

STRAINER ASSEMBLIES

Strainer posts mark the end/beginning of the fence and are considered the most important posts in the fence line. They carry the strain of the fence and support any gates if necessary.

In parts of New Zealand, where soil conditions are wet, a horizontal end assembly is sometimes preferred to a diagonal stay. Construction of this is outlined on page 30.

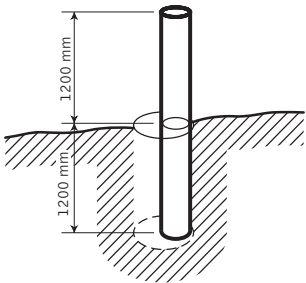
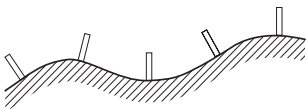
Before the hole for the strainer is prepared, attention must be given to the surrounding ground contour, as this will determine the strainer position.

Strainers should be good quality and as straight as possible. As a general rule of thumb, the strainer length should be double the fence height. Strainers that are 200mm SED (small end diameter) by 2.4m long would suit most fences.

Strainers on flat ground should stand vertical and on sloping ground 90° to the contour of the land. Angle and line posts should be placed in the same manner, so they bisect the angle of the wires perfectly and ensure the spacing of the wires remains consistent.

During construction, it is best to lay the strainer back slightly against the strain; this will allow for forward movement after tensioning.

When the hole is prepared, check for correct depth – it should be approximately half of the strainer length. Once the post has been dropped in, check for correct height and ensure it is standing against the stay side of the hole.



FOOTING THE STRAINER

Strainer posts need to be firmly footed in the ground to ensure that they don't lift or rotate.

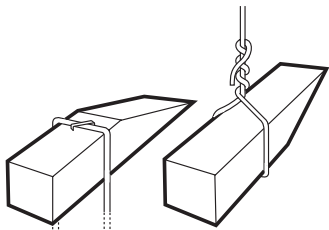
Foot size can vary depending on the type of ground. Usually the softer the ground, the bigger the foot. In firm ground two foots 380mm long x 100mm wide should be sufficient. Wire used for footing should be 4mm heavily galvanised steel or 3.15mm stainless steel wire.

Two foots should be placed on either side of the strainer at the bottom of the hole. A block of timber should then be laid across the back of both foots, as this will add extra strength and prevent upwards movement.

CONSTRUCTION OF THE FOOT

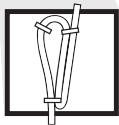
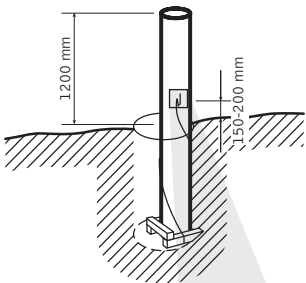
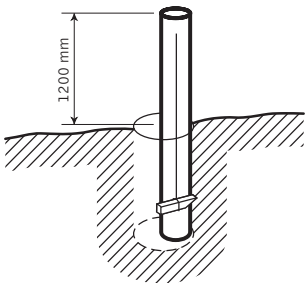
The foot consists of a piece of ground treated timber with a 4.00mm or 3.15mm heavily galvanised stainless steel wire stapled in the middle, on the underside of the foot.

1. The wire should be at right angles to the foot and well stapled.
2. Bend the wire around the foot and neatly wrap the short end around the long wire using a pair of pliers. The tails should be left long to avoid unravelling.
3. Straighten the long wire by running it through your hands, counter to the natural coil/curve of the wire, while you stand on the foot.



INSTALLING THE FOOT AND RAMMING

1. Place one foot beside the strainer so that it finishes flat against the bottom of the hole. Follow with the second foot on the other side.



2. Check that the foot wires spiral half a turn around the strainer in the direction of anticipated movement, as this will avoid rotating and lifting –ie. if the line wires of the fence leave the right side of the strainer, the left foot wire should be fixed on the right side of the strainer.
3. Staple any wires clear off the ground to avoid corrosion.
4. Place a block of timber across the top of both foots at the back of the strainer. This will tension the foot wires, increasing holding power and preventing backward movement.
5. Using one staple, staple the foot wires to the post approximately 150-200mm above the ground to ensure that the staples don't come into contact with the soil. The staple should be 45° across the wire and driven in firmly so that the wire has to be drawn through it under tension.
6. Check the foot to ensure that it is securely in place.
7. With the foot in place, ramming can now begin. Use four separate fillings as it is important that the soil around the foot is well compacted. While ramming, constantly check that the strainer is in the desired position (flat against the front of the hole).
8. When ramming is complete, the desired wire gauge can be marked on the strainer. This should be done on both sides and will help ensure accurate and neat positioning of wires when tying off.

THE STAY

The stay is used to support the strainer against the strain of the line wires. The more wires, the more tension the stay must support. A suitable length stay that is free of knots and of good diameter should be used. A stay that is 2400mm by 125 SED is recommended.

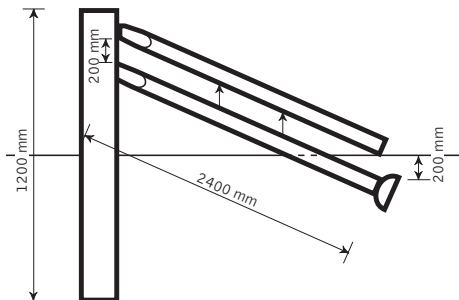
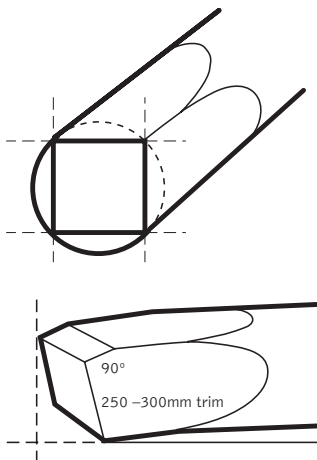
TRIMMING OF THE STAY

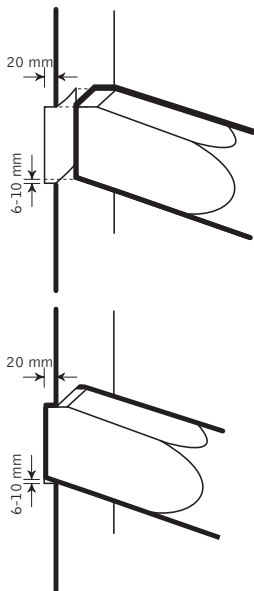
Care should be taken not to over trim the stay, as this gives less bearing area where contact is made.

A round stay should be trimmed to square at the end and taper out to nothing by about 250 to 300 millimetres. The exact length of trim is not too important.

Once the stay has been trimmed, cut the bevel on the end. The bevel is a small angled face above the bearing surface of the stay, which acts as a support. The angle this is cut at will depend on the ground contour between the strainer and the stay block. The object is to get the stay and mortice to fit flush. This can be achieved by setting the stay against the strainer where its final position will be and then lifting the stay above this position by the approximate distance in which the block end of the stay will be buried in the ground.

A parallel line should then be scribed into the stay using a flat rule/level to ensure that it is accurate.





POSITION OF THE STAY

Opinions vary as to how high or low the stay should be on the strainers, but half way between the ground and top is suitable in most cases. A high stay will increase tension on the footing and low stay will put too much pressure on the stay block. The exact position is determined by the wire gauge and the size of the wires in use. The stay must not be in the way when tying the wires.

Once the height has been determined, rest the trimmed stay at this height and check to see if it is in line with where the wires will run. Do this by either sighting the already straightened, or tensioned guide wires, or by standing behind the strainer and sighting in the direction of the intended fence line. Careful sighting and lining of the stay is very important and if done incorrectly, may cause the mortice to be off centre, resulting in the twisting of the strainer.

The stay should be scribed to mark where the mortice needs to be chiselled out. This should be neatly done across and down each side, right against the stay, but about 6mm to 10mm underneath. This gap will be filled when the stay is put into the ground and is essential in preventing the splitting of the stay. Chisel out the mortice to about 20mm deep. Try the stay for fit and then realign as before. With the stay now fitted and in its correct line position, the stay block can be fitted.



FITTING OF THE STAY BLOCK

The stay block provides the stay with extra support by giving it a greater bearing surface where it comes into contact with the ground.

Failure of the stay block means strainer movement, wire tension loss and a non stock-proof fence. Choosing a suitable stay block will depend on the soil type –the softer the ground, the bigger the stay block will need to be.

Where the subsoil is firm, a 900mm by 200mm bearing surface is required. In soft ground, the length of the stay block should be increased.

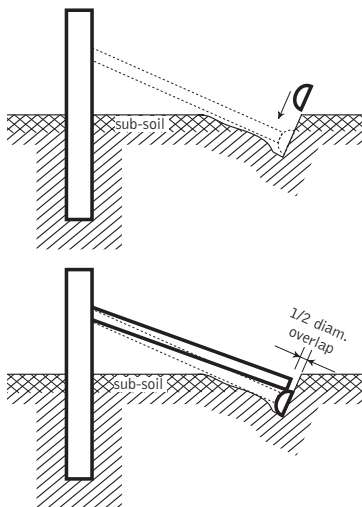
With the stay in its exact position the stay block trench can be marked out. This will be positioned horizontally in the ground. The stay should hit the stay block at mid point to ensure the bearing is in the middle of the stay block and the stay doesn't twist once it comes under pressure.

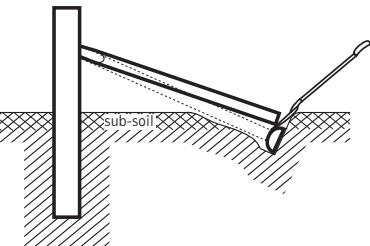
Dig out the length of the block, and as deep as is necessary for it to be in stable ground. eg. subsoil.

Place the block in the trench and thump it several times along its length, as this will ensure it is well embedded and won't move during the final fitting.

Dig a sloping scarf to let the stay meet the block.

Insert the stay in the mortice and lower it onto the block. It should fit about half way across the block diameter.

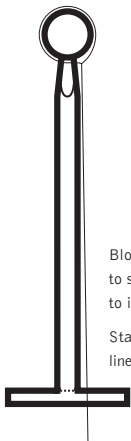




Raise it slightly and insert a spade in between the block face and the end of the stay. Use your foot to apply some weight to the stay and thump it down to halfway on the block using a rammer.

Remove the spade and centre the stay on the block face and in perfect line with the fence wires.

Cover in the block and turf it down neatly.



Block must be centred to stay and right angles to it.

Stay fitted in parallel line to fence wires