Rate of placing

The user and/or reader of this manual must check for available updates of the illustrated tables and values.

Recommendations for concrete placement

- Concrete should be placed in layers, the thickness of which can vary from 18" to 4'.
- Concrete must not be placed from great heights (exceeding 5') at free fall.
- When vibrating the concrete, which is done layer by layer, the vibrator must not penetrate more than 18" into the layer below.
- A final vibrating over the overall concrete height is not recommended. It does not provide any advantage, since concrete that has been vibrated once cannot be compacted further. This may result only in water bubbles (shrinkage cavities) on the concrete surface.

Legend for equations:

P_{max} = max. lateral pressure (psf)

R = rate of placement (ft/h)

T = temperature of concrete (°F)

C_w = unit weight coefficient

C_c = chemistry coefficient

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Coefficients to be used in pressure equations

Unit weight coefficient, C_w	
Concrete weighing less than 140 pcf	$C_w = 0.5\ (1+ w/145)$ but not less than 0.80
Concrete weighing 140 to 150 pcf	$C_w = 1.0$
Concrete weighing more than 150 pcf	$C_w = w/145$

Chemistry coefficient, C_c	
Types I, II and III cement without retarders*	1.0
Types I, II and III cement with a retarder*	1.2
Other types or blends containing less than 70% slag or 40% fly ash without retarders*	1.2
Other types or blends containing less than 70% slag or 40% fly ash with a retarder*	1.4
Blends containing more than 70% slag or 40% fly ash	1.4

* Retarders include any admixture, such as a retarder, retarding water reducer, retarding midrange water-reducing admixture, or high-range water-reducing admixture (super-plasticizer), that delays setting of concrete.

For concrete having a slump of 7 in. or less and placed with normal internal vibration to a depth of 4 ft or less, formwork can be designed for a lateral pressure as follows:

For columns: $P_{max} = C_w C_c\ [150 + 9000R/T]$

with a minimum of 600 C_w lb/ft², but in no case greater than wh.

For walls with a rate of placement of less than 7 ft/h and a placement height not exceeding 14 ft:

$$P_{max} = C_w C_c\ [150 + 9000R/T]$$

with a minimum of 600 C_w lb/ft², but in no case greater than wh.

For walls with a placement rate less than 7 ft/h where placement height excees 14 ft, and for all walls with a placement rate of 7 to 15 ft/h:

$$P_{max} = C_w C_c\ [150 + 43{,}400/T + 2800\ R/T]$$

with a minimum of 600 C_w lb/ft², but in no case greater than wh.

DSI Taper tie, She-bolt: Technical data

Taper tie 3/4" to 1" Safe working load [lbs]	18,750
She-bolt 5/8" Safe working load [lbs]	21,900

DSI Thru-rod: Technical data

Thru-rod 5/8"	
Safe working load [lbs]	21,900