

PLASTIC COUPLING FOR SANITARY PLUMBING AND DRAINAGE SYSTEM

This invention relates to a plastic coupling which is to be anchored for example by nailing, onto formwork of concrete structural elements. After concreting the structural elements, the coupling receives an incoming or first plastic pipe and a fitting used in sanitary plumbing and drainage system.

The conventional method adopted by plumbers to install rain water pipe, soil waste, ventilating stack, discharge pipe and plumbing fittings is costly and cumbersome. In addition to these because of poor workmanship, water seepage leads to spalling of concrete next to the pipe often arises.

The conventional method, especially for cast-in-situ construction, usually involves making wooden formwork in the shape of a box with both ends opened. The box is nailed to the formwork before concrete is poured. After curing, the formwork is stripped, leaving an access hole in the slab to receive plastic pipes/fittings. Apart from a wooden box, formwork of other shapes and materials are also used for leaving an access hole in the concreted slab. After installation of pipes/fittings, formwork is erected underneath the slab for filling the access hole. The formwork is propped. Concrete mortar is mixed, usually manually, and poured to fill up the hole. After curing, the formwork for the access hole is removed and then a skimming coat is applied to make the filled portion lie

flush with the surrounding structure which may subsequently be plastered.

The sequence of installation is cumbersome and costly.

Furthermore, during plastering and brick laying, debris may drop into the pipes and these have to be cleared to prevent the pipes from being clogged.

Due often to poor workmanship, the mortar is of low quality, highly porous and not well compacted, water seeps through the mortar and flows along the outer surface of the pipe where there is little adhesion between the smooth surface of the pipe and mortar. This causes corrosion of reinforcing steel bars and then spalling of the concrete.

According to the present invention, a coupling comprises an open ended inlet pipe including a bore having an internal diameter for receiving a first pipe having an external diameter which permits insertion within the bore, and outlet pipe having an end portion with an external surface having an external diameter for receiving a second pipe having an internal diameter which permits location on the end portion, an external flange extending from the coupling for anchoring the coupling to wooden formwork, and a cover removably closing the inlet pipe.

The coupling hereinafter described complements and improves on the installation of sanitary plumbing and drainage pipes/fittings in the following ways:

- (a) Since there is no access hole to be filled with mortar which is porous and lacks adhesion to pipes, the perennial problem of water seepage through the mortar next to the pipe is avoided.
- (b) With the use of the coupling there is no preparation and installation of formwork to leave an access hole; no need to fill the access hole

with mortar after installation of pipes/fittings; no preparation of formwork and propping underneath the concreted slab to cover the access hole. Hence, the cumbersome sequence of installation of the coupling saves manpower and hence reduces the labour cost.

(c) The top of the coupling is covered by a removable cover and so during the construction there is no problem of debris from broken bricks or plastic cement dropping into the pipe/fitting. One particular and at present preferred embodiment of the invention is hereinafter described by reference to the accompanying drawings in which:-

Fig. 1 is a perspective view of a coupling;

Fig. 2 shows the bottom plan view of the coupling;

Fig. 3 shows the top plan view of the coupling;

Fig. 4 illustrates the installation of the coupling.

The coupling comprises a flange 1 with holes 2 for nailing onto the formwork. A hollow inlet pipe 3 and outlet pipe 4 passes through the flange. At the top end of the hollow inlet pipe 3 is a removable cover 5 which prevents debris from falling into the coupling during building construction. Water flows through the inlet pipe 3 the outlet pipe 4 and to prevent water leakage around the coupling, the internal diameter of the inlet pipe 3 is larger than the external diameter of an incoming pipe/fitting 6 so that the pipe/fitting 6 coming from the top can be slotted inside inlet pipe 3. As for outlet pipe

4, its external diameter is smaller than the internal diameter of an outgoing pipe/fitting 7 so that the outgoing pipe fitting 7 coming from the bottom can be slotted outside outlet pipe 4.

To use the coupling, it is first aligned and then a hole 9 is cut in the wooden formwork 8. The hollow outlet pipe 4 is then slotted into the hole 9 and the coupling is nailed onto the formwork. Concrete structural elements i.e. slabs, columns and beams, are now ready for concreting 10 followed by connecting an incoming pipe/fitting 6 and an outgoing pipe fitting 7.

CLAIMS



1. A coupling comprising

an open ended inlet pipe including a bore having an internal diameter for receiving a first pipe having an external diameter which permits insertion within the bore, and outlet pipe having an end portion with an external surface having an external diameter for receiving a second pipe having an internal diameter which permits location on the end portion,

an external flange extending from the coupling for anchoring the coupling to wooden formwork, and

a cover removably closing the inlet pipe.

2. A coupling according to claim 1 wherein the flange includes holes for attachment to the wooden formwork.

3. A coupling according to claim 1 or 2 constructed in a plastics material.

4. A coupling according to any preceding claim wherein the inlet pipe is disposed on one side of the flange, and the outlet portion is disposed on the other side of the flange.

5. A coupling as hereinbefore described with reference to, and as shown in the accompanying drawing.