

## 慣性モーメントの圖式計算 (三)

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### § 3. 圖表の作成

板桁断面の算定に當つては、慣性モーメントの算出に相當の手續を要することでもあるので、前にも述べた如く種々の略算法が行はれてゐる次第である。

然るに、先般發表されたところの「鋼道路橋設計示方書案」第八十六條によれば、

「板桁断面ノ設計ハ其ノ總断面ノ中立線ノ周リノ慣性モーメントニ依ルベシ

引張線應力及壓縮線應力ハ次式ニ依リテ算出スベシ

$$\delta_t = \frac{M \cdot y_t}{I} \cdot \frac{A_g}{A_n}$$

$$\delta_c = \frac{M \cdot y_c}{I}$$

$\delta_1$  = 引張線應力 ( $kg/cm^2$ )

$\delta_0$  = 壓縮線應力 ( $kg/cm^2$ )

$M$  = 曲げモーメント ( $kg-cm$ )

$I$  = 鋼桁總斷面ノ中立線ノ周リノ慣性モーメント ( $cm^4$ )

$y_1$  = 中立線ヨリ引張線ニ至ル距離 ( $cm$ )

$y_0$  = 中立線ヨリ壓縮線ニ至ル距離 ( $cm$ )

$A_0$  = 引張突縁ノ總斷面積 (突縁山形鋼及蓋板斷面積) ( $cm^2$ ) とある。

又本邦鐵道省に於ても、別に設計々算規定としては設けられてゐないが、従来より鋼桁の設計に於ては總斷面に對する中立線の周りの慣性モーメントを求め、然る後に、

壓縮線應力  $\delta_0$  は

$$\delta_0 = \frac{M \cdot h}{I \cdot z}$$

引張線應力  $\delta_1$  は

$$\delta_1 = \frac{b}{b - nd} \cdot \delta_0$$

によつて求めることになつてゐる。

茲に、

$n$  は控除すべき鉄數

$d$  は銀孔の直径

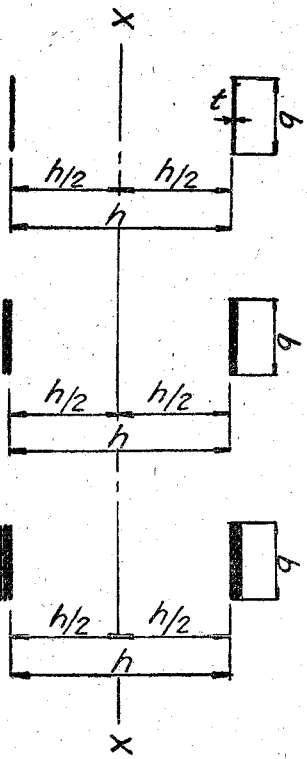
$b$  は蓋鉄の幅

を示す。

即ち、現在本邦に於て道路橋及び鐵道橋鋼筋桁の設計を算を行ふに當つては、先づ鋼筋總斷面の中立線の周りの慣性モーメントを求めなければならぬ事になつてゐる。

故に、本文に於ても鋼筋總斷面の中立線の周りの慣性モーメント圖表を作成することとしたのである。

(1) 蓋鉄の慣性モーメント



$b$  = 蓋鉄の幅 (cm)

$h$  = 山形背面間 (cm)

$t$  = 蓋鉄の厚さ (cm)

$I = X-X$  軸に對する慣性モーメント

( $cm^4$ )

とすれば

蓋鉄上下二枚宛の場合

$$I_2 = \frac{1}{3} b t \{ 4t^2 + 3(h + 2t)^2 \}$$

蓋鉄上下二枚宛の場合

$$I_3 = \frac{1}{2} b t \{ 9t^2 + 3(h + 3t)^2 \}$$

蓋鉄上下三枚宛の場合

$$I_1 = \frac{1}{6} b t \{ t^2 + 3(h + t)^2 \}$$

第 四 圖

今、 $b=10cm$  とすれば、

$$I_1 = \frac{5}{3} f^3 + 5f(h+d)^2$$

$$I_2 = \frac{40}{3} f^3 + 10f(h+2f)^2$$

$$I_3 = 45f^3 + 15f(h+3f)^2$$

(1)

となる。

(1) 式に夫々  $f$  及び  $h$  の値を入れて蓋板 (幅10cm) の慣性モーメント (I) を求めれば、附表-1、附表 2 及び附表 3 の如くなる。

附表 1

| 蓋板厚サ<br>(mm) | 使用<br>枚数 | 重 量<br>(kg/m) | 山 形 背 面 間 (mm) |         |         |         |         |         |         |         |
|--------------|----------|---------------|----------------|---------|---------|---------|---------|---------|---------|---------|
|              |          |               | 100            | 200     | 300     | 400     | 500     | 600     | 700     | 800     |
| 8            | 1        | 12.560        | 467.41         | 1731.41 | 3795.41 | 6659.41 | 10323.4 | 14787.4 | 20051.4 | 26115.4 |
|              | 2        | 25.120        | 1083.31        | 3739.31 | 7995.31 | 13851.3 | 21307.3 | 30363.3 | 41019.3 | 53275.3 |
|              | 3        | 37.680        |                |         | 12620.2 | 21596.2 | 32972.2 | 46748.2 | 62924.2 | 81500.2 |
| 9            | 1        | 14.130        | 535.86         | 1966.86 | 4297.86 | 7528.86 | 11659.9 | 16690.9 | 22621.9 | 29452.9 |
|              | 2        | 28.260        | 1262.88        | 4286.88 | 9110.88 | 15734.9 | 24158.9 | 34382.9 | 46406.9 | 60230.9 |
|              | 3        | 42.390        |                |         | 14468.2 | 24647.2 | 37526.2 | 53105.2 | 71384.2 | 92363.2 |
| 10           | 1        | 15.700        | 606.67         | 2206.67 | 4806.67 | 8406.67 | 13006.7 | 18606.7 | 25206.7 | 32806.7 |
|              | 2        | 31.400        | 1453.33        | 4853.33 | 10253.3 | 17653.3 | 27053.3 | 38453.3 | 51853.3 | 67253.3 |
|              | 3        | 47.100        |                |         | 16380.0 | 27780.0 | 42180.0 | 59580.0 | 79980.0 | 103380  |

|    |   |        |         |         |         |         |         |         |         |         |
|----|---|--------|---------|---------|---------|---------|---------|---------|---------|---------|
| 11 | 1 | 17.270 | 679.87  | 2450.87 | 5821.87 | 9292.87 | 14363.9 | 20534.9 | 27805.9 | 36176.9 |
|    | 2 | 34.540 | 1654.99 | 5438.99 | 11423.0 | 19607.0 | 29991.0 | 42875.0 | 57359.0 | 74343.0 |
|    | 3 | 51.810 |         |         | 18356.6 | 30995.6 | 46934.6 | 66173.6 | 88712.6 | 114552  |
| 12 | 1 | 18.840 | 755.52  | 2699.52 | 5843.52 | 10187.5 | 15731.5 | 22475.5 | 30419.5 | 39563.5 |
|    | 2 | 37.680 | 1868.16 | 6044.16 | 12620.2 | 21596.2 | 32972.2 | 46748.2 | 62924.2 | 81500.2 |
|    | 3 | 56.520 |         |         | 20399.0 | 34895.0 | 51791.0 | 72887.0 | 97583.0 | 125879  |
| 14 | 1 | 21.980 | 914.29  | 3210.29 | 6906.29 | 12002.3 | 18498.3 | 26394.3 | 35690.3 | 46386.3 |
|    | 2 | 43.960 | 2330.35 | 7314.35 | 15098.3 | 25682.3 | 39066.3 | 55250.3 | 74234.3 | 96018.3 |
|    | 3 | 65.940 |         |         | 24685.9 | 41149.9 | 61813.9 | 86677.9 | 115742  | 149006  |
| 15 | 1 | 23.550 | 997.50  | 3472.50 | 7447.50 | 12922.5 | 19897.5 | 28372.5 | 38347.5 | 49822.5 |
|    | 2 | 47.100 | 2580.00 | 7980.00 | 16380.0 | 27780.0 | 42180.0 | 59580.0 | 79980.0 | 103380  |
|    | 3 | 70.650 |         |         | 26932.5 | 44707.5 | 66982.5 | 93757.5 | 125033  | 160808  |
| 16 | 1 | 25.120 | 1083.31 | 3739.31 | 7995.31 | 13851.3 | 21307.3 | 30363.3 | 41019.3 | 53275.3 |
|    | 2 | 50.240 | 2842.45 | 8666.45 | 17690.5 | 29914.5 | 45338.5 | 63962.5 | 85786.5 | 110810  |
|    | 3 | 75.360 |         |         | 29249.3 | 48353.3 | 72257.3 | 100961  | 134465  | 172769  |

附表 2

| 蓋板厚度<br>(mm) | 使用<br>枚數 | 重 量<br>(kg/m) | 山 形 背 面 間 (mm) |         |         |         |      |      |      |      |
|--------------|----------|---------------|----------------|---------|---------|---------|------|------|------|------|
|              |          |               | 900            | 1000    | 1100    | 1200    | 1300 | 1400 | 1500 | 1600 |
| 8            | 1        | 12.560        | 32979.4        | 40643.4 | 49107.4 | 58371.4 |      |      |      |      |
|              | 2        | 25.120        | 67131.3        | 82587.3 | 99643.3 | 118299  |      |      |      |      |

|    |   |        |          |          |          |          |          |          |         |         |  |  |  |
|----|---|--------|----------|----------|----------|----------|----------|----------|---------|---------|--|--|--|
| 9  | 3 | 37,680 | 102,476  | 125,852  | 151,628  | 179,804  |          |          |         |         |  |  |  |
|    | 1 | 14,130 | 37,183.9 | 45,814.9 | 55,345.9 | 65,776.9 | 77,107.9 | 89,338.9 | 102,470 | 116,501 |  |  |  |
|    | 2 | 28,260 | 75,854.9 | 93,278.9 | 112,503  | 133,527  | 156,351  | 180,975  | 207,399 | 235,623 |  |  |  |
| 10 | 3 | 42,390 | 116,042  | 142,421  | 171,500  | 203,279  | 237,758  | 274,937  | 314,816 | 357,395 |  |  |  |
|    | 1 | 15,700 | 41,406.7 | 51,006.7 | 61,606.7 | 73,206.7 | 85,806.7 | 99,406.7 | 114,007 | 129,607 |  |  |  |
|    | 2 | 31,400 | 84,653.3 | 104,053  | 125,453  | 148,853  | 174,253  | 201,653  | 231,053 | 262,453 |  |  |  |
| 11 | 3 | 47,100 | 129,780  | 159,180  | 191,580  | 226,980  | 265,380  | 306,780  | 351,180 | 398,580 |  |  |  |
|    | 1 | 17,270 | 45,647.9 | 56,218.9 | 67,889.9 | 80,660.9 | 94,531.9 | 109,503  | 125,574 | 142,745 |  |  |  |
|    | 2 | 34,540 | 93,527.0 | 114,911  | 138,495  | 164,279  | 192,263  | 222,447  | 254,831 | 289,415 |  |  |  |
| 12 | 3 | 51,810 | 143,691  | 176,130  | 211,869  | 250,908  | 293,247  | 338,886  | 387,825 | 440,064 |  |  |  |
|    | 1 | 18,840 | 49,907.5 | 61,451.5 | 74,195.5 | 88,139.5 | 103,284  | 119,628  | 137,172 | 155,916 |  |  |  |
|    | 2 | 37,680 | 102,476  | 125,852  | 151,628  | 179,804  | 210,380  | 243,556  | 278,732 | 316,508 |  |  |  |
| 14 | 3 | 56,520 | 157,775  | 193,271  | 232,367  | 275,063  | 321,359  | 371,255  | 424,751 | 481,847 |  |  |  |
|    | 1 | 21,980 | 58,482.3 | 71,978.3 | 86,874.3 | 103,170  | 120,866  | 139,962  | 160,458 | 182,354 |  |  |  |
|    | 2 | 48,960 | 120,602  | 147,986  | 178,170  | 211,154  | 246,938  | 285,522  | 326,906 | 371,090 |  |  |  |
| 15 | 3 | 65,940 | 186,470  | 228,134  | 279,998  | 324,062  | 373,326  | 436,790  | 499,454 | 566,318 |  |  |  |
|    | 1 | 23,550 | 62,797.5 | 77,272.5 | 93,247.5 | 110,723  | 129,698  | 150,173  | 171,148 | 195,623 |  |  |  |
|    | 2 | 47,100 | 129,780  | 159,180  | 191,580  | 226,980  | 265,380  | 306,780  | 351,180 | 398,580 |  |  |  |
| 16 | 3 | 70,650 | 201,083  | 248,858  | 295,133  | 348,908  | 407,183  | 469,958  | 537,233 | 609,008 |  |  |  |
|    | 1 | 25,120 | 67,131.3 | 82,587   | 99,643.3 | 118,299  | 138,555  | 160,411  | 183,867 | 209,923 |  |  |  |
|    | 2 | 50,240 | 139,034  | 170,458  | 205,082  | 242,906  | 283,930  | 328,154  | 375,578 | 426,202 |  |  |  |

|   |        |        |        |        |        |        |        |        |        |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 3 | 75.360 | 215873 | 263777 | 316481 | 373985 | 436289 | 503393 | 575297 | 652001 |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|

附表 3

| 蓋紙厚さ<br>(mm) | 使用<br>枚數 | 重<br>量<br>(kg/m) | 山 形 背 面 間 (mm) |        |        |        |        |        |        |         |         |  |  |
|--------------|----------|------------------|----------------|--------|--------|--------|--------|--------|--------|---------|---------|--|--|
|              |          |                  | 1700           | 1800   | 1900   | 2000   | 2100   | 2200   | 2300   | 2400    | 2500    |  |  |
| 8            | 1        | 12.560           |                |        |        |        |        |        |        |         |         |  |  |
|              | 2        | 25.120           |                |        |        |        |        |        |        |         |         |  |  |
|              | 3        | 37.680           |                |        |        |        |        |        |        |         |         |  |  |
| 9            | 1        | 14.130           | 131432         | 147263 | 163994 | 181625 |        |        |        |         |         |  |  |
|              | 2        | 28.260           | 265647         | 297471 | 331095 | 366519 |        |        |        |         |         |  |  |
|              | 3        | 42.390           | 402674         | 450653 | 501332 | 554711 |        |        |        |         |         |  |  |
| 10           | 1        | 15.700           | 146207         | 163807 | 182407 | 202007 |        |        |        |         |         |  |  |
|              | 2        | 31.400           | 295853         | 331253 | 368653 | 408053 |        |        |        |         |         |  |  |
|              | 3        | 47.100           | 448980         | 502380 | 558780 | 618180 |        |        |        |         |         |  |  |
| 11           | 1        | 17.270           | 161016         | 180387 | 200858 | 222429 | 245100 | 268871 | 293742 | 319713  | 346784  |  |  |
|              | 2        | 34.540           | 326199         | 365183 | 406387 | 449751 | 495335 | 543119 | 593103 | 645287  | 699671  |  |  |
|              | 3        | 51.810           | 495603         | 554442 | 616601 | 682020 | 750759 | 822798 | 898137 | 976776  | 1058715 |  |  |
| 12           | 1        | 18.840           | 175860         | 197004 | 219118 | 242892 | 27635  | 293579 | 320723 | 349067  | 378611  |  |  |
|              | 2        | 37.680           | 356684         | 399260 | 444236 | 491612 | 541388 | 593564 | 648140 | 705116  | 764492  |  |  |
|              | 3        | 56.520           | 542543         | 606839 | 674735 | 746231 | 821327 | 900023 | 982319 | 1068215 | 1157711 |  |  |

資 料

|      |   |        |        |        |        |         |         |         |         |         |         |
|------|---|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|
| 14   | 1 | 21,980 | 205650 | 230346 | 256442 | 283938  | 312834  | 343130  | 374836  | 407922  | 442418  |
|      | 2 | 43,960 | 418074 | 467858 | 520442 | 575826  | 634010  | 694994  | 758778  | 825362  | 894746  |
|      | 3 | 65,940 | 667382 | 712646 | 792110 | 875774  | 963638  | 1055702 | 1151966 | 1252430 | 1357094 |
| 15 # | 1 | 23,550 | 220598 | 247073 | 275048 | 304523  | 335497  | 367972  | 401947  | 437422  | 474397  |
|      | 2 | 47,100 | 448980 | 502380 | 558780 | 618180  | 680580  | 745980  | 814380  | 885780  | 960180  |
|      | 3 | 70,650 | 685283 | 766058 | 851383 | 941108  | 1035382 | 1134157 | 1237432 | 1345207 | 1457482 |
| 16   | 1 | 25,120 | 235579 | 263835 | 293691 | 325147  | 358203  | 392859  | 429115  | 466971  | 506427  |
|      | 2 | 50,240 | 480026 | 537050 | 597274 | 660698  | 727322  | 797146  | 870170  | 946394  | 1025818 |
|      | 3 | 75,360 | 733505 | 819809 | 910913 | 1006817 | 1107521 | 1213025 | 1323329 | 1438433 | 1558337 |

(2) 山形鋼の慣性モーメント

$h$  = 山形背面間 (cm)

$h_g$  = 山形鋼重心間 (cm)

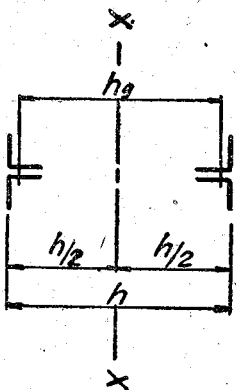
$A_a$  = 山形鋼断面積 (cm<sup>2</sup>)

$I_a$  = 山形鋼の自己重心軸に對する慣性モーメント (cm<sup>4</sup>)

$I = X-X$  軸に對する慣性モーメント (cm<sup>4</sup>)

とすれば、

$$I = 4 \left\{ I_a + A_a \left( \frac{h_g}{2} \right)^2 \right\} \dots \dots \dots (2)$$



第五圖

(2) 式より山形鋼 (4-I<sub>a</sub>) の慣性モーメント (I) を求むれば、附表-4 乃至附表-12 に示すが如くなる。



附表 4

| 寸法<br>A×B<br>(mm) | 規定厚<br>t<br>(mm) | 重量<br>kg/m | 山形管間 (mm) |        |        |        |         |         |         |         |  |
|-------------------|------------------|------------|-----------|--------|--------|--------|---------|---------|---------|---------|--|
|                   |                  |            | 200       | 300    | 400    | 500    | 600     | 700     | 800     | 900     |  |
| 75 75             | 6                | 27,400     | 2,382     | 6,029  | 11,423 | 18,561 | 27,446  | 38,075  | 50,450  | 64,570  |  |
|                   | 9                | 39,840     | 3,386     | 8,639  | 16,431 | 26,761 | 39,628  | 55,034  | 72,978  | 93,459  |  |
|                   | 12               | 52,000     | 4,300     | 11,083 | 21,178 | 34,585 | 51,304  | 71,335  | 94,678  | 121,333 |  |
| 80 80             | 6                | 29,280     | 2,341     | 6,357  | 12,076 | 19,661 | 29,111  | 40,426  | 53,607  | 68,653  |  |
|                   | 9                | 42,800     | 3,556     | 9,112  | 17,386 | 28,377 | 42,037  | 58,514  | 77,660  | 99,523  |  |
|                   | 12               | 55,600     | 4,522     | 11,704 | 22,438 | 36,725 | 54,563  | 75,953  | 100,895 | 129,389 |  |
| 90 90             | 7                | 38,360     | 3,141     | 8,054  | 15,410 | 25,210 | 37,455  | 52,143  | 69,276  | 88,852  |  |
|                   | 10               | 53,200     | 4,263     | 11,022 | 21,181 | 34,740 | 51,700  | 72,059  | 95,818  | 122,977 |  |
|                   | 13               | 68,000     | 5,309     | 13,854 | 26,742 | 43,971 | 65,542  | 91,455  | 121,710 | 156,307 |  |
| 100 100           | 7                | 42,800     |           | 8,738  | 16,801 | 27,588 | 41,099  | 57,334  | 76,293  | 97,977  |  |
|                   | 10               | 59,600     |           | 11,991 | 23,156 | 38,120 | 56,885  | 79,449  | 105,813 | 135,978 |  |
|                   | 13               | 76,400     |           | 15,074 | 29,352 | 48,291 | 72,193  | 100,956 | 134,582 | 173,069 |  |
| 130 130           | 9                | 71,600     |           | 13,428 | 26,153 | 43,426 | 65,248  | 91,617  | 122,534 | 158,000 |  |
|                   | 12               | 93,600     |           | 17,281 | 33,804 | 56,279 | 84,706  | 119,084 | 159,415 | 205,698 |  |
|                   | 15               | 115,200    |           | 20,956 | 41,198 | 68,790 | 103,731 | 146,023 | 195,665 | 253,657 |  |
| 150 150           | 11               | 100,400    |           | 17,945 | 35,135 | 58,726 | 88,716  | 125,106 | 167,397 | 217,087 |  |
|                   | 12               | 108,400    |           | 19,279 | 37,899 | 63,212 | 95,546  | 134,792 | 180,951 | 234,021 |  |
|                   | 15               | 134,400    |           | 23,423 | 46,126 | 77,378 | 117,177 | 165,525 | 222,420 | 287,864 |  |
|                   | 19               | 167,600    |           | 28,565 | 56,621 | 95,354 | 144,762 | 204,847 | 275,607 | 357,044 |  |

|         |    |         |        |         |         |         |         |         |
|---------|----|---------|--------|---------|---------|---------|---------|---------|
| 200 200 | 15 | 181,200 | 57,563 | 96,949  | 147,884 | 210,370 | 284,405 | 369,991 |
|         | 20 | 238,800 | 74,095 | 125,380 | 191,865 | 273,549 | 370,434 | 482,519 |
|         | 25 | 294,400 | 89,305 | 151,892 | 233,230 | 333,317 | 452,155 | 589,742 |

附 表 5

| 寸 法<br>A×B<br>(mm) | 規 定 厚<br>t<br>(mm) | 重 量<br>kg/m | 山 形 背 面 間 (mm) |         |         |         |         |         |         |         |
|--------------------|--------------------|-------------|----------------|---------|---------|---------|---------|---------|---------|---------|
|                    |                    |             | 1000           | 1100    | 1200    | 1300    | 1400    | 1500    | 1600    | 1700    |
| 75 75              | 6                  | 27,400      | 80,436         | 98,047  | 117,403 | 138,505 | 161,353 | 185,945 | 212,283 | 240,367 |
|                    | 9                  | 39,840      | 116,479        | 142,036 | 170,132 | 200,766 | 233,937 | 269,647 | 307,895 | 348,680 |
|                    | 12                 | 52,000      | 151,299        | 184,578 | 221,169 | 261,072 | 304,287 | 350,814 | 400,653 | 453,804 |
| 80 80              | 6                  | 29,280      | 85,565         | 104,342 | 124,985 | 147,493 | 171,866 | 198,105 | 226,209 | 256,178 |
|                    | 9                  | 42,800      | 123,105        | 151,405 | 181,422 | 214,158 | 249,612 | 287,783 | 328,673 | 372,280 |
|                    | 12                 | 55,600      | 161,435        | 197,033 | 236,184 | 278,886 | 325,140 | 374,946 | 428,304 | 485,214 |
| 90 90              | 7                  | 38,360      | 110,873        | 135,337 | 162,245 | 191,598 | 223,394 | 257,635 | 294,319 | 333,448 |
|                    | 10                 | 53,200      | 153,536        | 187,496 | 224,855 | 265,614 | 309,773 | 357,332 | 408,292 | 462,651 |
|                    | 13                 | 68,000      | 195,246        | 238,527 | 286,150 | 338,115 | 394,422 | 455,071 | 520,062 | 589,395 |
| 100 100            | 7                  | 42,800      | 122,384        | 149,515 | 179,370 | 211,949 | 247,252 | 285,279 | 326,030 | 369,505 |
|                    | 10                 | 59,600      | 169,942        | 207,707 | 249,271 | 294,635 | 343,800 | 396,764 | 453,529 | 514,093 |
|                    | 13                 | 76,400      | 216,419        | 264,631 | 317,704 | 375,640 | 438,437 | 506,097 | 578,619 | 656,002 |
| 130 130            | 9                  | 71,600      | 198,013        | 242,574 | 291,683 | 343,341 | 403,546 | 466,299 | 533,601 | 605,450 |
|                    | 12                 | 93,600      | 257,293        | 316,119 | 380,258 | 450,349 | 526,392 | 608,386 | 696,338 | 790,232 |
|                    | 15                 | 115,200     | 316,999        | 388,691 | 467,733 | 554,125 | 647,367 | 743,959 | 857,400 | 973,192 |

|         |    |         |         |         |           |           |           |           |           |           |
|---------|----|---------|---------|---------|-----------|-----------|-----------|-----------|-----------|-----------|
| 150 150 | 11 | 100,400 | 272,678 | 334,668 | 403,058   | 477,849   | 559,039   | 646,630   | 740,620   | 841,010   |
|         | 12 | 108,400 | 294,003 | 360,898 | 434,704   | 515,422   | 603,053   | 697,595   | 799,049   | 907,416   |
|         | 15 | 134,400 | 361,855 | 444,395 | 535,482   | 635,418   | 743,301   | 860,033   | 985,312   | 1,119,140 |
|         | 19 | 167,600 | 449,156 | 551,945 | 665,409   | 789,550   | 924,366   | 1,069,859 | 1,226,027 | 1,392,872 |
| 200 200 | 15 | 181,200 | 467,126 | 575,812 | 696,047   | 827,833   | 971,168   | 1,126,054 | 1,292,489 | 1,470,475 |
|         | 20 | 238,800 | 609,804 | 752,289 | 909,973   | 1,082,858 | 1,270,943 | 1,474,228 | 1,692,713 | 1,926,397 |
|         | 25 | 294,400 | 746,080 | 921,167 | 1,115,005 | 1,327,592 | 1,558,930 | 1,809,017 | 2,077,855 | 2,365,442 |

附表 6

| 寸法<br>A×B<br>(mm) | 規定厚<br>t<br>(mm) | 重量<br>kg/m | 山形背面間 (mm) |         |         |         |           |           |           |           |
|-------------------|------------------|------------|------------|---------|---------|---------|-----------|-----------|-----------|-----------|
|                   |                  |            | 1800       | 1900    | 2000    | 2100    | 2200      | 2300      | 2400      | 2500      |
| 75 75             | 6                | 27,400     | 270,196    | 301,770 | 335,090 | 370,155 | 406,965   | 445,521   | 485,822   | 527,869   |
|                   | 9                | 39,840     | 392,004    | 437,866 | 486,265 | 537,203 | 590,679   | 646,692   | 705,244   | 766,384   |
|                   | 12               | 52,000     | 510,267    | 570,042 | 633,129 | 699,528 | 769,239   | 842,262   | 918,597   | 998,244   |
| 80 80             | 6                | 29,280     | 288,013    | 321,714 | 357,279 | 394,710 | 434,007   | 475,169   | 518,196   | 563,089   |
|                   | 9                | 42,800     | 418,606    | 467,649 | 519,411 | 573,891 | 631,088   | 691,004   | 753,637   | 818,989   |
|                   | 12               | 55,600     | 545,676    | 609,691 | 677,257 | 748,375 | 823,045   | 901,267   | 983,041   | 1,068,567 |
| 90 90             | 7                | 38,360     | 375,020    | 419,037 | 465,497 | 514,401 | 565,750   | 619,542   | 675,779   | 734,459   |
|                   | 10               | 53,200     | 520,410    | 581,569 | 646,128 | 714,088 | 785,447   | 860,206   | 938,365   | 1,019,924 |
|                   | 13               | 68,000     | 663,070    | 741,087 | 823,446 | 910,147 | 1,001,191 | 1,096,576 | 1,196,303 | 1,300,372 |

|         |    |         |           |           |           |           |           |           |           |           |
|---------|----|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 100 100 | 7  | 42,800  | 415,704   | 464,627   | 516,274   | 570,645   | 627,740   | 687,559   | 750,102   | 815,369   |
|         | 10 | 59,600  | 578,457   | 646,622   | 718,586   | 794,351   | 873,915   | 957,279   | 1,044,444 | 1,135,408 |
|         | 13 | 76,400  | 738,248   | 825,355   | 917,325   | 1,014,157 | 1,115,850 | 1,222,406 | 1,333,823 | 1,450,103 |
| 130 130 | 9  | 71,600  | 681,847   | 762,793   | 848,386   | 938,327   | 1,032,917 | 1,132,054 | 1,235,739 | 1,343,972 |
|         | 12 | 93,600  | 890,083   | 995,885   | 1,107,640 | 1,225,347 | 1,349,006 | 1,478,616 | 1,614,179 | 1,755,694 |
|         | 15 | 115,200 | 1,096,334 | 1,226,826 | 1,364,668 | 1,509,860 | 1,662,402 | 1,822,294 | 1,989,536 | 2,164,128 |
| 150 150 | 11 | 100,400 | 947,801   | 1,060,991 | 1,180,582 | 1,306,572 | 1,438,962 | 1,577,753 | 1,722,943 | 1,874,534 |
|         | 12 | 108,400 | 1,022,694 | 1,144,884 | 1,273,987 | 1,410,001 | 1,552,927 | 1,702,766 | 1,859,516 | 2,023,178 |
|         | 15 | 134,400 | 1,261,515 | 1,412,439 | 1,571,910 | 1,739,930 | 1,916,497 | 2,101,613 | 2,295,276 | 2,497,488 |
| 200 200 | 19 | 167,600 | 1,570,392 | 1,758,589 | 1,957,461 | 2,167,010 | 2,387,235 | 2,618,135 | 2,859,712 | 3,111,964 |
|         | 15 | 181,200 | 1,660,010 | 1,861,096 | 2,073,731 | 2,297,917 | 2,533,652 | 2,780,938 | 3,039,773 | 3,310,159 |
|         | 20 | 238,800 | 2,175,282 | 2,439,367 | 2,738,652 | 3,013,137 | 3,322,821 | 3,647,706 | 3,987,791 | 4,343,076 |
|         | 25 | 294,400 | 2,671,780 | 2,996,867 | 3,340,705 | 3,703,292 | 4,084,630 | 4,484,717 | 4,903,555 | 5,341,142 |

附表 7

| 寸法<br>A×B<br>(mm) | 規定厚<br>t<br>(mm) | 重量<br>kg/m | 山形背面間 (mm) |        |        |        |        |        |        |         |
|-------------------|------------------|------------|------------|--------|--------|--------|--------|--------|--------|---------|
|                   |                  |            | 200        | 300    | 400    | 500    | 600    | 700    | 800    | 900     |
| 80 70             | 6                | 27,400     | 2,483      | 6,212  | 11,685 | 18,904 | 27,869 | 38,578 | 51,034 | 65,234  |
|                   | 9                | 39,840     | 3,521      | 8,886  | 16,790 | 27,231 | 40,210 | 55,728 | 73,783 | 94,376  |
|                   | 12               | 51,960     | 4,473      | 11,401 | 21,642 | 35,195 | 52,059 | 72,236 | 95,725 | 122,525 |

|        |    |        |       |        |        |        |        |        |         |         |
|--------|----|--------|-------|--------|--------|--------|--------|--------|---------|---------|
| 90 60  | 6  | 27,400 | 2,686 | 6,564  | 12,188 | 19,557 | 28,671 | 39,591 | 52,136  | 66,487  |
|        | 9  | 39,840 | 3,810 | 9,394  | 17,516 | 28,175 | 41,373 | 57,108 | 75,382  | 96,194  |
|        | 12 | 52,000 | 4,844 | 12,058 | 22,583 | 36,421 | 53,736 | 74,198 | 97,971  | 125,057 |
| 90 75  | 6  | 30,240 | 2,720 | 6,205  | 12,816 | 20,753 | 30,615 | 42,402 | 56,115  | 71,753  |
|        | 9  | 44,000 | 3,867 | 9,764  | 18,468 | 29,981 | 44,302 | 61,431 | 81,368  | 104,112 |
|        | 12 | 57,600 | 4,922 | 12,552 | 23,854 | 38,829 | 57,475 | 79,794 | 105,784 | 135,446 |
| 90 80  | 7  | 36,160 | 3,130 | 7,923  | 15,019 | 24,419 | 36,124 | 50,132 | 66,444  | 85,061  |
|        | 10 | 50,400 | 4,239 | 10,825 | 20,610 | 33,596 | 49,781 | 69,167 | 91,753  | 117,558 |
|        | 13 | 64,000 | 5,261 | 13,572 | 25,965 | 42,440 | 62,997 | 87,636 | 116,357 | 149,160 |
| 100 75 | 7  | 37,280 | 3,388 | 8,454  | 15,894 | 25,708 | 37,896 | 52,458 | 69,394  | 88,704  |
|        | 10 | 52,000 | 4,592 | 11,561 | 21,831 | 35,401 | 52,270 | 72,440 | 95,909  | 122,679 |
|        | 13 | 66,000 | 5,706 | 14,509 | 27,524 | 44,751 | 66,190 | 91,841 | 121,705 | 155,780 |
| 100 80 | 7  | 38,360 | 3,391 | 8,524  | 16,100 | 26,121 | 38,585 | 53,493 | 70,846  | 90,642  |
|        | 10 | 53,200 | 4,600 | 11,666 | 22,131 | 35,996 | 53,261 | 73,926 | 97,992  | 125,457 |
|        | 13 | 68,000 | 5,731 | 14,667 | 27,945 | 45,565 | 67,526 | 93,830 | 124,476 | 159,464 |
| 100 90 | 7  | 40,400 | 3,393 | 8,639  | 16,469 | 26,882 | 39,880 | 55,461 | 73,627  | 94,376  |
|        | 10 | 56,400 | 4,609 | 11,838 | 22,667 | 37,096 | 55,125 | 76,753 | 101,982 | 130,811 |
|        | 13 | 72,400 | 5,731 | 14,871 | 28,612 | 46,956 | 69,901 | 97,449 | 129,598 | 166,350 |

附表 8

鋼盤S型 鐵口十寸總 鐵火鋼

11頁

| 寸法<br>A×B<br>(mm) | 規定厚<br>t<br>(mm) | 重量<br>kg/m | 山形背面間 (mm) |         |         |         |         |         |         |         |
|-------------------|------------------|------------|------------|---------|---------|---------|---------|---------|---------|---------|
|                   |                  |            | 1000       | 1100    | 1200    | 1300    | 1400    | 1500    | 1600    | 1700    |
| 80 70             | 6                | 27,400     | 81,180     | 98,871  | 118,308 | 139,490 | 162,418 | 187,091 |         |         |
|                   | 9                | 39,840     | 117,508    | 143,177 | 171,384 | 202,130 | 235,413 | 271,234 |         |         |
|                   | 12               | 52,000     | 152,638    | 186,063 | 222,800 | 262,848 | 306,209 | 352,882 |         |         |
| 90 60             | 6                | 27,400     | 82,583     | 100,425 | 120,012 | 141,344 | 164,422 | 189,245 |         |         |
|                   | 9                | 39,840     | 119,543    | 145,431 | 173,856 | 204,820 | 238,322 | 274,361 |         |         |
|                   | 12               | 52,000     | 155,454    | 188,998 | 226,020 | 266,353 | 309,999 | 356,956 |         |         |
| 90 75             | 6                | 30,240     | 89,316     | 108,805 | 130,220 | 153,559 | 178,824 | 206,015 | 235,131 | 266,172 |
|                   | 9                | 44,000     | 129,665    | 158,026 | 189,195 | 223,172 | 259,956 | 299,549 | 341,950 | 387,159 |
|                   | 12               | 57,600     | 168,781    | 205,787 | 246,466 | 290,816 | 338,839 | 390,533 | 445,899 | 504,938 |
| 90 80             | 7                | 36,160     | 105,981    | 129,205 | 154,734 | 182,566 | 212,702 | 245,143 | 279,887 | 316,935 |
|                   | 10               | 50,400     | 146,524    | 178,709 | 214,095 | 252,681 | 294,466 | 339,452 | 387,637 | 439,023 |
|                   | 13               | 64,000     | 186,045    | 227,012 | 272,061 | 321,192 | 374,405 | 431,700 | 493,077 | 558,536 |
| 100 75            | 7                | 37,280     | 110,388    | 134,447 | 160,879 | 189,685 | 220,865 | 254,419 | 290,347 | 328,649 |
|                   | 10               | 52,000     | 152,749    | 186,118 | 222,788 | 262,757 | 306,027 | 352,597 | 402,466 | 455,636 |
|                   | 13               | 66,000     | 194,067    | 236,566 | 283,277 | 334,200 | 389,335 | 448,682 | 512,241 | 580,012 |
| 100 80            | 7                | 38,360     | 112,883    | 137,567 | 164,695 | 194,268 | 226,284 | 260,745 | 297,649 | 336,997 |
|                   | 10               | 53,200     | 156,322    | 190,587 | 228,252 | 269,318 | 313,783 | 361,648 | 412,913 | 467,578 |
|                   | 13               | 68,000     | 198,794    | 242,466 | 290,479 | 342,835 | 399,533 | 460,573 | 525,955 | 595,679 |

|        |    |        |         |         |         |         |         |         |         |         |
|--------|----|--------|---------|---------|---------|---------|---------|---------|---------|---------|
| 100 90 | 7  | 40,400 | 117,710 | 143,627 | 172,129 | 203,214 | 236,884 | 273,137 | 311,975 | 353,396 |
|        | 10 | 56,400 | 163,240 | 199,269 | 238,897 | 282,126 | 328,955 | 379,384 | 433,413 | 491,041 |
|        | 13 | 72,400 | 207,704 | 253,659 | 304,217 | 359,376 | 419,138 | 483,501 | 552,467 | 626,035 |

附表 9

| 寸法<br>A×B<br>(mm) | 規定厚<br>t<br>(mm) | 重量<br>kg/m | 山形背面間 (mm) |         |         |         |      |      |      |      |
|-------------------|------------------|------------|------------|---------|---------|---------|------|------|------|------|
|                   |                  |            | 1800       | 1900    | 2000    | 2100    | 2200 | 2300 | 2400 | 2500 |
| 80 70             | 6                | 27,400     |            |         |         |         |      |      |      |      |
|                   | 9                | 39,840     |            |         |         |         |      |      |      |      |
| 90 60             | 6                | 27,400     |            |         |         |         |      |      |      |      |
|                   | 9                | 39,840     |            |         |         |         |      |      |      |      |
| 90 75             | 6                | 30,240     | 299,139    | 334,031 | 370,848 |         |      |      |      |      |
|                   | 9                | 44,000     | 435,176    | 486,000 | 539,533 | 704,085 |      |      |      |      |
| 90 80             | 7                | 36,160     | 356,287    | 397,944 | 441,904 |         |      |      |      |      |
|                   | 10               | 50,400     | 493,609    | 551,380 | 612,380 |         |      |      |      |      |
|                   | 13               | 64,000     | 628,077    | 701,700 | 779,404 |         |      |      |      |      |

|        |    |        |         |         |         |         |           |           |           |           |
|--------|----|--------|---------|---------|---------|---------|-----------|-----------|-----------|-----------|
| 100 75 | 7  | 37,280 | 369,325 | 412,376 | 457,800 | 505,598 | 555,770   | 608,316   | 663,236   | 720,530   |
|        | 10 | 52,000 | 512,105 | 571,875 | 634,945 | 701,314 | 770,984   | 843,953   | 920,223   | 999,793   |
|        | 13 | 66,000 | 651,995 | 723,190 | 808,598 | 893,217 | 982,048   | 1,075,091 | 1,172,346 | 1,273,813 |
| 100 80 | 7  | 38,360 | 378,790 | 423,026 | 469,707 | 513,931 | 570,399   | 624,412   | 680,868   | 739,769   |
|        | 10 | 53,200 | 525,644 | 587,109 | 651,974 | 720,239 | 791,904   | 866,970   | 945,435   | 1,027,300 |
|        | 13 | 68,000 | 669,744 | 748,152 | 830,902 | 917,994 | 1,009,428 | 1,105,204 | 1,205,321 | 1,309,781 |
| 100 90 | 7  | 40,400 | 397,402 | 443,991 | 493,165 | 544,922 | 599,264   | 656,189   | 715,699   | 777,792   |
|        | 10 | 56,400 | 552,270 | 617,099 | 685,528 | 757,557 | 833,183   | 912,414   | 995,243   | 1,081,672 |
|        | 13 | 72,400 | 704,204 | 786,976 | 874,349 | 966,325 | 1,062,902 | 1,164,082 | 1,269,864 | 1,380,247 |

附表 10

| 寸法<br>A×B<br>(mm) | 規定厚<br>t<br>(mm) | 重量<br>kg/m | 山形背面間 (mm) |        |        |        |        |         |         |         |
|-------------------|------------------|------------|------------|--------|--------|--------|--------|---------|---------|---------|
|                   |                  |            | 200        | 300    | 400    | 500    | 600    | 700     | 800     | 900     |
| 125 75            | 7                | 42,800     | 4,050      | 9,972  | 18,617 | 29,987 | 44,081 | 60,899  | 80,441  | 103,707 |
|                   | 9                | 54,000     | 5,020      | 12,440 | 23,297 | 35,873 | 53,606 | 74,777  | 99,387  | 127,434 |
|                   | 10               | 59,600     | 5,510      | 13,687 | 25,665 | 41,443 | 61,020 | 84,398  | 111,575 | 142,553 |
| 125 90            | 13               | 76,400     | 6,867      | 17,223 | 32,441 | 52,521 | 77,463 | 107,267 | 141,933 | 181,461 |
|                   | 7                | 46,000     | 4,048      | 10,145 | 19,176 | 31,141 | 46,040 | 63,872  | 84,639  | 108,340 |
|                   | 9                | 58,400     | 5,037      | 12,690 | 24,051 | 39,121 | 57,898 | 80,383  | 106,577 | 136,478 |
| 125 90            | 10               | 64,400     | 5,516      | 13,945 | 26,475 | 43,105 | 63,834 | 88,664  | 117,593 | 150,623 |



|         |    |         |       |        |        |        |         |         |         |         |
|---------|----|---------|-------|--------|--------|--------|---------|---------|---------|---------|
| 150 90  | 9  | 65,600  | 5,903 | 14,715 | 27,715 | 44,902 | 66,278  | 91,841  | 121,593 | 155,532 |
|         | 12 | 86,000  | 7,520 | 18,913 | 35,778 | 58,114 | 85,923  | 119,294 | 157,956 | 202,181 |
|         | 15 | 106,000 | 9,031 | 22,936 | 43,591 | 70,996 | 105,151 | 146,056 | 193,711 | 248,116 |
| 150 100 | 9  | 68,400  | 5,894 | 14,814 | 28,101 | 45,757 | 67,780  | 94,172  | 124,931 | 160,058 |
|         | 12 | 89,600  | 7,514 | 19,052 | 36,303 | 59,265 | 87,939  | 122,325 | 162,424 | 208,234 |
|         | 15 | 110,800 | 9,025 | 23,110 | 44,246 | 72,432 | 107,668 | 149,290 | 199,290 | 255,676 |
| 175 90  | 9  | 72,800  |       | 16,626 | 31,162 | 50,335 | 74,147  | 102,596 | 135,684 | 173,409 |
|         | 12 | 95,200  |       | 21,414 | 40,310 | 65,278 | 96,318  | 133,430 | 176,614 | 225,870 |
|         | 15 | 117,600 |       | 26,007 | 49,182 | 79,857 | 118,032 | 163,707 | 216,882 | 277,557 |

附表 11

| 寸法<br>A×B<br>(mm) | 規定厚<br>t<br>(mm) | 重量<br>gk/m | 山形背面間 (mm) |         |         |         |         |         |         |         |
|-------------------|------------------|------------|------------|---------|---------|---------|---------|---------|---------|---------|
|                   |                  |            | 1000       | 1100    | 1200    | 1300    | 1400    | 1500    | 1600    | 1700    |
| 125 75            | 7                | 42,800     | 127,697    | 155,411 | 185,849 | 219,011 | 254,897 | 293,507 | 334,841 | 378,899 |
|                   | 9                | 54,000     | 158,919    | 193,842 | 232,203 | 274,003 | 319,240 | 367,915 | 420,028 | 475,579 |
|                   | 10               | 59,600     | 177,331    | 215,908 | 258,286 | 304,463 | 354,441 | 408,219 | 465,796 | 527,174 |
|                   | 13               | 76,400     | 225,851    | 275,103 | 329,217 | 388,193 | 452,031 | 520,731 | 594,233 | 672,717 |
|                   | 7                | 46,000     | 134,975    | 164,544 | 197,047 | 232,483 | 270,854 | 312,159 | 356,398 | 403,571 |

|         |    |         |         |         |         |         |         |         |         |           |
|---------|----|---------|---------|---------|---------|---------|---------|---------|---------|-----------|
| 125 90  | 9  | 58,400  | 170,087 | 207,404 | 248,430 | 293,163 | 341,604 | 393,754 | 449,611 | 509,176   |
|         | 10 | 64,400  | 187,753 | 228,982 | 274,312 | 323,741 | 377,271 | 434,901 | 496,630 | 562,460   |
|         | 13 | 82,400  | 239,392 | 292,090 | 350,041 | 413,243 | 481,698 | 555,404 | 634,363 | 718,574   |
| 150 90  | 9  | 65,600  | 193,660 | 235,975 | 282,479 | 333,171 | 388,050 | 447,118 | 510,373 | 577,817   |
|         | 12 | 86,000  | 251,878 | 307,046 | 367,687 | 433,800 | 505,385 | 582,441 | 664,970 | 752,971   |
|         | 15 | 106,000 | 309,271 | 377,176 | 451,831 | 533,236 | 621,391 | 716,296 | 817,951 | 926,556   |
| 150 100 | 9  | 68,400  | 199,554 | 243,417 | 291,649 | 344,248 | 401,216 | 462,551 | 528,255 | 598,226   |
|         | 12 | 89,600  | 259,756 | 316,990 | 379,937 | 448,595 | 522,965 | 603,047 | 688,942 | 780,348   |
|         | 15 | 110,800 | 319,112 | 389,598 | 467,134 | 551,719 | 643,355 | 742,041 | 847,777 | 960,563   |
| 175 90  | 9  | 72,800  | 215,773 | 262,774 | 314,414 | 370,691 | 431,607 | 497,160 | 567,352 | 642,181   |
|         | 12 | 95,200  | 281,198 | 342,598 | 410,070 | 483,614 | 563,230 | 648,918 | 740,673 | 838,511   |
|         | 15 | 117,600 | 345,732 | 421,407 | 504,582 | 595,257 | 693,432 | 799,107 | 912,282 | 1,032,956 |

附表 12

| 寸法<br>A×B<br>(mm) | 規定厚<br>t<br>(mm) | 重量<br>kg/m | 山形背面間 (mm) |         |         |           |           |           |           |           |
|-------------------|------------------|------------|------------|---------|---------|-----------|-----------|-----------|-----------|-----------|
|                   |                  |            | 1800       | 1900    | 2000    | 2100      | 2200      | 2300      | 2400      | 2500      |
| 125 75            | 7                | 42,800     | 425,681    | 475,187 | 527,417 | 582,371   | 640,049   | 700,451   | 763,577   | 829,427   |
|                   | 9                | 54,000     | 534,569    | 596,996 | 662,861 | 732,164   | 804,905   | 881,085   | 960,702   | 1,043,757 |
| 125 75            | 10               | 59,600     | 592,351    | 661,329 | 734,107 | 810,684   | 891,062   | 975,239   | 1,063,217 | 1,154,995 |
|                   | 13               | 76,400     | 756,003    | 844,152 | 937,162 | 1,035,004 | 1,137,768 | 1,245,364 | 1,357,822 | 1,475,142 |

|         |    |         |           |           |           |           |           |           |           |           |
|---------|----|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 125 90  | 7  | 46,000  | 453,678   | 506,719   | 562,693   | 621,602   | 683,445   | 748,222   | 815,933   | 886,578   |
|         | 9  | 58,400  | 572,450   | 639,431   | 710,120   | 784,518   | 862,623   | 944,436   | 1,029,958 | 1,119,187 |
|         | 10 | 64,400  | 632,389   | 706,419   | 784,549   | 866,778   | 953,108   | 1,043,537 | 1,138,067 | 1,236,697 |
| 150 90  | 13 | 82,400  | 808,036   | 902,751   | 1,002,717 | 1,107,936 | 1,218,406 | 1,334,129 | 1,455,104 | 1,581,330 |
|         | 9  | 63,600  | 649,448   | 725,268   | 805,275   | 889,471   | 977,854   | 1,070,426 | 1,167,186 | 1,268,133 |
|         | 12 | 86,600  | 846,443   | 945,388   | 1,049,805 | 1,159,700 | 1,274,381 | 1,395,887 | 1,522,192 | 1,653,968 |
| 150 100 | 15 | 106,000 | 1,041,511 | 1,163,416 | 1,292,071 | 1,427,476 | 1,569,631 | 1,718,536 | 1,874,191 | 2,036,596 |
|         | 9  | 68,400  | 672,766   | 751,573   | 834,748   | 922,292   | 1,014,203 | 1,110,483 | 1,211,130 | 1,316,146 |
|         | 12 | 89,600  | 877,566   | 980,496   | 1,089,138 | 1,203,493 | 1,323,539 | 1,449,337 | 1,580,827 | 1,718,030 |
| 175 90  | 15 | 110,800 | 1,080,399 | 1,207,285 | 1,341,221 | 1,482,207 | 1,680,243 | 1,785,328 | 1,947,464 | 2,116,650 |
|         | 9  | 72,800  | 721,649   | 805,754   | 894,498   | 987,879   | 1,085,899 | 1,188,556 | 1,295,852 | 1,407,785 |
|         | 12 | 95,200  | 942,415   | 1,052,391 | 1,168,439 | 1,290,559 | 1,418,751 | 1,553,015 | 1,693,351 | 1,839,759 |
|         | 15 | 117,600 | 1,161,132 | 1,296,807 | 1,439,982 | 1,590,657 | 1,748,932 | 1,914,507 | 2,087,682 | 2,268,357 |

(3) 腹縁の慣性モーメント

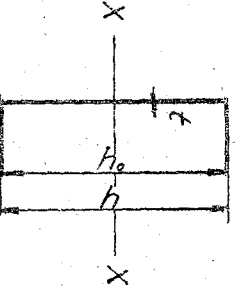
$h$  = 山形背面間 (cm)

$h_0$  = 腹縁の高さ (cm)

$l$  = 腹縁の厚さ (cm)

$I = X-X$  軸に對する腹縁の慣性モーメント (cm<sup>4</sup>)

とすれば、



第六圖

$$I = \frac{1}{12} bh_o^3 \dots \dots \dots (3)$$

(3)式より腹板の慣性モーメント(I)を求めれば、附表-13乃至附表-15の如くなる。  
 (荷重、腹板慣性モーメント表中、wは腹板1米當りの重量(kg/m)である)

附 表 13

| t<br>(mm) | I<br>w | 山 形 骨 面 間 (mm) |        |        |        |        |        |        |        |
|-----------|--------|----------------|--------|--------|--------|--------|--------|--------|--------|
|           |        | 200            | 300    | 400    | 500    | 600    | 700    | 800    | 900    |
| 8         | I      | 533            | 1,800  | 4,267  | 8,333  | 14,400 | 22,867 | 34,133 | 48,600 |
|           | w      | 12,560         | 18,840 | 25,120 | 31,400 | 37,680 | 43,960 | 50,240 | 56,520 |
| 9         | I      |                | 2,025  | 4,800  | 9,375  | 16,200 | 25,725 | 38,400 | 54,675 |
|           | w      |                | 21,195 | 28,260 | 35,325 | 42,390 | 49,455 | 56,520 | 63,585 |
| 10        | I      |                | 2,250  | 5,333  | 10,417 | 18,000 | 28,583 | 42,667 | 60,750 |
|           | w      |                | 23,550 | 31,400 | 39,250 | 47,100 | 54,950 | 62,800 | 70,650 |
| 11        | I      |                | 2,475  | 5,867  | 11,458 | 19,800 | 31,442 | 46,933 | 66,825 |
|           | w      |                | 25,905 | 34,540 | 43,175 | 51,810 | 60,445 | 69,080 | 77,715 |
| 12        | I      |                | 2,700  | 6,400  | 12,500 | 21,600 | 34,300 | 51,200 | 72,900 |
|           | w      |                | 28,260 | 37,680 | 47,100 | 56,520 | 65,940 | 75,360 | 84,780 |
| 14        | I      |                | 3,150  | 7,467  | 14,583 | 25,200 | 40,017 | 59,733 | 85,050 |
|           | w      |                | 32,970 | 43,960 | 54,950 | 65,940 | 76,930 | 87,920 | 98,910 |

|    |   |        |        |        |        |         |         |         |
|----|---|--------|--------|--------|--------|---------|---------|---------|
| 15 | I | 3,375  | 8,000  | 15,625 | 27,000 | 42,875  | 64,000  | 91,125  |
|    | w | 35,325 | 47,100 | 58,875 | 70,650 | 82,425  | 94,200  | 105,975 |
| 16 | I | 3,600  | 8,533  | 16,667 | 28,800 | 45,733  | 68,267  | 97,200  |
|    | w | 37,680 | 50,240 | 62,800 | 75,360 | 87,920  | 100,480 | 113,040 |
| 17 | I | 3,825  | 9,067  | 17,708 | 30,600 | 48,592  | 72,533  | 103,275 |
|    | w | 40,035 | 53,380 | 66,725 | 80,070 | 93,415  | 106,760 | 120,105 |
| 19 | I | 4,275  | 10,133 | 19,792 | 34,200 | 54,308  | 81,067  | 115,425 |
|    | w | 44,745 | 59,660 | 74,575 | 89,490 | 104,405 | 119,320 | 134,235 |
| 20 | I | 4,500  | 10,667 | 20,833 | 36,000 | 57,167  | 85,333  | 121,500 |
|    | w | 47,100 | 62,800 | 78,500 | 94,200 | 109,900 | 125,630 | 141,300 |

附表 14

| t<br>(mm) | I<br>及<br>w | 山形背面間 (mm) |        |         |         |         |         |         |         |
|-----------|-------------|------------|--------|---------|---------|---------|---------|---------|---------|
|           |             | 1000       | 1100   | 1200    | 1300    | 1400    | 1500    | 1600    | 1700    |
| 8         | I           | 66,667     | 88,733 | 113,200 | 146,467 | 182,933 | 225,000 | 273,067 | 327,533 |
|           | w           | 62,800     | 69,080 | 75,360  | 81,640  | 87,920  | 94,200  | 100,480 | 106,760 |
| 9         | I           | 75,000     | 99,825 | 129,600 | 164,775 | 205,800 | 253,125 | 307,200 | 368,475 |
|           | w           | 70,650     | 77,715 | 84,780  | 91,845  | 98,910  | 105,975 | 113,040 | 120,105 |

|    |   |         |         |         |         |         |         |         |         |
|----|---|---------|---------|---------|---------|---------|---------|---------|---------|
| 10 | I | 83,333  | 110,917 | 144,000 | 183,083 | 228,667 | 281,250 | 341,333 | 409,417 |
|    | W | 78,500  | 86,350  | 94,200  | 102,050 | 109,900 | 117,750 | 125,600 | 133,450 |
| 11 | I | 91,667  | 122,008 | 158,400 | 201,392 | 251,533 | 309,375 | 373,667 | 450,358 |
|    | W | 86,350  | 94,985  | 103,620 | 112,255 | 120,890 | 129,525 | 138,160 | 146,795 |
| 12 | I | 100,000 | 133,100 | 172,800 | 219,700 | 274,400 | 337,500 | 409,600 | 491,300 |
|    | W | 94,200  | 103,620 | 113,040 | 122,460 | 131,880 | 141,300 | 150,720 | 160,141 |
| 14 | I | 116,667 | 155,283 | 201,600 | 256,317 | 320,133 | 393,750 | 477,867 | 573,183 |
|    | W | 109,900 | 120,890 | 131,880 | 142,870 | 153,860 | 164,850 | 175,840 | 186,830 |
| 15 | I | 125,000 | 166,375 | 216,000 | 274,625 | 343,000 | 421,875 | 512,000 | 614,125 |
|    | W | 117,750 | 129,525 | 141,300 | 153,075 | 164,850 | 176,625 | 188,400 | 200,175 |
| 16 | I | 133,333 | 177,467 | 230,400 | 292,933 | 365,867 | 450,000 | 546,133 | 655,067 |
|    | W | 125,600 | 138,160 | 150,720 | 163,280 | 175,840 | 188,400 | 200,960 | 213,520 |
| 17 | I | 141,667 | 188,558 | 244,800 | 311,242 | 388,733 | 478,125 | 580,267 | 696,008 |
|    | W | 133,450 | 146,795 | 160,140 | 173,485 | 186,830 | 200,175 | 213,520 | 226,865 |
| 19 | I | 158,333 | 210,742 | 273,600 | 347,858 | 434,467 | 534,375 | 648,533 | 777,892 |
|    | W | 149,150 | 164,065 | 178,980 | 193,895 | 208,210 | 223,725 | 238,640 | 253,555 |
| 20 | I | 166,667 | 221,833 | 288,000 | 366,167 | 457,333 | 562,500 | 682,667 | 818,833 |
|    | W | 157,000 | 172,700 | 188,400 | 204,100 | 219,800 | 233,500 | 251,200 | 266,900 |

附表 15

| t<br>(mm) | I<br>及<br>w | 山 形 背 面 間 (mm) |         |           |           |           |           |           |           |  |
|-----------|-------------|----------------|---------|-----------|-----------|-----------|-----------|-----------|-----------|--|
|           |             | 1800           | 1900    | 2000      | 2100      | 2200      | 2300      | 2400      | 2500      |  |
| 8         | I           | 388,800        | 457,267 | 533,333   |           |           |           |           |           |  |
|           | w           | 113,040        | 119,320 | 125,600   |           |           |           |           |           |  |
| 9         | I           | 437,400        | 514,425 | 600,000   | 694,575   | 798,600   | 912,525   | 1,036,800 | 1,171,875 |  |
|           | w           | 127,170        | 134,235 | 141,300   | 148,365   | 155,430   | 162,495   | 169,560   | 176,625   |  |
| 10        | I           | 486,000        | 571,583 | 666,667   | 771,750   | 887,333   | 1,013,917 | 1,152,000 | 1,302,083 |  |
|           | w           | 141,300        | 149,150 | 157,000   | 164,850   | 172,700   | 180,550   | 188,400   | 196,250   |  |
| 11        | I           | 534,600        | 628,742 | 733,333   | 848,925   | 976,067   | 1,115,308 | 1,267,200 | 1,432,292 |  |
|           | w           | 155,430        | 164,065 | 172,700   | 181,335   | 189,970   | 198,605   | 207,240   | 215,875   |  |
| 12        | I           | 583,200        | 685,900 | 800,000   | 926,100   | 1,064,800 | 1,216,700 | 1,382,400 | 1,562,500 |  |
|           | w           | 169,560        | 178,980 | 188,400   | 197,820   | 207,240   | 216,660   | 226,080   | 235,500   |  |
| 14        | I           | 680,400        | 800,217 | 933,333   | 1,080,450 | 1,242,267 | 1,419,483 | 1,612,800 | 1,822,917 |  |
|           | w           | 197,820        | 208,810 | 219,800   | 230,790   | 241,780   | 252,770   | 263,760   | 274,750   |  |
| 15        | I           | 729,000        | 857,375 | 1,000,000 | 1,157,625 | 1,331,000 | 1,520,875 | 1,728,000 | 1,953,125 |  |
|           | w           | 211,950        | 223,725 | 235,500   | 247,275   | 259,050   | 270,825   | 282,600   | 294,375   |  |
| 16        | I           | 777,600        | 914,533 | 1,066,667 | 1,234,800 | 1,419,733 | 1,622,267 | 1,843,200 | 2,083,333 |  |

|    |   |         |           |           |           |           |           |           |           |
|----|---|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|    | w | 226,080 | 238,640   | 251,200   | 263,760   | 276,320   | 288,880   | 301,440   | 314,000   |
| 17 | I | 826,200 | 971,692   | 1,133,333 | 1,311,975 | 1,508,467 | 1,723,658 | 1,958,400 | 2,213,542 |
|    | w | 240,210 | 253,555   | 266,900   | 280,245   | 293,590   | 306,935   | 320,280   | 333,625   |
| 19 | I | 923,400 | 1,086,008 | 1,266,667 | 1,466,325 | 1,685,933 | 1,926,442 | 2,188,800 | 2,473,958 |
|    | w | 268,470 | 283,385   | 298,300   | 313,215   | 328,130   | 343,045   | 357,960   | 372,875   |
| 20 | I | 972,000 | 1,143,167 | 1,333,333 | 1,543,500 | 1,774,667 | 2,027,833 | 2,304,000 | 2,604,167 |
|    | w | 282,600 | 298,300   | 314,000   | 329,700   | 345,400   | 361,100   | 376,800   | 392,500   |

以上、附表-1乃至附表-15は、山形背面間 ( $h=20\text{cm}\sim 250\text{cm}$ ) に對して、 $10\text{cm}$  をきに夫々の慣性モーメントを求めたものであるが、今、之等を圖に示せば附圖-1乃至附圖-36となる。即ち、

附圖-1乃至附圖-9は蓋鉄 ( $b=10\text{cm}$ ) の慣性モーメント圖

附圖-10乃至附圖-32は山形鋼の慣性モーメント圖

附圖-34乃至附圖-36は腰鉄の慣性モーメント圖である。