

# Augered pile • Partial and full displacement augered pile

## 2.2 Augered pile with wide hollow stem (partial displacement augered pile)

The European standard EN 1536 also applies to this pile type. In principle, this type of pile is produced in the same way as described in section 2.1, and the same rotary drilling equipment is used. The hollow stem (central pipe) has a diameter of  $\approx 55\%$  of the drilling diameter. It is closed off at the bottom with a disposable base plate or drill tip. Due to the wider hollow stem of the continuous flight hollow auger, the soil is displaced to a greater extent when the auger is drilled into the ground. Once the final depth has been reached a reinforcement cage – if required – is inserted in the hollow stem and concrete is pumped in. As the concrete is pumped in it slowly fills the hollow stem. When it is completely full, a particular concrete pressure is established which can be read off and checked by the operator of the equipment on a monitor. When the auger is extracted, the concrete needs to be continuously pumped in to prevent the soil from

breaking in from the sides at the bottom end of the auger. As a result, the auger must always be directly in the column of fresh concrete which has just been pumped. It therefore also forms part of the resistance against the pressing-in force of the concrete. If the auger is extracted too rapidly then the concrete pressure will drop. In this case the extraction process needs to be stopped immediately until the required pressure has been re-attained by pumping in the concrete so that the column of pile concrete rises accordingly. This prevents the concrete column in the pile from separating. The concreting process is finished when the auger removes concrete when it is extracted under simultaneous rotation. Towards the end of the concreting stage it should be noted that the quantity of concrete in the central pipe corresponds to the volume of concrete which is still missing in the pile, i.e. pumping is continued without pressure.

