

HEAT OF HYDRATION

Heat of hydration is the heat generated when cement and water react. The amount of heat generated is dependent chiefly upon the chemical composition of the cement, with C3A and C3S being the compounds primarily responsible for high heat evolution.

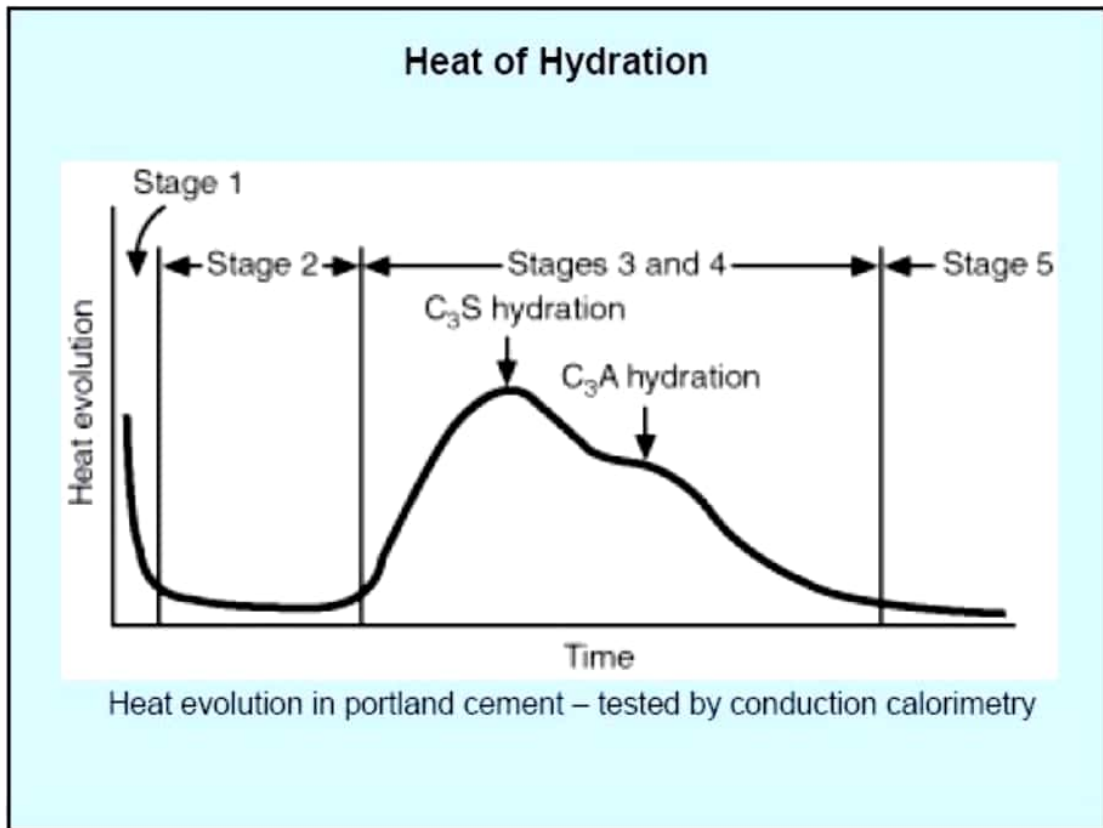
Characteristics of Hydration of the Cement Compounds



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Compounds	Reaction Rate	Amount of Liberated	Strength	Heat Liberation
C3S	Moderate	Moderate	High	High
C2S	Slow	Low	Low initially, high later	Low
C3A + CSH ₂	Fast	Very high	Low	Very high
C4AF+CSH ₂	Moderate	Moderate	Low	Moderate

Hydration of Portland Cement





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Strength development



Strength development

