Acceptance & Quality Control

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General Outline

- **Action & adjustments**
- **Example**
- **Quality assurance**
- **Role of in-situ testing**

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Quality Control

$\{$ *DI+n$\times$G$\}$/n= average change*

=8.1 σ/n+σ/6 for mean and correlation

$\{$ *DI+n$\times$G$\}$/n= average change*

=8.5 σ/n+σ/10 for SD

Quality Control

✠ ***Accordingly change the mix design***

$\Delta f = 8.1\ \sigma/n + \sigma/6;$

$f = K_1 \times K_2^{\text{w/c}}$ where

$$f = \text{Strength} = \frac{A}{B^{w/c}}\ (\text{Abraham's law});$$
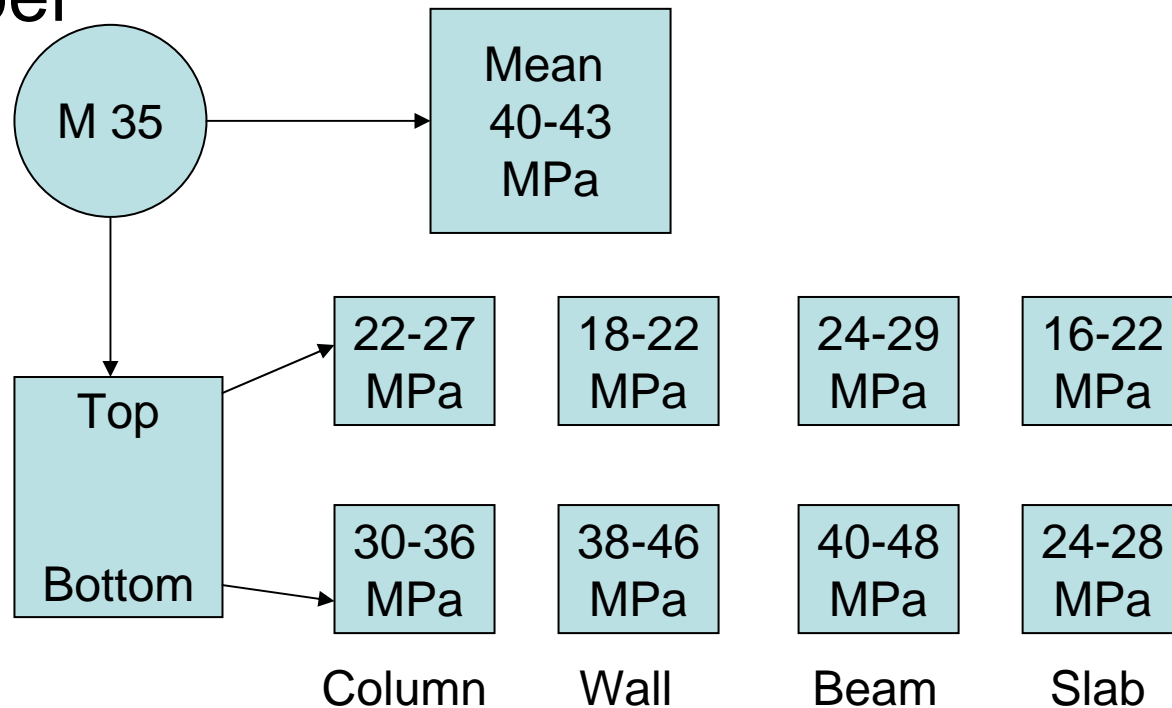
$K_1 = A \text{ and } K_2 = B^{-1}$

$$K_1 = \left[58.11 \times \ln f_{0.5} - 60.47\right]$$

$$K_2 = \left[\frac{f_{0.5}}{540.76} - \frac{1}{6371.84}\right]$$

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IN STRUCTURE VARIATION

- Concrete properties varies systematically within a member

M 35 → Mean 40-43 MPa

Top

Bottom

	Column	Wall	Beam	Slab
Top	22-27 MPa	18-22 MPa	24-29 MPa	16-22 MPa
Bottom	30-36 MPa	38-46 MPa	40-48 MPa	24-28 MPa

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Summary

Action

Insitu testing

THANK YOU FOR HEARING

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