

# Piling Rigs

- Drilling rigs are used in many industries for a variety of purposes; the main ones are listed below .

- **Geotechnical**

This covers a multitude of activities including survey and assessment work taking samples or cores at depth to assist with foundation design, looking for water sources and mineral resources, developing geothermal energy systems and designing routes for tunnels.

- **Surface production rigs**

These are used mainly in quarries and mines to drill holes for explosives to be inserted

- **Jumbo tunnelling rigs and rock-bolting rigs**

These have single or multiple articulated arms that can swivel through 180 degrees to drill holes and insert roof bolts or create holes for explosives in blasting to create tunnels. They may also include arms with a manriding access cage.

- **Jack-up rigs**

This is a floating barge that is manoeuvred into position so that the legs can extend to the river or sea bed below. The barge then jacks it self up to a working position.

- **Diamond core-drilling rigs**

These are towed trailers or lorry or chassis mounted. They are used to drill holes usually in concrete slabs or through roadways either for building construction or alterations (e.g. riser installation) or for access to underground services for emergency repairs.

## **Mini-piling rigs**

The rotating drill string of mini piling rigs must be guarded. Mini rigs are characterised by their relatively low centre of gravity, limited height and versatility.

**Driven piles** - Piling operations using rigs or piling attachments that drive a pile into the ground do not usually involve any rotation and therefore rotary entanglement is not an issue. This type of equipment is outside the scope of this guidance but note that some equipment is readily adapted to work in driven or rotary mode

**Bored piles** - use a short auger on a long stem that drills into the ground to load the auger and is then repeatedly withdrawn, slewed off bore and spun to remove the spoil.

**Continuous flight auger (CFA) piling** - use an auger that extends the full height of the drill string. This is drilled into the ground whilst rotating in one pass and then withdrawn, whilst the auger is slowly rotating. During withdrawal concrete is pumped down the hollow stem of the auger to maintain a positive pressure ahead of the auger.

**Pole Rigs** These are typically used by utility companies to auger holes for the erection of lamp standards or utility poles.

