

CORRECT STANDARD TECHNIQUE CONCERNING SOUNDPROOF CABINS FOR MACHINERY AND PRODUCTION LINES



PREMISE

The **machinery directive 2006/42-CE** establishes that when a soundproof cabin is installed onto a machine or production line it becomes a safety device so is therefore subject to **CE conformity**. Based on this principle, **SGF S.r.l.** being a manufacturer of **soundproof systems** (most of which are soundproof cabins for machinery and/or complete lines intended for production environments in various sectors) realises that beyond the safety of operators who work in the workshop where machinery or production lines are installed, it is also necessary to ensure the safety of those who install them, of those who provide maintenance at the customer end, and of those who use the machinery upon which the soundproofed cabins are installed. This maintenance may be routine (periodical) or may come about due to an unexpected fault or problem, and the person responsible must intervene safely when disassembling and subsequently reassembling the panels, doors and structures.

HOW TO ENSURE THE SAFETY OF THE PEOPLE INVOLVED IN MANUFACTURING, ASSEMBLY AND DISASSEMBLY

SGF S.r.l. builds sound enclosures primarily for manufacturers which produce machines that create an excessive amount of noise. In these cases our company is not aware of the work environment in which the acoustic cabin are to be installed.

The working environments in which the sound enclosure are installed onto machinery are often cramped spaces due to the proximity of other machinery, tools, work equipment, chords, and power systems of the actual machinery itself. This means there is limited possibility to work on the machine and provide the adequate lifting required (often without a crane). It is therefore also difficult for subsequent maintenance operations.

In addition to this, we ourselves, the creators of the soundproof cabins, despite being equipped with a crane and lifting means, must also handle the products used to make the cabins we manufacture inside our factory. In these three cases: cabin construction, assembly and maintenance at the end customer, the **machinery directive** with regard to the manual handling of loads, which places a limit of 25 kg each worker.

Due to the aforementioned reasons, **SGF S.r.l.** builds soundproof cabins for machinery and production lines using the following procedure:

A Structures in square section are composed of columns and crosspieces containing individual pieces so are therefore easy to handle. They are bolted together and can be dismantled and reassembled using screws and threaded inserts.

B Panels with a weight not exceeding 25 kg where possible, above all for those that must be installed at a height greater than two meters. All panels are equipped with a projected weld nut inside the upper thickness of the panel itself, so that an eyebolt can be screwed to it, in order for lifting and positioning to take place from outside the cabin. The panels are attached to the structure with screws and threaded inserts. All these operations are always carried out from outside the cabin whilst on a suitable lifting vehicle if more than two meters above the ground. Each panel is equipped with a perimeter seal for acoustics beforehand in our workshop.

C The doors, whether single or double wing, folding or sliding, must have passage lights according to the need for intervention on board the machinery. In most cases the installation of the doors of the cabin takes place on the first floor. To facilitate easy handling by two workers, the doors with a maximum surface of two square meters are made of simple press-folded sheet metal, insulated with suitable acoustic materials. To add strength, the large doors are equipped with square section frames as described in point **A**, to which the threaded inserts and the acoustic seals are applied followed by the panels as described in point **B**. Therefore even the large doors are assembled in individual pieces that can be manually manipulated, and for disassembly each one can be lifted with the use of eyebolts screwed to projection weld nuts.

D Installation Accessories. Often, as the supplier, we are asked for internal lighting systems, security systems, automation systems for horizontal or vertical sliding doors and related wiring. These systems are always pre-installed at our workshop where we pre-assemble the cabin according to our procedure. In this phase the electricians install the cable ducts and electrical wiring, which are positioned in numbered modules and connected to one another, in order to be identified and quickly assembled without the use of tools - simply by looking at the construction drawing. This system also favors the end customer who, if necessary, has to move the machinery containing the soundproof cabin to another department. With the aid of our instructions, they can simply disconnect the various numbered connections and reinstall the entire system without the use of tools.

ASSEMBLY AND DISASSEMBLY

All the components of a soundproof cabin are numbered, both on each individual piece (panel, structure, door, silencer, etc.), and on the construction drawing which is always attached to the CE conformity manual.