
*Operating and maintenance
manual
of the SST Temporary Spiral
Staircase*



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Item	NAME AND SURNAME	DEPARTMENT	DATE OF AMENDMENT	SCOPE OF AMENDMENT	COMMENTS
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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 temporary spiral staircase system consisting of modules such as stair treads, landings, railings, poles, assembly consoles.

3. Intended use of the temporary spiral staircase system

Temporary spiral stairs system is a temporary structure designed according to PN EN 12811 standards. It is designed to provide communication between levels on a construction site.

The TLC temporary stairs system is characterized by easy assembly and durability, the simplicity of assembly is influenced by the reduction of fasteners such as screws, nuts and the use of intuitive assembly system of stairs, railings and posts.

4. Technical description

- Permissible distributed load on landings and stairs - 2 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 : - 730 mm version
- Types of barriers - industrial version
- Material - steel S355, S235
- Corrosion protection - hot-dip galvanised

Stairs are assembled as pre-braced intermediate modules which are set on a base frame with four adjustable feet and stabilised with consoles mounted on a stable base, for proper assembly and operation stairs must be mounted on a levelled concrete substrate. Due to its temporary use, installation on reinforced concrete slabs or concrete blocks is permitted. If blocks are used, it is a prerequisite that they are set on a hardened gravel bed with an effective drainage system in a secure and stable manner.

5. Health and safety guidelines

GENERAL PROVISIONS.

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

- 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 TEMPORARY SPIRAL STAIRCASES

- 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 TEMPORARY SPIRAL STAIRCASES.

- 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 temporary spiral 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 inspection of engineering structures.

Inspection of civil engineering works is a visual inspection (vetting) carried out as part of an ad hoc inspection of the structure in order to identify damages which directly threaten the safety of users - usually performed at their request or after unusual events - e.g. storm, heavy snowfall, flood, vehicle impact, fire, seismic vibration, abnormal load.

The purpose of the current inspection is to identify:

- damage that directly jeopardises the safety of users;
- damages which significantly reduce the comfort of use of the facility or its surroundings
- damage that indicates the need for an emergency basic inspection or extended inspection.

The current inspection consists of a visual check of the structure, equipment and the surroundings of the civil engineering facility for signs that indicate or may indicate that they are inadequate or fixed. The current inspection is carried out from the usable level of stairs, and in case of irregularities and at least once a year also from the level of the ground under the facility and next to the facility.

Periodic annual inspection - basic inspection is an inspection carried out at least once a year in order to assess and record the current technical condition of the facility, as well as to determine the conditions for safe operation and the needs and scope of necessary ongoing maintenance and repair works.

The purpose of the basic inspection is to check the technical condition of the elements of the engineering object, the object's surroundings, installations and devices for environmental protection and to record changes that have occurred during use.

As a result of the basic inspection, it is necessary to determine

- damages of the object, which may cause a threat to human life or health, safety of property or environment,
- damages of the facility which may cause a building catastrophe,
- conditions for safe use of the facility,
- damages to the facility which should be removed as part of the current maintenance plan or in an emergency mode maintenance plan or in an emergency procedure,
- damage to installations and devices serving environmental protection,
- damage to equipment
- damage to attachments or covers of third-party equipment endangering the safety of users of the stairs or the structure, in order to call upon the owners of such equipment to inspect and remove the damage,
- implementation of recommendations from previous inspections,

- the need to carry out an extended or detailed inspection outside the inspection schedule,
- the need to perform an expert opinion on the technical condition of the facility or its part

Before starting the inspection it is necessary to get acquainted with the registration documents and technical documentation of the facility. Basic inspection includes visual inspection of the building and its surroundings and basic tests and measurements. The visual inspection and basic tests and measurements are carried out:

- during the basic inspection from the level of stairs and from the ground level under the object, using binoculars and possibly a ladder or a scaffold,
- e) if necessary, equipment allowing direct access to each structural element inspected should be used during this inspection.

7. Transport and storage

Temporary spiral stair components shall be protected against corrosion; however, the longest life will be achieved by storage when not in use in a closed, dry location.

Temporary spiral stairs may be stored in the form of assembled intermediate modules or dismantled individual elements. In the case of assembled modules, it is not permitted to stack more than two intermediate modules on top of each other. In this case, however, a stable, hardened substrate with good drainage must be provided.

In order to avoid damage to the system elements during transport and storage, it is recommended to use spacers and underlay to provide free space between the individual elements to prevent mechanical damage to the anti-corrosion coating. The elements should be securely fastened together to prevent movement between them.

- Loading and unloading of the stairs can be carried out with a crane. The chain sling must be fastened with a shackle to the upper mounting bolt M16 inside the centre column (Fig. 2).
- An alternative to lifting behind the central post is to attach the slings to the corner posts of the module. For this purpose four-legged chain slings should be used. Spacing angle of the slings $\alpha=45-60^\circ$

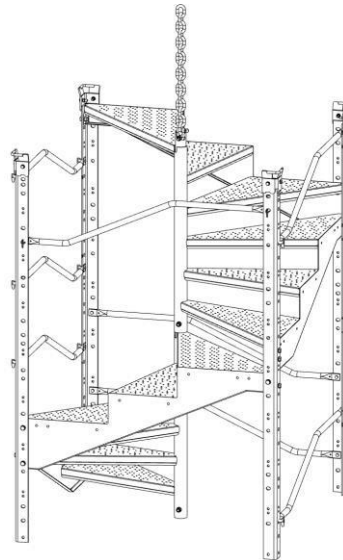


Fig. 1 Lifting the intermediate module

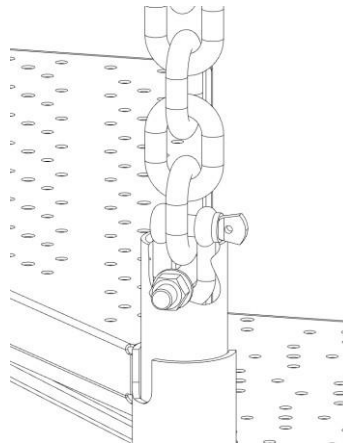


Fig. 2 Method of mounting shackles to the central post

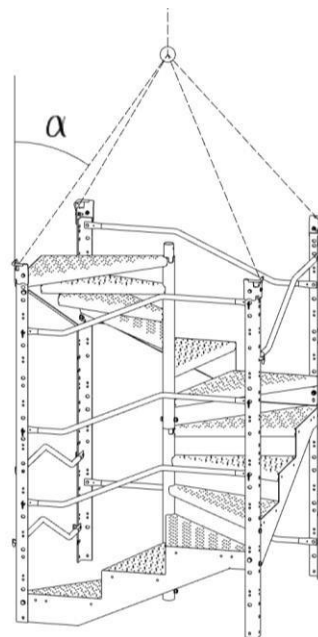


Fig. 3 Alternative lifting of the intermediate module

8. Acceptance, authorisation for use

Once the correct installation of the temporary spiral staircase has been completed, the structure should be inspected. The following should be checked:

- tightening of all screw connections,
- correctness of installation of anchors
- correctness of assembly of the barrier

The use of the container stairs is permissible after the technical inspection confirmed by an appropriate protocol.

It is also necessary to check the condition of the anti-corrosion coating for any damage that may have occurred during assembly; in case of damage to the coating, the damaged element must be replaced or repaired.

9. Disposal

Packaging and used equipment should be stored, managed or disposed of in accordance with the applicable recommendations and requirements set out in the Act on Waste of 27.04.2001 (Journal of Laws 2001 No. 62 item 628) as amended.

10. Declaration of performance

Each platform is supplied with a Declaration of Performance by TLC.
A specimen of this document is shown below.

DEKLARACJA ZGODNOŚCI / DECLARATION OF CONFORMITY

Wg/ as per PN-EN ISO/IEC 17050-1
Nr/ No: 01/22

Producent / Products:	TLC sp. z o.o. ul. Chopina 25 n, 38-300 Gorlice
Adres / Address:	ul. Chopina 25 n, 38-300 Gorlice
Wyrób / Product:	SCHODY SPIRALNE TYMCZASOWE (SST) / TEMPORARY SPIRAL STAIRS
Typszereg / Series:	System schodów spiralnych przeznaczony jest do zapewnienia komunikacji pomiędzy poziomami na placu budowy. Wy różnia się łatwością montażu oraz trwałością, na prostotę montażu wpływa ograniczenie elementów łączących typu śruby, nakrętki oraz zastosowanie intuicyjnego systemu montażu schodów, barierek oraz słupów. / Spiral stair system is designed to ensure communication between the levels on the construction site. It stands out by ease of assembly and durability, the simplicity of assembly is influenced by the limitation of fasteners such as bolts, nuts and the use of an intuitive system for installing stairs, railings and poles.
Dane techniczne / Technical data:	Szerokość użytkowe schodów: 730mm Typy barierek: wersja przemysłowa
Elementy składowe systemu SST / Components of the SST system:	SST-A3 – łącznik podestów / platform connector SST-K1 – burtnica biegu / stairs flight toeboard SST-L3 - konsola montażowa / mounting bracket EPS-KS-A2 – konsola A2 / element of the mounting bracket A2 EPS-KS-A3 – konsola A3 / element of the mounting bracket A3 SST-R4 – barierka R4 modułu końcowego / top module R4 railing SST-R8 – barierka R8 modułu końcowego / top module R8 railing SST-R9 – barierka R9 podestu zejściowego / access platform R9 railing M-Z-POD-T32 – stopa regulowana / adjustable support SST-A1 – prawa konsola podestu / right console of platform SST-A2 – lewa konsola podestu / left console of platform SST-P2a – podest zejściowy / descent platform SST-F1 – bieg klatki /stair flight module SST-PO1 – poręcz/ handrail SST-S1 –słup/ post SSTRAP – rama podstawy / base frame SST-P1 – stopień zejściowy/ descent step
Oznaczenie i nr seryjny umieszczone jest na etykiecie każdego produktu / The product code and serial number is stated on each product label	
Podstawowa kompleatacja wyrobu wg instrukcji obsługi / Basic product completion according to the operating instruction	Podstawowa kompleatacja wyrobu wg instrukcji obsługi / Basic product completion according to the operating instruction
Kompleatacja ilościowa i rodzajowa zgodnie z zamówieniem / Type and amount according to the order	Kompleatacja ilościowa i rodzajowa zgodnie z zamówieniem / Type and amount according to the order
Podzespoły / Components:	Zgodnie z typoszeregiem / According to the series of types
Informacje / dodatkowe / Additional information:	Przewidywane zastosowanie wyrobu/Intended use of the product: System schodów kontenerowych przeznaczony jest do zapewnienia komunikacji pomiędzy poziomami na placu budowy. / The container stair system is designed to ensure communication between the levels on the construction site. Materialy / Materials: Stal / Steel S235, S355 MC Reakcja na ogień / Reaction to fire: A1 wg / as per PN-EN 13501-1

TLC Sp. z o.o. registered in: XII Economic Department of the National Court Register, District Court in Cracow - Śródmieście, fully paid-up share capital in the amount of PLN 613 332,00 PLN.

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Trwałość / Durability: Zabezpieczenie antykorozyjne - cynkowanie wg PN-EN ISO 1461 / Corrosion protection - galvanizing acc. to PN-EN ISO 1461 Dopuszczalne obciążenia/ Category of use (Acceptable loads): - Dopuszczalne rozłożone obciążenie podestów i schodów / Permissible distributed load on landings and stairs - 2 kN/m ² - Dopuszczalne skupione obciążenie podestów i schodów / Permissible concentrated load on platforms and stairs - 1.5 kN per 200x200 mm - Railing / Balustrada – 0,3kN/m Szczegóły / Details: wg rysunku technicznego / acc. to the technical drawing		
Na potrzeby Klienta udostępniane są / Available for the customer needs: Certyfikat FPC/Certyfikat kwalifikacji spawalniczej / FPC certificate / Welding qualification certificate		
Producent deklaruje na wyłączną własną odpowiedzialność, że przedmiot deklaracji opisany wyżej został zaprojektowany, wykonany zgodnie z dokumentacją i jest zgodny z wymaganiami następujących dokumentów/ The manufacturer declares on his responsibility that the subject of the declaration described above has been designed and made in accordance with the documentation and complies with the requirements of the following documents:		
Nr dokumentu / Doc no.	Tytuł / Title	Wydanie / Edition
P-OT-MOB-F2; OT-MOB-F2	Dokumentacja Konstrukcyjna / Construction documentation	-
-	Dokumentacja Techniczno – Ruchowa / Operation & Maintenance Manual	-
-	Instrukcja montażu / assembly manual	-
PN-EN 10216-2	Drut stalowy i wyroby z drutu – Postanowienia ogólne – Część 2: Wymiary i tolerancje wymiarów drutu / Steel wire and wire products. General Wire dimensions and tolerances	-
PN-EN 10244-1	Drut stalowy i wyroby z drutu – Powłoki z metali nieżelaznych na drucie stalowym – Część 1: postanowienia ogólne / Steel wire and wire products. Non-ferrous metallic coatings on steel wire	-
PN-EN 10244-2	Drut stalowy i wyroby z drutu – Powłoki z metali nieżelaznych na drucie stalowym – Część 2: Powłoki z cynku lub ze stopu cynku / Steel wire and wire products. Non-ferrous metallic coatings on steel wire	-
PN-EN 10223-4	Drut stalowy i wyroby z drutu na ogrodzenia i siatki – Część 4: Siatka ogrodzeniowa z drutu stalowego z połączeniami zgrzewanymi. / Steel wire and wire products for fencing and netting - Part 4: Steel wire welded mesh fencing	-
PN-EN 10305-3	Rury stalowe precyzyjne – Warunki techniczne dostawy – Część 3: Rury ze szwem kalibrowane na zimno / Steel tubes for precision applications - Technical delivery conditions - Part 3: Welded cold sized tubes	-
PN-EN ISO 9223	Korozja metali i stopów – Korozyjność atmosfer – Klasyfikacja, określenie i ocena / Corrosion of metals and alloys - Corrosivity of atmospheres - Classification, determination and estimation	-
PN-EN ISO 3834-2	Wymagania jakości dotyczące spawania materiałów metalowych – Część2: Pełne wymagania jakości / Quality requirements for fusion welding of metallic materials - Part 2: Comprehensive quality requirements	-
PN-EN 22768-1	Tolerancje ogólne – Tolerancje wymiarów liniowych i kątowych bez indywidualnych oznaczeń tolerancji / General tolerances Tolerances for linear and angular dimensions without individual tolerance indications	-
PN-EN 22768-2	Tolerancje ogólne – tolerancje geometryczne elementów bez indywidualnych oznaczeń tolerancji / General tolerances - Part 2: Geometrical tolerances for features without individual tolerance indications	-
PN-EN ISO 2081	Powłoki metalowe i inne nieorganiczne – Elektrolytyczne powłoki cynkowe z obróbką dodatkową na żelazie lub stali. / Metallic and other inorganic coatings. Electroplated coatings of zinc with supplementary treatments on iron or steel	-
PN-EN ISO 1461	Powłoki cynkowe nanoszone na wyroby stalowe i żeliwne metodą zanurzeniową – Wymagania i metody badań / Hot dip galvanized coatings on fabricated iron and steel articles. Specifications and test methods	-
PN-EN ISO 14713-1	Powłoki cynkowe – Wytyczne i zalecenia dotyczące ochrony przed korozją konstrukcji z żelaza i stali – Część 1: Zasady ogólne dotyczące projektowania i odporności korozyjnej / Zinc coatings: Guidelines and recommendations for the protection against corrosion of iron and steel in structures. General principles of design and corrosion resistance	-
PN-EN ISO 14713-2	Powłoki cynkowe – Wytyczne i zalecenia dotyczące ochrony przed korozją konstrukcji ze stopów żelaza – Część 2: cynkowanie zanurzeniowe / Zinc coatings. Guidelines and recommendations for the protection against corrosion of iron and steel in structures Hot dip galvanizing	-

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PN-EN 13501-1	Klasyfikacja ogniowa wyrobów budowlanych i elementów budynków – Część 1: Klasyfikacja na podstawie wyników badań reakcji na ogień / Fire classification of construction products and building elements	-
	Classification using data from reaction to fire tests	

Niniejsza deklaracja zgodności odpowiada normie europejskiej EN 17050-1 „Ocena zgodności - Deklaracja zgodności składana przez dostawcę”. / This declaration of compliance is in accordance with the European standard EN 17050-1 "Conformity assessment - Declaration of compliance by the supplier".

Podpisał w imieniu i z powołaniem: Kazimierz Kęder Pełnomocnik Zarządu ds. ZKP. / On behalf of the manufacturer, signed: Kazimierz Kęder - Plenipotentiary of the Board of Directors of the FPC

(miejsce i data wydania) / Date: (Podpis osoby upoważnionej) / (Signed by)
Gorlice, 12.01.2022

WZÓR



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11. Annexes

List of attachments to the Technical and Operating Documentation

Annex 1 - Assembly instructions

Annex 2 - Declaration of conformity

Annex 3 - Declaration