

9. Driving Corrections

9.1 Correction of lean

In order to avoid the tendency of sheet piling to lean, the hammer should be positioned over the centre of gravity of the piles being driven and should be held vertically and firmly on the piles by means of efficient grips.

Transverse leaning of sheet piles is eliminated by the use of efficient guide walings. If the piles develop a transverse lean which needs to be corrected, the piles should be extracted and re-driven using more efficient methods.

Longitudinal leaning in the direction of driving, which can either be caused by friction between the last previously driven pile and the pile being driven, or by incorrect use of the hammer should be counteracted immediately it becomes apparent, otherwise the condition can become uncontrollable.

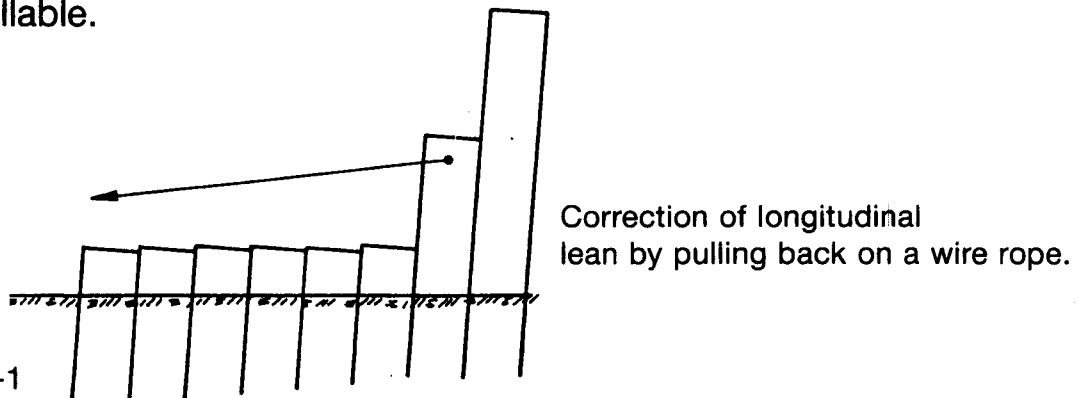


Figure 9.1-1

In conjunction with the above method, the hammer can be placed off centre of the pair of piles towards the last driven piles.

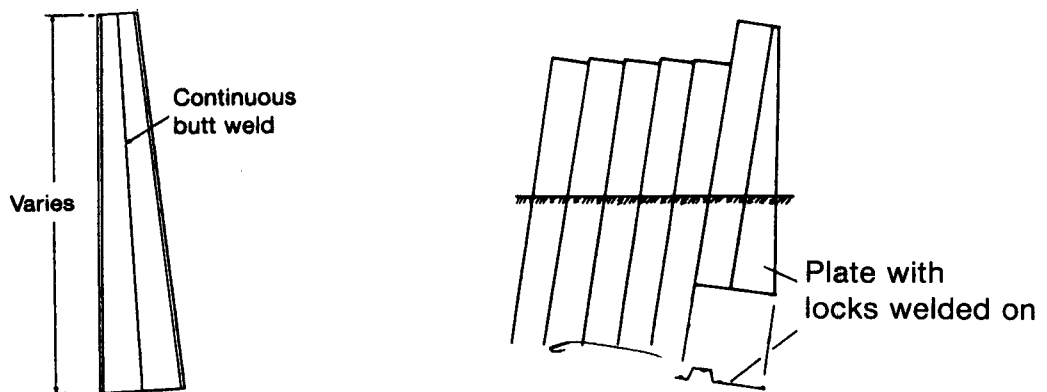


Figure 9.1-2

When, in spite of all precautions, a lean cannot be eliminated, taper piles must be employed to correct the error.

9.2 Drawing down

When piles are driven in soft ground, particularly when they are allowed to lean, the pile being driven may draw down the adjacent pile below its intended final level. If this occurs the affected pile should be extended by welding on a short length.

In order to prevent the drawing down of previously driven piles, several may be bolted together with a waling or alternatively the interlocks may be tack welded. As a further precaution against drawing down, a bolt may be inserted in the leading interlock of the pile prior to driving, thus preventing soil entering the interlocks, and reducing friction in the driving of the next pile.

Alternatively a clamping device for the sheet pile locks may be used thereby avoiding two or more sheet piles being drawn (or extracted) at the same time. If one is not sufficient a supplementary clamp can be used on the next lock.

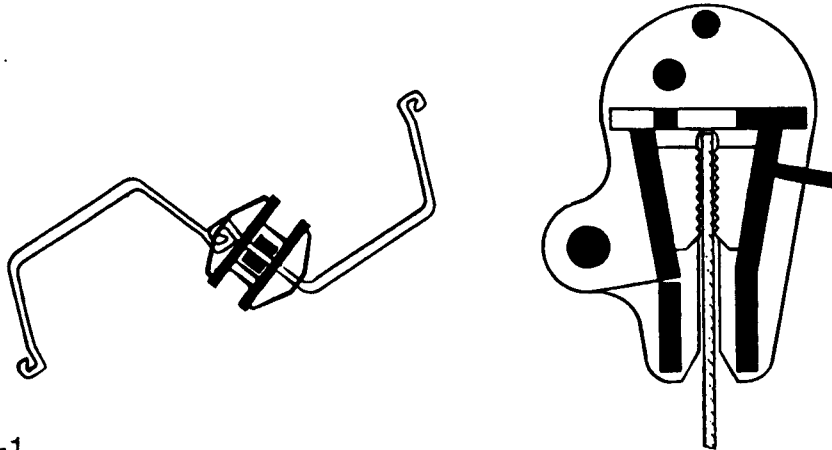


Figure 9.2-1



Figure 9.2-2

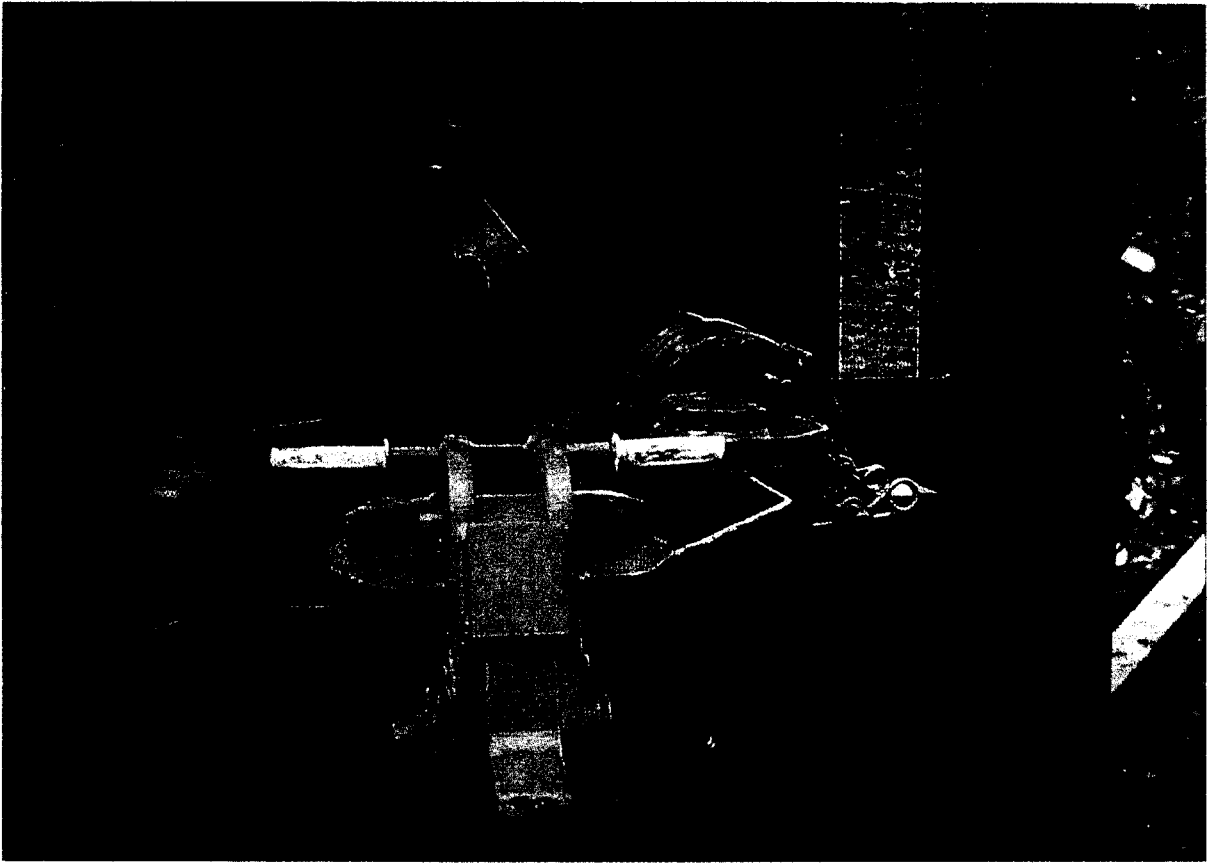


Figure 9.2-3

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9.3 Control of wall length

Some control over the theoretical lock centres, which govern the length of the wall, can be established during pitching by varying the overall depth of the pile section.

U sections: if the wall is found to be gaining in length, this gain may be corrected by reducing the width between guide beams with timber blocks placed between the outside faces of the piles and the guide waling.

Z sections: if the wall is found to be gaining in length, this gain may be corrected by increasing the guide width with timber blocks placed between the inside faces of the piles and the opposite guide walings. Conversely, a loss in length can be corrected by decreasing this guide width.

If accurate theoretical wall dimensions have to be achieved, it may be necessary to introduce a fabricated pile.

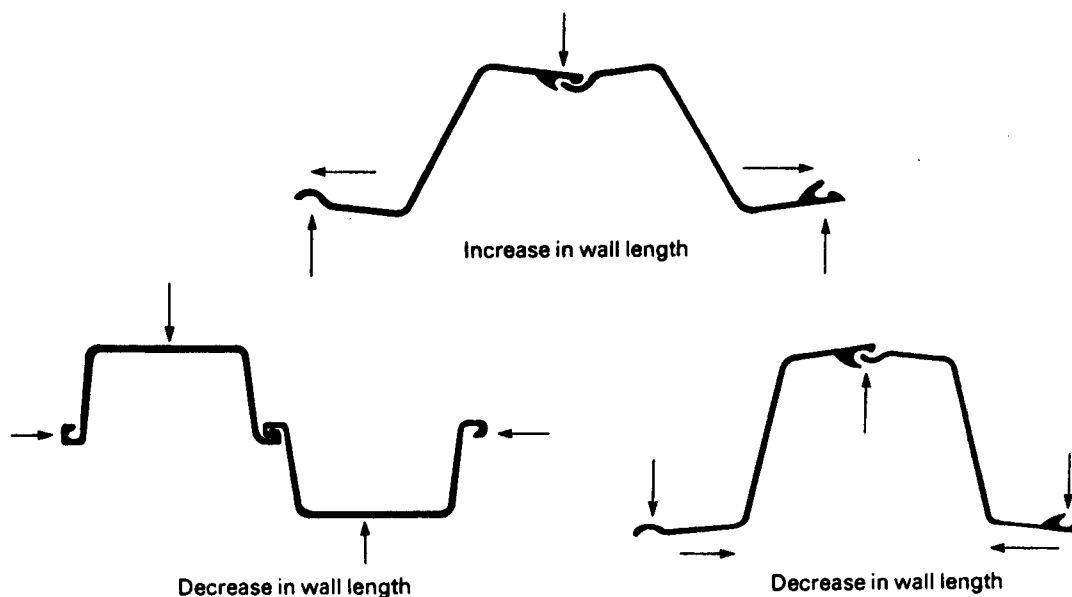


Figure 9.3

9.4 Driving tolerances

Position and orientation of the sheet piles are indicated in the driving plan. Deviations from this theoretical layout may occur due to rolling tolerances, soil conditions and driving procedure.

General tolerances for a straight and plumb sheet pile wall should be in accordance with the following figures:

a) deviation normal to the wall line at the top of the pile		\pm 50 mm
b) finished level deviation from nominal level of top of pile		\pm 20 mm
of toe of pile		\pm 120 mm
c) deviation of verticality	for pitch and drive method	for panel drive method
normal to line of piles as per cent of driving depth	\pm 1%	\pm 1%
d) deviation of verticality along line of piles as a per cent of driving depth	\pm 1%	\pm 0,5%

In some cases and for certain constructions, tighter tolerances may be specified, as in the case for king piles of combined walls, where accuracy is especially important.

