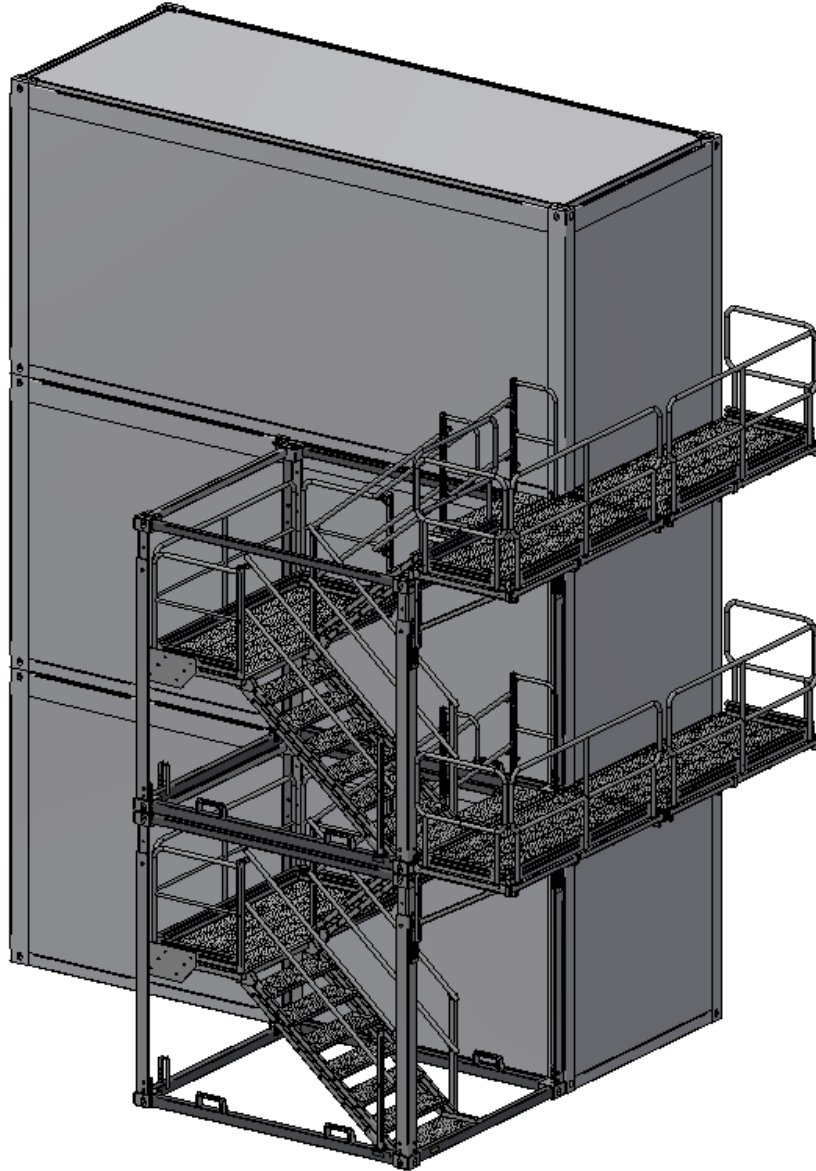


Operating and maintenance manual of Adjustable Container Staircase SK-KS2



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Pos.	NAME AND SURNAME	DEPARTMENT	DATE OF CHANGE	SCOPE OF REVISION	NOTES
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1. General Guidelines

Every time before starting the assembly of the temporary spiral staircase made of steel parts you have to get acquainted with this Operating and Maintenance Manual (hereinafter referred to as OMM). The Operation and Maintenance Manual informs about the assembly of the stairs, operation and maintenance as well as about safety conditions during the operation. The operating instructions describe the installation, use and maintenance of the temporary spiral staircase. During the assembly, disassembly, operation and maintenance of the temporary spiral staircase it is always necessary to follow the instructions of the OMM and safety regulations.

2. Subject of the Operation and Maintenance Manual

The subject of the Operation and Maintenance Manual is the information on assembly, disassembly, operation, maintenance and safe use of the TLC adjustable container staircase system consisting of modules such as stair treads, landings, railings, poles, assembly consoles.

3. Intended use of the adjustable container staircases

Adjustable container staircase is a temporary structure designed according to PN-EN 12811 oraz PN-EN ISO 14122-3 standards. It is designed to provide communication between levels of stackable office, warehouse and sanitary containers at the construction site.

The adjustable container staircase system by TLC is easy to assemble and durable, and simplicity of its assembly results from the limited number of parts, such as bolts, nuts, and use of the intuitive system of assembly of stairs, barriers and poles.

4. Technical description

- Permissible distributed load on landings and stairs: – 2,0 kN/m²
- Permissible concentrated load on platforms and stairs: – 1,5 kN per 50x50 mm
- Allowable load on the balustrade: – 0,3 kN/m
- Usable widths of stairs and landings: – 940 mm
- Types of barriers: – industrial
- Materials – steel S355, S235
- Anti-corrosion protection – hot-dip galvanised

Staircases come as bolted modules with a standard container width of 2440mm. For proper assembly and operation staircases should be mounted on a stable, level base, the height of which is at the level of the container base. For reasons of stability and the possibility of stacking the cages, a foundation is recommended. It is permissible to mount staircases on concrete slabs. In this case, an adequate foundation and drainage must be provided.

5. Health and safety guidelines

GENERAL PROVISIONS

a) A person who meets the following conditions may work at the installation of the adjustable container staircases:

- has been admitted to work at height by a doctor, is in good health,
- is over 18 years of age,

b) Conditions of admission to work:

- the employee must be sober and rested,
- the employee must be dressed in working and protective clothing, including safety shoes, must have approved safety equipment such as safety harnesses, ropes, protective helmet, etc.,
- the employee must be trained in manual handling operations,
- the employee should be subjected to a position instruction where the division of tasks for particular persons performing the assembly of

stairs and the manner of communication between the hoist operator and the worker assembling the stairs will be determined.

- c) Due to the size and weight of individual components special care must be taken during transport, assembly and operation of the staircase.
- d) Keep this manual as a source of information for users of the staircase and their service personnel.
- e) The manufacturer cannot be held responsible for any damage caused by incorrect installation or misuse of the product.
- f) The staircase is designed for use in industrial conditions i.e. for use by adults, observing health and safety regulations, trained and not under the influence of alcohol or other intoxicating substances.
- g) Do not allow the staircase to be used simultaneously by a number of persons having a greater mass than the permissible load of the staircase.
- h) Do not use the staircase to transport objects other than tools, instruments, etc.

ASSEMBLY OF ADJUSTABLE CONTAINER STAIRCASE

- a) Before beginning the installation of stairs, read the technical documentation and the instructions of the site manager.
- b) When preparing the materials, check that the metal parts are not corroded or bent.
- c) Mark and sign the area around the temporary spiral staircase assembly zone.
- d) When working at height, workers should be secured with safety harnesses attached to the fixed parts of the structure.
- e) The stair structure should be assembled in accordance with the OPERATION AND MAINTENANCE MANUAL and the approved design.
- f) Temporary spiral stairs as a steel construction are recommended to provide adequate earthing for protection against lightning discharges (PN -78/M - 47900/01).
- g) The use of temporary spiral stairs is admissible after an acceptance inspection by a technical supervision confirmed with an appropriate protocol.

- h) It is forbidden to modify system elements and their assembly not in conformity with OMM

DISASSEMBLY OF ADJUSTABLE CONTAINER STAIRCASE

- a) Employees involved in the dismantling of spiral staircases must wear approved harnesses.
- b) Dismantling of stairs must be carried out in the reverse order of assembly.
- c) Before starting dismantling, a safety zone must be defined (at least 6 m away from the dismantling site).

FINAL PROVISIONS

- a) It is prohibited to assemble and disassemble of adjustable container staircases:
- at dusk, if there is no proper lighting,
 - during fog, precipitation, ice
 - during storms and winds above 10 m/s,
 - in the distance from the power line edge wires lower than:
 - LV line - 2 m
 - HV line up to 15 kV - 5 m
 - HV line up to 30 kV - 10 m
 - HV line > 30 kV - 15 m
- b) During operation, the supervision should periodically check the condition of the bolted connections.
- c) All accidents at work must be reported to the immediate supervisor and the workplace must be left in the condition in which the accident occurred.
- d) If the fitter is unwell, he/she should report this to his/her supervisor to obtain an exemption from working at height.

6. Classification and guidelines for periodic reviews

The parts included in the structure as well as the entire structure require inspection due to the conditions of use and the use of welded, crimped or screwed connections. The inspection should be carried out for:

- the completeness of the system,
- the condition and completeness of the fasteners,
- damage to welds,
- deformations, cracks, nicks or other damage to components,
- condition of anticorrosion coating,
- patency of assembly and drainage holes,
- the use of correct system components.

The purpose of the ongoing inspection is to determine the presence of damage that:

- directly threaten the safety of users,
- clearly reduce the comfort of using the facility or its surroundings,
- indicate the need to conduct a detailed inspection as an emergency.

If, during the inspection, irregularities are found in the structure or elements, they should be immediately excluded from use and necessary repairs should be made by replacing the damaged elements with replacement elements provided by the system manufacturer. It is not allowed to perform independent repairs of structures or elements without obtaining permission and approval of the method of repair by the manufacturer.

Losses in anti-corrosion coatings should be repaired in a manner appropriate to the type of coating used. The manufacturer allows repairs of anti-corrosion coatings provided that they are carried out in accordance with the provisions of the PN-EN ISO 1461 standard. 6.3 for hot-dip galvanized products or the PN-EN ISO 12944 series of standards for painted products.

Due to the period of performance, we distinguish the following types of inspections:

A. Current, daily inspection

Daily inspection is performed by the users of the structure. This is a visual inspection intended to assess the condition of components and the integrity of the structure in case of occurrence:

- irregularities in the assembly and anchoring of structure elements,
- damage related to random events such as winds, storms, floods, fires, etc.,
- mechanical damage caused, for example, by the impact of moving objects,
- damage to elements caused by operational factors,
- damage to components that has not been reported.

B. Weekly review

The weekly inspection should be performed by a competent person with appropriate technical knowledge. The inspection is carried out to assess the condition of the elements and structures in terms of deformations, damage and the condition of the anti-corrosion surface. The purpose of the inspection is to assess whether there have been any changes in the structure and its elements that may pose a threat.

C. Detailed inspection

A detailed inspection should take place:

- if damage is detected during current or weekly inspection,
- before delivering the structure or its elements to the construction site,
- every 12 months of use,
- after a long time of not using the system,
- in the event of an accident,
- at the client's request.

The inspection should be carried out by competent persons with appropriate technical knowledge. The results of the review should be documented in the form of a review report.

7. Transport and storage

The elements of adjustable container staircases are protected against corrosion, however, the longest durability can be achieved by storing them when they are not in use in a closed and dry room.

Adjustable container staircases should be stored in bolted modules. The area intended for storing staircases should be hardened and even. Staircases should be stored on wooden bases so that they are not placed directly on the ground.

In order to avoid damage to the system elements during transport and storage, it is recommended to use spacers and underlays that provide free space between individual elements, which prevents mechanical damage to the anti-corrosion coating. The elements should be firmly fastened together to prevent them from moving between each other.

Loading and unloading of staircases can be carried out using a crane. The four-point chain sling should be attached to the corner cubes of the staircase using the sling hooks.