

This should be placed in layers of 6 inches to one foot and compacted to prevent future settlement and subsequent ponding of water near the foundation wall.

CONCRETE

Protection for concrete is essential during placing and curing in any region where temperatures below freezing are expected. Good practice requires that the concrete be warm when placed and that it be kept above freezing until it has gained sufficient strength to prevent damage when frozen. Concrete which has attained a strength of 500 psi is considered past the danger stage, although it is still not capable of withstanding repeated cycles of freezing and thawing. Further gain in strength will depend on temperature and humidity conditions, but care must be taken to see that temperatures do not rise to a high level. It is not generally realized that concrete which is not allowed to freeze and which is placed and cured at low temperatures above freezing develops higher ultimate strength and greater durability than concrete placed and cured at higher temperatures. It is only in winter that the contractor can provide the low temperatures required for top quality concrete.

While low temperatures are desirable, fresh concrete must not be allowed to freeze. When this happens the hydration of the cement ceases and ice crystals form within the concrete. While hydration will resume with a rise in temperature, the disruption caused by the expanding ice crystals will have so damaged the concrete that it will never attain the strength of unfrozen concrete and may, in severe cases, be completely destroyed.

All necessary equipment and materials for the protection of the concrete should be on the site well in advance of freezing weather. With the concrete in place and the temperature dropping below freezing it is often too late to begin collecting protective equipment and materials.

The next step in winter concreting is to select suitable aggregate.