

Soft, shaly stones are dangerous since they absorb water and may cause rupture after the concrete has hardened particularly when the concrete is subjected to cycles of freezing and thawing. Further information on the making of concrete is contained in Better Building Bulletin No. 3, "Concrete" published by the Division of Building Research.

Heating the Mix

The table below indicates, for various outside temperatures, the requirements for heating of aggregate and water and also the recommended temperature of the concrete in the mixer.

Air Temperatures	Water	Aggregates		Concrete Temp. at mixer
		Sand	Coarse	
Above 30°F.	Heated	—	—	60 to 80°F.
30 to 0°F.	"	Heated	—	65 to 90°F.
Below 0°F.	"	"	Heated	70 to 90°F.

When the air temperature is just below freezing, the required temperature for the concrete mix can be obtained by heating the water only. This assumes, however, that the aggregate is not frozen and no ice is contained in the aggregate. Later as the weather becomes colder and stockpiles freeze, heat is also applied to the sand. In severe winter weather coarse aggregate is also heated.

The temperature of the mixing water should be controlled to avoid variations from batch to batch. If either the water or the aggregate is heated to a temperature above 100°F., water and aggregate should come together first in the mixer in such a way that the temperature of the combination is reduced to below 100°F. before the cement is added. This will prevent flash set.