

# AJC VENTURES SDN BHD (Co. No. 1025998-U)

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## Method Statement for Injection Pile Installation

### PILING MACHINE MODEL: ZYC 120T, ZYC 180T, ZYC 240T, ZYC 400T, ZYC 600T, ZYC 800T

#### 1.0 GENERAL

- 1.1 The purpose of this method of statement is to outline the method and construction procedures required to carry out injection piling works, including material and equipment required for the installation of pile.
- 1.2 Detail of the procedures contained herein may be reviewed periodically and modified based on actual requirement.
- 1.3 The pile to be installed will be of a specified size by jacking in through overlaying soil to the bedrock strata.

#### 2.0 PLATFORM & CLEARANCE REQUIREMENTS

- 2.1 Proper access and egress to site shall be provided by employer / client.
- 2.2 Underground utility cable / pipe / drain on the site, if any, shall be re-positioned.
- 2.3 Piling works shall only commence upon satisfaction of the platform and clearance requirements.
- 2.4 Normal / center injection works shall require for minimum clearance from the edge of site boundary, wall and / or slope to the piling points as below:-

Model	ZYC 120T	ZYC 180T	ZYC 240T	ZYC 400T	ZYC 600T	ZYC 800T
Clearance Required	2500mm / 4500mm	3000mm / 5000mm	3500mm / 6000mm	4500mm / 7000mm	5000mm / 7500mm	6000mm / 8000mm

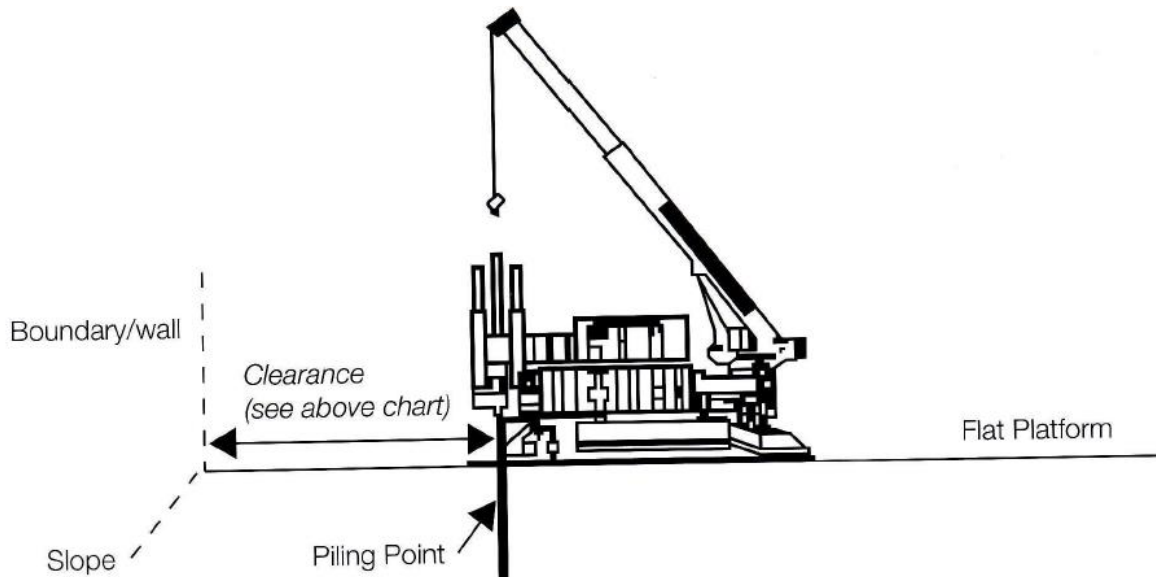
- 2.5 Side jack-in works, if required, shall require for minimum clearance from the edge of site boundary wall and/or slope to the piling point as below:-

*Please note that the maximum jacking force (kN) achievable for side-jacking of piles is **50% of the normally applicable maximum jacking force** in accordance with the respective model(s) of the piling machine(s)*

Model	ZYC 120T	ZYC 180T	ZYC 240T	ZYC 400T	ZYC 600T	ZYC 800T
Clearance Required	600mm	800mm	1300mm	1600mm	1800mm	2000mm

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## 3.0 SURVEY WORKS

3.1 The Survey control points, typically the building / block corner pegs are determined by the employer / client's licensed surveyor.

The location of these points shall be sited at a place unlikely to be disturbed and are clearly marked using timber pegs with nail head to indicate the precise position of control point.

3.2 Setting out pile positions would be where every pile position is pre-surveyed by the land surveyor with reference to the grid lines. The pile position will be pegged using a mild steel bar.

## 4.0 SAFETY PROCEDURE FOR PILING OPERATOR

4.1 Injection machines and cranes will be operated by trained and authorized operator. In the event of operating by a trainee it will be under the guidance and instruction of a trained and authorized operator.

4.2 Before operation, ensure that the machine is correctly maintained. Report all defects immediately.

4.3 Check all hydraulic jacks, wire ropes for wear at frequent intervals.

4.4 Before operation, check all rig motions. Ensure machine is on firm and level ground.

4.5 Before hoisting, ensure that the pile is being lifted at the lifting hooks.

4.6 Work only with an authorized signal man and operate to his signals. Do not react to the signals from unauthorized persons, except in an emergency.

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- 4.7 Check for obstructions and men in the vicinity of the rig before hoisting & pitching.
- 4.8 Before unloading from and loading to any vehicles, ensure the driver is out of the cab unless this has special protection.
- Also make sure that the driver of vehicle is in full view of machine operator before the load is lifted.
- 4.9 Prior to establishment of plant, ensure that there are no overhead obstructions and that the working surface and access are suitable for operation of our machine.

## 5.0 TYPE OF PILE

- 5.1 The applicable range and length of pile for the following piling machines are:-

Model		ZYC 120T	ZYC 180T	ZYC 240T	ZYC 400T	ZYC 600T	ZYC 800T
Spun Pile (mm diameter)	min	250	250	250	250	250	250
	max	350	400	400	600	800	800
RC Pile (mm)	min	150	150	150	300	300	300
	max	300	300	400	500	500	600

## 6.0 PREPARATION FOR PITCHING PILE

- 6.1 Piles should be stored on site within the operating radius of the Injection machine.
- 6.2 Before commencing injection operations it shall be ensured that:-
- 6.2.1 A pile layout drawing and specification relating to the Contract are available.
- 6.2.2 The Client has been made aware of our intention to commence piling.
- 6.3 The injection machine shall be established at the pile position.
- 6.4 The pile peg shall be offset by marking two pegs which are perpendicular to each other for checking the position of pile after pitching.
- 6.5 Hoisting and pitching of pile for the following piling machines are by way of :-
- 6.5.1 ZYC 120T, ZYC 180T, ZYC 240T, ZYC 400T, ZYC 600T & ZYC 800T:-
- (i) The nominated pile segment shall be drawn towards the machine using the on-board crane;
- (ii) The pile shall then be lifted by the on-board crane to facilitate the pile head to locate in the pile position.
- 6.6 The correct verticality of the pile position relative to the reference pins shall be checked. Pile inclination is checked using a spirit level.

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## 7.0 JACKING PILE

7.1 The jacking method for the following piling machines are :-

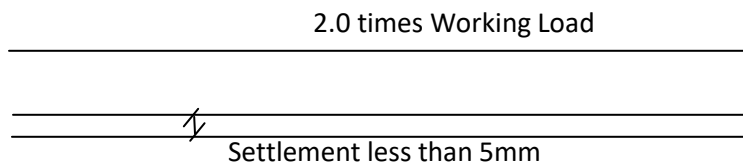
7.1.1 ZYC 120T, ZYC 180T, ZYC 240T, ZYC 400T, ZYC 600T & ZYC 800T:-

- (i) Insert pile into the Jack-In system clamp by using the on-board crane;
- (ii) Clamped the pile and detach the crane cable;
- (iii) Final vertical check and positioning by moving in the X and Y direction;
- (iv) Commence jacking pile by applying jacking force onto the clamp device to press down the pile.

7.2 If pile jointing is necessary then the pile will be joined in accordance to conventional method or by way of MIG / CO2 welding.

7.3 When the jacking pile reaches certain depth and refuses penetration at the desired corresponding pressure, the pile may have set. If required, dolly may be used to jack-in excess pile length to below ground level.

7.4 The 'set' of the pile is achieved when the jacking force is taken as **2.0** times the pile working load and is maintained for 30 seconds with residual settlement not more than 5mm



7.5 Once 'set' the extruding length of the pile shall either crushed by usage of a dolly and / or cut off by usage of a diamond cutter to facilitate movement of the machine.

## 8.0 RECORDING

8.1 Recording shall be done by machine operator. The recording sheet shall be approved by the S.O.

8.2 On completion of the pile installation, all necessary information shall be recorded in other pile record sheet can be completed.

If the pile has not been driven as expected, has been obstructed or does not conform to the specification, this shall be recorded in the remark column.