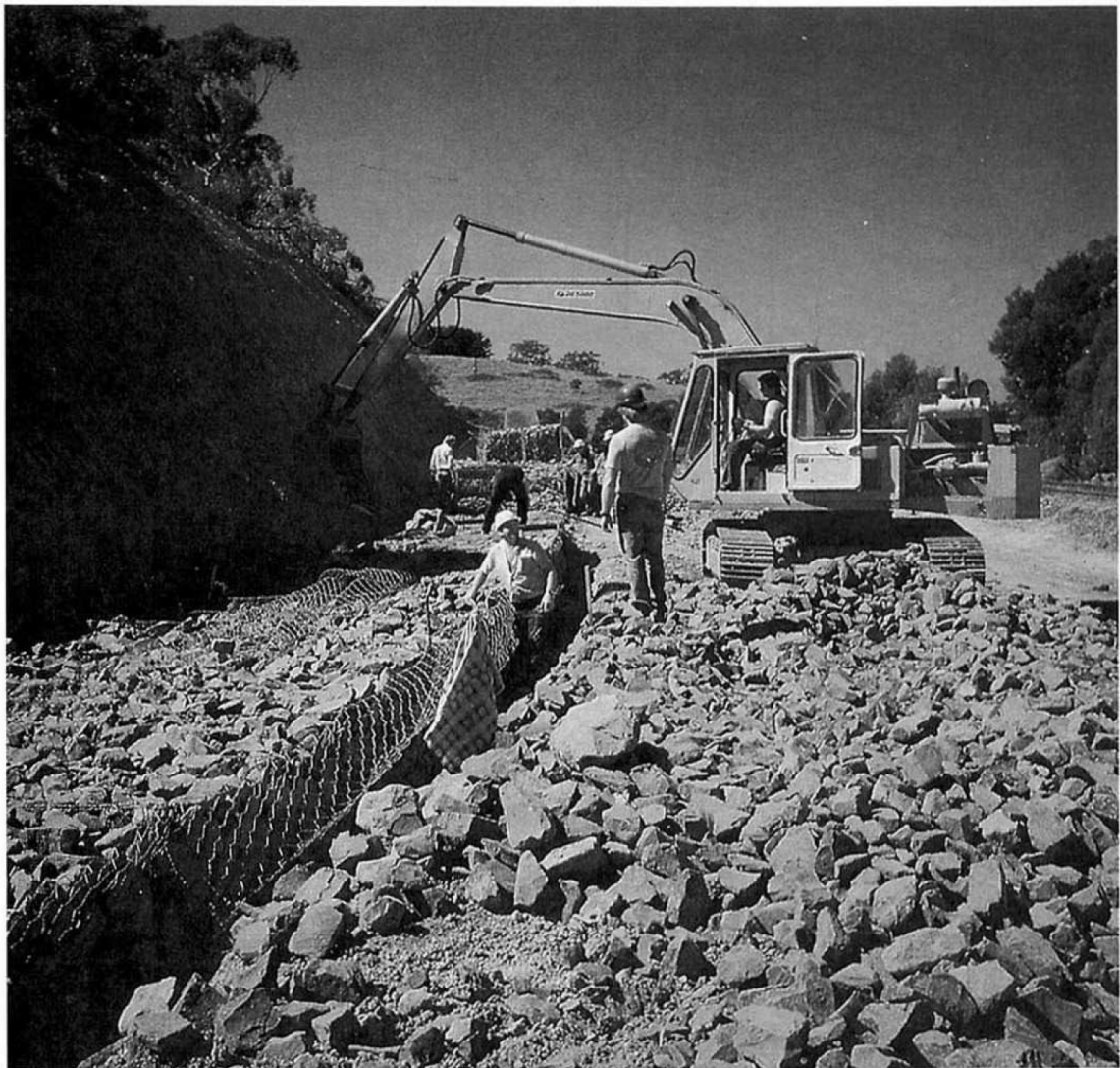
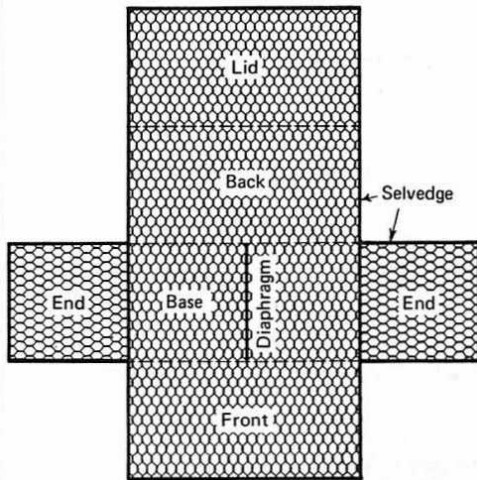


# **SITE INSTRUCTIONS FOR THE ASSEMBLY AND ERECTION OF GABIONS**



*TIGHTNESS OF THE MESH AND WIRING IS ESSENTIAL AT ALL TIMES*

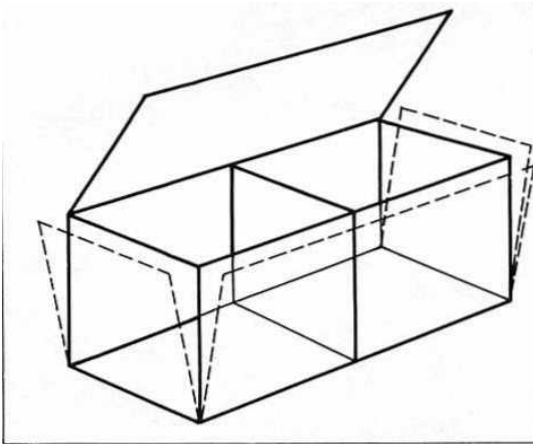
# Assembly



Unpack the gabions, which are supplied in bundles of two, whatever their size. (Enough binding wire is supplied with all gabions delivered.)

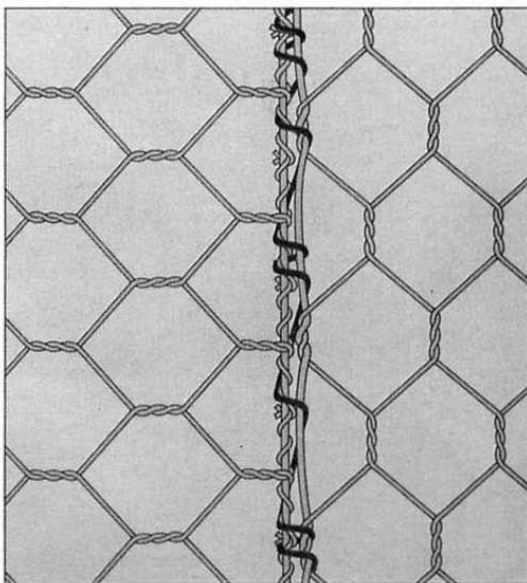
← Unfold each gabion on a hard, flat surface.

Stretch it out and stamp out any kinks. Make sure that all creases are in the correct positions for forming the box - one at the edge of each end panel and each diaphragm.



← Fold the side and end panels into the upright position to form a rectangular box.

Join the top corners of the box together with the thick selvedge wire sticking out from the corners of each panel. This makes sure that the tops of all four sides of the box are level.



← Begin wiring up by securing the binding wire at the top corners of the panels to be joined by looping it through and twisting it together.

Then lace the wire around the selvedges with single loops and double loops in turn at 100 mm (4 in) intervals.

Finally, fasten the wire securely at the bottom corner, and poke the loose end inside the gabion. Next, lift the diaphragms into the vertical position, and wire them up to the side panels in exactly the same way.

***TIGHTNESS OF THE MESH AND WIRING IS ESSENTIAL AT ALL TIMES***

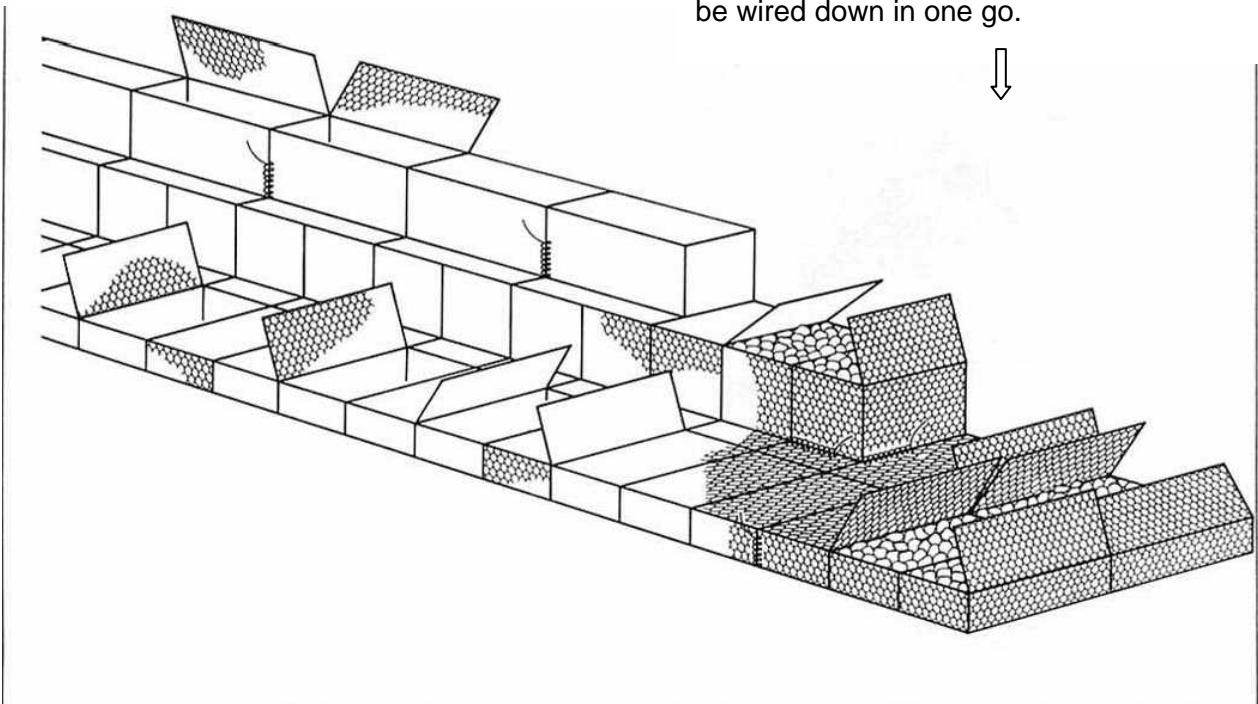
# Forming the structure



← When possible, wire small groups of gabions together off the site, and then carry them to the structure as complete sections for joining to other gabions already in position. This is easier than wiring them on site, especially when working in water.

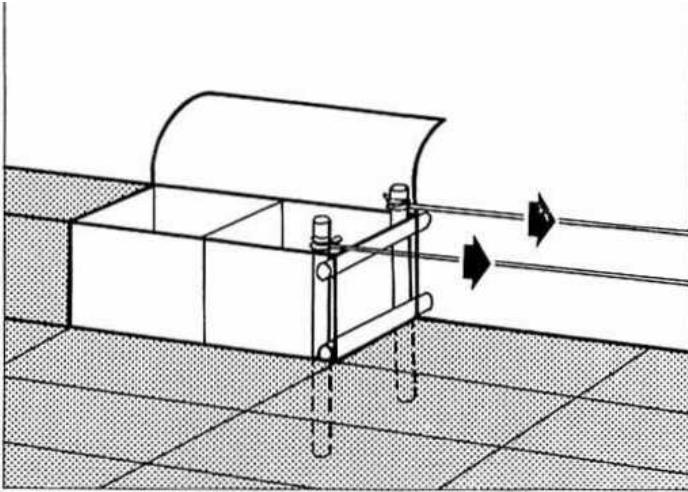
Level the ground where the gabion structure is to be built as much as possible before placing the empty gabions in position. Once the gabions are in place, it is difficult to remove unwanted material from underneath.

Wire the gabions together, using exactly the same method as for assembling single gabions. Place them front to front and back, to back, so that pairs of facing lids can later be wired down in one go.



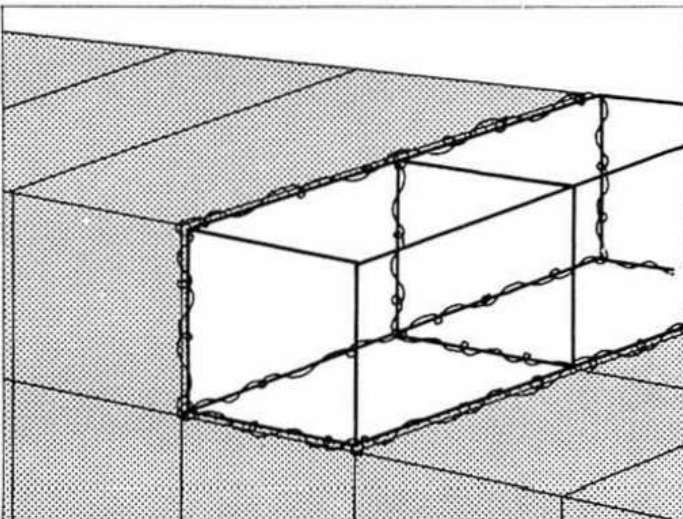
***TIGHTNESS OF THE MESH AND WIRING IS ESSENTIAL AT ALL TIMES***

# Stretching gabions before filling



Place the empty gabion or group of gabions in position. Secure the end from which work is to start by rods driven through the two corners into the ground and tied firmly to a good anchorage. It is important that the anchorages are at least the height of the gabion to prevent it collapsing.

The remaining empty gabions are wired one to another as work proceeds. Stretch the opposite side or end of the gabion by inserting bars into the bottom corners and lever rig them forwards. The top and bottom are then kept stretched until the gabion has been filled, by tying them to a fixed point - eg, a stake driven into the ground and wired to the gabion below. (For another method of stretching, see note Continuous Tensioning at end of leaflet.)



While the gabion is being stretched, check that the wiring together has been properly carried out and is not pulling apart. If it is, the section must be re-wired.

When on the structure, wire the gabions securely along the sides and ends to the adjoining gabions and to the already filled gabions below.

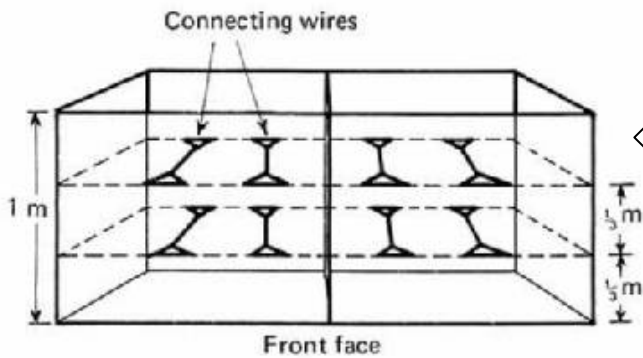


## Filling

Use filling material not larger than 250 mm (10 inches) and not smaller than the size of the mesh.

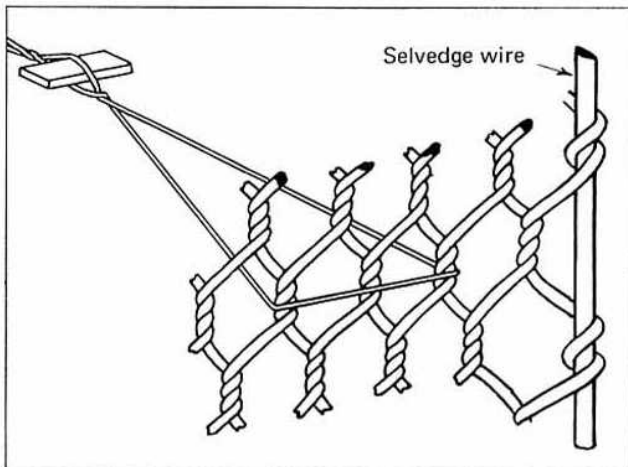
The best size range is 125 mm to 200 mm (5 in to 8 inches). A small percentage (about 5 to 7% of smaller material) is allowable. (See also note: Small Fill on back of leaflet).

## Filling -continued



Fill the gabions by hand or by machine, making sure that the stone is tightly packed and has a minimum of voids. When possible, leave the last gabion empty, as it is easier to join the next one to it.

Fill all the outside compartments of 1 m high gabions only one-third full to begin with.\*

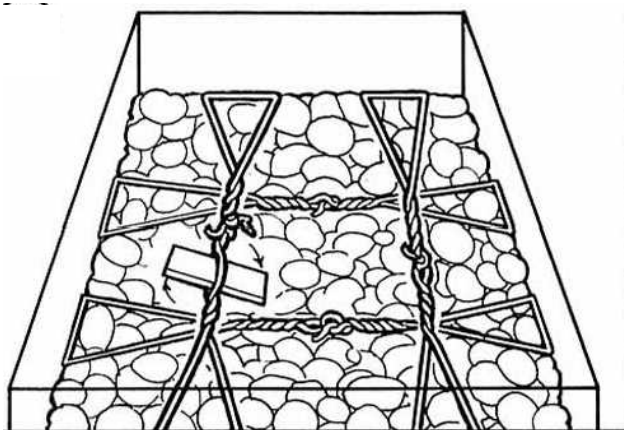


Then fix horizontal bracing wires in the gabions *directly above* the level of the stone in those compartments and 'Spanish' windlass the bracing wires to keep the face even and free from bulging.

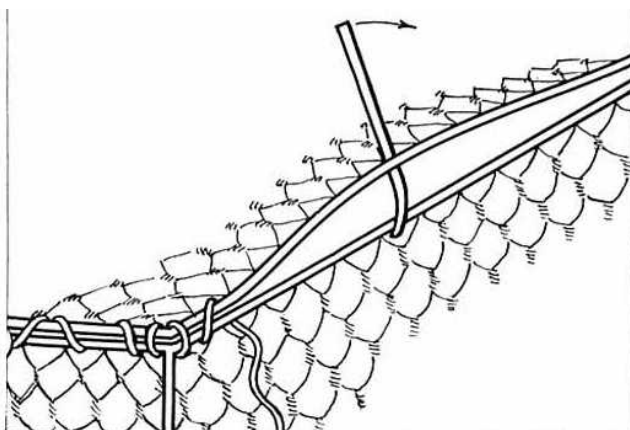
Next fill to two-thirds, and repeat the bracing. Finally fill to the top.

*\*500 mm gabions are filled in 2 'lifts' with bracing at half full. No bracing is necessary with 330 mm gabions.*

Level off the fill 25mm to 50mm (1 in to 2 in) above the top of the mesh to allow for settlement. Small material is best for this.



In aprons downstream of weirs and similar places where water falls directly on to the gabions, fit vertical bracing wires between the top and bottom mesh. & show additional bracing used at the end of a structure.)



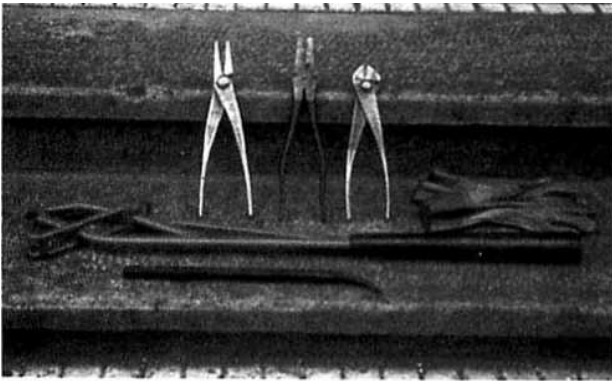
## Securing lids

Stretch the lids tightly over the filling and wire them down. The corners should be temporarily secured first, to ensure that there is enough mesh to cover the whole area.

Some filling may have to be removed from the top of the gabion to prevent the lid from being over-stretched.

***TIGHTNESS OF THE MESH AND WIRING IS ESSENTIAL AT ALL TIMES***

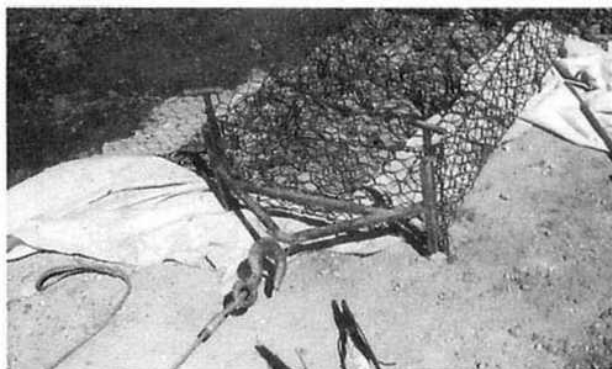
# Tools



(A) **PLIERS** - Preferably 10 in long-nose pliers.

(B) **CROWBARS** - For closing down the lids.

(C) **LID CLOSER** - Special tool for drawing the lid and side panel selvages together for easy and quick lacing.



## Notes

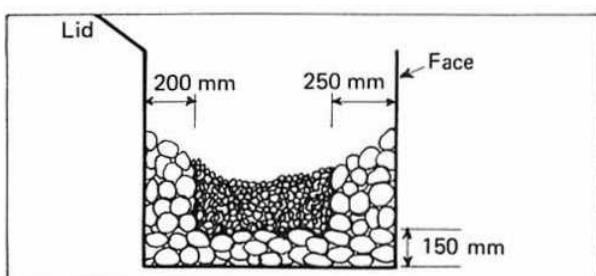
### Continuous tensioning

In suitable conditions (ie. construction of a relatively long, straight structure), a Tirfor strainer may be usefully employed instead of stretching each gabion separately.

One end of a row of previously-wired together empty gabions is firmly secured to a good anchorage, and the other end attached to the Tirfor by means of rods and a spreader bar. When sufficient tension has been applied over the length (of up to 30 m), the gabions are either wired down to the course below and then filled (if the second or higher course) or filled immediately (if they form the base course).

### Small fill

In areas where large fill is difficult to obtain, the compartment is lined with large material and the interior filled with smaller.



***TIGHTNESS OF THE MESH AND WIRING IS ESSENTIAL AT ALL TIMES***