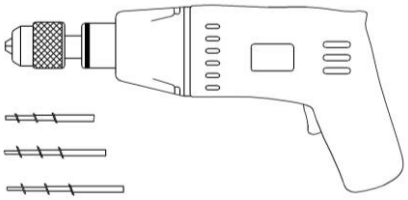
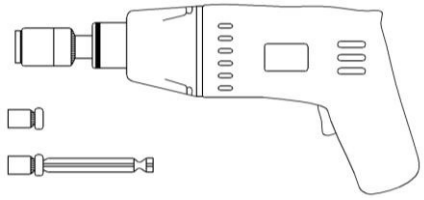
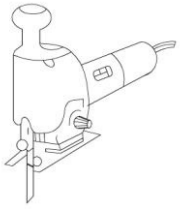
3. TOOLS FOR ASSEMBLY



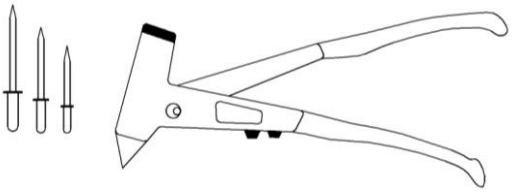
PORTABLE DRILL
Portable drill with tool holder chuck maximum 8 mm and their respective fights.



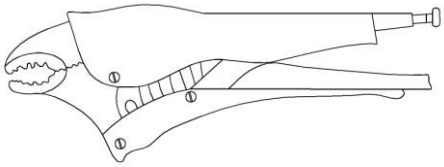
SCREWDRIVER
Reversing gear screwdriver and their respective sockets.



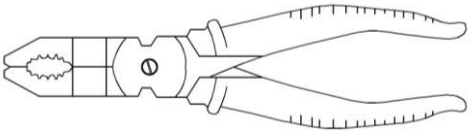
ALTERNATIVE SAW (JILLING)



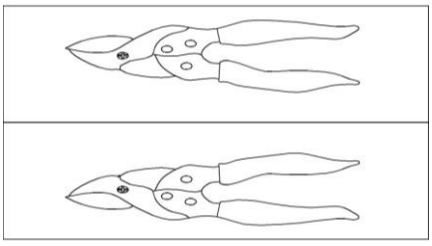
Riveter
Riveter for rivets 2, 5–5 mm and respective rivets.



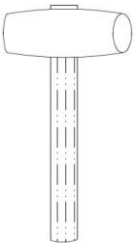
PRESSURE PLIERS



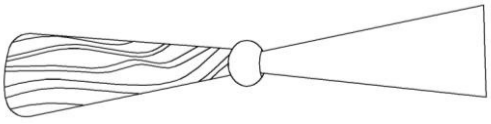
UNIVERSAL CLAMP



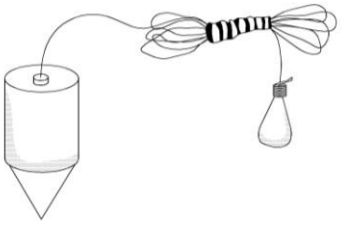
SHEAR (left and right) (CUTTING TONGS) COURT)



RUBBER HAMMER



RACKET OR SPATULA



THREAD OR PLUMB

4. ASSEMBLY INSTRUCTIONS

4.1. Preliminaries

a) Check that storage has been carried out as indicated in chapter 2.
b) Check that the structure is positioned according to the project and that it does not present flatness defects.
c) Move the panel packages in proximity to the employment points.
d) Prepare a fixed or mobile scaffolding, depending on the height at which it has to be operated, at the distance of 30/40 cm. of the external edge of the support structure respecting the norms safety at work.
e) Prepare all electrical power lines for the use of tools according to current regulations.
g) Prepare the lifting means for the panels.

4.2 Panel Preparation

4.2.1 Before assembly, the protective polyethylene film must be removed over the entire the length of the panel, but only in the part where the panel is going to be exposed to the elements, since it is advisable to leave this film for the casting of the concrete and thus prevent the sheet from damaged by direct contact with it.

4.2.2 Check carefully that there are no traces of film adhesives on the surface protective. If its presence is noticed, remove it using a mild detergent aqueous solution.

4.2.2 In the event that the surface of the panel presents evident dents, scratches, marks of the sheet, corner it to use it in smaller measures.

4.3. Panel assembly

4.3.1 Before starting with the installation of the floor of the chamber must be checked, the type, the thickness of the insulation required for the operating temperature and the entire system that will require said chamber.

4.3.2 On the construction designs, indicate in the vertical the exit point of the first panel, taking care with the alignment between them. This operation can be carried out with thread to plumb.

4.3.3 Determine the installation sequence, make the traces and install perfectly level the profile against the floor, previously applying a double sealing cord of Butyl and fix it with expanding anchor bolts for the concrete plate. In the case in which

makes the assembly on a support structure, the fixing is done with screws self tapping(Fig. 4)

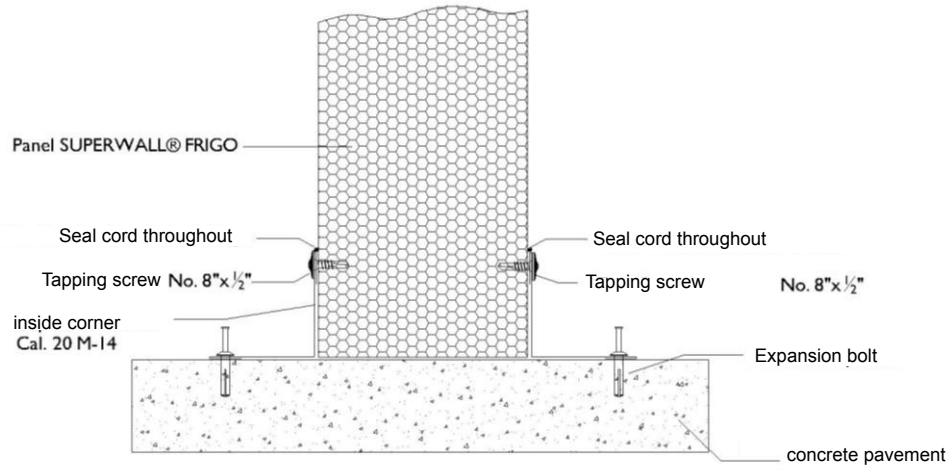


Fig. 4

4.3.4 The distance between fixings in the basement must not exceed 500 mm. In the cases in which the profiles are to be joined, install them butt, one after the other, taking special care so that the board is hermetic and well presented. can seal the joint with butyl or polyurethane sealants.

4.3.5 Once the support structure and the lower guide profiles have been reviewed, determine the Start point. In the self–supporting wall system, the joints of the panels must be plumb and attached to the lower profile using #8 x 1/2" self–tapping screws and seals of butyl.

4.3.6 Position the first panel with the plumb line, check its verticality, after what has been provisionally supported to the structure by means of pressure pliers. (Fig. 5)

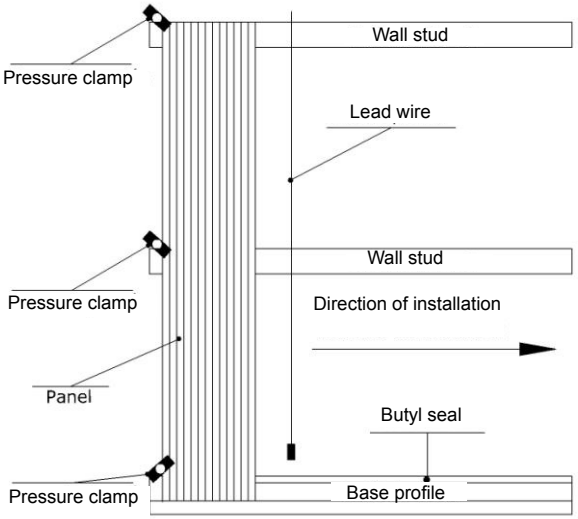


Fig. 5

4.3.7 Proceed with fixing by applying the screws provided according to the diagram illustrated in the point 1.7(Fig. 3 y 4)

4.3.8 Remove the pressure clamps and with a thread and plumb, check the verticality of the panel.

4.3.9 In the case where the panels are produced with a self–adhesive transparent film, it must be removed on land before the first installation, but only in the part where the panel is going to be outdoors since it is advisable to leave this film for the casting of the concrete and thus prevent the sheet from being damaged by direct contact with the concrete.(Fig. 6)

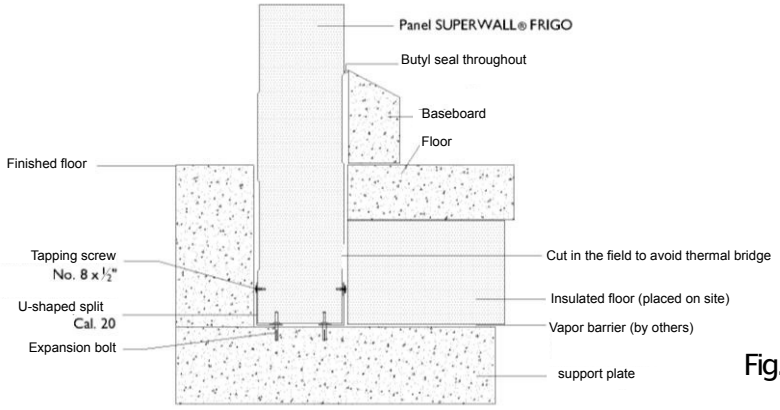


Fig. 6

4.3.10 Before mounting the 2nd panel, check that the joints are clean and free of any excess foam. For a correct and easy assembly, the 2nd panel must be at the side of the panel already fixed and must be inserted into the joint with a slight inclination from the external side.

Check the perfect execution of the splice by checking that the external surfaces of the two adjoining panels are in contact with each other. Similarly, continue with successive panels to the end of the wall, checking every 3 or 4 panels the verticality. (Fig. 7)

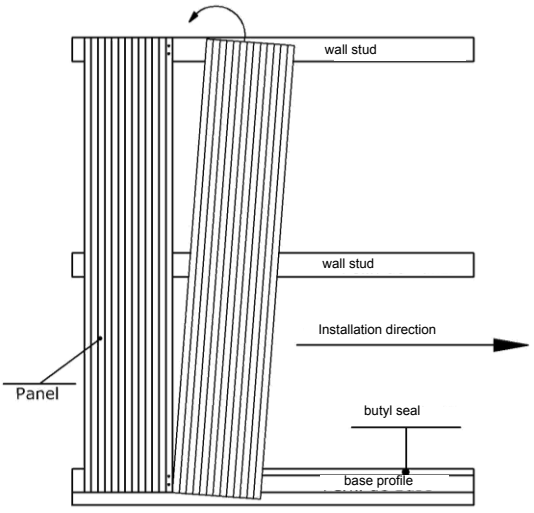


Fig. 7

4.3.11 In cases where the panels must be lifted to a height where it is not it is possible to operate from the ground, it is advisable to pull from above through a pulley or with a crane with the aid of a cable provided with two supports that are used, one, in the lower part of the panel, and the other, with a stop provided with a sliding handle, which is placed on the panel top.

A safety ring with carabiner and a guide rope complete the device lifting (Fig. 8)

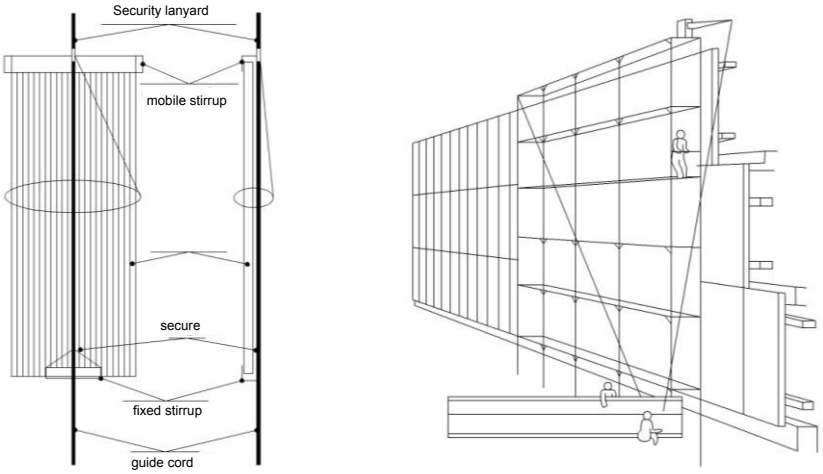


Fig. 8

4.3.12 For the union of the corners it is very important to take into account that special cuts for the elimination of the aforementioned thermal bridges between the interior and the Exterior. (Fig. 9)

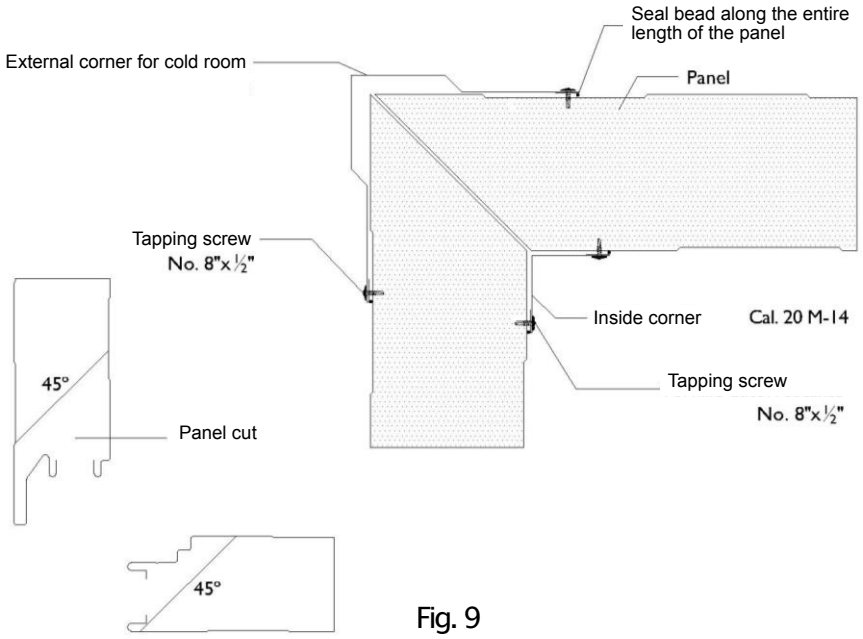


Fig. 9

4.3.13 The free spaces that may remain within the profiles must be filled with polyurethane foams or insulating wools applied on site. As well as the male joint female between panel and panel. Additionally inside corners can be finished between walls and ceilings with concave sanitary finishes in PVC. (Fig. 10)

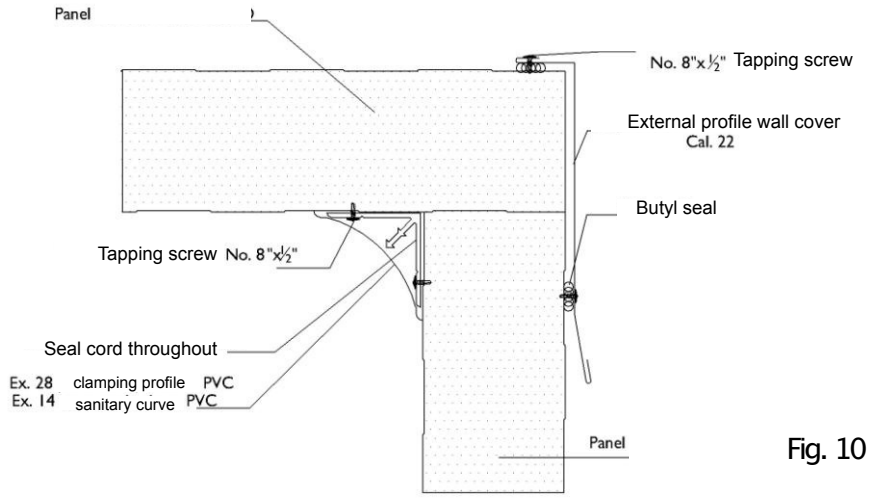


Fig. 10

4.3.14 As you fix wall sections, install the finishing profiles for corners of walls and ceilings using #8x1/2" self–tapping screws and butyl seals and sheets special for vapor barriers. (Fig. 11)

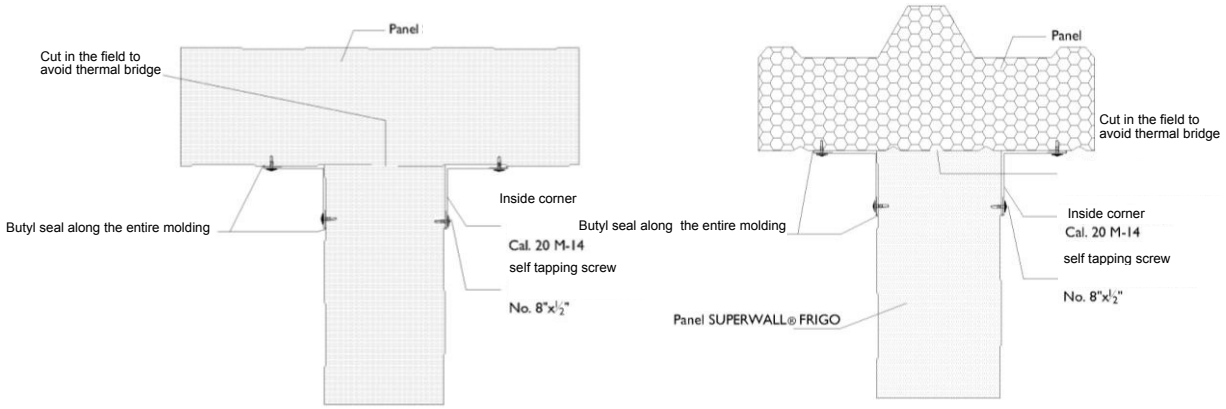


Fig. 11

4.3.15 Proceed to make the necessary cuts on the site, such as preparation of openings installation of gates, gates and equipment, or for the preparation of the crowning of the walls with slopes to receive the roof panels. Please refer to chapter 5 of panel cutting.

4.4 ASSEMBLY OF ACCESSORIES

Check the quantities and condition of trim accessories, fasteners, and sealants that you are going to
to require for the project. Have packages ready as much as possible
complete at the location closest to the point of installation. Put all the materials
used as well as the panels that must be conditioned before assembly (overlaps,
longitudinal or transverse cuts) in the planned workshop area.
There are two alternatives for the installation of the complementary elements to the system of

panels such as gates, equipment, gates and installations:

1. Elements in the self-supporting system

The elements that are installed between already fixed panels. Installation must be done in the place. The width of the elements is similar to the width between one to two panels. The element is installed together with the union and termination profiles configured
a self-supporting unit. They are of great application for the installation of equipment and duct with insulation.

The fixation is carried out by means of self-tapping screws directly to the profile of finish independently for the interior and exterior parts of the panel, applying previously butyl sealants.

2. Supported Items

Large-sized elements that are subjected to mechanical loads, such as large doors or equipment with great weight and size must be supported directly by an auxiliary suspension structure independent of the panels. The fixing is made directly to the aforementioned support structure and are attached to the panels by means of finishing profiles of the openings previously applying the butyl or polyurethane sealants fastened with self-tapping screws.

3. Installation of other elements

It is possible to integrate networks with boxes and tubes both electrical and hydrosanitary to the system of walls with Metecno panels.

For temporary or large installations, all your networks can be installed overlapped with the fixing accessories specified by the manufacturers.

In the case of pipes and accessories of the hydro-sanitary network that must be hidden by protection reasons and construction finish can be fixed by the other side
of the installation wall and hide them using a removable cover for inspection and maintenance by leaving gates for the shut-off or register valves. use pipes insulated and low thermal conductivity.(Fig. 12)

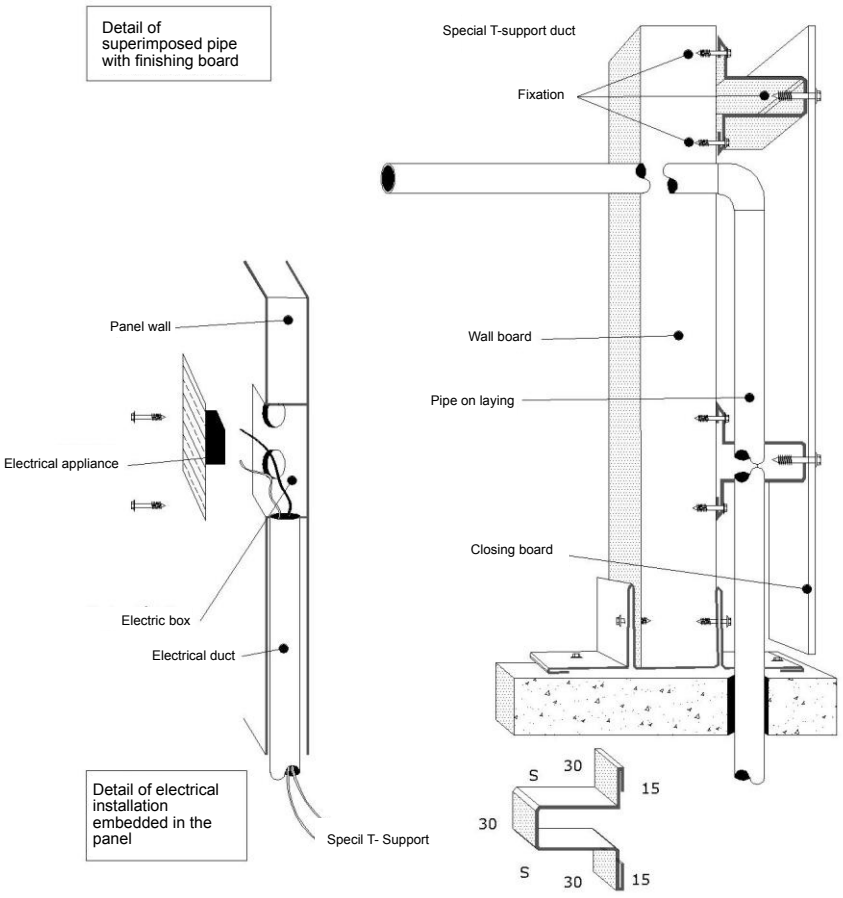

Detail of superimposed pipe with finishing board
Special T-support duct
Fixation
Wall board
Pipe on laying
Closing board
Panel wall
Electrical appliance
Electric box
Electrical duct
Detail of electrical installation embedded in the panel
Specil T- Support
S
30
15
30
S
30
15

Fig. 12

5. PANEL CUTTING

Most panels arrive at the requested lengths for your project but it is some items may need to be field conditioned prior to assembly: longitudinal and/or transversal cuts, overlaps and spans for special installations,
among others.

Next, we will describe the general procedures to carry out the cuts of the
panels:

Streak
Determine and protect the surface where the cut will be made and place a tape adhesive or masking to best protect the finished surface of the
panel.

Trace on the tape with a marker the guide line where the cut is going to be executed.

(Fig. 13)

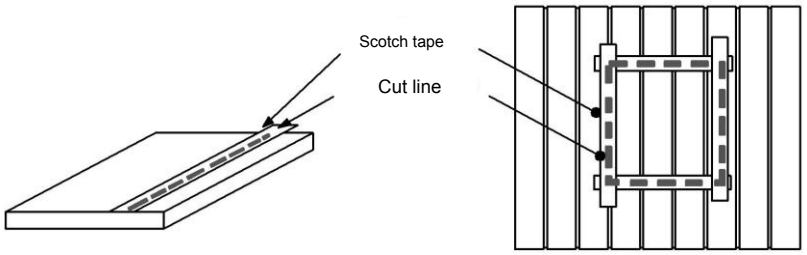


Fig. 13

Cut
Check that the trace is correct and proceed to cut the panel with a saw reciprocating or jig. If you are going to make a full thickness cut make sure the
length of the saw blade cut is greater than the thickness of the panel. when it cuts
on one side only (required in overlaps or in special installations) verify that the
saw blade penetrate the polyurethane to the desired depth. Install in your
tools saws specified for cutting sheet metal. remember not
use a disk saw to make the cuts in the panels because friction burns and
damage panel paint. (Fig. 14)

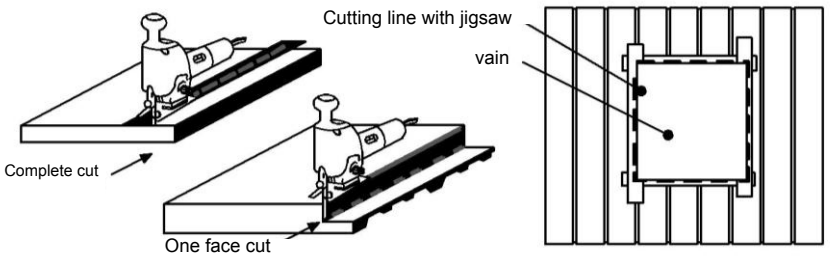


Fig. 14

Finish cut

Immediately after cutting, carefully clean off particles and debris metal that may remain on the edge and/or the surface of the panel, because with the time can generate oxidation points damaging the paint. Use the vacuum cleaner both in the workshop and in the assembly areas, guaranteeing at all times that the panel surfaces are clean and free of cutting debris and metal particles.

If necessary, file the edges of the panel to a perfect finish.

Remove surface tapes and clean panel until ready for installation.

Locate it at a point close to the mounting site. (Fig. 15)

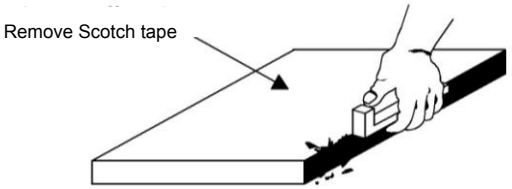


Fig. 15