

To be used to review joint movement calculations

Sample Calculation: Post tensioned, 100°, MR = 3"

Contributory Length = $(3) / [100^\circ (0.0000060 \times 1,200) + 0.63] / 100' = 222'$ say 220'

| TOTAL JOINT MOVEMENT (MR) (Inches) | MAXIMUM CONTRIBUTORY STRUCTURE LENGTH | | | | | | | | | | | |
|------------------------------------|---------------------------------------|---------------------|---------------------|-----------------------|------------|---------------------|---------------------|-----------------------|------------|---------------------|---------------------|-----------------------|
| | 80° RANGE | | | | 100° RANGE | | | | 120° RANGE | | | |
| | Steel | Reinforced Concrete | Pretension Concrete | Post Tension Concrete | Steel | Reinforced Concrete | Pretension Concrete | Post Tension Concrete | Steel | Reinforced Concrete | Pretension Concrete | Post Tension Concrete |
| ½" | 80. | 80. | 70. | 40. | 65. | 65. | 60. | 40. | 55. | 55. | 50. | 35. |
| 1" | 160. | 160. | 145. | 85. | 130. | 130. | 120. | 75. | 105. | 110. | 100. | 65. |
| 1½" | 240. | 235. | 215. | 125. | 195. | 190. | 180. | 110. | 160. | 160. | 150. | 100. |
| 2" | 320. | 315. | 285. | 165. | 255. | 255. | 240. | 150. | 215. | 215. | 200. | 135. |
| 2½" | 400. | 395. | 360. | 210. | 320. | 320. | 300. | 185. | 265. | 270. | 255. | 170. |
| 3" | 480. | 470. | 430. | 250. | 385. | 385. | 360. | 220. | 320. | 325. | 305. | 200. |
| 3½" | 560. | 550. | 505. | 290. | 450. | 450. | 415. | 260. | 375. | 380. | 355. | 235. |
| 4" | 640. | 630. | 575. | 330. | 515. | 515. | 475. | 300. | 425. | 430. | 405. | 270. |

| FACTORS USED | | |
|---------------------------|--------------------------|--------------------------------------|
| Type of Structure | Coefficient of Expansion | Anticipated Shortening (in./100 ft.) |
| Steel | 0.0000065 | 0.00 |
| Concrete (Conventional) | 0.0000060 | 0.06 |
| Concrete (Pretensioned) | 0.0000060 | 0.12 |
| Concrete (Post Tensioned) | 0.0000060 | 0.63* |

*Note: Anticipated shortening and remaining approximately 11 weeks after stressing.