

## MANHOLE LADDER INSTALLATION GUIDELINES

Before any ladders can be installed the above procedure must be observed (entering a confined space) must be carried out and all criteria satisfied. A visual inspection of the area is to be carried out before commencing to identify any trip and slip hazards. Safety barriers to be erected if specified in site survey.

All ladder installations require a minimum of two personnel, with a top man situated at the top of the tripod for the duration of the work. All safety tools debris and site equipment should be kept well clear of the access point and outside of the tripod recovery area and stored in plastic containers.

Fit the winch to the top rung of the ladder along with secondary rope, using a Karibiner, the ladder support rope should be threaded through lifting eye at the top of the tripod and secured to the top rung of the ladder, lower the ladder into the chamber via the winch until it is seated on the chamber floor. Once the ladder is firmly seated on the chamber floor, take up slack on the ladder support rope and tie off at the eye on the top of the tripod.

Lying on the floor above the chamber, detach carbine snap hook from the top rung of the ladder.

Attach entrant to the winch via the rear "D" link with the attendant making final checks ensuring that full harness checks have been carried out and full PPE is being worn, 10 minute rescue kit is fitted as stated (entering a confined space). Attendant is to steadily lower entrant into the chamber via the winch.

Once the entrant is safely in the chamber, site tools are to be placed in a canvas bag and lowered down to the bottom of the chamber. The attendant is to attach the acro prop to another rope using an eye on top of the tripod, manually feed acro prop down to the entrant. Entrant is to detach the acro prop and the attendant to retrieve rope back to the surface of the chamber.

The acro prop should be placed onto one of the ladder rungs approximately 1200mm from the chamber floor and against the opposite chamber wall, tighten until the ladder is firmly secure, giving a sharp tug to ensure that the ladder does not come loose. The ladder holding rope can now be detached by the attendant and withdrawn from the chamber.

The bottom two brackets are to be drilled first using a suitable drill bit drilling straight through the holes in the ladder brackets and into the chamber wall to a minimum depth of 100mm. Bolts are then to be inserted using the impact Wrench, tightening until bolts are fully tight.

Proceed to the central brackets by getting the attendant to raise the winch to the appropriate height and repeat as stated above.

If any further tools are required the attendant should raise the entrant to the chamber surface to retrieve them. Once the central brackets have been fitted the entrant may use the ladder to ascend further whilst the attendant reels in the slack on the winch. The entrant can then continue to fit the upper brackets in the same way. Once these have been drilled the entrant can pass the drill and other equipment from the chamber to be secured on the surface by the attendant.

The entrant is then to be lowered on the winch to the bottom of the chamber and detach the acro prop for retrieval to the surface.

Once all equipment is removed from the chamber the entrant can then begin his ascent using the ladder.

The Safety harness is not to be detached until the entrant is clear from the chamber and outside the tripod area.

The manhole lid is to be replaced by the attendant and the entrant using the appropriate lifting keys, as soon as the work has been completed.