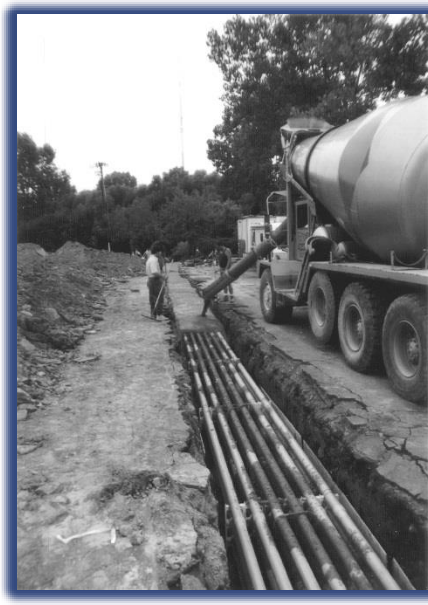
Prime Conduit, Inc.

P&C® Duct & Telephone Duct – Installation

Typical Installation Practices for P&C® Duct Type EB and Telephone Duct Type B

Trenching:
Whenever possible the walls of the trench for P&C Duct should act as forms for concrete encasement. The trench should be made no wider than necessary to provide the nominal size concrete thickness.

Duct Spacing:
Duct spacing, both vertical and horizontal, is accomplished with the use of spacers. Recommended interval between spacer assemblies is 8 to 10 feet.



Terminating:
For smooth cable pulling and properly engineered terminations into manholes, Prime Conduit P&C Duct end bells should be used.

Concrete:
The concrete used with P&C Duct should be 3/8" aggregate with a nominal compressive strength of 2,500 lbs. per square inch. The slump should be at the upper end of the range, preferably 7 to 8 inches. It should have just enough slump to flow to the bottom of the formation and yet not be so wet as to cause the ducts to float. In placing concrete around P&C Duct, adjust the delivery chute so the fall of the concrete into the trench is minimal. Use a splash board to divert the flow of concrete away from the trench sides and avoid dislodging soil and stones.

Pressure Grouting:
This technique is used for ducts in a casing or bored construction. Hydraulic pressure exceeding 25 psi is common and thus dictates the use of a P&C Duct Type DB-120 or a Schedule 40® product. (See collapse pressure chart). Hydraulic pressure from grouting is a function of the line pressure at the nozzle and back pressure created by pumping. If the exhaust nozzle isn't withdrawn properly, the back pressure will rapidly build and equal the line pressure. Depending on the type casing and pumping distance, line pressures will go up to 90 psi.

Hydraulic Pressure:
The primary consideration for duct selection is the height of the duct bank. Since concrete exerts a force of 1.03 psi per foot of height, to determine the correct duct selection, consider the following examples:

1. 16 way duct bank, 5" conduit, 4 x 4 configuration with 3" separation, and 3" concrete cover
   Concrete Height – 4 x 5.563" + 4 x 3 = 22.5 + 12" = 34.2"
   Hydraulic Pressure – (34.2"/12) x 1.03 = 2.9 psi

   In this instance the maximum force on the bottom ducts would be 2.9 psi, therefore, 5" EB-20 would be a satisfactory choice.

2. 16 way duct bank, 5" conduit, 8 x 2 configuration with 3" separation, and 3" concrete cover.
   Concrete Height – 8 x 5.563" + 8 x 3 = 44.5 + 24" = 68.5"
   Hydraulic Pressure — (68.5"/12) x 1.03 = 5.9 psi

   In this instance the hydraulic force is equal to the theoretical collapse pressure of 5" EB-20, therefore, the use of 5" EB-35 or DB-60 would be a satisfactory choice.

Another alternative would be to use a sequential pour technique. Pour approximately 1/2 the height, allow the concrete to set-up, and then pour the remaining distance. Using this method, 5" EB-20 would be satisfactory, since the hydraulic pressure has been reduced by 50%.