

Cold Weather Concrete Provisions

Matt Reiter
FCS - Facilities Engineering



Outline

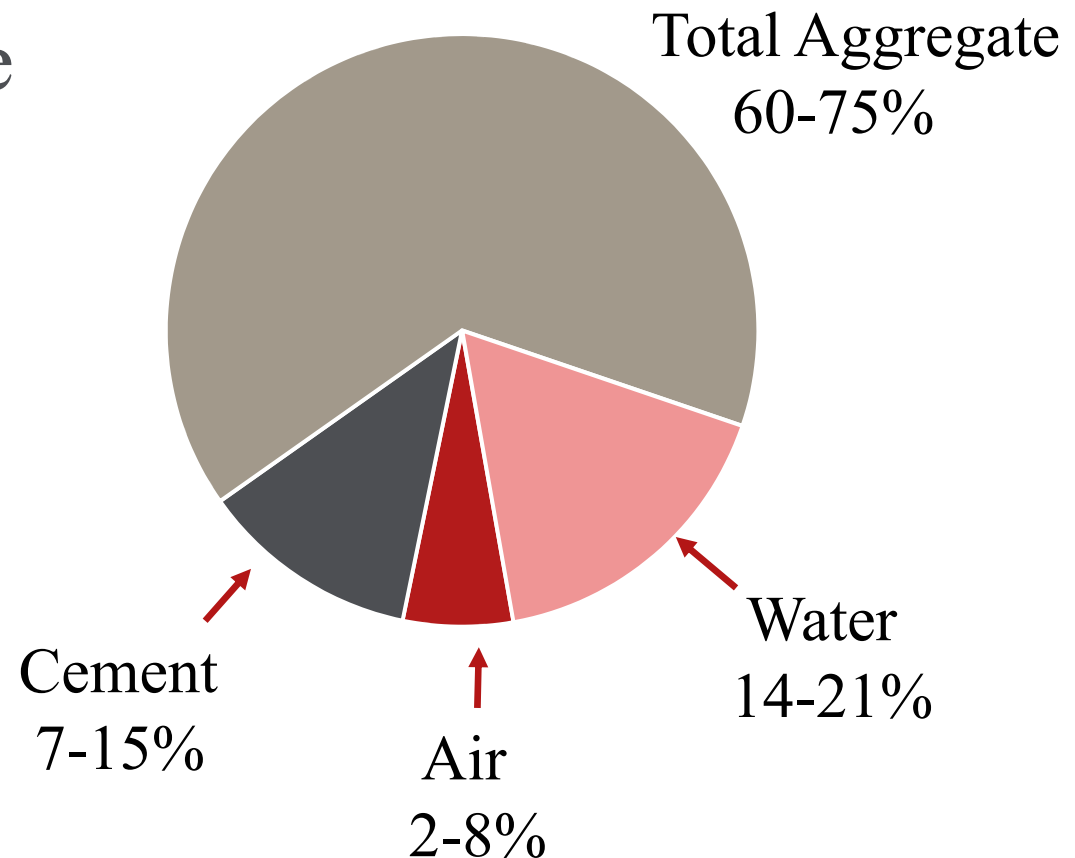
- Theory - Concrete Chemistry
- Technical Standard:
ACI 306 - Cold Weather Concrete
- Implementing on Your Project

Concrete – Back to the Basics

Components

- Coarse Aggregate
- Fine Aggregate
- Cement
- Water
- Admixtures

Concrete Proportion Absolute Volume



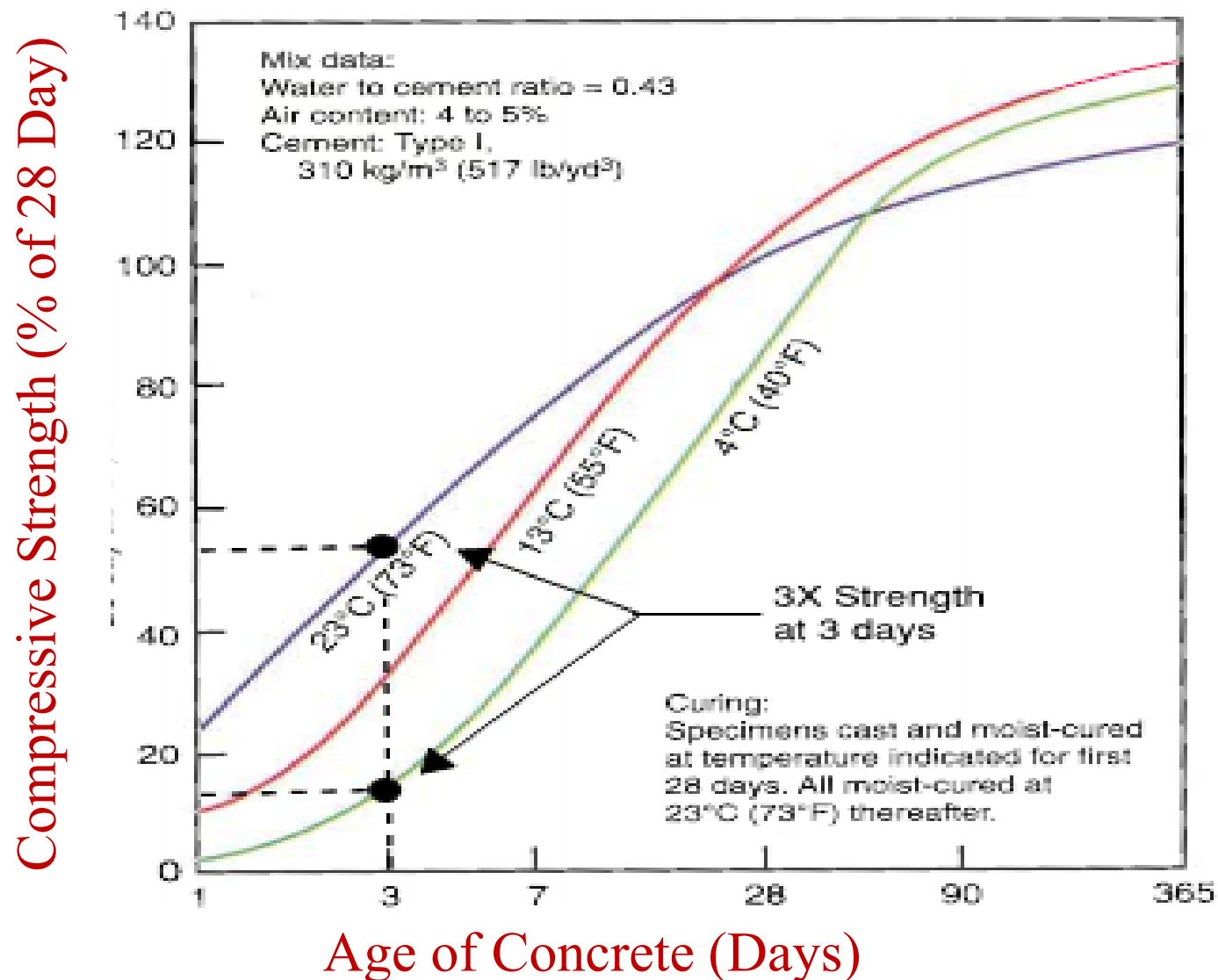
Concrete – Chemistry

Cement - Just Add Water...

- Highly reactive and unstable
- Water triggers exothermic chemical reaction
- Cement particles hydrate



Concrete Strength Gain – Cold Weather



ACI 306 ($< 40^{\circ}\text{F}$) Specs:

Min Rebar/Formwork Temp

Min Conc Temp – Batched/ Delivery

Min Conc Temp – Placed/Maintained

Protection Period Duration - Days

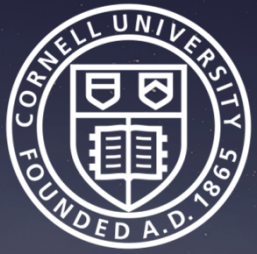


.....Plus Critical Elements that Require Specific Guidance

Implementing on Your Project

- Engineer of Record Specifies ACI 306
- Contractor Submittal
- Preinstallation Meeting:
 - Temps
 - Protection Period
 - Critical Elements
- 3rd Party Inspection





Thank You

