

Concrete Technology

Concrete Properties

a)  $S = \frac{P}{F} = \frac{900}{225 \text{ cm}^2} = 40 \text{ MPa}$

Compressive strength



c)  Volume: $V = 15 \times 15 \times 15 = 3375 \text{ cm}^3$

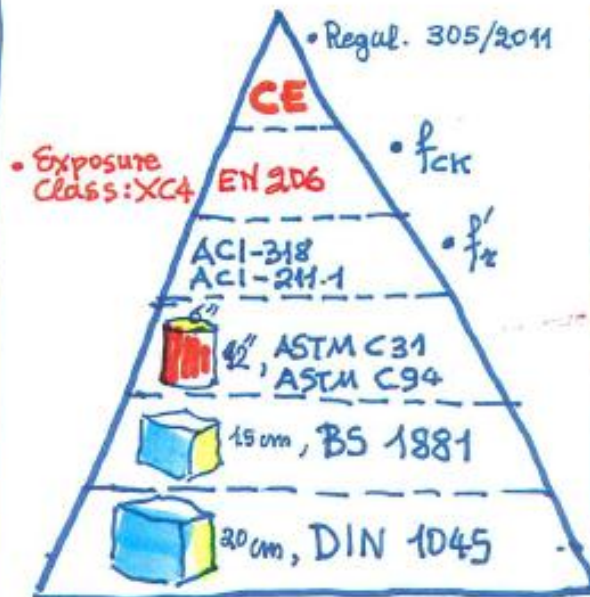
$d = \frac{W}{V} = \frac{8040}{3375} = 2.382 \text{ kg/m}^3$

Unit weight (density)

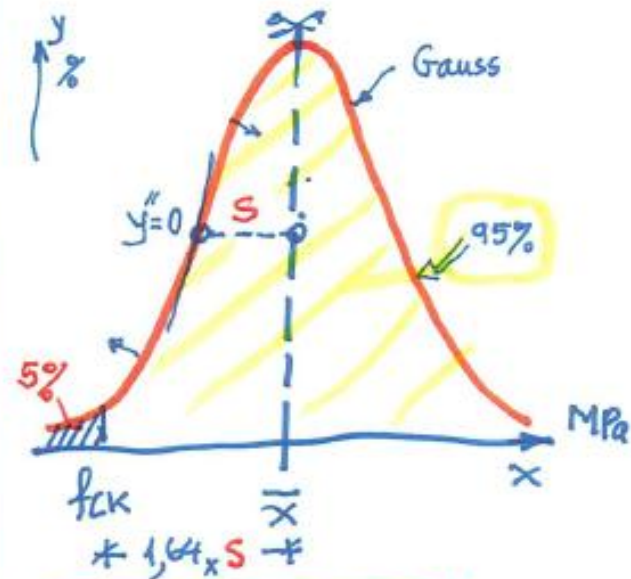
d) $W/C \leq 0.45 - 0.50$ (* Water-Cement Ratio)

(DURABILITY)

Concrete Standards Acceptance/Compliance



- * DIN 1045: German Standard
- * BS 1881: British Standards
- * ASTM, ACI: American Standards and Recommended Practice
- * EN 206-2021: European Standard (CEN/TC404-Brussels)
- * CE: European Conformancy



$$f_{cr} = f_{ck} + 1.64 \cdot S$$

* Compliance Criteria

$$\left\{ \begin{array}{l} \bar{f}_c \geq f_{ck} + 1.64 \cdot S \\ f_i \geq f_{ck} - 2 \text{ MPa} \end{array} \right\}$$

* ie: 6 cubes/150m³/per day

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