04 Unintentional start up/down</td>
<td></td>
</tr>
<tr>
<td>05 Unintentional start up/down with open doors</td>
<td></td>
</tr>
<tr>
<td>06 Lift running with open doors</td>
<td></td>
</tr>
<tr>
<td>07 Car stopped abruptly</td>
<td></td>
</tr>
<tr>
<td>08 Car stopped between landings</td>
<td></td>
</tr>
<tr>
<td>09 Passengers trapped in car</td>
<td></td>
</tr>
<tr>
<td>10 Car not present when doors opened</td>
<td></td>
</tr>
<tr>
<td>11 Person falling into the well</td>
<td></td>
</tr>
<tr>
<td>12 Goods falling down in the well</td>
<td></td>
</tr>
<tr>
<td>13 Limbs trapped between car and shaft wall (no car door)</td>
<td></td>
</tr>
<tr>
<td>14 Limbs trapped between sax gate and shaft wall</td>
<td></td>
</tr>
<tr>
<td>15 Person crushed between car and shaft wall (no car door)</td>
<td></td>
</tr>
<tr>
<td>16 Person crushed between goods and car/shaft wall (no car door)</td>
<td></td>
</tr>
<tr>
<td>17 Person crushed by car in headroom</td>
<td></td>
</tr>
<tr>
<td>18 Person crushed by car or counterweight in pit</td>
<td></td>
</tr>
<tr>
<td>19 Uncontrolled movement of car and/or counterweight</td>
<td></td>
</tr>
<tr>
<td>20 Car collided with fixed objects</td>
<td></td>
</tr>
<tr>
<td>21 Counterweight or machine parts hit the car</td>
<td></td>
</tr>
<tr>
<td>22 Electric shock</td>
<td></td>
</tr>
<tr>
<td>23 Fire in the lift</td>
<td></td>
</tr>
<tr>
<td>24 Person injured by rotating parts</td>
<td></td>
</tr>
<tr>
<td>25 Person entering or leaving the machinery space</td>
<td></td>
</tr>
<tr>
<td>26 Person hoisting or lifting equipment</td>
<td></td>
</tr>
<tr>
<td>27 Hands/fingers crushed between door and door frame/panels</td>
<td></td>
</tr>
<tr>
<td>98 Other accidents</td>
<td></td>
</tr>
<tr>
<td>99 Not known</td>
<td></td>
</tr>
</tbody>
</table>