Appendix 5: Guard design and construction

Key points that need to be addressed with guard design are:

- The materials selected should be robust enough to withstand expected site conditions; tubular/box steel frames with mesh infill are most common but polycarbonate and conveyor belt rubber infill have also been used effectively.

- The purpose of the guard is to prevent access so the guard must extend far enough around the drill string to achieve this.

- BS EN 16228 specifies that in vertical or near vertical operations the guard should start no more than 500mm (small and high speed rigs) or 750mm (large piling rigs) from the ground or no more than 200mm above the clamps/jaws of the drill/auger guide. The guard should extend to at least 1600mm above the ground or above any adjacent operators working platform. Note these dimensions set a minimum standard and guard arrangements and size should be optimised for greatest enclosure whilst retaining machine functionality.

- In inclined or horizontal drilling applications, the entire drill string may be within reach and access needs to be prevented to the entire length.

Interlocks need to be sufficiently robust to withstand site conditions including the vibration that comes with drilling operations. They should not be easy to defeat. Simple roller switches are unlikely to withstand vibration that can be magnified through the structure of the guard and can be easy to defeat, as are some plunger style devices. Coded magnetic interlocks are reliable and more difficult to defeat.