Product Manual

(EN 12810-1: 2004 § 9.2)

EUROPEAN SCAFFOLDING OF PREFABRICATED ELEMENTS

BF105 / RP105 (RAPIDO 105)

Code 00152

Summary

1. Introduction

These instructions for safe installation of the Ceta SpA scaffolding must accompany the product and must be made available to the assembly/disassembly operators and users of the scaffolding.

In no circumstances the scaffolding can be arbitrarily modify, not even can be arbitrarily replace/repair the damaged items: if this should happen, the Ceta SpA cannot be held responsible for any damage suffered or caused by improper use of the scaffolding subject of this manual.

Although not expressly stated in this manual, reference should be made to the current regulations on safety in the workplace.

2. Regulatory framework

- ENV 1993 (Eurocode 3) - Design of steel structures;
- May 24, 1988 Presidential Decree No. 224 - Liability for defective products.
- Legislative Decree of 9 April 2008 No. 81 - Consolidated Law on health and safety at work, as amended.
- Legislative Decree of 4 August 1999 n ° 359 - Implementation of Directive 95/63 / EEC amending Directive 89/655 / EEC concerning the minimum safety and health requirements for the use of work equipment by workers.
- Legislative Decree of July 8, 2003 No. 235 - Implementation of Directive 2001/45 / EEC on the minimum safety and health requirements for the use of work equipment by workers.
- UNI EN 12810 - 1: Facade scaffolding made with prefabricated components: product specifications.
- UNI EN 12810 - 2: Facade scaffolding made with prefabricated components: particular methods of structural design.
- UNI EN 12811-1: Work provisional Equipment: Scaffolding - Performance requirements and general design
- UNI EN 12811-2: Work provisional Equipment: Information on materials
- UNI EN 12811-3: Work provisional Equipment: Load tests
- UNI EN 12811-4: Work provisional Equipment: Protection brackets for scaffoldings

3. Description of the scaffolding type

The type of produced and marketed by Ceta SpA scaffolding is that of prefabricated elements in the portal- frame.

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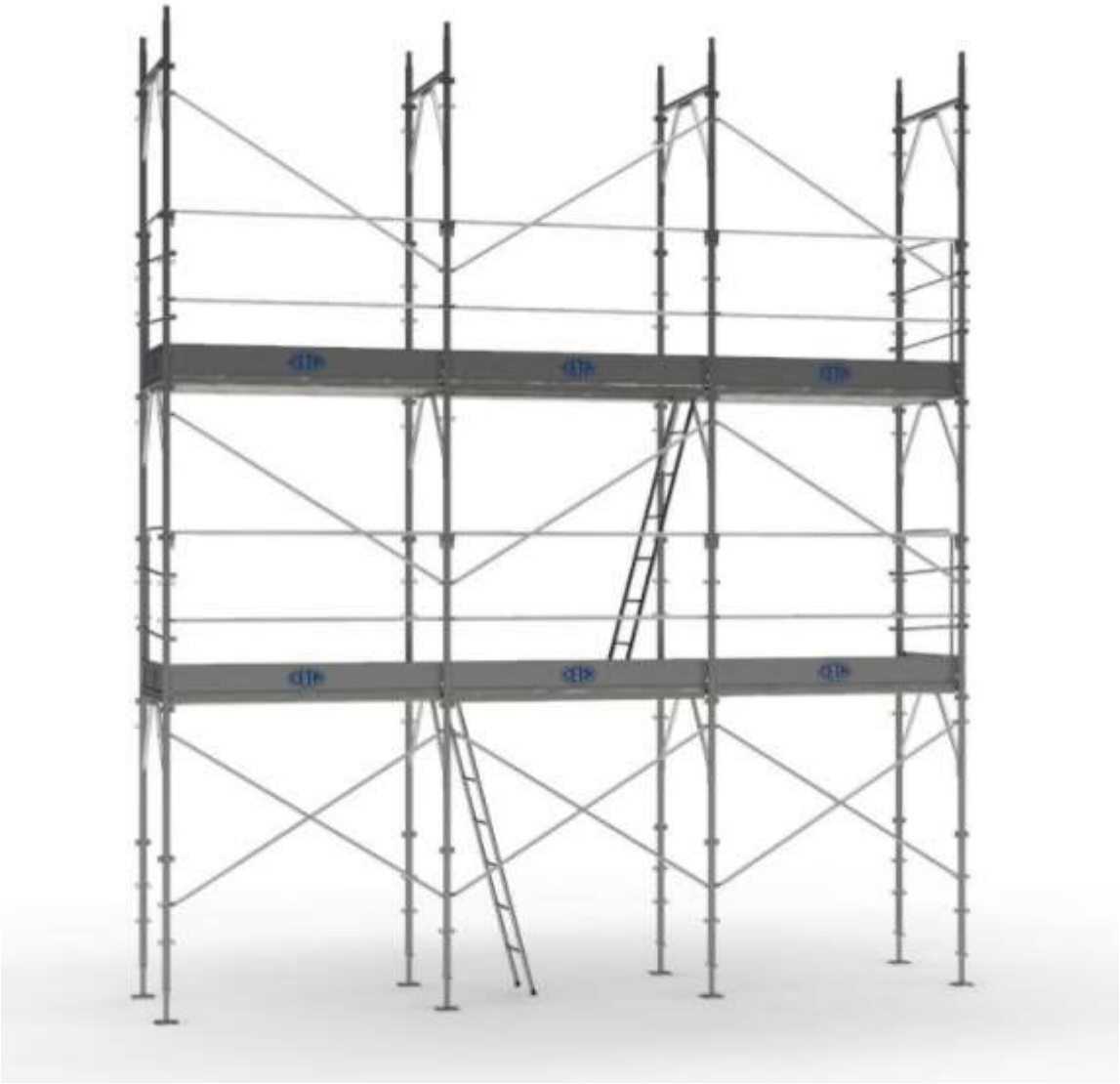
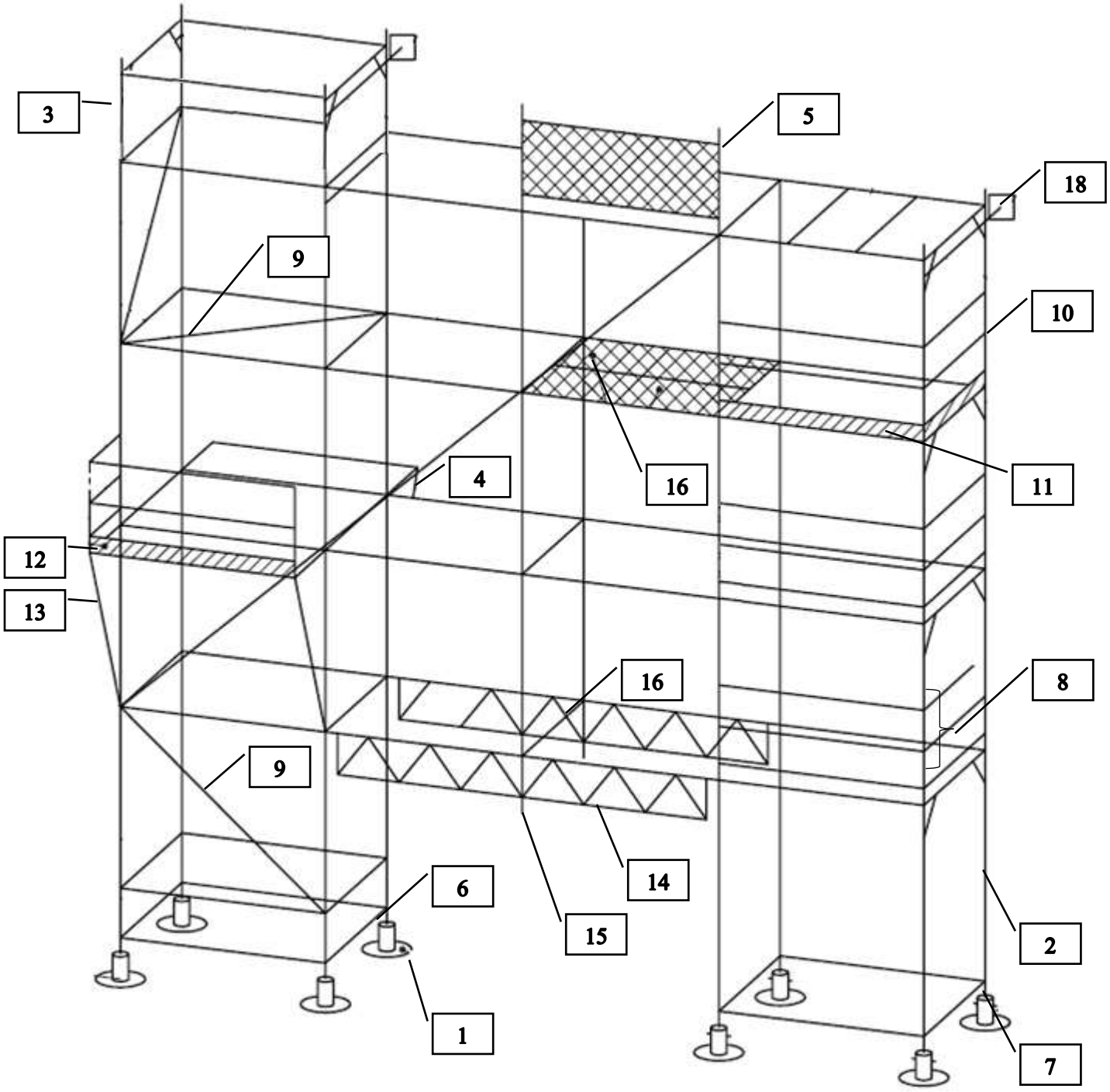
The multi-age system is made with vertical prefabricated elements on which are welded rosettes for the grafting of current tubes, diagonals and all other accessories.

- Maintenance and construction scaffolding with lengths up to 2.50 m.



4. Component list



Component list	
1	Base jack or Base plate
2	Portal frame
3	Half portal frame
4	Console bracket
5	Guardrail top standard with bushes
6	Starter frame
7	Re starting standard (optional)
8	Ledger (guardrail)
9	Diagonal
10	Universal head frame with toeboard
11	Toeboard
12	Universal console bracket
13	Console bracket brace
14	Lattice grides
15	Standard for lattice grides
16	Starter frame for lattice grides
17	Metal plank
18	Anchor

5. Personal protective equipment

For the execution of the operations at construction sites the employer must provide its workers with appropriate personal protective equipment.

In particular, each worker must have the following protective devices:

- **Helmet** for head protection

- **Safety shoes** for foot protection

- **Gloves** for hand protection

- **Harness with lanyard and energy absorber** for anti-fall protection

- **Accessories** for lifelines or self-retracting anti-falls devices

All devices must comply with the current safety legislation.

6. Use of anti-fall systems

Anti-fall systems must be used for mounting the scaffolding from heights in excess of 2 meters in the absence of the guardrail frame.

Operators should use a full safety belt with straps and leg loops connected to a holding device which can be:

A horizontal steel wire rope spanning between two uprights on which slide the carabiner with energy and tear dissipator. This horizontal anchor line must be anchored to structures capable to withstand the eventual dynamic stress of a fall protected by kinetic energy dissipator and the weight of a possible rescuer.

One of the critical points of the use of the horizontal lifeline is when operating from second level as the "air draft" may not be sufficient to avoid the impact of the worker to the ground.

To avoid this situation is necessary to carefully calculate the lengths of the lifelines and decrease the fall distance so as to reduce the operator's impact with the harness as well as the stresses induced on the structure of the scaffolding and on the anchors.

A self-retracting recovery device with rope of such length to permit the work for the length of the facade and that must be attached to a secure anchorage point (in compliance with UNI EN 795).

The procedure is to operate from the lower level by placing a self-retracting device on the level of the scaffolding to be mounted and anchor to an upright.

Get out of the trap door and engage yourself immediately before going out completely on the work surface.

The next step is the assembly of the elements in order to maintain the open string as short as possible by limiting the pendulum effect.
Check, in relation to of the pendulum effect, that the operator encounters an unexpected obstacle.

A lanyard (even without energy dissipator) of limited length (1.35 cm) to contain the falling space.
After mounting the walk-over flooring, the operator ascends to the plane through the trapdoor (without leaving it completely) and hooks to the scaffolding structure of the walk-over flooring level (so that the cord does not slip).

Subsequently installs two complete parapet modules and continues with assembly of uprights and the parapets (including toe-boards) consecutively.

The methods of conservation and maintenance of personal protective equipment are given in the instructions for use provided compulsorily by the product manufacturer.

Should be made periodically the checks foreseen by instruction manual provided by the product manufacturer.

After a fall the arrest device should not be reused: the control of it should be performed only by the manufacturer.

7. Safety signs

- **Risk of falling from**

- **Risk of falling from**

- **Risk of fall of the**

- **Suspended loads**

- **Generic danger**

- **Is mandatory to wear**

- **Is mandatory to wear protective**

- **Is mandatory to wear the body protection**

- **Is mandatory to wear anti-fall protection**

- **Is mandatory to wear safety**

- **No entry for unauthorised persons**

- **Prohibition of transit of persons under scaffoldings or suspended loads**

- **Prohibition of climb or descend along the**

- **Prohibition of throw materials or elements from**

- **Suspend the works in case of strong wind**

8. Assembly equipment

POLYGONAL KEY

Figure 1 - key for tightening the bolts of the joints

Figure 3 - spirit level

Figure 2 - electric drill for drilling walls anchors

Figure 4 - hammer

Figure 5 - rolmeter

9. Discharge, lifting and handling operations

Before the cargo container lifting, make sure that the lifting means have suitable capacity and have an adequate range for the movements to be carried out.

Before lifting make sure that the product in the container is secured with straps.

⚠ DURING THE PHASES OF LIFTING OR HANDLING IS FORBIDDEN THE PRESENZE OF OUTSIDERS IN THE AREA.

⚠ IN THE CASE OF OVERTURNING RISK OF THE CONTAINER, NOT TRY TO STABILIZE IT MANUALLY: IMMEDIATELY LEAVE THE DANGER ZONE.

The lifting can be done in two ways:

- **With cranes and ropes**

  The accessories for lifting, as hangers, must be provided with closing at the entrance to prevent the accidental release of the ropes or chains;

  The lifting of the load must be carried out slowly by checking that all the stretches of rope work and that the load is balanced;

  The start, the movement and the stop of the container must take place in a gradual way without sudden movements.

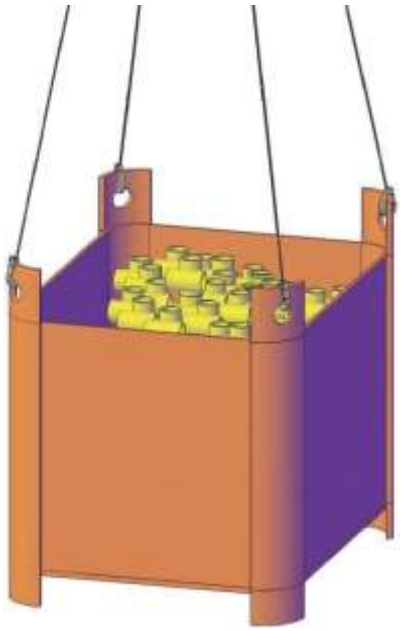


Figure 6 - lifting containers with crane

- **With lifter (forklift)**

For lifting the containers by forklift or similar (with forks), you have to follow these guidelines:

- Make sure that in the area of lifting and handling are no other people;
- Use a forklift truck with sufficiently long forks (they must go beyond the stretcher hold at least of 20 cm) and must be equipped with anti-slip block;
- The forks must be centered with respect to the axis of the container to prevent lateral overturning;
- The forks must be as broad as possible;
- Before lifting, incline the forks towards inside in order to stabilize the position of the container;
- During handling, keep the load in the lowered position in order to maintain a good visibility for the operator and to not unbalance the load forward;

⚠ IS STRICTLY FORBIDDEN TO RAISE TWO OR MORE OVERLAPPED CONTAINERS WHEN ARE LOADED.

⚠ LIFTING OPERATIONS SHOULD NOT BE DONE IN CASE OF STRONG WIND.

Figure 7 - lifting by forklift

Figure 8 - containers for loose materials

Storage and overlapping

For storage phases of the scaffolding elements it is necessary to follow these guidelines:

- Delimiting the unloading and storage areas avoiding the presence, even occasional, of people not involved in the work;
- Avoid stacking of containers, if this is not possible, make sure that the support surface is perfectly horizontal;
- For the supply of stacked materials use always a suitable means of handling (forklift) before the manual gripping;
- During the stacking of containers overlying the first, make sure the "centering funnel" are in good condition (must be free of dents, cracks or rust);
- Make sure the centring of the posts in the "glasses";
- In the case of use crane with ropes during unloading, must be done the verification of the correct centring of the upper stretchers by operators with help of appropriate equipment;
- For the storage of elements not in the containers, it is prohibited their stacking avoiding so the collapse;
- Among the stored items, leave the necessary space for the passage of the supply operators.

 IS STRICTLY FORBIDDEN TO CLIMB TO THE STACKED CONTAINERS.

Transportation of cargo

The loading and transport on truck phase must follow the instructions below:

- Make sure the perfect fastening of the elements to the container via the straps;
- Loading the truck in order to balance the weight on the axles;
- Verify that the weight range of the truck is suitable for the load to be transported;
- The truck transport cannot take place if the stacking is more than with two superimposed containers with loose material;
- At the end of the load fasten the containers to the truck through the straps to avoid overturning during transport.

 DURING THE PHASES OF LIFTING OR HANDLING IS FORBIDDEN THE PRESENZE OF OUTSIDERS IN THE AREA.

 THE RELEASE OF CONTAINERS FROM GRU MUST BE CARRIED OUT BY PERSONNEL INFORMED ON THE OPERATIONS TO BE PERFORMED.

10. Mounting and dismounting phases

General requirements

The assembly and disassembly of the scaffolding must be performed by skilled workers who use appropriate tools maintained in good repair and condition.

During the assembly and disassembly must be used suitable individual protection means such as safety belts, helmets, gloves, safety shoes.

Special care should be taken to verify that the ground support points are capable of supporting the entire weight of the structure: the uprights should support, through the base plates, by the elements for the division of loads (wooden boards, ...).

All of the scaffolding elements should be carefully checked before being used and have to be eliminated those no longer considered suitable.

- **General measures for prevention**

In the assembly, disassembly and transformation of scaffolds must be identified the measures to minimize workers risks.

The following are general preventative measures and the main technical and organizational measures to be taken:

- Identify the appropriate measures to minimize the workers risks by providing, if necessary, the installation of protective devices against falls;
- Provide collective protection devices to prevent falls;
- Store the scaffolding in efficiency for the entire duration of their use: it is not possible to remove a parts of the scaffold for other needs exposing workers that use it at risk;
- Check the site of protection system or realize suitable protective devices against atmospheric discharges;
- Set-up a suitable access systems to all floors that is portable and prefabricated metal ladder for deck with trapdoor in the assembly phase either during disassembly and transformation;
- Use equipment for gripping and handling the scaffolding components to be assemble, disassemble (uprights, horizontal brace, crosspieces, diagonal brace, frames, ...) in order that workers do not have to lean over the edge of the scaffolding;
- In case of a fall is essential that the worker is detached from the hanging position as soon as possible;

- The assembly of the scaffoldings decks must be such to prevent its moving as well as the presence of dangerous empty spaces between the elements that constitute the decks and the vertical collective protection devices to prevent falls;

- If they are not present the collective protection devices against falling from above the workers must always be connected to a point of safe anchorage with fall arrest system, consisting of a full body harness with a lanyard and an energy dissipator,

- The tools required for assembly, disassembly and transformation of the scaffolding elements must be secured to belt or clothing that is appropriate to prevent it from falling.

- **Organisational procedure**

Before assembling the scaffolding it is necessary to identify the person responsible for controlling the behavior of workers to the safety aspect.

In addition must be:

- Deliver to the workers the required personal protective equipment (gloves, helmet, harness, safety shoes, ...) for the mounting or demounting;
- Prepare a suitable signage. If the scaffolding is in a town the warning lamps must be place on the uprights of the scaffolding to the corners and ledges on the road;

- Identify the storage areas of materials and equipment (winches, lifts, ..);
- Install appropriate barriers of the area involved in assembly of the scaffolding with a restraining order, stop and transit to unauthorized persons.

- **Protection against atmospheric discharges**

For temporary works the protective grounding connection may not be necessary if on the scaffolding are not mounted the electrical elements or machines.

However is mandatory to perform a test in which you evaluate the probability of lightning and state whether the scaffolding is self-protected or not.

The protective grounding connection must therefore be provided only for the structures built in areas subject to lightning.

- **Checks before assembly**

All the metal elements of the scaffolding to be used must be controlled and provided with mark as in booklet, taking care to discard those without the mark or belonging to other scaffolding.

- Check the state of preservation of all the metal elements of the scaffolding and the effectiveness of the interconnection system, discarding those elements that have deformations, cracks and corrosion that may decrease the resistance of the scaffolding. Such elements will be replaced with others supplied by the same manufacturer of the scaffolding.

- Check the horizontality and the efficiency of the connection system of the metal deck panels to the crosspieces, taking care to discard the elements that no are longer fit and integrate them with other supplied by the same manufacturer of the scaffolding.

- Check the deck wood panels discarding the elements with passing nodes of discrete size or which present accentuated longitudinal cracks (in order to avoid the collapse of the deck).

- Check the availability and integrity of the fall arrest system and other personal protective equipment to be taken (helmet, gloves, shoes with flexible and non-slip soles) and read carefully the instructions determined by the manufacturer.

- Check that the various elements of the scaffolding all belong to the same scaffolding system and to the same manufacturer.

Assembly

- **Preliminary activities**

Before starting to assembly the scaffolding is necessary to delimit the assembly area and setting up the safety signs.

Discharge the material near to the storage area of the various elements and stack them divided by type to facilitate taking.

These unloading and stacking operations should follow the directions as in chapter " Discharge, lifting and handling operations".

During assembly must be followed the following guidelines:

- Must respected the drawings and the instructions indicated by the designer and by the manufacturer of the scaffolding;

- The bolts of the joints must be tightened to the correct measure;

- All elements must be carefully checked before being used and must be eliminate those no longer suitable;

- The scaffolding decks must be suitably fixed, matched to each other and adhering to the uprights;

- The parapet must be provided with toe boards of minimum 15 cm height, firmly fixed to the uprights and resting on the scaffold decking;

- The parapet must be placed at least 100 cm in height from the floor;

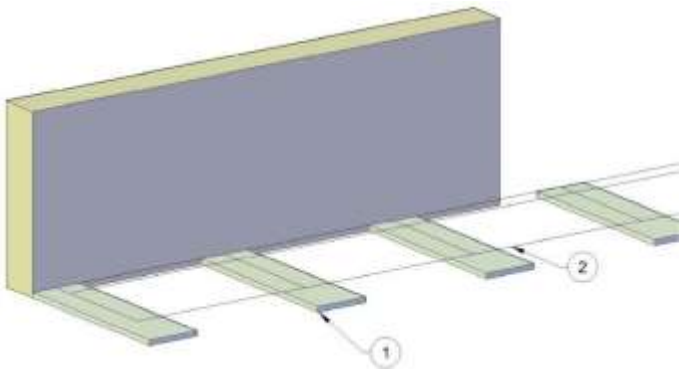
- If the base of the scaffolding is use for transit of people and/or vehicles must be installed the prefabricated protection brackets along the external facade.

- **Tracing the scaffolding**

The scaffolding tracking takes place according to the assembly diagram starting from the fixed wires.

During this phase it is very important to check the solidity and flatness of the support surface and distribute the vertical loads by placing the wooden boards of adequate thickness and finally nailing the base plates to wooden boards.

You must verify that the scaffolding is not located less than 5 meters from power lines.



1. Wooden board for load distribution
2. Tracking lines

ASSEMBLY

- **Starting bases**

The ground support must guarantee stability to the uprights over time without failure.

Comply therefore the following operations:

- provide a suitable support surface (rammed earth, gravel, etc) remember that the asphalt is a loose support.
- allocate the loads to the ground by wooden boards or stable metal plates.
- check the planarity of the supporting bases or their wedging in the case of support on an inclined plane.
- nailing the base plates on the boards or close the frame at the base with a rapier in the tube and joint if the frame is more than 20 cm from the ground.
- check that the adjustable base plates have the top limit of the sleeve blocked by a retainer and ensure that the base penetrates in the upright for the minimum length allowed by the manufacturer.
- if on site we are forced to create solutions other than those provided by the project the responsible must be involved and must be provide the integration of technical documentation.

- **Scaffolding structure**

- During the progress of the assembly check the verticality of the uprights and the horizontality of the crosspieces and horizontal braces.
- Check for all elements of the project:
- Guardrail frame. transom and structural braces.
- Diagonals in facades and in plan view.
- Decks.
- Toeboard.
- And various accessories.
- Check that all safety devices are installed and functioning (hooks, devices for locking metal decks panels, plugs or the braces /diagonals, etc).
- Take particular care in the realization of the anchors. It is important that the highest beam of the scaffolding in progress does not exceed 4 m the last order of the anchors.

- The distance between the uprights of the scaffold and the building should not be upper than 20 cm. Otherwise it is necessary to prohibit the passage on scaffold, or provide lateral protection also on the inner side or mounting the internal consoles.
- Do not forget to realize the security under-bridges provided by the project.
- Connect the boards of protection brackets to scaffold in order to prevent the fall of materials.
- If the scaffolding is not accessible directly from the served construction implement the system with access to decks including the related protections against falls, respecting the project.
- Do not forget to double the upright where required by the project.
- Do not mount billboards or tarps on scaffolding unless expressly required by the project that is signed by a qualified technician. We recall also that the use of tarps can not be considered a substitute to protection brackets.
- If required by the project realize the earthing system and/or the protection system against atmospheric discharges.

Sequences of assembly

1. Place the load distribution board on the floor
2. Place the Base jack or Base plate on the board
3. Put the portal frame to the base
4. Assembly the first diagonal brace at the base at the outside of the scaffold
5. Put the second frame and unite it with the outside diagonal brace
6. Put the second diagonal brace at the base (to form a X with first diagonal)
7. Mount the metallic plane on the inner side of the scaffold (help with the provisional horizontal brace)
8. Level the scaffold
9. Put the second level of the portal frame on first one (that of point 4) and secure it with universal hook
10. Assembly the diagonal brace on second floor
11. Place the two ledger, the toeboard and the universal console baracket, to secure the second level of the scaffolding
12. Attach the scaffolding to the building by means of anchors
13. Repeat steps from point 9 for each subsequent deck

- **Wooden planks**

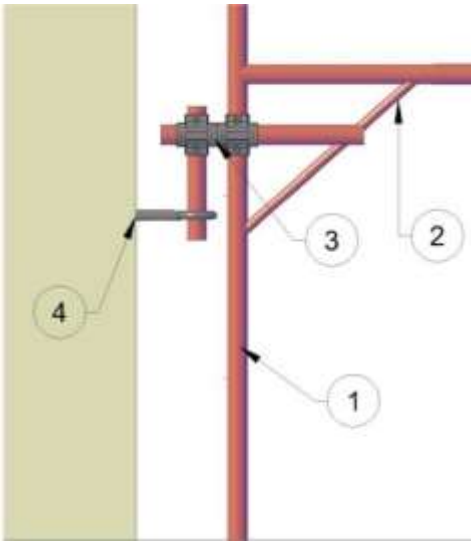
In the presence of wooden boards control the quality, thickness and the amount of nodes as well as the correct positioning and overlapping. We remember:

The bridge boards of 5 cm thickness must have a minimum width of 20 cm, while for the boards of 4 cm the minimum width is 30 cm.

They are used the maximum spans of 1.80 m, they must overlap at least 40 cm and be secured so that they can not slip on the metal crosspieces.

- **Installation of subsequent levels of the scaffolding**

After the assembly of the first deck is necessary to perform the first set of anchors (where planned) before starting the assembly of subsequent levels.



1. Prefabricated frame
2. Diagonal reinforcement of the frame
3. Tube and clouper
4. Eyebolt with anchor

The decks must be protected on all sides towards the empty space by:

- Prefabricate portal frame or parapet consists of two positioned horizontal braces at altitudes of the upright supports;

- A toe-board height not less than 15 cm.

- **Installation and use of winches and pulleys**

If the lifting operations are carried out using a winch it must be positioned at the level already set-up and protected, with subsequent vertical handrail at the top level of the elements necessary to set up a fully protected field.

Only after the assembly of the plane of all the collective protection and suitably anchored in order to support the hoisting winch, the winch can be moved to the last level so that the worker can receive the material without being put in a position to lean from edge of the scaffolding facade.
The mounting of lifting equipment on scaffolding is allowed for equipment having the scale <200 daN and outreach not longer than 1.20 m if it is doubled the concerned upright and if is realized an adequate anchorages system.

During the material lifting operators must be on the protected floor.

Disassembly

The disassembly phases repeat, in reverse order, the operations defined during installation, keeping active all the instructions on how to operate safely and how to use personal protective equipment.

During disassembly must be checked the state of preservation of all of the scaffolding elements, cleaned the elements to be preserves and discard the elements that have deformations, cracks and corrosion that may affect the strength and stability of the scaffolding in a further use.

- **Preliminary activities**

Before disassembling it is necessary to check that they are the boundaries and the safety warnings.

You have to check also the availability and integrity of the anti-fall system and other personal protective equipment (helmet, gloves, safety shoes, ...) to be taken and read carefully the instructions laid down by the manufacturer.

- **Organizational method**

Before starting the disassembly it is necessary to appoint the person in charge who must be informed of the tasks entrusted to him.

In addition is necessary:

- Deliver to workers the individual protection devices needed for assembly operations;

- Prepare appropriate signs, both for the daytime period that night that highlights the risks present in individual areas of intervention (including signaling lamps);

- Identify the operational areas for the storage of materials and equipment;

- Install appropriate barriers in the concerned no entry, stop and transit areas to unauthorized persons.

- **Disassembly of the scaffolding**

In the disassembly you have to follow the following precautions:

- Disassembly should be gradual: disassembly of the scaffold must be carried out standing on the scaffold below (which is still in the security situation having all the elements mounted);

- Before the removal operations of the horizontal brace / the parapets and the diagonals the operator must prepare the retractable device or the lifeline to which must be connected with the safety harness, in the case that disassembly of the parapets does not take place from the underlying floor;

- Repeat these steps until the complete removal of all the elements respecting the safety instructions.

Do not disassemble all anchors before the beginning of the disassembly of the scaffolding: the removing of the anchors must follow the disassembly of the scaffolding.

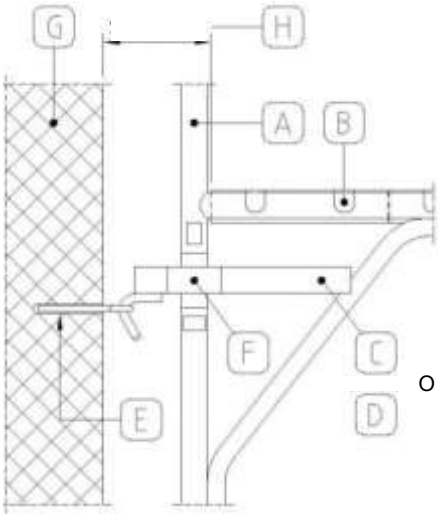
During disassembly it is prohibited to throw the materials from above, avoiding injury to the persons standing below and the possible damage to the scaffolding elements.

11. Anchor

The key issue is the execution of the correct anchoring of the scaffolding.

- In the case of **new construction** the assembly of the scaffolding must proceed in parallel with the raising of the work, or anticipate it slightly.
  In the predetermined points must be carried out those anchorages of different types:

  with gusset:



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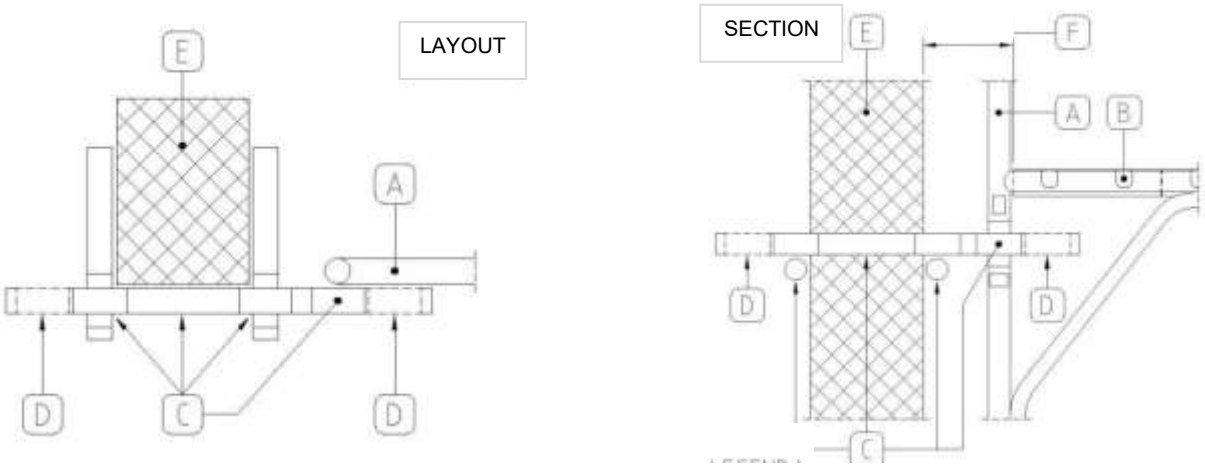
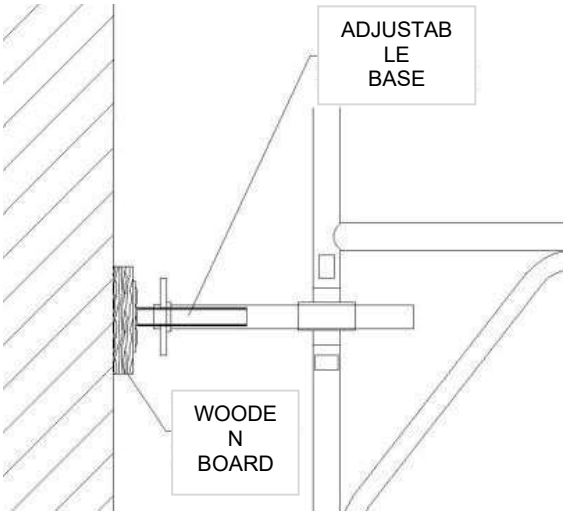
A - scaffolding
B - deck
C - 0.40 m anchor bar from with hook
D - 0.70 m anchor bar from with hook
E - mechanical or chemical expansion gusset with eyelet
F - orthogonal joints
G - construction to be served
H - distance between the edge of teh deck and construction to be served - 25mc.

to tie:



A - scaffolding
B - deck
C - tube and clouper
D - restraint clouper only for special anchors
E – construction to be served
F - distance between the edge of the deck and the construction to be served – 25cm.

to contrast screw-down:



special anchors: anchor bar with double round bar ø 20

There are two bars placed at 45 ° with to the building

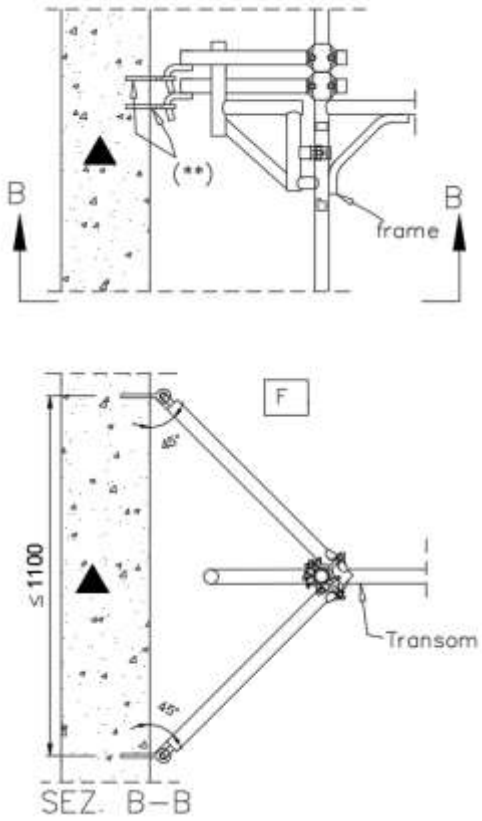


Figure 1 Layout with bracket

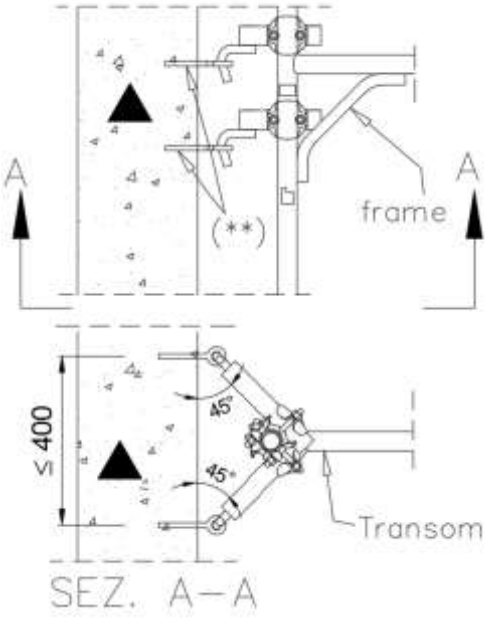


Figure 2 Layout without bracket

- In the case of **existing buildings**, typically for maintenance works, it is more practical the use of suitable plugs (mechanical or chemical) for which it is appropriate

to perform tensile strength tests (or assess the extent of the wall support).

The most significant anchor execution steps are:

Figure 9 - drilling of the wall support with electric drill

Figure 10 - cleaning the hole and inserting expansion plug

Figure 11 - screwing the eyebolt

Figure 12 - mounting anchor with tube and clouper

Figure 13 - control of the exact distance from the wall

The anchors must be checked regularly especially those of the cantilever bridges after strong winds or long interruptions of work.
It must also be carried out a periodic revision of the tightening of possibly loose bolts.

12. Use of the scaffolding

- **Scaffolding check before use**

Before use of the scaffolding it is necessary to check the following aspects:

- Compliance of the scaffolding performed with the executive project and with the type schemes provided by the manufacturer of the scaffolding;
- Presence of the executive project in the site;
- Control of the distances of the scaffolding from the building that must not be greater than as required by applicable law;
- Check the functionality of the protection brackets with deck capable of intercepting the fall of the material from the top;
- Efficiency control of the tightening of the elements of the scaffolding and the connections between tube joints;
- Efficiency control of the anchors and the wall support;
- Checking the verticality of the uprights;
- Control of bracings system in layout and in view (straight and not deformed rods);
- Checking the suitability of the decks (no dangerous holes);
- Control of the maintenance in work of the locking devices of the deck and the toe-boards;
- If the scaffold is distant more than 25 cm from the wall to be served it is necessary to mount the parapets and toe- boards also towards the wall;
- Checking the presence of the safety underdeck at a distance from the working surface of not more than 2.50 m and with all the necessary elements (parapets, toe-boars, deck).

- **Instructions for the use of scaffolding**

For proper use of the scaffolding must be respected the following instructions:

- You should not modify any part of the scaffolding without permission of the foreman;
- Inform the person in charge whenever the need arises of a modification of the structure;
- For the ascent or descent from the scaffolding must be used only the internal stairs;

- **Prohibitions during the use of scaffolding**

It is absolutely forbidden to perform the following:

- Climbing along the uprights of the scaffolding for ascent or descent to the levels: ascent or descent operations must be made using the apposite stairs and the deck panels with

trapdoor on the various levels;

- Depositing material on the scaffolding service bridges except for the temporary need for the short-term work: must be respected the capacity of the deck defined by the manufacturer of the scaffolding;
- Restrict movements and maneuvers necessary for the execution of the work with deposits of material or crowds of people on the same deck;
- Remove, even provisionally, the deck boards;
- Throw materials or elements of the scaffold from above.

13. General instructions for lifting and handling

The lifting and handling phases present special risks for the operators, there are therefore two phases that need to be addressed with special precautions and requirements.

General requirements

For lifting and handling of containers must be observed the following requirements:

- Before lifting or transport of containers make sure there are good conditions: lack of breakages or cracks in welds, lack of rusted areas, lack of bumps in the tubular and in glasses;

- Check the actual capacity of the lifting means;

- Check the load capacity of the ropes and their suitable conditions for the load to be lifted;

- The accessories for lifting, as hangers, must be provided with closing the entrance to prevent the accidental release of the ropes or chains;

- Before use always examine the hook of the tie rods to ascertain the load capacity and conditions in particular those of the beak and the locking device.

- Must be used the predisposed coupling points;

- The container must be lifted one at a time (it is absolutely forbidden to hook more containers overlapped);

- The lifting should be done so as to ensure balance of the container to avoid the its overturning or of the equipment contained;

- The slinging of loads must be carried out using suitable means to prevent the falling of the load or its displacement from the initial position;

- The lifting and handling operations can not to be executed in case of strong wind and consequently may be necessary to further secure of the container by ropes in order to limit the oscillations;

- The lifting operators have to make use of Personal Protective Equipment (suitable gloves, safety shoes, protective helmet, ..) delivered to them by the employer;

- Information and training of the lifting operators on the following instructions to know and control to be performed:
    - Knowledge of the weight to be lifted
    - Knowledge dimensions of the equipment to be lifted or moved (in its main dimensions)

14. Cleaning and maintenance

Any repairs or replacements of parts of the scaffolding must be carried out exclusively by the manufacturer (Ceta SpA).

In case of modification or repair not authorized by the manufacturer (Ceta SpA) Ceta SpA can not be held responsible for damages suffered or caused by the user.

15. Audits and components controls

Before installation and during use

Elements	Type of check	Test mode	Measures adopted
general	Check if the tube and coupler elements if used are authorized kind belonging to a single manufacturer.	Visual.	If the test is negative you must use authorized items belonging to a single manufacturer.
frame	Check the label	Visual.	If the label is not detectable the element must be discarded.
	Check the state of conservation of the protection against corrosion.	Visual.	If the check is negative proceed to the control of thicknesses: if the thickness control is negative (take into account the tolerances specified by the manufacturer) discard the element. If the thickness control is positive proceed with restoring of the protection in accordance with the procedures provided by the manufacturer.
	Check the verticality of the frame uprights.	Visual with a plumb line.	If the verticality of the uprights is not satisfied it is necessary to discard the element.
	Check the connector plug between the uprights.	Visual and functional.	If the check is negative the element must be discarded.
	Check of bracing attacks: pins and/or bushes.	Visual and functional.	If the check is negative you must: discard the element or restore the functionality of the element in accordance with the procedures specified by manufacturer.
	Check of the horizontal beam.	Visual.	If the check is negative it is necessary to discard the element.
Horizontal brace, diagonals and guard rails	Check the label	Visual.	If the label is not detectable the element must be discarded.
	Check the state of conservation of the protection against corrosion.	Visual.	If the check is negative proceed to the control of thicknesses: if the thickness control is negative (take into account the tolerances specified by the manufacturer) discard the element. If the thickness control is positive proceed with restoring of the protection in accordance with the procedures provided by the manufacturer.
	Check the element linearity.	Visual.	If the check is negative the element must be discarded.
	Check the condition of the connections to the frame.	Visual.	If the check is negative the element must be discarded.

Elements	Type of check	Test mode	Measures adopted
Prefabricated decks	Check the label	Visual.	If the label is not detectable the element must be discarded.
	Check the state of conservation of the protection against corrosion.	Visual.	If the check is negative proceed to the control of thicknesses: if the thickness control is negative (take into account the tolerances specified by the manufacturer) discard the element. If the thickness control is positive proceed with restoring of the protection in accordance with the procedures provided by the manufacturer.
	Horizontality check of the walking surfaces.	Visual.	If the check is negative the element must be discarded.
	Check of absence of deformations in the supports abeam.	Visual: integrity of the connection system for riveting, bolting and caulking. Absence of cracks, gaps and oxidations penetrating for welding in the connecting system.	If the check is negative it is necessary to discard the element or proceed, by the manufacturer of the scaffolding, with the recovery of the efficiency of the connection systems.
Fixed base plates	Check the label	Visual.	If the label is not detectable the element must be discarded.
	Horizontality check of the base plate.	Visual for example with a reference plan	If the check is negative the element must be discarded.
Adjustable base plates	Check the label	Visual.	If the label is not detectable the element must be discarded.
	Horizontality check of the base plate.	Visual for example with a reference plan	If the check is negative the element must be discarded.
	Verticality check of the rod.	Visual.	If the check is negative the element must be discarded.
	Check the state of conservation of the thread of the rod and of the threaded ring.	Visual and functional. Visual: state of conservation of the thread. Functional: Regular screwing of the ring nut.	If both the visual and functional controls are negative the element must be discarded. If it is negative only the functional control the functionality must be restored (cleaning and lubrication). If this is not possible the element must be discarded.
Toe-board	Check the label	Visual.	If the label is not detectable the element must be discarded.
	Check of absence of deformations.	Visual.	If the check is negative the element must be discarded.
	Check the state of conservation of the connections to the frame.	Visual and functional.	If both the visual and functional controls are negative the element must be discarded. If the only the functional check is negative the functionality must be restored (cleaning and lubrication). If this is not possible the element must be discarded.

Elements	Type of check	Test mode	Measures adopted
Beam for driveway	Check the label	Visual.	If the label is not detectable the element must be discarded.
	Check the state of conservation of the protection against corrosion.	Visual.	If the check is negative proceed to the control of thicknesses: if the thickness control is negative (take into account the tolerances specified by the manufacturer) discard the element. If the thickness control is positive proceed with restoring of the protection in accordance with the procedures provided by the manufacturer.
	Check the state of preservation and efficiency of connection to the frame systems.	Visual and functional.	If the controls, visual and functional, are negative the element must be discarded. If it is negative only the functional control the functionality must be restored (cleaning and lubrication). If this is not possible the element must be discarded.
	Check of absence of deformations.	Visual.	If the check is negative the element must be discarded.
For tests related to other scaffolding elements (such as: console, upright for the top upright, stairs, protection brackets, ...) it is necessary to use: type, mode of and verification measures similar to those described for the above elements.			

16. Annexes

1. CALCULATION REPORT
2. ANCHOR REPORT
3. CERTIFICATES LABORATORY TESTS

17. Conclusion

For schemes which do not fall in the reference series of the system configuration or height greater than 24,00 m is required the verification.