

ACI 562M - 13 Method

Bibliography (5) – 2013

✓ 562M-13

(Chapter 06 ¶ 6.4.3) requires that the cores have to be selected and removed in accordance with ASTM C42 and ASTM C823. The equivalent specified concrete strength is calculated using the following formula :

$$f_{c,eq} = 0.9 * f_{c,m} * \left(1 - 1.28 * \sqrt{\frac{(k_c * V)^2}{n}} + 0.0015 \right)$$

Where :

$f_{c,eq}$: equivalent specified strength of ^{BATCH} concrete ^{cores} (N/mm²)

$f_{c,m}$: average core strength as modified to account for the diameter and moisture condition of the core (N/mm²) (see : ACI 214.4R-10 table 9.1)

n : q.ty of cores (-)

k_c : coeff. of variation modification factor (-)

V : coeff. of variation of the core strengths (-)

Table 6.4.3—Coefficient of variation modification factor k_c

n	k_c
2	2.4
3	1.47
4	1.28
5	1.20
6	1.15
8	1.10
10	1.08
12	1.06
16	1.05
20	1.03
25 or more	1.02

Coefficient of Variation due to in-place strength variation through-out the structure, V

Structure composed of	One member	Many members
One batch of concrete	0.067	0.084
Many batches of concrete		
Cast in place	0.120	0.130
Precast	0.090	0.103

IS THIS OK ?

NOTE : all linear interpolations are allowed