

**TABLE IX**  
**STEEL TAPE TEMPERATURE CORRECTIONS**

| Thermometer Reading | Temperature Correction | Thermometer Reading | Temperature Correction | Thermometer Reading | Temperature Correction |
|---------------------|------------------------|---------------------|------------------------|---------------------|------------------------|
| -10                 | -.050                  | 28                  | -.026                  | 66                  | -.001                  |
| - 9                 | -.050                  | 29                  | -.025                  | 67                  | -.001                  |
| - 8                 | -.049                  | 30                  | -.025                  | 68                  | .000                   |
| - 7                 | -.048                  | 31                  | -.024                  | 69                  | +.001                  |
| - 6                 | -.048                  | 32                  | -.023                  | 70                  | +.001                  |
| - 5                 | -.047                  | 33                  | -.023                  | 71                  | +.002                  |
| - 4                 | -.046                  | 34                  | -.022                  | 72                  | +.003                  |
| - 3                 | -.046                  | 35                  | -.021                  | 73                  | +.003                  |
| - 2                 | -.045                  | 36                  | -.021                  | 74                  | +.004                  |
| - 1                 | -.045                  | 37                  | -.020                  | 75                  | +.005                  |
| 0                   | -.044                  | 38                  | -.019                  | 76                  | +.005                  |
| 1                   | -.043                  | 39                  | -.019                  | 77                  | +.006                  |
| 2                   | -.043                  | 40                  | -.018                  | 78                  | +.006                  |
| 3                   | -.042                  | 41                  | -.017                  | 79                  | +.007                  |
| 4                   | -.042                  | 42                  | -.017                  | 80                  | +.008                  |
| 5                   | -.041                  | 43                  | -.016                  | 81                  | +.008                  |
| 6                   | -.040                  | 44                  | -.015                  | 82                  | +.009                  |
| 7                   | -.039                  | 45                  | -.015                  | 83                  | +.010                  |
| 8                   | -.039                  | 46                  | -.014                  | 84                  | +.010                  |
| 9                   | -.038                  | 47                  | -.014                  | 85                  | +.011                  |
| 10                  | -.037                  | 48                  | -.013                  | 86                  | +.012                  |
| 11                  | -.037                  | 49                  | -.012                  | 87                  | +.012                  |
| 12                  | -.036                  | 50                  | -.012                  | 88                  | +.013                  |
| 13                  | -.035                  | 51                  | -.011                  | 89                  | +.014                  |
| 14                  | -.035                  | 52                  | -.010                  | 90                  | +.014                  |
| 15                  | -.034                  | 53                  | -.010                  | 91                  | +.015                  |
| 16                  | -.034                  | 54                  | -.009                  | 92                  | +.015                  |
| 17                  | -.033                  | 55                  | -.008                  | 93                  | +.016                  |
| 18                  | -.032                  | 56                  | -.008                  | 94                  | +.017                  |
| 19                  | -.032                  | 57                  | -.007                  | 95                  | +.017                  |
| 20                  | -.031                  | 58                  | -.006                  | 96                  | +.018                  |
| 21                  | -.030                  | 59                  | -.006                  | 97                  | +.019                  |
| 22                  | -.030                  | 60                  | -.005                  | 98                  | +.019                  |
| 23                  | -.029                  | 61                  | -.005                  | 99                  | +.020                  |
| 24                  | -.028                  | 62                  | -.004                  | 100                 | +.021                  |
| 25                  | -.028                  | 63                  | -.003                  | 101                 | +.021                  |
| 26                  | -.027                  | 64                  | -.003                  | 102                 | +.022                  |
| 27                  | -.026                  | 65                  | -.002                  | 103                 | +.023                  |

Temperature Correction Normal 68 Degrees. Tape Temperature Correction for each Degree 0.000645 per 100 Ft. based on the formula  $C = 0.0000645 (T - 68)L$ . Where; C = Correction in Ft., T = present temperature, in Degrees Fahrenheit, and L = distance measured to nearest foot.

**EXAMPLE**

When chaining 200 feet to set a hub when the temperature is 40° F., the correction from the table is shown as -.018 for 100 feet or .036 for 200 feet. This means that the tape is .018 feet too  
(Cont.)

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(Cont.)

short due to the difference in temperature and must be added to each 100 foot measurement. Therefore, 200.036 feet would be measured with the steel tape to set a hub at the actual distance of 200 feet.

In measuring the distance between two known points with this tape the inverse of the above would apply. A 200 foot measurement between the two known points would be 200 feet  $-.036$  feet for an actual distance of 199.964 feet.

A mercurial Fahrenheit thermometer with at least 2° graduations from  $-20^{\circ}$  to  $+120^{\circ}$  should be used to ascertain the proper temperature correction. Thermometers that can be attached directly to the tape are readily available.

**TABLE X**  
STEEL TAPE WORKING TENSIONS

Tensions in pounds when supported throughout or at ends only.

| LENGTH<br>Type |       | 50 Ft. |    | 100 Ft. |    | 200 Ft. |    | 300 Ft. |    |
|----------------|-------|--------|----|---------|----|---------|----|---------|----|
|                |       | ST     | SE | ST      | SE | ST      | SE | ST      | SE |
| 1/8"           | Chain | 10     | 10 | 10      | 19 | 20      | 30 | 20      | 37 |
| 1/4"           | Chain | 10     | 13 | 10      | 27 | 20      | 45 | 20      | 57 |
| 5/16"          | Chain | 10     | 15 | 10      | 31 | 20      | 50 | 20      | 64 |

ST = Supported throughout entire length (tension in pounds)

SE = Supported at ends only (tension in pounds)

A tension handle capable of measuring 0 to 60 pounds of pull should be used for accurate chaining.

When measuring distances shorter than the length of the steel tape being used, a palm sized clamping handle should always be used to provide a steady pull and to prevent damage to the tape.