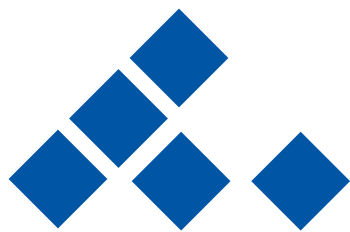




Canadian Distributor of



alufase

aluminium scaffolding



alufase

ALUMINIUM SCAFFOLDING

ASSEMBLY AND USE GUIDE

Model 300 and 400

En 1004 approved:

BUREAU VERITAS
Certification



This manual provides the necessary instructions for the correct assembly and safe use of **ALUFASE** scaffolding systems (300 and 400 models). The difference between the models (300 and 400) is that for the 400 model it is necessary to supply each level with an **access ladder**, in order to ascend to the different levels of the scaffold by ladder through the platform trapdoors. This is because the distance between the rungs of the frame is 40 cm, and the current regulations allow a maximum distance of 30 cm to use it as a ladder. In model 300 users are allow to use frames as a ladder, always by inside of the scaffold. (UNE-HD-1004).

The company contracting the scaffolding has the responsibility that the information contained in this "Guide of assembly and use" be known to the workers who will use the scaffolding. They must also guarantee that all users who assemble or use the tower are trained according to current regulations.

Introduction	1
Specifications	2
Definition and use	
Maximum permitted loads	
Maximum permitted height	
Wind effect on scaffolding	2
Diagram to calculate the wind force	
Attention note	
Components	3
System components	4-5
Before assembling a tower	5
Assembly process	6-7
Alufase safety notes	8-11
During assembly	
During dismantle	
During use	
Before each use	11
Laws and regulations	12
DELIVERY NOTE	13-15

SPECIFICATIONS

DEFINITION AND USE

Mobile towers are scaffolding structures assembled by components, that are able to move by hand over a flat surface. These towers are a safe solution for jobs such as cleaning, painting, covering, constructing, etc., if these operations do not need heavy quantities of materials on the platforms.

MAXIMUM PERMITTED LOADS

Maximum load by tower: 720 Kg.

Maximum load by level: 360 Kg.

Maximum load by platform: 250 Kg.

MAXIMUM PERMITTED HEIGHT

TYPE	Indoor placed systems	Outdoor placed systems
Simple width 0,74 m. Standard stabilizer	8,00 m.	6,00 m.
Simple width 0,74 m. Reinforced stabilizer	8,00 m.	8,00 m.
Double width 1,35 m. Standard stabilizer	10,00 m.	8,00 m.
Double width 1,35 m. Reinforced stabilizer	12,00 m.	8,00 m.

If more than the maximum permitted heights are required,
please ask for technical assistance.

WIND EFFECTS ON SCAFFOLDING

When ALUFASE S.A. scaffoldings are placed in windy environments, such as outdoors or indoors with wind draughts, special precautions are required according to "Wind Forces".

Recommendations:

For forces higher than FORCE 4 Beauford (moderated breeze)

DO NOT USE THE SCAFFOLDING

For forces higher than FORCE 6 (strong breeze)

TIE THE TOWER TO A RIGID STRUCTURE

For forces higher than FORCE 8 (strong wind)

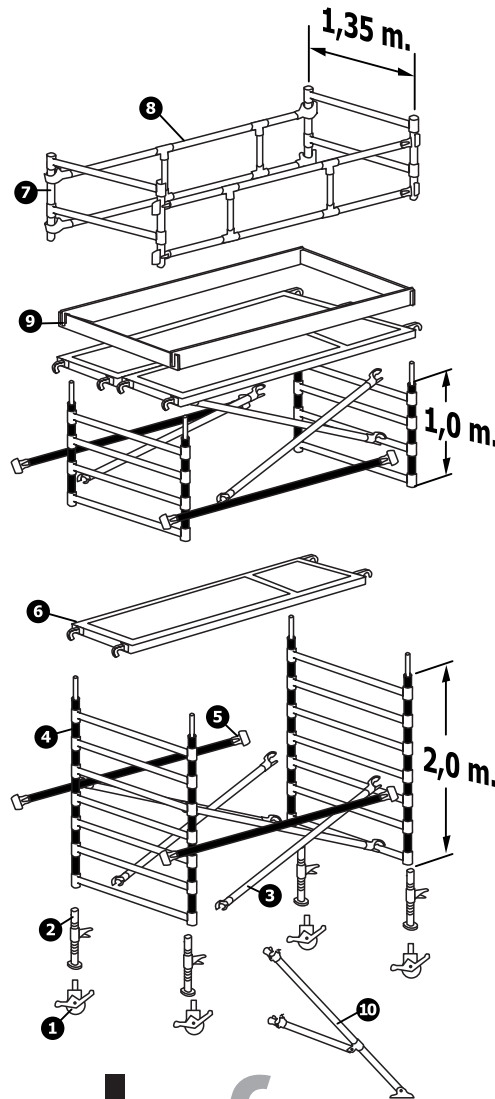
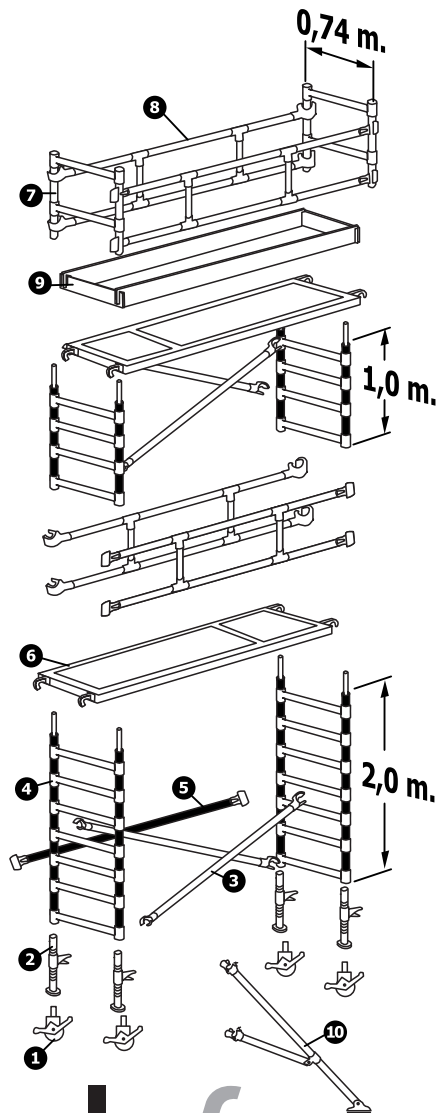
DISMANTLE THE SCAFFOLDING or move it to a protected place

Beauford Force	Description	Speed	
		m/s	Km/h
3	Gentle breeze	3 to 5	10,80 to 18
4	Moderate breeze	5 to 8	18 to 28,8
5	Fresh breeze	8 to 11	28,8 to 39,6
6	Strong breeze	11 to 14	39,6 to 50,4
7	Strong wind	14 to 17	50,4 to 61,2
8	Very strong wind	17 to 21	61,20 to 75,6

➡ **Always assemble the stabilizers, outriggers and the support arms in towers higher than 2.5 m.**

➡ **Tie the towers to fixed structures when there is danger of instability or bad weather.**

➡ **Assemble guardrails and toe boards in all the work platforms.**



- 1** Castors
- 2** Adjustable legs
- 3** Diagonal braces
- 4** Frames
- 5** Horizontal braces
- 6** Guardrail frames
- 7** Platforms with trapdoor
- 8** Plain platforms
- 9** Guardrail bracing frames
- 10** Toe boards
- 11** Stabilizers

(Pag 4)

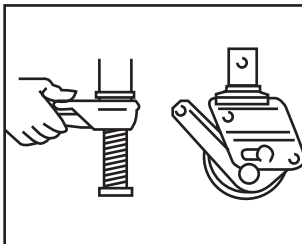
FRAMES

In order to achieve the desired height, frames with different number of rungs exist: 7 rungs: 2 m., 4 rungs: 1 m. (300 System). 5 rungs: 2,07 m., 4 rungs: 1,66 m., 3 rungs: 1,24 m. (400 System). At the top of the tower, a "GUARDRAIL FRAME" and "GUARDRAIL BRACING FRAME" must be assembled.

LEGS/CASTORS/BASE PLATES

Adjustable legs have to be fixed in the cavities at the bottom part of the frames. Adjustable legs consist of a threaded bar, a leg adjuster and a ring. For quicker adjustment, press the leg adjuster and slide it along the thread until reaching the desired height. To achieve a more accurate adjustment, spin the leg adjuster without tying it, around the thread bar. The leg is automatically blocked when you release the leg adjuster. For your safety this leg adjuster is designed not to adjust under load.

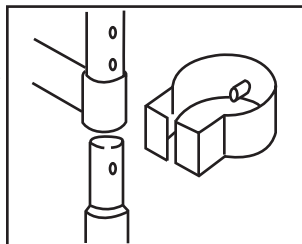
The castors or baseplates have to be attached to the legs by pressure. The castors have brakes that must be activated before using the tower.



INTERLOCK CLIPS

Interlock clips are used to join the upper part of a frame with the lower part of the next one. The interlock clip has an interlock pin and once this interlock pin is introduced in the lower cavity of the frame, it blocks both frames.

In order to dismantle the frames, pull the interlock clip out and place it in the upper cavity of the frame.



SYSTEM COMPONENTS

BRACES

There are two different sorts of braces: HORIZONTAL AND DIAGONAL. ➡ **HORIZONTAL:** Only required on the base frames. These braces are the same length as the platforms and usually have the tube coloured (anodized) or have a plastic colour ring at both ends. The colour of this ring is lighter than in the diagonal braces.

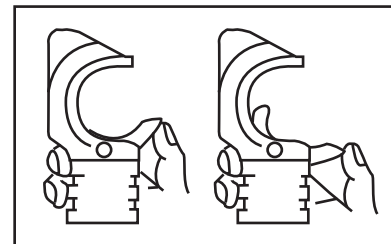
➡ **HORIZONTAL WITH COUPLINGS:** Se utilizan a modo de protecciones laterales, principalmente para torres de ancho doble, montadas con una sola plataforma. Tienen las mismas características que las barras horizontales descritas anteriormente, con la diferencia, que presentan grapas en vez de ganchos en los extremos de la barra (para evitar deslizamientos).

➡ **DIAGONAL:** They are larger than the horizontal braces and usually are not coloured (aluminium colour) or have a plastic colour ring at both ends that is darker than the horizontal braces. Are used in all the modules frames, as required.

HOOKS

All the hooks have an automatic block.

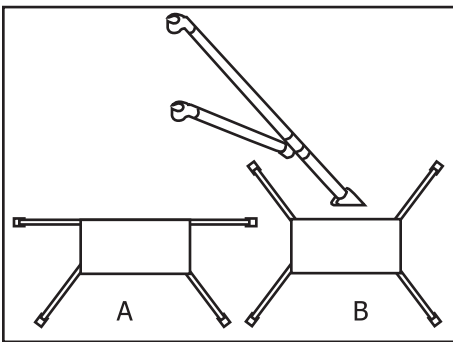
In order to anchor the hook, push them gently into the frame. Retract the latch of the hook with the thumb for releasing (see picture). Always make sure that the hooks are fully connected and the latch has clicked home.



SYSTEM COMPONENTS

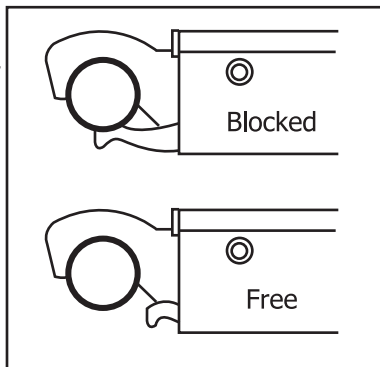
STABILIZERS

The stabilizers must be assembled in all scaffolding higher than 2,50 m. There are two types of stabilizers: telescopic or not telescopic. In the area of contact with the ground, there is a revolving brake shoe allowing contact with irregular surfaces. The joint with the tower has wing nuts, in order to allow manual adjustments. The stabilizers are assembled as shown in picture B. In cases where the tower leans against a resistant wall that is at least $\frac{2}{3}$ the height of the scaffolding, it is possible to assemble the stabilizers as shown in picture A.



PLATFORM WINDLOCKS

Every platform has a safety hook called windlock underneath one of the hooks at each end of the platform. These are used to prevent movement of the platform or even platform lifting in case of strong wind. Fix it always. To remove the platforms, just push the windlock back, then the platform can be removed.



BEFORE LIFTING AN ALUFASE SCAFFOLDING

Make sure that the workplace prepared for assembly is safe and adequate according to these guidelines.

➡ ENSURE GROUND IS FIRM AND LEVEL.

The tower with castors must not be assembled on an incline which makes it difficult to control.

Do not set the tower bases (castors or base plates) over sewers or similar objects.

➡ ENSURE AREA IS CLEAR OF OBSTACLES THAT MAKE THE ASSEMBLY, MOVEMENT OR WORK DIFFICULT.

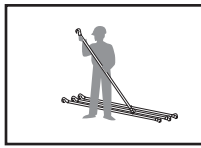
Eliminar los obstaculos que dificulten el montaje, desplazamiento y trabajo.

➡ ACCEPTABLE WIND CONDITIONS AS PER PARAGRAPH ON WIND EFFECTS ON SCAFFOLDING.

Check that in the workplace where the tower is to be assembled there are all the components, tools and individual protection equipment (i.e. gloves, glasses, security shoes, helmet, etc.).

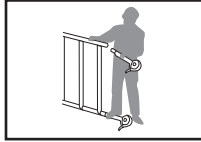
➡ **1** Classify the different braces as "Horizontal" or "Diagonal".

- Horizontal: Anodized colored or lighter plastic ring.
- Diagonal: Aluminum colored or darker plastic ring.



➡ **2** Put the castor/baseplate inside the adjustable leg and fix those legs into the end of a frame.

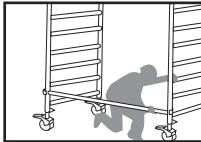
Practical advice: Leave a 10 cm. protrusion of the adjustable leg in each frame, this will help you in the following steps to level the tower easier.



➡ **3** Place the hook of a horizontal brace in a vertical tube of the frame as low as possible and lean the other side of the brace on the ground. The hole of the hook must be with the opening to outside.

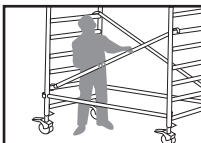


➡ **4** Place a horizontal brace at the same height at the opposite end of the frame. In the case of double width scaffolding (1,35 m.), use two horizontal braces instead of one.

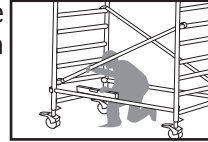


➡ **5** Place two diagonal cross braces. The height difference from one side of the diagonal brace to the other has to be 4 rungs (usually between 2nd and 4th rungs), while the braces must be placed as close as possible to the vertical tubes of the frame. For double width scaffolding (1,35 m.), each frame has to be fixed with 4 diagonal braces, 2 for each side.

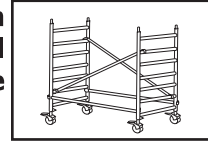
- Simple width (0,74 m.): 2 diagonal braces per module.
- Double width (1,35 m.): 4 diagonal braces per module.



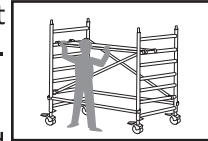
➡ **6** The next step is to check the level of the scaffolding base. Any correction must be made with the adjustable legs.



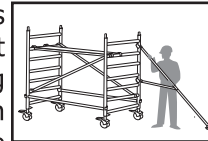
➡ **7** In 400 system scaffolding, **a ladder at each platform level is required to give access to all levels. For access to the next floor, open the trapdoor and pass throw the platform.**



➡ **8** Place a platform over the rungs of the frame. If another level is not required, go directly to point 12, but if other levels are required, help is required.



➡ **9** Assemble the stabilizers. These must be tied to each corner of the tower, in the same tube as the legs have been inserted. The stabilizer-tube joint must be closed with the wing nuts. The upper wing nuts have to be placed just under a frame rung, in order to avoid any movement. Make sure that the revolving brake shoes are in 100% contact with the ground.

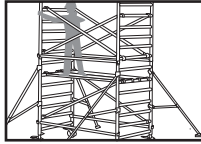
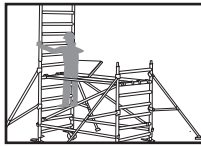


ASSEMBLY PROCESS

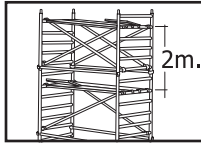
➔ **10** Working from the first placed platform, insert the fixed frame spigots inside the next new frame and then block it with the clips. Then, fix the corresponding horizontals and diagonal braces.

- **Single width:** 2 diagonals (2nd and 5th rung). Alufase suggest use 4 horizontals for safety (2nd and 4th rungs) used as guardrail in every level.

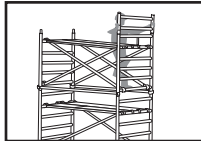
- **Double width:** 2 diagonals (2nd and 5th rung) always. Alufase suggest use double platform every level and 2 horizontals in first rung. Another option could be single platform with one horizontal in the first rung at external side and 2 horizontal with couplings (2nd and 4th rung) at internal side.



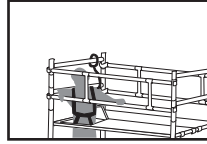
➔ **11** Place an access ladder for the 400 system, if there is built-in ladder on the frame. Assemble a platform over the top and repeat step number 10 every additional module. Certain platforms and braces can be changed (The maximum distance between platforms is 4 meters. Alufase recommends keeping 2 meters as the maximum distance between platforms).



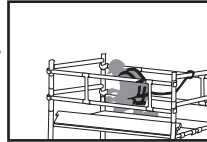
➔ **12** Once that the final level is assembled, place the platforms in order to cover the total scaffolding width. Then install the guardrail frames and fix all interlock clips.



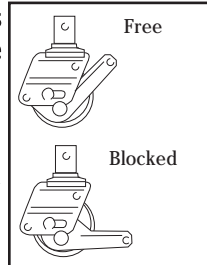
➔ **13** In the top level is necessary to assemble a complete rail guard, with two guardrail bracing frames over the guardrail frames and two guardrail bracing frames joining these guardrail frames. Remember to assembly guardrail bracing frames correctly (hook opening at outside).



➔ **14** Place the wooden toe board at all work levels and make sure that the windlock system is working.



➔ **15** Finally, make sure that ALL castor brakes are blocked and that the stabilizer's revolving brake shoes are in contact with the ground.



DISMANTLE: Follow the instructions in reverse, noting that castors are always blocked.

ALUFASE SAFETY NOTES

BEFORE ASSEMBLY

1. People who are going to assemble the scaffold must be trained; they also must follow all safety notes.

2. Access to the area where the scaffolding is going to be assembled must be restricted only to trained workers. Never use the scaffold the assembly is totally finished.

3. Safety devices:

Before assembly or dismantle scaffold, these safety devices must be used:

- Safety helmet.
- Safety boots.
- Safety harness.
- Safety glasses.
- Safety clothing.

Any other additional protection devices will depend on the work, on the place where the scaffold must be assembled or on the conditions set by safety plan.

All people who work over 2 m high must use safety harness, unless there is installed any other safety device as a guardrail.

4. Before erecting a tower, always inspect all the material. Never use damaged material. All tools and safety devices must be inspected, if are wrong must be replaced.

DURING ASSEMBLY

1. Before assembly, all pieces have to be checked in order to verify that they are in good conditions. Pay special attention to the legs. Never use barrels, bricks, boxes or similar to prop the scaffolding.

2. All scaffolding has to be clear of the movement of cranes or other moving machinery.

3. Never begin an upper level without completely finishing the lower level, with all stability elements, and ladders in model 400 as required.

4. When a platform is placed, it has to be immediately fixed with windlock clips.

5. Check that clips are fixed on the bottom hole of the following frame. Never raise a tower without fixing all clips. Change damaged clips if necessary.

6. Before erect a new floor, finish completely the last floor, in order to have a place to fix a harness.

7. Tie the scaffolding to fixed structures every 4m when an instability risk exists due to the weather.

ALUFASE SAFETY NOTES

8. When erecting towers higher than 2 m, harness is compulsory.

It must be fixed to:

- Fixed structures in the building.
- Scaffolding structure already finished.

9. As a standard, scaffold must be assembled 30 cm or less from the wall where working. (If the distance is 20 cm or less, it isn't necessary to use a guardrail)

10. Use ropes to raise the scaffold parts using a safe knot. It's forbidden to stay at below where parts are arisen.

11. Throwing any object from the platforms is strictly forbidden.

12. Never place the platforms on guardrail frames. These pieces are not structural elements, but for protection.

13. Parts damaged or in bad condition must be dismantled immediately and replaced (or repaired if possible).

DURING DISMANTLING

1. Remove all materials and tools from the platform in order to prevent an accidental fall.

2. Clean the platform.

3. The workplace where the scaffolding is to be dismantled must be very well indicated and restricted access.

4. Dismantling must be done in reverse than assembly.

5. Materials must be lowered with ropes.

DURING USE

1. Always block the castors with the brakes before using the tower.

2. When the tower has to be moved:

A.- Make sure that the path is totally free of obstacles or aerial wires.

B.- The platforms have to be totally empty and without personnel.

C.- When the scaffolding has stabilizers, they have to be raised as little as possible and moved slowly with the structure. If the stabilizers make movement difficult, dismantle the tower to a height of 2.5m, move and then assemble again.

D.- Once the movement has been completed, make sure that the tower is completely vertical, the stabilizers in contact with the ground and the castor brakes working.

ALUFASE SAFETY NOTES

E.- Make sure that the movement path is resistant enough to support the scaffolding weight.

F.- The speed of movement cannot be higher than a person's normal walking speed. Towers must be pushed by manpower; never use machinery to push it.

3. The tower has to be totally vertical and level.
Never increase the tower height using the adjustable legs.
Never adjust the legs while workers, tools or other materials are on the platforms.

4. Never lean ladders or other objects against ALUFASE scaffolding.
Never place ladders or other objects on the platforms in order to gain extra height.
Never lean a tower on a wall unless it is perfectly tied to a building.

5. Be careful with horizontal forces that can increase instability of the scaffolding. Maximum horizontal force: 20Kg.

6. Never climb using diagonal braces. Always climb using ladders or the integrated vertical ladder in model 400, or use the frame as a ladder in 300 system, go through the platforms using trapdoors.
Never jump over the platforms.
Always work inside the tower. Never climb outside the tower. Never swing on the tower.

7. Never use the scaffolding close to non-insulated electrical devices.

8. Never use the scaffolding with winds higher than FORCE 4.
Remove ice or snow in order to avoid any slipping. If necessary spread salt.

Be careful with wind draughts between buildings.
Tie the scaffolding to structural points in case of dangerous weather conditions.

9. Never cover the scaffolding with meshes, canvas or similar.

10. Never store tools, materials or rubbish on the platforms.

11. Inorganic acids or caustic products are corrosive, reducing aluminum resistance.

12. Never assemble pulleys nor raise heavy materials from the outer side of the scaffolding.

13. When the scaffolding is not being used, always tie the tower to a fixed point.

14. The workplace where the scaffolding is to be dismantled must be very well indicated and with access restricted. Put signage at the base of the scaffold to avoid use when it is not ready to use.

ALUFASE SAFETY NOTES

15. Never exceed the maximum permitted loads: 250 kg./platform; 360 kg./level; 720 kg./tower.

16. Working on a platform placed under another higher platform where are people working is strictly forbidden.

BEFORE USE

- The scaffolding has to be totally level.
- Make sure the scaffolding is assembled on a firm surface, with all safety devices, hooks and locks working.
- Make sure that the castor brakes are working.
- Never use any damaged or uncompleted towers.

CARE AND MAINTENANCE, SAFETY REGULATIONS, RESPONSIBILITY OF SCAFFOLDING USER

- Is user responsibility to have safety systems adapted to the work.
- Scaffold must be assembled, dismantled, or modify only by workers with specific training for this.
- When any safety system must be dismantled (for access or working), harnesses must be in use. When finished that work, safety system must be replaced.
- Work at height must be done only when light and weather conditions do not risk safety.
- The spigots must be kept clean. Use oil or grease to lubricate if necessary.
- Do not hit or damage any component. ALUFASE recommends store and transport all material in an upright position.
- Damaged parts must be changed or repaired.
- Clean dirt from legs.

- Lubricate with oil brake castors if necessary.
- Keep platforms and windlock clean, also braces hooks, lubricate if necessary.

HD 1004 (UNE-HD 1004)

"Mobile access and working towers made of prefabricated elements".

R.D. 1627/1997,

24th October 1997, "Minimum health and safety requirements in building sites".

R.D. 2177/2004,

12th November 2004, "Minimum health and safety requirements for workers using towers and scaffoldings".

Company:

Construction Project:

Information received by:
(First and Last name)

ID#:

In accordance with that which is stipulated in Chapter VI "Manufacturers', importers', and suppliers' obligations", Article 41 of Law 31/1995 regarding Occupational Risk Prevention wherein the following is stipulated:

"All manufacturers, importers, and suppliers must provide the companies, and vice versa, all of the necessary information so that all machinery, equipment, products, raw materials, and work tools are used and handled in such a way as not to pose safety or health risks for the workers as well as so that the employer can fulfill his obligations to provide information to the workers".

This assembly guide for scaffolding models 300 and 400 has been given to the person who signed this document. It indicates all of the specifications, components, procedures, and safety regulations that must be taken into account when assembling and disassembling the scaffolding. Likewise, in accordance to Article 18 of Law 31/1995, the company contracting the scaffolding is responsible for making the information contained in this manual known to the workers who will use the scaffolding and the person supervising the work.

Date:

Signature:

Company:

Construction Project:

Information received by:
(First and Last name)

ID#:

In accordance with that which is stipulated in Chapter VI "Manufacturers', importers', and suppliers' obligations", Article 41 of Law 31/1995 regarding Occupational Risk Prevention wherein the following is stipulated:

"All manufacturers, importers, and suppliers must provide the companies, and vice versa, all of the necessary information so that all machinery, equipment, products, raw materials, and work tools are used and handled in such a way as not to pose safety or health risks for the workers as well as so that the employer can fulfill his obligations to provide information to the workers".

This assembly guide for scaffolding models 300 and 400 has been given to the person who signed this document. It indicates all of the specifications, components, procedures, and safety regulations that must be taken into account when assembling and disassembling the scaffolding. Likewise, in accordance to Article 18 of Law 31/1995, the company contracting the scaffolding is responsible for making the information contained in this manual known to the workers who will use the scaffolding and the person supervising the work.

Date:

Signature:

