



EN10219 : ท่อเหล็กชุบสีเหลี่ยมผืนผ้าสำหรับงานโครงสร้าง

Cold Formed Welded Structural Hollow Section of Non-Alloy and Fine Grain Steels

| ชั้นคุณภาพ Material of Grade | ส่วนประกอบทางเคมี (ไม่เกินร้อยละ) Chemical Composition (%) | | | | | สมบัติทางกล (ไม่น้อยกว่า) Mechanical Properties | | | | | |
|---------------------------------|---|-------------------|---------------------------------------|-------------------|-------|--|----------------------------------|-----------|--------------------------------|--------------------------------------|---|
| | | | | | | ความเค้นดึง Yield Strength | ความเค้นคราก Tensile Strength | | ความยืด Elongation (Min) | การทดสอบ การกระแทก Impact Test | Minimum Average Absorbed Energy for Standard Test Piece J |
| | t < 3 mm. | 3 mm. ≤ t ≤ 40 | อุณหภูมิ ทดสอบ Test Temperature | | | | | | | | |
| | N/mm ² | N/mm ² | | N/mm ² | % | | °C | | | | |
| C Max | Si Max | Mn Max | P Max | S Max | | | | | | | |
| S235JRH | 0.170 | - | 1.400 | 0.045 | 0.045 | 235 | 360 - 510 | 340 - 370 | 24 | 20 | 27 |
| S275J0H | 0.200 | - | 1.500 | 0.040 | 0.040 | 275 | 430 - 580 | 410 - 560 | 20 | 0 | 27 |
| S275J2H | 0.200 | - | 1.500 | 0.035 | 0.035 | 275 | 430 - 580 | 410 - 560 | 20 | -20 | 27 |
| S355J0H | 0.220 | 0.550 | 1.600 | 0.040 | 0.040 | 355 | 510 - 680 | 490 - 630 | 20 | 0 | 27 |
| S355J2H | 0.220 | 0.550 | 1.600 | 0.035 | 0.035 | 355 | 510 - 680 | 490 - 630 | 20 | -20 | 27 |

| ขนาดของด้าน Length of Side | | ความหนา Thickness | มวลต่อเมตร Mass/Length |
|-------------------------------|-----|----------------------|---------------------------|
| mm | mm | mm | kg/m |
| 40 | 20 | 2.00 | 1.68 |
| 60 | 40 | 2.00 | 2.93 |
| | | 2.50 | 3.60 |
| | | 3.00 | 4.25 |
| | | 2.50 | 5.56 |
| 100 | 50 | 3.00 | 6.60 |
| | | 4.00 | 8.59 |
| | | 5.00 | 10.50 |
| | | 6.00 | 12.30 |
| | | 6.30 | 12.50 |
| | | 3.00 | 8.96 |
| 120 | 80 | 4.00 | 11.70 |
| | | 5.00 | 14.40 |
| | | 6.00 | 17.00 |
| | | 6.30 | 17.50 |
| | | 8.00 | 21.40 |
| | | 4.00 | 13.00 |
| 140 | 80 | 5.00 | 16.00 |
| | | 6.00 | 18.90 |
| | | 6.30 | 19.40 |
| | | 8.00 | 23.90 |
| | | 4.00 | 14.90 |
| 150 | 100 | 5.00 | 18.30 |
| | | 6.00 | 21.70 |
| | | 6.30 | 22.40 |
| | | 8.00 | 27.70 |
| | | 10.00 | 33.40 |

| ขนาดของด้าน Length of Side | | ความหนา Thickness | มวลต่อเมตร Mass/Length |
|-------------------------------|-----|----------------------|---------------------------|
| mm | mm | mm | kg/m |
| 160 | 80 | 4.00 | 14.20 |
| | | 5.00 | 17.50 |
| | | 6.00 | 20.70 |
| | | 6.30 | 21.40 |
| 200 | 100 | 4.00 | 18.00 |
| | | 5.00 | 22.30 |
| | | 6.00 | 26.40 |
| | | 6.30 | 27.40 |
| | | 8.00 | 33.90 |
| | | 10.00 | 41.30 |
| 250 | 150 | 5.00 | 30.10 |
| | | 6.00 | 35.80 |
| | | 6.30 | 37.20 |
| | | 8.00 | 46.50 |
| | | 10.00 | 57.00 |
| | | 12.00 | 66.00 |
| | | 12.50 | 68.30 |
| | | 6.00 | 40.50 |
| 300 | 150 | 6.30 | 42.20 |
| | | 8.00 | 52.80 |
| | | 10.00 | 64.80 |
| | | 12.00 | 75.40 |
| | | 12.50 | 78.10 |
| | | 6.00 | 45.20 |
| 300 | 200 | 6.30 | 47.10 |
| | | 8.00 | 59.10 |
| | | 10.00 | 72.70 |
| | | 12.00 | 84.80 |
| | | 12.50 | 88.00 |

| ขนาดของด้าน Length of Side | | ความหนา Thickness | มวลต่อเมตร Mass/Length |
|-------------------------------|-----|----------------------|---------------------------|
| mm | mm | mm | kg/m |
| 350 | 250 | 6.00 | 54.70 |
| | | 6.30 | 57.00 |
| | | 8.00 | 71.60 |
| | | 10.00 | 88.40 |
| | | 12.00 | 104.00 |
| 400 | 200 | 12.50 | 108.00 |
| | | 8.00 | 71.60 |
| | | 12.50 | 108.00 |

เกณฑ์ความคลาดเคลื่อนของมิติ

Dimension Tolerances

ขนาดของด้าน

Length of Side

< 100 : ± 1% with a minimum of ± 0.5 mm.

100-200 : ± 0.8%

≥ 200 : ± 0.6%

ความหนา t ≤ 5 mm. ± 10%

Thickness t > 5 mm. ± 0.5 mm.

น้ำหนัก : ± 6%

Weight