

1. Background

In general piling operations is one of (and in many cases) the first sub-contractors to work on a construction site. The work is very dirty; the rigs are heavy (up to 150t) and tend to be rather large, lots of associated equipment such as, casing, cages, and augers) are needed along with attendant plant such as cranes, excavators and dumpers. It is not practicable or safe to stack this equipment and therefore large areas of floor space may be required. There are also many daily vehicle movements i.e. reinforcement cage and concrete deliveries in particular and muck away leaving site. This leads to the need for certain facilities to be immediately available in order for the piling to safely commence in a satisfactory manner and also in accordance with legislation.

It is essential to ensure the arrangements are made some weeks prior to the piling contractor arriving on site.

This document offers guidance on the minimum acceptable conditions expected before work commences.

2. Set-Down Area

	An area accessible to vehicles with trailers (usually 4 off) with a haul route designed to take the necessary loads with sufficient space to unload items up to 20m in length
	Within reach of the handling crane/piling rig
	Suitable access from this area to the piling site including segregation from other workers and pedestrians
	If no area is available on site then suitable arrangements have to be made with the Local Authority and/or Highways Agency for delivery times and possible road closures

Note – space requirements will vary greatly from project to project dependant on the piling technique used, attendant plant requirements, pile depth(s), diameter(s), ground conditions, design specification etc. it is critical that discussions take place with the piling contractor to agree working space before and during the contracted works.

3. Welfare Facilities

Provision of suitable and sufficient welfare arrangements continues to be one of the main frustrations for piling contractors on site. Being one of the first contractors on site, the PC is usually working out of temporary accommodation until the main welfare / office arrangements are constructed.

Piling work is dirty and is carried out in all weathers, because of this it is essential that welfare requirements are correct from day one and include scope for growth as follow on trades start work.

Welfare provisions must be made available in accordance with the Construction (Design and Management) Regulations:

Sanitary Conveniences

Shall be provided in close proximity of the area of work and easily accessible and shall be:

	Adequately ventilated and lit
	Kept clean and orderly
	Separate men and women, except when each convenience is in a separate room which can be locked from inside.
	Chemical toilets are not an acceptable option

Washing Facilities

Shall be provided (including showers if required by the nature of the work) in close proximity of the area of work and easily accessible and shall:

	Be in the immediate vicinity of every convenience, whether provided elsewhere as well
	Be in the vicinity of changing rooms, whether provided elsewhere as well
	Include a supply of clean hot and cold or warm water (which shall be running as far as is practicable)
	Include soap or other suitable materials for cleaning
	Include towels or suitable means of drying
	Be adequately ventilated and lit
	Be kept clean and orderly
	Be separate for men and women, except when each convenience is in a separate room which can be locked from inside

Drinking Water

Wholesome drinking water shall be provided for all persons at work in the workplace and shall:

	Be readily accessible at suitable places
	Be conspicuously marked
	Have a sufficient number of suitable drinking vessels unless supply is in form of a jet.

Changing rooms and lockers

Suitable and sufficient changing rooms shall be provided at readily accessible places and shall be

	Separate for men and women,
	Provided with seating and allow or include facilities for drying clothing overnight so they are ready for work the next day.
	Provided to enable persons to lock away, their work clothes, their own clothing and their personal effects.

Facilities for rest (and to Eat Meals)

Shall be provided at readily accessible places and shall:

	Be equipped with adequate number of tables and seating with backs – sufficient for the number of persons likely to use them at any one time.
	Include suitable arrangements to ensure meals can be prepared and eaten.
	Include a means of boiling water
	Be maintained at an appropriate temperature and clean.

Arrangements for Smokers

In accordance with legislation regarding smoking in public places:

	At the discretion of site management a smoking area may be provided. If providing a shelter the area of the structure, including the roof, is to be less than the area of the openings
--	--

4. Working Platforms

A working platform designed for the rig bearing pressures provided by the piling contractor will be provided. (BR 470 and Guidance on the reverse of the Working Platform Certificate should be consulted).

<http://www.fps.org.uk/fps/guidance/platforms/platforms.php>

	Platforms should also be suitable for persons to walk and work on, and not present a trip hazard from large cobbles or tramp material i.e. steel from demolition crush.
	A fully completed and signed Working Platform Certificate shall be issued prior to work commencing.

5. Third Party Protection

Piling operations are commonly carried out to the full extent of the site i.e. around the perimeter hoarding, which introduces a risk to third parties. When piling close to the site perimeter the PC should consider:

	Temporary closure of pedestrian walkways outside of site.
	Extending the perimeter hoarding vertically, or installing a fan type hoarding.
	Use of scaffold system to install a protected walkway beneath.

6. Vehicle/People Segregation

Workplace transport is the second biggest cause of incidents in the workplace, accounting for about 70 fatalities each year. The majority of these accidents are preventable by good traffic / pedestrian management which consider the number/type of deliveries and constantly changing site environment Sites should as a minimum:

	Have suitable segregated pedestrian routes, delineated by barriers, for access between Welfare and work areas.
	Have a designated, non-pedestrian, access for vehicles with a gateman to provide instructions/directions and ideally a one-way system around the site.
	Where pedestrian routes cross vehicle routes have clear visibility (no obstructions) for drivers and pedestrians
	Provide warning signs for drivers and pedestrians indicating crossing point.
	Sufficient operational space should be made available to the piling contractor in accordance with the earlier provisions in section 2 'Set down area'.
	Planned traffic routes should be agreed with the piling contractor and (where applicable) take into account any concrete hose routes / movement and crossing points etc.

7. Underground Services

Service strikes are still occurring on many piling projects and in particular on inner-city sites. In nearly all cases a permit to dig/pile is issued confirming underground services are NOT present. Investigation findings have confirmed in as much as 50% of cases that there is documented evidence of the service and the site investigation has failed to find it; usually owing to an ineffective search. The following guidance on requirements is offered:

	Confirmations of an in depth search of documentary evidence for services.
	Where services are known their presence should be confirmed and highlighted on site.
	If services are within 2m of a pile location they should be physically located and as appropriate relocated, protected or removed.

Further guidance can be found within HSG47 available from the HSE website <http://www.hse.gov.uk/pubns/books/index-hsg-ref.htm>

8. Permits to Work

The Health and Safety at Work Act requires the provision of a safe system of work. Where special precautions have to be taken before, during or following any potentially hazardous operation, the Permit to Work should be used as an integral part of the system of work, e.g. Working in close proximity to sewers, electrical circuits (cables), pipelines and the location of underground services.

The Permit to Work should be used as an operational document, prepared by a responsible person who is familiar with the work procedures, the hazards involved and the precautions to be taken.

Where specific hazards have been identified task specific permits must be issued and completed e.g. Permit to Dig, Permit to Pile etc.

9. Environmental Considerations

Concrete and concrete wash water:

Water contaminated with cement is highly alkaline and can be toxic to fish, plants and animals living in watercourses. Cement particles entering a watercourse can clog fishes' gills and also destroy their spawning grounds. It is illegal to allow cement, unset concrete or washout water containing cement to enter a watercourse or drain. (Special permission is needed before construction work can take place in a watercourse).

Uncontrolled release could result in a breach of environmental legislation

For Environmental Agency Guidance on Managing Concrete Washwaters on Construction sites see link: <https://www.gov.uk/government/publications/managing-concrete-wash-waters-on-construction-sites>

	Ensure that a concrete / cement washout area is established, when necessary, to prevent the discharge of liquids to the ground/water environment
	Locate washout facilities at least 10m away from drains or surface waters and at least 10m from trees, where possible
	Ensure washout facilities are constructed and maintained in sufficient quantity and size to contain all liquid and concrete wastes i.e., lined with impermeable liners to prevent liquid and solid wastes escaping to the external environment, unless a consent or authorisation for soakaway is in place. Suitable washout facilities might include sludge boxes, washout pit, concrete retainers, concreted building foundations, leak-proof skips, washout sacs or bags, depending on the frequency and volume of wash water generated.
	Ensure excess liquid effluent from concrete / cement washout facilities is contained within additional washout facilities or disposed of as a hazardous / special waste stream, unless a consent or authorisation for soakaway is in place

There are other environmental considerations such as noise, dust, traffic, visual, vibration which are also the responsibility of the Principal Contractor but these should have been previously identified with controls and monitoring programmes already in place where necessary.

Federation of Piling Specialists

www.fps.org.uk fps@fps.org.uk Tel: 020 8663 0947