CODE

20.5.3.2 The sheathing shall be connected to all stressing, intermediate, and fixed anchorages in a watertight fashion.

20.5.3.3 Unbonded single-strand tendons shall be protected to provide resistance to corrosion in accordance with ACI 423.7.

20.5.4 *Corrosion protection for grouted tendons*

20.5.4.1 Ducts for grouted tendons shall be grout-tight and nonreactive with concrete, prestressing reinforcement, grout, and corrosion inhibitor admixtures.

20.5.4.2 Ducts shall be maintained free of water.

20.5.4.3 Ducts for grouted single-wire, single-strand, or single-bar tendons shall have an inside diameter at least 6 mm larger than the diameter of the prestressing reinforcement.

20.5.4.4 Ducts for grouted multiple wire, multiple strand, or multiple bar tendons shall have an inside cross-sectional area at least two times the cross-sectional area of the prestressing reinforcement.

20.5.5 *Corrosion protection for post-tensioning anchorages, couplers, and end fittings*

20.5.5.1 Anchorages, couplers, and end fittings shall be protected to provide long-term resistance to corrosion.

20.5.6 *Corrosion protection for external post-tensioning*

20.5.6.1 External tendons and tendon anchorage regions shall be protected to provide resistance to corrosion.

20.6—Embedments

20.6.1 Embedments shall not significantly impair the strength of the structure and shall not reduce fire protection.

COMMENTARY

R20.5.4 *Corrosion protection for grouted tendons*

R20.5.4.2 Water in ducts may cause corrosion of the prestressing reinforcement, may lead to bleeding and segregation of grout, and may cause distress to the surrounding concrete if subjected to freezing conditions. A corrosion inhibitor should be used to provide temporary corrosion protection if prestressing reinforcement is exposed in the ducts for prolonged periods of time before grouting (ACI 423.7).

R20.5.5 *Corrosion protection for post-tensioning anchorages, couplers, and end fittings*

R20.5.5.1 For recommendations regarding protection, refer to 4.2 and 4.3 of Mojtahedi and Gamble (1978) and 3.4, 3.6, 5, 6, and 6.3 of Breen et al. (1994).

R20.5.6 *Corrosion protection for external post-tensioning*

R20.5.6.1 Corrosion protection can be achieved by a variety of methods. The corrosion protection provided should be suitable to the environment in which the tendons are located. Some conditions will require that the prestressing reinforcement be protected by concrete cover or by cement grout in polyethylene or metal tubing; other conditions will permit the protection provided by coatings such as paint or grease. Corrosion protection methods should meet the fire protection requirements of the general building code, unless the installation of external post-tensioning is to only improve serviceability.

R20.6—Embedments

R20.6.1 Any embedments not harmful to concrete or reinforcement can be placed in the concrete, but the work should be done in such a manner that the structure will not