

Field Operations Directorate

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HM Principal Inspector of Health &
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Mike Williams

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Reference FMU86

For the attention of Bill Gill,

Dear Sirs

**HEALTH & SAFETY AT WORK ETC. ACT 1974
CONSTRUCTION (DESIGN AND MANAGEMENT) REGULATIONS 2007
PROVISION AND USE OF WORK EQUIPMENT REGULATIONS 1998**

I am writing, as discussed, to explain HSE's view on the requirement to prevent access to the rotating parts of drilling & mini-piling rigs. Please feel free to copy this letter to clients or designers whom you feel would benefit from being made aware of its contents.

Under the Provision & Use of Work Equipment Regulations 1998 there is a requirement to prevent access to rotating parts of machinery so far as is practicable. HSE's position is that such machines must be fitted with a guard that is interlocked so that if the gate is opened to allow access, the rotation stops; where rotation is necessary to add or remove sections, the speed should be no more than 15rpm with the gate open. The guard should extend from 500mm above ground level to 2000mm above ground level or the operator position if that is raised & within reach of the drill string.

We are aware of research being undertaken to create a robust technological system that would stop the machine rotating when approached by any person; such devices are very much at the trial stage & to date the best, most practicable solution, is a guard.

Where small drilling rigs and mini-piling rigs are used in unrestricted areas there would be no temptation or need to remove the interlocked guard which is the highest practicable level of protection for such machines.

Measures, such as trip wires, are further down the hierarchy of protective measures set out in PUWER as they do not prevent access to the rotating part but will rather mitigate injury once entanglement occurs. Given that trip wires have usually been found to be poorly located, badly maintained or defective it makes it even more likely that death or serious injury is a realistic outcome of entanglement. However, HSE has found numerous cases where the guard has been removed so the machine can be used in restricted areas and trip wires used instead; this is unacceptable.

One of the most common excuses we get from contractors for not guarding drilling and piling rigs is that designers often expect them to work so close to existing structures and foundations that it is not possible to do so with guards fitted. If this is the case the designers are not just failing in their duties under CDM but are forcing contractors to ignore machinery safety legislation and work in a dangerous manner. With work in the foundation industry declining, pressures on contractors to win work by agreeing to unsafe practices will grow. Designers have a duty to eliminate hazards, where reasonably practicable, in order to 'design out' foreseeable risks to those carrying out construction work.

As part of the tendering process contractors should make sure their estimators and planning engineers are fully aware of the space needed to operate rigs safely and the range of rigs available within the company. When a contractor cannot operate a rig fitted with a mesh guard because of the proximity of adjacent structures, HSE advice to the contractor is that the CDM-Coordinator should be consulted to ascertain if the designer has given sufficient consideration to the health and safety of the piling operatives by allowing them sufficient working space for the rig to be operated safely. HSE advises that guards should only be removed from the rig on the advice of the CDM-Coordinator following an assessment of the risks posed by the alternative means of protection. Contractors removing a guard could both invalidate the CE marking of the machine and be knowingly condoning the use of a dangerous machine.

Several contractors faced with this problem have created innovative guarding solutions that are not too bulky and have a side gate enabling work against existing walls. HSE is aware that in some basement designs this may result in the loss of a minimal amount of space in the finished structure and this should be accepted.

In the case where the piling company designs the pile locations themselves the CDMC should be involved in order to ensure the risks are being designed out and any contractor tendering on the basis they can work closer to an existing wall than anyone else should have their machinery guarding capabilities closely looked at by the CDMC, involving the architect and other structural engineers as necessary.

When on-site, if a Principal Contractor becomes aware that the piling contractor is operating an unguarded machine he should stop the work and consult with all parties, including the CDMC, so a solution can be found that does not involve removing the guards.

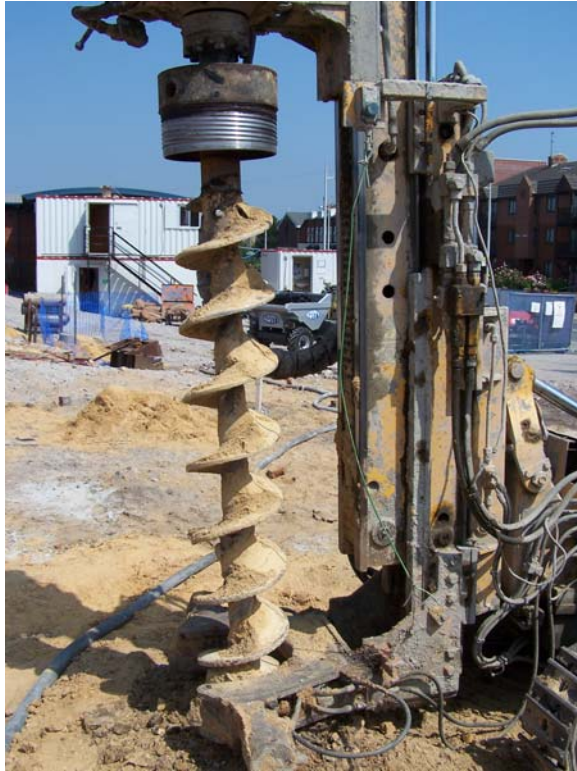
In the case of HSE finding an unguarded rig in use, all parties, from Client to Site Manager can expect to be under scrutiny, not just the piling contractor. Anyone allowing the removal of a guard from a machine opens themselves up to potential enforcement action up to and including prosecution.

I hope this makes the situation clear; if you or your colleagues have any queries please do not hesitate to contact me.

Yours faithfully



Sarah Snelling
HM Inspector of Health & Safety



Unguarded mini piling rig



Guarded with front mounted interlocked gates