



A construction site is different from your home: it is a workplace frequented by many workers, exposed to the elements, impacts, hazards and unforeseen events. As a result, electrical components and materials are very different from those in your home. In fact, power strips and adapters are not used on construction sites; instead, sub-panels are used. Ultimately, the electrical system on a construction site must be reliable and safe, durable and suitable for the specific risks of the site.



Before using cables, always check that they are in good condition. If they are damaged or repaired with adhesive tape, do not cut them or reconnect them! This is not your responsibility: report the problem to your manager.

Extension cord sockets and plugs must comply with regulations.

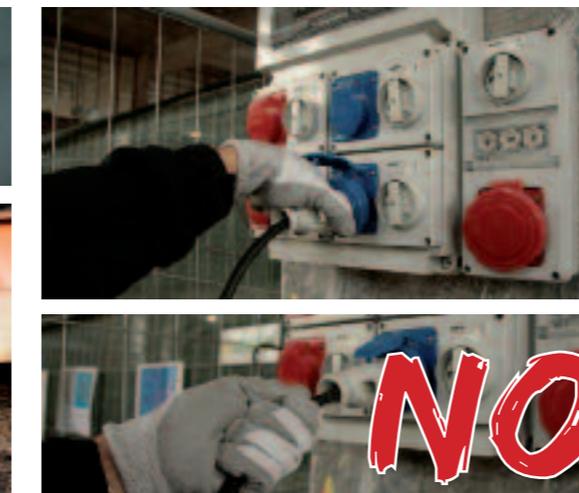


In areas where people pass through, hang the extension cord at least 2 metres above the ground, while in areas where vehicles pass through, the height must be greater than 5 metres and must be clearly marked.



Always unroll the extension cord completely to prevent it from overheating.

Avoid laying cables on the ground in areas where vehicles or machinery may pass. If the cables run along the ground, protect them with two boards placed side by side on the right and left.



Insert the plug into the electrical panel.

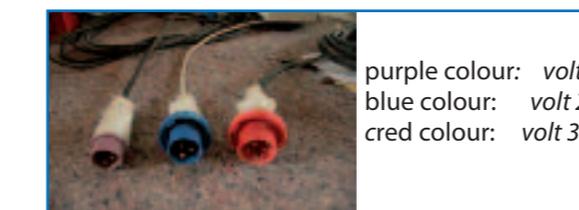
The 220 V socket is blue, the 380 V socket is red.

Before inserting or removing the plug, turn off the power to the socket by turning the switch to the left to the 0 position.

Remove the plug from the socket by grasping it, without pulling on the cable.



Always disconnect the power supply from the electrical panel before disconnecting and winding up the cable.



purple colour: volt 24  
blue colour: volt 220  
cred colour: volt 380



In very humid environments, electrical tools with a voltage not exceeding 50 V and electric lamps with a voltage not exceeding 24 V must be used.



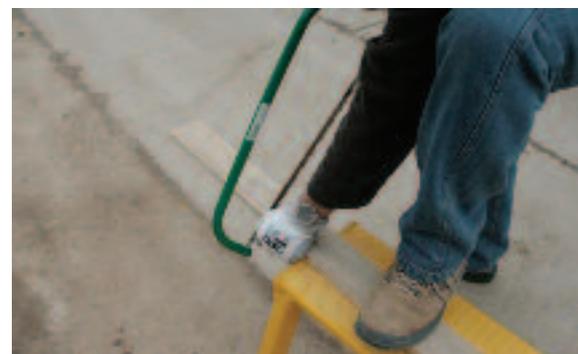
Very low voltage tools and portable lamps must be connected to a suitable portable transformer.

Position the lamps appropriately and in such a way as to protect them from impact and splashing water.



## CUTTING WITH A HAND SAW

1



Place the board on a sturdy, comfortable surface for working.  
If the board is too long or heavy, ask someone to help you.



## CUTTING WITH A HAND SAW

2



Mark the cutting line on the board. Use a set square to help you.

If you find a knot, avoid it: if necessary, turn the board over.



## CUTTING WITH A HAND SAW

3

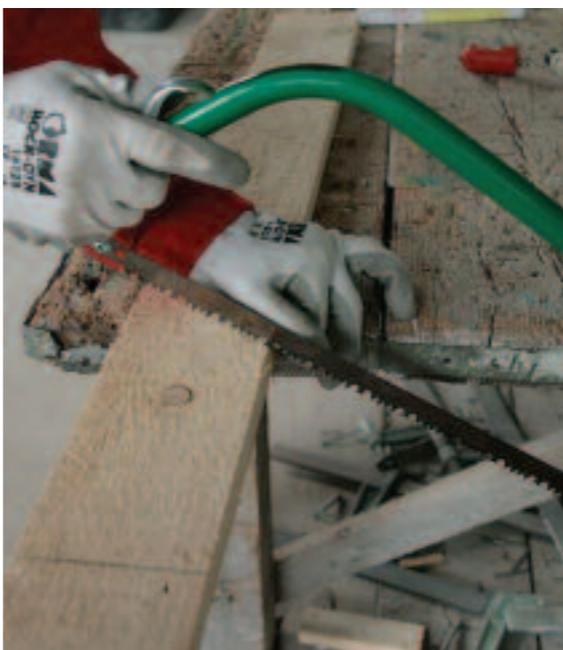


Ensure that the hand saw blade is correctly inserted.



## CUTTING WITH A HAND SAW

4



Place the saw on the mark (cutting line) using your thumb (or a small board) as a guide.  
Begin sawing with a backward movement.



## CUTTING WITH A HAND SAW

5



Start sawing to form the seat (a groove) along the cutting line, applying adequate pressure (but without forcing). The teeth of the blade should 'jump' and slide along the cut.



## CUTTING WITH A HAND SAW

6



Remember to use (and work with) the entire length of the blade.





Check that the circular saw has the mandatory electrical safety devices.



Check that the dividing knife behind the disc is no more than 3 mm from it.

This is to ensure that the workpiece "opens up".



Position the circular saw on a flat, stable surface out of the way. Remove any material from the saw bench: the work surface must be clear and clean. The work area must always be kept clean to avoid tripping.

Move any colleagues who may be near the saw away from the machine..



Make sure that the piece to be cut does not have any nails or encrustations.

Pay attention to any knots along the cutting line.

Mark the cutting line, using a set square if necessary.



Turn on the saw.

Make sure that the protective guard is always resting against the piece you are cutting.



Push the board towards the disc continuously, keeping your hands well away from the disc at all times.

At the end of the cut, try to encourage the board to open and prevent the sides of the cut from forcing the blade.



Ask a colleague to help you cut long boards.

Use push sticks or wooden sticks to move small pieces closer to the blade.



Switch off the saw and carefully clean the work surface.

Always keep the work area clean and clear.



MOVE BY HAND 1



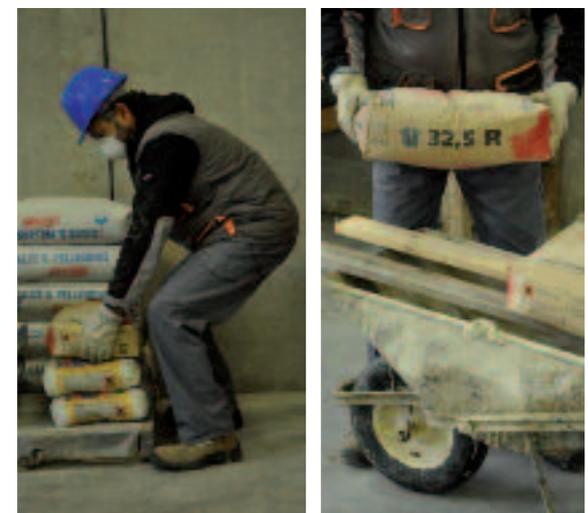
Learn to estimate the weight of the load you are carrying.

If it is too heavy (more than 30 kg) or difficult to handle, ask a colleague for help.

- RD examples of weights:
- a solid brick = 2.7 kg
  - a bucket of mortar = 20 kg
  - a bundle of formwork boards = 40 kg
  - a bag of cement = 25 kg
  - a concrete block (15 cm edge) = 10 kg



MOVE BY HAND 2

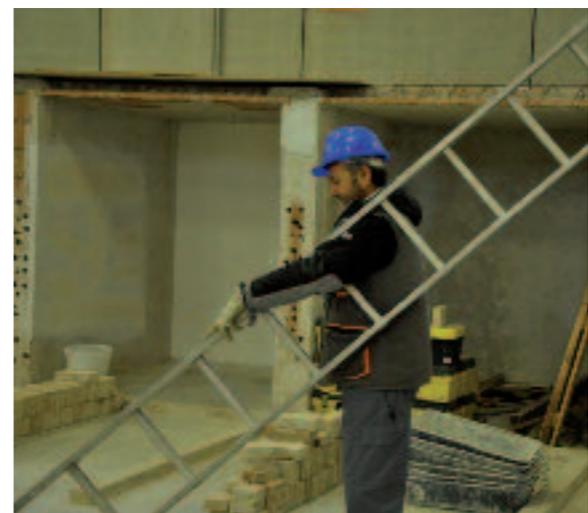


Every load has its own correct way of being transported. When lifting, always take care not to strain your spine.

- feet firmly planted
  - legs bent, keeping your back straight
  - load held close to the body
  - avoid twisting your torso
- Avoid overfilling buckets or wheelbarrows.



MOVE BY HAND 3



When carrying boards, props, portable ladders, etc. on your shoulders, tilt them so that they do not hit your colleagues..



MOVE BY HAND 4



Load the wheelbarrow so that no material falls out during transport..



MOVE BY HAND 5



To transport bags of binding material or bulky, heavy or fragile items, etc., place wooden boards on the wheelbarrow to make it easier to load and unload them.



MOVE BY HAND 6



Hold the wheelbarrow with your arms outstretched and push it forward using your legs.

When going downhill, be careful not to trip.

Avoid pushing the wheelbarrow over planks, walkways or other unsafe surfaces.





Position the truck on flat, solid ground as close as possible to the crane to avoid load-bearing difficulties.

Be careful not to position the truck near open excavations.

In the case of mobile cranes, pay close attention to the presence of unprotected overhead power lines.



Stand at a safe distance from the truck and work with the crane operator to lower the load to 50/60 cm above the platform.

Never stand under the load.

Climb onto the platform and guide the crane operator's movements. Use a ladder to climb up or down from the platform; take care not to slip, clean the soles of your shoes and the steps of the ladder. Never climb on materials on the platform.

Take care not to pull or push the load attached to the crane.



Move the lifting accessory close to the load or storage surface using the appropriate supports.

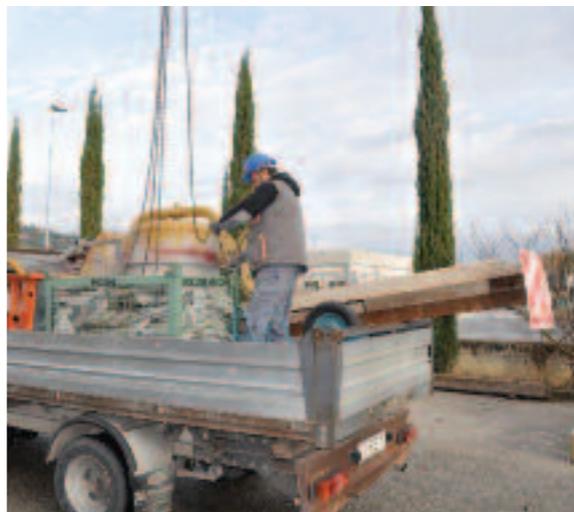


Always start loading from the rear of the cab: single loads (e.g. a concrete mixer or circular saw) must be securely fastened, for example to the fixed side rail behind the cab. If the load is heavy, place it in the middle of the axles.

Wheelbarrows must be placed upside down or upright.



Before loading or unloading beams and boards, place wooden crossbars to facilitate the passage of straps or ropes.



Do not overload the truck; ask your manager for information.

The load may only protrude at the rear, and no more than 30% of the vehicle's length. On the sides, it must remain within the line of the rear-view mirrors.

If necessary, place visual signals on the protruding end.





Work with the crane operator to select the most suitable equipment for slinging the load.



Pay attention to the weight indicated on the tag on the straps or chains: it must be suitable for the weight to be lifted. If there is no tag, do not trust it; inform the crane operator so that it can be replaced.



Put on gloves and check that the chains and bands are in good condition: the bands must not be cut or torn, the chains must not be deformed and the hooks must have a working spring lock. Always report any problems to the crane operator so that they can be replaced.



Secure the load by passing straps and chains underneath it, fasten them in a loop, protect the straps from sharp edges/corners with pieces of wood to prevent them from being cut, and check that they are well spaced. Never hook the crane hook onto the wire or ropes holding the bundle of boards together.



Small items must only be moved inside secure containers equipped with special hooks. Do not use metal drums, wooden crates or other systems that are not certified. To lift toolboxes, never hook them by the handles, but wrap them with straps. Machines should only be lifted when hooked to the points on the machine designed for this purpose. Wheelbarrows should only be hooked to the designated arm. Always check that the hooking point is not damaged.



After hooking up the load, signal to the crane operator to raise it to a height of 50 cm above the ground to check that it is balanced and, when you are sure, have it raised completely. Move away from the load being lifted and keep people away to avoid the risk of falling material..



If you need to manoeuvre a raised load, first secure it to a rope and use this to move it from a distance, or use a long pole; in any case, stay away from the load. When unloading, never approach the load before it has been set down. When lifting, move away from the load as soon as it begins to rise. Be careful with your hands; never put them between the chain links or on the hook.



While waiting for the load to be deposited, prepare some wooden crossbars (see photo) to facilitate the placement of the material. After placing the load, wait for the signal from the crane operator to release it, then remove the sling, taking care not to scatter the material. Always pay attention to the block and tackle.

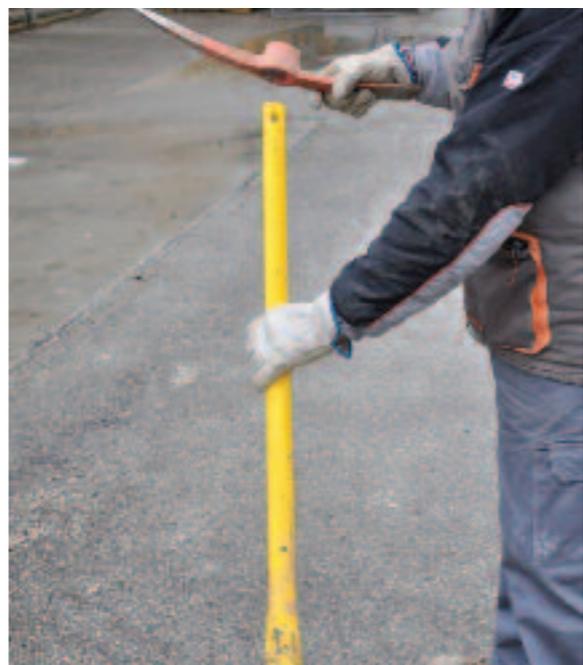




Insert the handle into the hole in the blade of the shovel. Secure it with a nail so that it does not come out. The curve (the hump) of the handle must always face upwards.



1. Hold the handle of the shovel with both hands, your left hand lower down in the middle of the handle and your right hand higher up (vice versa for left-handed people).
2. Bend your knees slightly, keep your back straight and fill the shovel.
3. Rest the handle of the shovel on your knee, push with your legs and lift the material, keeping your back straight at all times.



Place the blade of the pickaxe on the thinnest part of the handle and push it all the way in.



Hold the pickaxe with both hands: at the end of the handle to apply force, closer to the blade for greater precision.

Check that there is no one near you, bring the pickaxe behind your back and then strike the ground.





Before using the concrete mixer, check that all safety guards are in place and that it turns on. If any safety guards are missing or it does not appear to be working, notify the site manager or someone more experienced.



The concrete mixer must be positioned securely on flat, solid ground. It must remain stationary while in operation. Check that it is earthed.



Stand next to the concrete mixer on the opposite side from the loading and unloading handle. When working with the concrete mixer running, you will avoid splashes.



Proceed with loading: first pour in the water and then use the shovel to throw the material (sand or other) into the mouth of the concrete mixer.

When the concrete mixer is running, never insert the shovel into the mouth; if the shovel gets stuck between the blades inside the drum, remove it immediately!



Once mixing is complete, place a wheelbarrow in front of the concrete mixer, taking care to ensure that the wheelbarrow does not tip over while filling.



Once emptied, thoroughly wash the concrete mixer, taking care not to wet the electrical panel.

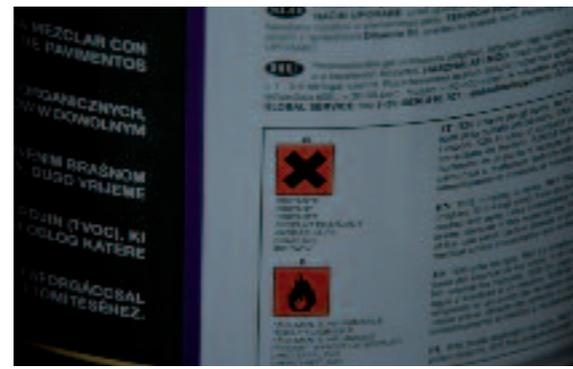
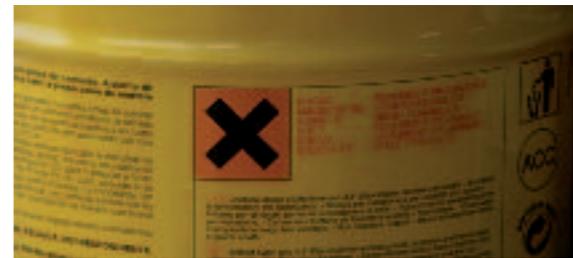




The chemicals you find on construction sites are becoming increasingly numerous and serve a variety of purposes. They must be used with great caution and in strict accordance with the instructions.



First of all, ask the site manager or someone more experienced how to use the products. Always read the instructions on dosages, follow the precautions to the letter, step by step, and always try to carry out the operations in a well-ventilated area, i.e. not closed, where air can circulate.



Each chemical product package has one or more hazard symbols: these are very important, so learn to understand them and act accordingly. Read the label on the product package carefully.



Pictogrammi		
	T T+	Tossico Molto Tossico
	F F+	Facilmente infiammabile Estremamente infiammabile
	C	Corrosivo
	E	Esplosivo
	O	Ossidante
	Xn Xi	Mucoso Irritanti
	C	Pericoloso per l'ambiente

Always read the symbols (pictograms). They will help you avoid dangerous consequences for yourself and the environment..



Mix and measure chemicals according to the instructions received and the manufacturer's guidelines. Excessive use does not improve results. Never mix chemicals together.

Equivalences:	1/10 = 10%
	1/5 = 20%
	1/4 = 25%
	1/3 = 33%
	1/2 = 50%
	1/1 = 100%



When you have finished using a product, close the container tightly. Never pour chemicals into improvised containers (drink bottles or other containers). Never leave containers without labels indicating their contents.



## ROMPERE CON IL MARTELLO DEMOLITORE 1



Always check the condition of the tool. Avoid working with tools that are not in good working order.



## ROMPERE CON IL MARTELLO DEMOLITORE 2



Always find out exactly which parts are to be demolished and do not demolish load-bearing elements on your own initiative.  
Find out whether any utilities (water, gas, electricity, etc.) run through the parts to be demolished.



## ROMPERE CON IL MARTELLO DEMOLITORE 3



Choose the right tool for the job:  
Concrete: pointed tip  
Masonry: flat tip  
Drilling: drill bit  
Make sure it is correctly mounted on the hammer.



## ROMPERE CON IL MARTELLO DEMOLITORE 4



Prepare and mark out your work area. Keep people who are not involved in the work away from the area.  
Wet the area to be demolished with water.  
Do not use the demolition tool when working on unstable surfaces, such as stairs.  
Make sure that materials, cables and debris do not obstruct the demolition work.



## ROMPERE CON IL MARTELLO DEMOLITORE 5



Grip the hammer drill handle with both hands, standing with your feet firmly planted and well balanced, keeping your back straight.

Hold it steady. Do not push it by leaning your weight on it: this is not necessary.

Always avoid overheating the tool.  
Do not use the demolition hammer for long periods of time; ask your boss to alternate you with other workers.

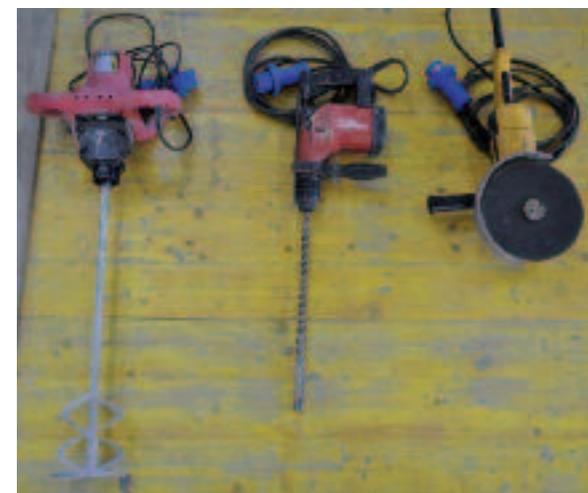


## ROMPERE CON IL MARTELLO DEMOLITORE 6



When working on walls, always demolish from top to bottom. When working on floors, always start from the sides, breaking outwards.





La mola portatile (flessibile o flex), il trapano e il frullino sono utensili elettrici sempre presenti nei cantieri.



Always find out exactly which parts need to be cut and never cut load-bearing elements. Find out whether any pipes or cables (water, gas, electricity, etc.) run through the parts to be cut.



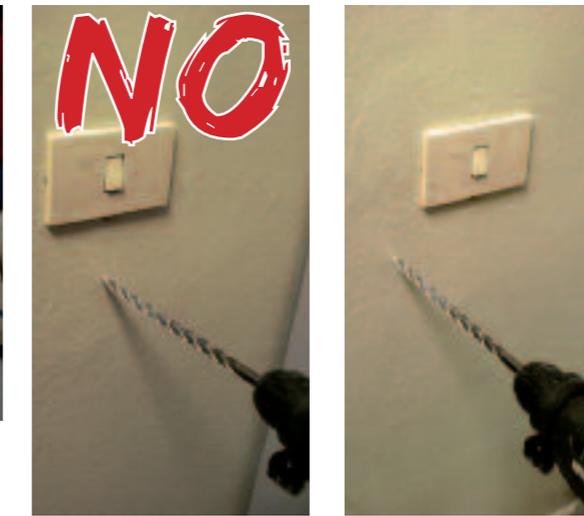
Before using the portable grinder, check that the metal guard is in place on the handle. Check that the number of revolutions per minute (RPM) indicated on the tool does not exceed that indicated on the disc. Check that the disc is suitable for the item to be cut..



When using the hose, make sure that the work area is clean and free of materials and tools. Keep a safe distance from people around you. Do not use the hose on unstable surfaces, such as stairs. Be careful not to damage nearby objects or materials (glass, tiles, etc.) with hot debris.



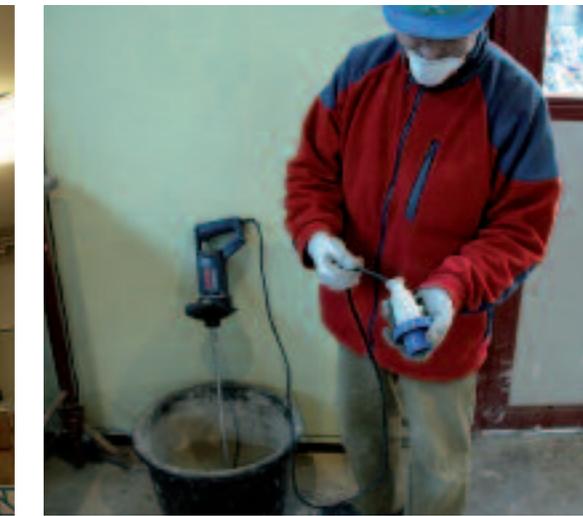
Before changing the flexible disc, disconnect the power cable and wait until it has come to a complete standstill. If you place it on the ground or pass it to a colleague, always wait until the disc has come to a complete standstill. Always disconnect the cable from the power socket during breaks and at the end of work; do not leave the tool unattended while it is still connected to the power supply.



Always find out exactly which parts are to be drilled. Find out whether any pipes or cables (water, gas, electricity, etc.) run through the parts to be drilled.



When using the drill, make sure that the work area is clean and free of materials and tools. Keep a safe distance from other operators. Do not use the drill on unstable surfaces, such as ladders. Always disconnect the cable from the power outlet during breaks and at the end of work; do not leave the tool unattended while it is still connected to the power supply.



Before using the mixer, always check that its electrical cables are intact. Also check that it only works when you press the appropriate controls; if you release the controls, the mixer must stop. If this does not happen, notify the site manager.





Please note that using a portable ladder always involves risks that should not be underestimated.  
Choose the right ladder for the job:  
- FOR CLIMBING: step ladders  
- FOR SHORT JOBS: platform ladders (with guardrail)  
- FOR THROWING A PILLAR: scaffolding ladders.



Only use ladders with the CE mark.  
Check the condition of the ladder and report any faults (broken rungs or other defects) to the person in charge.



Place the ladder on flat surfaces and check that it is stable at the base..



Where you can ensure that the ladder is anchored at the landing. If in doubt, ask a colleague to hold the base steady.  
At the landing, the ladder must protrude sufficiently to facilitate disembarkation and descent.



The staircase must have an adequate slope: 1/4 of its height.  
Example: a staircase with a base of 4 metres must be 1 metre away from the wall..



Climb up and down with your hands free, holding the steps (rungs) firmly.  
Always climb up and down with your chest facing the ladder, never the other way around.  
Always climb up and down the ladder one at a time..



If you are using a folding ladder, open it until the chain between the uprights is taut or lock the device that prevents the ladder from opening beyond the safety limits.



Never use the ladder:  
• on scaffolding work surfaces  
• on balconies, even if there is a railing  
• near openings to the void (e.g. floor holes, stairwells, even if equipped with a parapet)  
• near the edge of salting rooms, even if there is a parapet  
• near windows

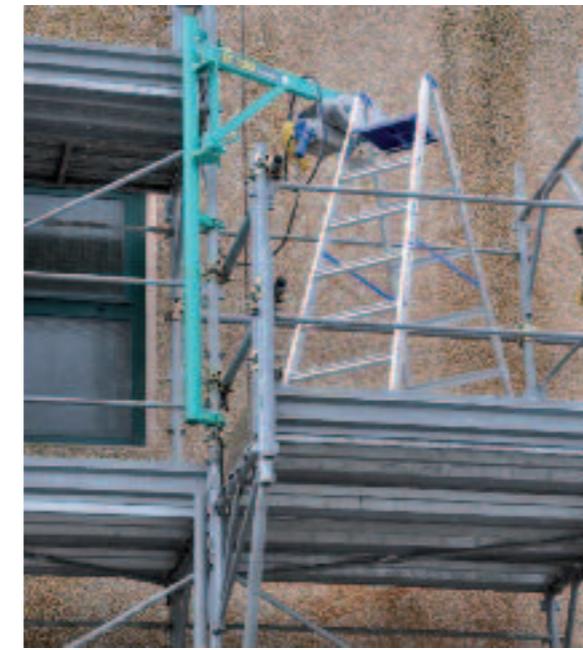




A well-built scaffold has some essential safety features, which we have indicated in the photo above: base plates, internal ladders, guardrails and platforms. Never tamper with or remove any parts of the scaffold. Report any clearly dangerous situations to your supervisor immediately.



Before climbing up, warn anyone who is already on the scaffolding. Use the internal ladders to access the scaffolding levels. Always close the hatch when you have climbed up.



Do not climb onto objects placed on the work platform and never create additional work platforms above the work platform.



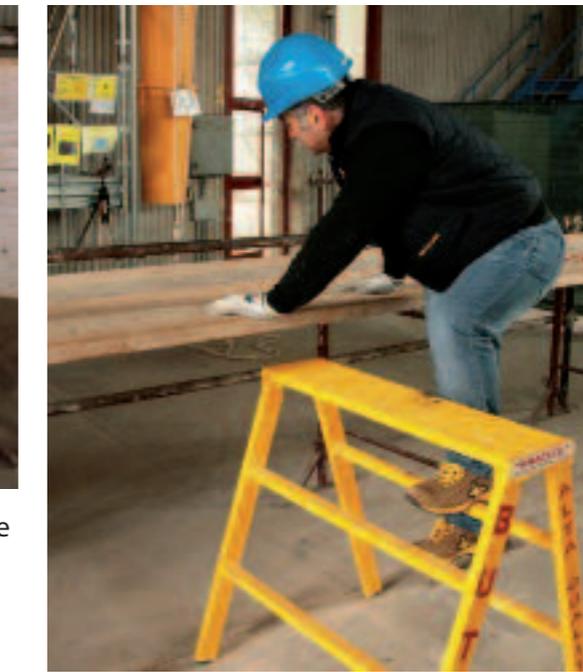
Always arrange materials and equipment in such a way that they cannot fall. Always leave adequate space for a person to pass (no less than 60 cm). Do not place heavy materials on the scaffolding decks.



Use the appropriate bridges for loading and unloading materials. Use the appropriate pipes to unload rubble.



To build a BRIDGE ON TRESTLES, arrange three trestles so that the two outer ones are 3.60 m apart and the upper bars are all at the same level. To prevent them from slipping, secure them underneath with a nailed strip. Build the complete deck with planks. Never use formwork panels.



Place a folding ladder next to the work surface to climb up and down from the deck.



Climb onto the work surface using a suitable ladder.





Before you start running the tracks, ask your boss for the necessary explanations on how to do it.



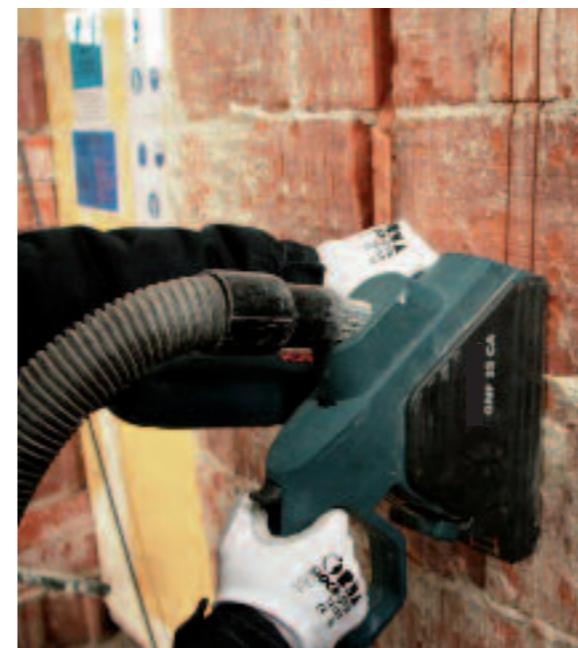
Check that the wall you are going to work on is free from water pipes, gas pipes or electrical wires..



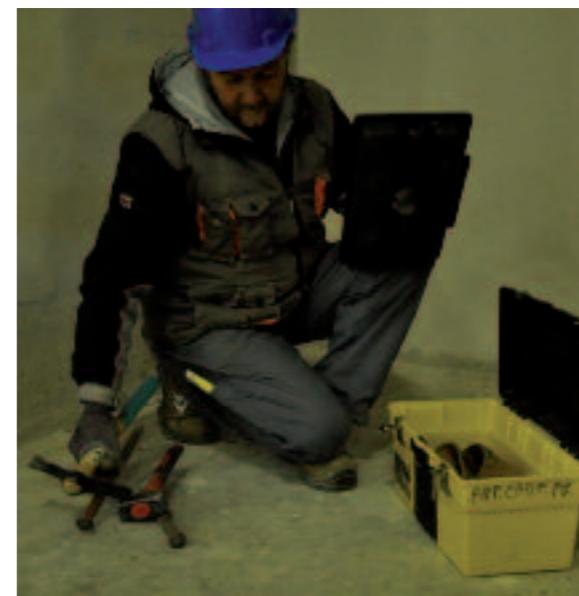
Put on gloves, a mask, goggles and ear protection.  
Take the mallet and chisel and strike the head of the chisel with force.  
Always start from the bottom of the mark and work your way up: this will prevent splinters from hitting your face.



Before using the track-setting machine, check that all safety guards are in place, that the cables are intact and that the handles are secure.  
Check that it is working properly; if not, notify your supervisor so that it can be replaced..



Connect the machine to the electrical system. Hold the tool firmly with both hands and start making the marks.



Always keep the area where you are working clean to avoid breaking the electrical cord, tripping or slipping.  
During breaks and at the end of work, always disconnect the cord from the electrical outlet; do not leave the tool unattended while it is plugged in.





Wrap the cables neatly so that they are easy to unwind later.



Disconnect electrical appliances from the mains by removing the plug from the electrical panel.



Once you have finished working, collect the tools you have used, clean them and put them back in their cases (if available) or in the toolbox.



Always clean the work surface and the area around the machines from any processing residues.



Wash the concrete mixer bowl with plenty of water, removing all encrustations. If there are any lumps of mortar left in the bowl, pour in some gravel and let it spin for a long time. Then scrape with a trowel with the mixer turned off.



Lava con abbondante getto d'acqua carriere, cazzuole, frattazzi, casse, malta e badili sporchi di malta. Evita di usare il martello.





Store materials in places that do not obstruct passageways or work.  
On floors, stack materials against load-bearing walls.



Collect the brick elements and reusable pieces of wooden boards and place them in suitable locations or in the appropriate containers. Separate those to be thrown away from those to be recycled.



Remove the nails from the boards using the split-tail claw of the carpenter's hammer. Lay the boards and other long items on the ground; do not lean them vertically against the wall.



Stack wooden boards, planks, panels and large boards, inserting crossbars every 50 to 70 cm to thread straps or ropes for transport.



Place the scaffolding elements in the appropriate containers. If there are none, lean them against a wall so that they are slightly inclined.



Pick up larger items by hand and smaller ones with a broom and dustpan. Place them in the wheelbarrow or bucket and transport them to the collection points.



Before cleaning very dusty areas, spray them generously with water.



Wear a mask and gloves to collect irritating materials.

