

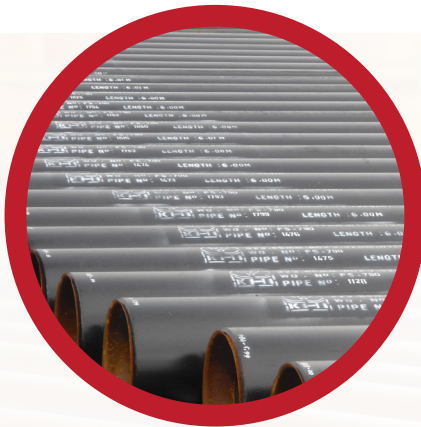
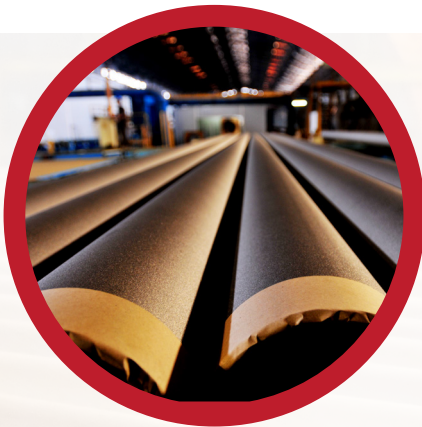
# STEEL PIPE

- SNI 0068 : 2013
- SNI 0039:2013
- ASTM
- BS EN 10255

ISO 9001 : 2008



**PIPE & COATING**  
PT KHI PIPE INDUSTRIES



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# ISO 9001 : 2008 CERTIFIED

SNI 0068:2013 (Certified)

Kelas 2 PKB (STK) - 400

Pipa baja untuk konstruksi umum, dapat diaplikasikan untuk menara/ tiang,  
konstruksi, infrastruktur kecuali tiang pancang

## SPESIFIKASI TEKNIS

| Outside Diameter | Thickness | Unit Mass | Informative Reference                   |                                                  |                                       |                                  |
|------------------|-----------|-----------|-----------------------------------------|--------------------------------------------------|---------------------------------------|----------------------------------|
| mm               | mm        | kg/m      | Cross-Sectional Area<br>cm <sup>2</sup> | Geometrical moment of inertia<br>cm <sup>4</sup> | Modulus of Section<br>cm <sup>3</sup> | Radius of Gyration of Area<br>cm |
| 21.7             | 2.0       | 0.972     | 1.238                                   | 0.607                                            | 0.560                                 | 0.700                            |
| 27.2             | 2.0       | 1.24      | 1.583                                   | 1.26                                             | 0.930                                 | 0.890                            |
|                  | 2.3       | 1.41      | 1.799                                   | 1.41                                             | 1.03                                  | 0.880                            |
| 34.0             | 2.3       | 1.80      | 2.291                                   | 2.89                                             | 1.70                                  | 1.12                             |
| 42.7             | 2.3       | 2.29      | 2.919                                   | 5.97                                             | 2.80                                  | 1.43                             |
|                  | 2.5       | 2.48      | 3.157                                   | 6.40                                             | 3.00                                  | 1.42                             |
| 48.6             | 2.3       | 2.63      | 3.345                                   | 8.99                                             | 3.70                                  | 1.64                             |
|                  | 2.5       | 2.84      | 3.621                                   | 9.65                                             | 3.97                                  | 1.63                             |
|                  | 2.8       | 3.16      | 4.029                                   | 10.6                                             | 4.36                                  | 1.62                             |
|                  | 3.2       | 3.58      | 4.564                                   | 11.8                                             | 4.86                                  | 1.61                             |
| 60.5             | 2.3       | 3.30      | 4.205                                   | 17.8                                             | 5.90                                  | 2.06                             |
|                  | 3.2       | 4.52      | 5.760                                   | 23.7                                             | 7.84                                  | 2.03                             |
|                  | 4.0       | 5.57      | 7.100                                   | 28.5                                             | 9.41                                  | 2.00                             |
| 76.3             | 2.8       | 5.08      | 6.465                                   | 43.7                                             | 11.5                                  | 2.60                             |
|                  | 3.2       | 5.77      | 7.349                                   | 49.2                                             | 12.9                                  | 2.59                             |
|                  | 4.0       | 7.13      | 9.085                                   | 59.5                                             | 15.6                                  | 2.58                             |
| 89.1             | 2.8       | 5.96      | 7.591                                   | 70.7                                             | 15.9                                  | 3.05                             |
|                  | 3.2       | 6.78      | 8.636                                   | 79.8                                             | 17.9                                  | 3.04                             |
| 101.6            | 3.2       | 7.76      | 9.892                                   | 120                                              | 23.6                                  | 3.48                             |
|                  | 4.0       | 9.63      | 12.26                                   | 146                                              | 28.8                                  | 3.45                             |
|                  | 5.0       | 11.9      | 15.17                                   | 177                                              | 34.9                                  | 3.42                             |
| 114.3            | 3.2       | 8.77      | 11.17                                   | 172                                              | 30.2                                  | 3.93                             |
|                  | 3.5       | 9.58      | 12.18                                   | 187                                              | 32.7                                  | 3.92                             |
|                  | 4.5       | 12.2      | 15.52                                   | 234                                              | 41.0                                  | 3.89                             |
| 139.8            | 3.6       | 12.1      | 15.40                                   | 357                                              | 51.1                                  | 4.82                             |
|                  | 4.0       | 13.4      | 17.07                                   | 394                                              | 56.3                                  | 4.80                             |
|                  | 4.5       | 15.0      | 19.13                                   | 438                                              | 62.7                                  | 4.79                             |
|                  | 6.0       | 19.8      | 25.22                                   | 566                                              | 80.9                                  | 4.74                             |
| 165.2            | 4.5       | 17.8      | 22.72                                   | 734                                              | 88.9                                  | 5.68                             |
|                  | 5.0       | 19.8      | 25.16                                   | 808                                              | 97.8                                  | 5.67                             |
|                  | 6.0       | 23.6      | 30.01                                   | 952                                              | 115                                   | 5.63                             |
|                  | 7.1       | 27.7      | 35.26                                   | 110x10                                           | 134                                   | 5.60                             |



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## SPESIFIKASI TEKNIS

| Outside Diameter | Thickness | Unit Mass | Informative Reference                   |                                                  |                                       |                                  |
|------------------|-----------|-----------|-----------------------------------------|--------------------------------------------------|---------------------------------------|----------------------------------|
| mm               | mm        | kg/m      | Cross-Sectional Area<br>cm <sup>2</sup> | Geometrical moment of inertia<br>cm <sup>4</sup> | Modulus of Section<br>cm <sup>3</sup> | Radius of Gyration of Area<br>cm |
| 190.7            | 4.5       | 20.7      | 26.32                                   | 114x10                                           | 120                                   | 6.59                             |
|                  | 5.3       | 24.2      | 30.87                                   | 133x10                                           | 139                                   | 6.56                             |
|                  | 6.0       | 27.3      | 34.82                                   | 149x10                                           | 156                                   | 6.53                             |
|                  | 7.0       | 31.7      | 40.40                                   | 171x10                                           | 179                                   | 6.50                             |
|                  | 8.2       | 36.9      | 47.01                                   | 196x10                                           | 206                                   | 6.46                             |
| 216.3            | 4.5       | 23.5      | 29.94                                   | 168x10                                           | 155                                   | 7.49                             |
|                  | 5.8       | 30.1      | 38.36                                   | 213x10                                           | 197                                   | 7.45                             |
|                  | 6.0       | 31.1      | 39.64                                   | 219x10                                           | 203                                   | 7.44                             |
|                  | 7.0       | 36.1      | 46.03                                   | 252x10                                           | 233                                   | 7.40                             |
|                  | 8.0       | 41.1      | 52.35                                   | 284x10                                           | 263                                   | 7.37                             |
| 267.4            | 8.2       | 42.1      | 53.61                                   | 291x10                                           | 269                                   | 7.36                             |
|                  | 6.0       | 38.7      | 49.27                                   | 421x10                                           | 315                                   | 9.24                             |
|                  | 6.6       | 42.4      | 54.08                                   | 460x10                                           | 344                                   | 9.22                             |
|                  | 7.0       | 45.0      | 57.26                                   | 486x10                                           | 363                                   | 9.21                             |
|                  | 8.0       | 51.2      | 65.19                                   | 549x10                                           | 411                                   | 9.18                             |
| 318.5            | 9.0       | 57.3      | 73.06                                   | 611x10                                           | 457                                   | 9.14                             |
|                  | 9.3       | 59.2      | 75.41                                   | 629x10                                           | 470                                   | 9.13                             |
|                  | 6.0       | 46.2      | 58.91                                   | 719x10                                           | 452                                   | 11.1                             |
|                  | 6.9       | 53.0      | 67.55                                   | 820x10                                           | 515                                   | 11.0                             |
|                  | 8.0       | 61.3      | 78.04                                   | 941x10                                           | 591                                   | 11.0                             |
| 355.6            | 9.0       | 68.7      | 87.51                                   | 105x10 <sup>2</sup>                              | 659                                   | 10.9                             |
|                  | 10.3      | 78.3      | 99.73                                   | 119x10 <sup>2</sup>                              | 744                                   | 10.9                             |
|                  | 6.4       | 55.1      | 70.21                                   | 107x10 <sup>2</sup>                              | 602                                   | 12.3                             |
|                  | 7.9       | 67.7      | 86.29                                   | 130x10 <sup>2</sup>                              | 734                                   | 12.3                             |
|                  | 9.0       | 76.9      | 98.00                                   | 147x10 <sup>2</sup>                              | 828                                   | 12.3                             |
| 406.4            | 9.5       | 81.1      | 103.3                                   | 155x10 <sup>2</sup>                              | 871                                   | 12.2                             |
|                  | 12.0      | 102       | 129.5                                   | 191x10 <sup>2</sup>                              | 108x10                                | 12.2                             |
|                  | 12.7      | 107       | 136.8                                   | 201x10 <sup>2</sup>                              | 113x10                                | 12.1                             |
|                  | 7.9       | 77.6      | 98.90                                   | 196x10 <sup>2</sup>                              | 967                                   | 14.1                             |
|                  | 9.0       | 88.2      | 112.4                                   | 222x10 <sup>2</sup>                              | 109x10                                | 14.1                             |
| 457.2            | 9.5       | 93.0      | 118.5                                   | 233x10 <sup>2</sup>                              | 115x10                                | 14.0                             |
|                  | 12.0      | 117       | 148.7                                   | 289x10 <sup>2</sup>                              | 142x10                                | 14.0                             |
|                  | 12.7      | 123       | 157.1                                   | 305x10 <sup>2</sup>                              | 150x10                                | 13.9                             |
|                  | 16.0      | 154       | 196.2                                   | 374x10 <sup>2</sup>                              | 184x10                                | 13.8                             |
|                  | 9.0       | 99.5      | 126.7                                   | 318x10 <sup>2</sup>                              | 140x10                                | 15.8                             |
| 457.2            | 9.5       | 105       | 133.6                                   | 335x10 <sup>2</sup>                              | 147x10                                | 15.8                             |
|                  | 12.0      | 132       | 167.8                                   | 416x10 <sup>2</sup>                              | 182x10                                | 15.7                             |
|                  | 12.7      | 139       | 177.3                                   | 438x10 <sup>2</sup>                              | 192x10                                | 15.7                             |
|                  | 16.0      | 174       | 221.8                                   | 540x10 <sup>2</sup>                              | 236x10                                | 15.6                             |



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konstruksi, infrastruktur kecuali tiang pancang

## SPESIFIKASI TEKNIS

| Outside Diameter | Thickness | Unit Mass | Informative Reference                   |                                                  |                                       |                                  |
|------------------|-----------|-----------|-----------------------------------------|--------------------------------------------------|---------------------------------------|----------------------------------|
| mm               | mm        | kg/m      | Cross-Sectional Area<br>cm <sup>2</sup> | Geometrical moment of inertia<br>cm <sup>4</sup> | Modulus of Section<br>cm <sup>3</sup> | Radius of Gyration of Area<br>cm |
| 500              | 9.0       | 109       | 138.8                                   | 418x10                                           | 167x10                                | 17.4                             |
|                  | 12.0      | 144       | 184.0                                   | 548x10                                           | 219x10                                | 17.3                             |
|                  | 14.0      | 168       | 213.8                                   | 632x10                                           | 253x10                                | 17.2                             |
| 508.0            | 7.9       | 97.4      | 124.1                                   | 388x10                                           | 153x10                                | 17.7                             |
|                  | 9.0       | 111       | 141.1                                   | 439x10                                           | 173x10                                | 17.6                             |
|                  | 9.5       | 117       | 148.8                                   | 462x10                                           | 182x10                                | 17.6                             |
|                  | 12.0      | 147       | 187.0                                   | 575x10                                           | 227x10                                | 17.5                             |
|                  | 12.7      | 155       | 197.6                                   | 606x10                                           | 239x10                                | 17.5                             |
|                  | 14.0      | 171       | 217.3                                   | 663x10                                           | 261x10                                | 17.5                             |
|                  | 16.0      | 194       | 247.3                                   | 749x10                                           | 295x10                                | 17.4                             |

| Toleransi Diameter Luar Pipa Bulat                                                                                                                                                                                                         |           | Toleransi Tebal Pipa Bulat |           | Panjang Pipa : 6 atau 12 meter per batang |          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------|-----------|-------------------------------------------|----------|
|                                                                                                                                                                                                                                            |           |                            |           | Toleransi Panjang                         |          |
| Diameter Luar Pipa                                                                                                                                                                                                                         | Toleransi | Tebal                      | Toleransi |                                           | + 100 mm |
| Dibawah 50 mm                                                                                                                                                                                                                              | ± 0,5 mm  | Di bawah 4 mm              | + 0,6 mm  |                                           | - 0 mm   |
| 50 mm ke atas                                                                                                                                                                                                                              | ± 1,0 %   |                            | - 0,5 mm  |                                           |          |
| <b>CATATAN:</b>                                                                                                                                                                                                                            |           | 4 mm s/d 12 mm             | + 15 %    |                                           |          |
|                                                                                                                                                                                                                                            |           |                            | - 12,5 %  |                                           |          |
|                                                                                                                                                                                                                                            |           | 12 mm ke atas              | + 15 %    |                                           |          |
|                                                                                                                                                                                                                                            |           |                            | - 1,5 mm  |                                           |          |
| Toleransi diameter luar dari pipa dilas tahanan listrik dan pipa dilas busur redam, dengan diameter luar lebih dari 350 mm mengacu pada Tabel Toleransi Diameter Luar Pipa Bulat dan toleransi diameter dari ujung-ujung pipa harus ± 0,5% |           |                            |           |                                           |          |

Komposisi Kimia : Carbon : 0,25% maks.  
Fosfor : 0,04% maks.  
Sulfur : 0,04% maks.

Sifat Mekanik : Kuat Luluh (Yield Strength) : 235 N/mm<sup>2</sup> min.  
Kuat Tarik (Tensile Strength) : 400 N/mm<sup>2</sup> min.  
Elongasi : 23% min.



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Ukuran Pipa Medium dan Pipa Tebal

Pipa baja dengan atau tanpa lapis seng untuk aplikasi saluran air  
kecuali untuk saluran air minum

## SPESIFIKASI TEKNIS

| Diameter Dalam Nominal | Medium             |         |        |        |            |                                                           | Tebal              |        |        |             |                                                           |
|------------------------|--------------------|---------|--------|--------|------------|-----------------------------------------------------------|--------------------|--------|--------|-------------|-----------------------------------------------------------|
|                        | Diameter Luar (mm) |         |        |        | Tebal (mm) | Berat Nominal Pipa Tanpa Lapis Seng Sebelum Diulir (kg/m) | Diameter Luar (mm) |        |        | Tebal (mm)  | Berat Nominal Pipa Tanpa Lapis Seng Sebelum Diulir (kg/m) |
| (mm)                   | (inci)             | Nominal | Maks.  | Min.   | +15%-10%*  | +10% - 8%*                                                | Nominal            | Maks.  | Min.   | +15%-12,5%* | +10% - 8%*                                                |
| 100                    | 4                  | 114,3   | 115,0  | 113,1  | 4,5        | 12,20                                                     | 114,1              | 114,9  | 113,3  | 6,0         | 15,99                                                     |
| 150                    | 6                  | 165,1   | 166,5  | 163,9  | 5,0        | 19,80                                                     | 168,3              | 170,0  | 164,1  | 7,1         | 28,22                                                     |
| 200                    | 8                  | 219,1   | 221,3  | 216,9  | 6,4        | 33,32                                                     | 219,1              | 221,3  | 216,9  | 8,2         | 42,65                                                     |
| 250                    | 10                 | 273,0   | 275,7  | 270,3  | 6,4        | 41,75                                                     | 273,0              | 275,7  | 270,3  | 9,3         | 60,48                                                     |
| 300                    | 12                 | 323,8   | 327,0  | 320,6  | 6,4        | 49,71                                                     | 323,8              | 327,0  | 320,6  | 10,3        | 79,63                                                     |
| 350                    | 14                 | 355,6   | 359,2  | 352,0  | 6,4        | 54,69                                                     | 355,6              | 359,2  | 352,0  | 11,1        | 94,30                                                     |
| 400                    | 16                 | 406,4   | 410,5  | 402,3  | 6,4        | 62,64                                                     | 406,4              | 410,5  | 402,3  | 12,7        | 123,30                                                    |
| 450                    | 18                 | 457,0   | 461,6  | 452,4  | 9,5        | 105,10                                                    | 457,0              | 461,6  | 452,4  | 12,7        | 139,15                                                    |
| 500                    | 20                 | 508,0   | 513,1  | 502,9  | 9,5        | 117,02                                                    | 508,0              | 513,1  | 502,9  | 12,7        | 155,12                                                    |
| 600                    | 24                 | 610,0   | 616,1  | 603,9  | 9,5        | 140,88                                                    | 610,0              | 616,1  | 603,9  | 12,7        | 187,06                                                    |
| 650                    | 26                 | 660,0   | 666,6  | 653,4  | 9,5        | 152,80                                                    | 660,0              | 666,6  | 653,4  | 12,7        | 202,72                                                    |
| 700                    | 28                 | 711,0   | 718,1  | 703,9  | 9,5        | 164,34                                                    | 711,0              | 718,1  | 703,9  | 12,7        | 218,69                                                    |
| 800                    | 32                 | 813,0   | 821,1  | 804,9  | 9,5        | 188,23                                                    | 813,0              | 821,1  | 804,9  | 12,7        | 250,64                                                    |
| 900                    | 36                 | 914,0   | 923,1  | 904,9  | 9,5        | 211,90                                                    | 914,0              | 923,1  | 904,9  | 12,7        | 282,27                                                    |
| 1000                   | 40                 | 1016,0  | 1026,2 | 1005,8 | 12,7       | 314,22                                                    | 1016,0             | 1026,2 | 1005,8 | 14,3        | 353,24                                                    |
| 1050                   | 42                 | 1067,0  | 1077,7 | 1056,3 | 12,7       | 330,19                                                    | 1067,0             | 1077,7 | 1056,3 | 14,3        | 371,22                                                    |
| 1150                   | 46                 | 1168,0  | 1179,7 | 1156,3 | 12,7       | 361,82                                                    | 1168,0             | 1179,7 | 1156,3 | 14,3        | 406,84                                                    |
| 1200                   | 48                 | 1219,0  | 1231,2 | 1206,8 | 12,7       | 377,79                                                    | 1219,0             | 1231,2 | 1206,8 | 14,3        | 424,82                                                    |

Note : \* Toleransi

Komposisi Kimia : Karbon (C) 0,200%  
Mangan (Mn) 1,400%  
Fosfor (P) 0,035%  
Sulfur (S) 0,030%

Sifat Mekanik : Kuat Mulur (Yield Strength) : 195 N/mm<sup>2</sup>  
Kuat Tarik (Tensile Strength) : 320 - 520 N/mm<sup>2</sup>  
Elongasi : 20 %

Panjang : 6 Meter atau 12 Meter Lapisan Seng  
Toleransi Panjang : + 100 mm dan - 0 mm Berat : 300 gr/m<sup>2</sup>  
Tebal : 42 µm

Ketahanan Bocor : Tidak bocor bila diuji hidrostatik pada tekanan 50 kgf/cm<sup>2</sup> selama 5 detik



# ISO 9001 : 2008 CERTIFIED

## ERW BS EN 10255 (BS EN 1387) PIPA BAJA UNTUK APLIKASI UMUM

### SPESIFIKASI TEKNIS

| Grade            | Nominal Size |       | Diameter Luar |       |         |       | Tebal | Berat  |
|------------------|--------------|-------|---------------|-------|---------|-------|-------|--------|
|                  |              |       | Minimum       |       | Maximum |       |       |        |
|                  | in           | mm    | in            | mm    | in      | mm    | mm    | kg/m   |
| Medium dan Heavy | 1/2          | 21,3  | 0,827         | 21,0  | 0,858   | 21,8  | 2,6   | 1,199  |
|                  | 3/4          | 26,9  | 1,043         | 26,5  | 1,075   | 27,3  | 2,6   | 1,558  |
|                  | 1            | 33,7  | 1,311         | 33,3  | 1,346   | 34,2  | 3,2   | 2,407  |
|                  | 1 1/4        | 42,4  | 1,654         | 42,0  | 1,689   | 42,9  | 3,2   | 3,093  |
|                  | 1 1/2        | 48,3  | 1,886         | 47,9  | 1,921   | 48,8  | 3,2   | 3,559  |
|                  | 2            | 60,3  | 2,350         | 59,7  | 2,394   | 60,8  | 3,6   | 5,034  |
|                  | 2 1/2        | 76,1  | 2,965         | 75,3  | 3,016   | 76,6  | 3,6   | 6,436  |
|                  | 3            | 88,9  | 3,465         | 88,0  | 3,524   | 89,5  | 4,0   | 8,375  |
|                  | 4            | 114,3 | 4,453         | 113,1 | 4,528   | 115,0 | 4,5   | 12,185 |
|                  | 5            | 139,7 | 5,453         | 138,5 | 5,543   | 140,8 | 5,0   | 16,609 |
|                  | 6            | 165,1 | 6,453         | 163,9 | 6,500   | 165,1 | 5,0   | 19,740 |

Komposisi Kimia : Karbon (C) 0,200%  
Mangan (Mn) 1,400%  
Fosfor (P) 0,035%  
Sulfur (S) 0,030%

Kekuatan Mekanik : Kekuatan Luluh (Yield Strength) : 195 N/mm<sup>2</sup>  
Kekuatan Tarik (Tensile Strength) : 320 - 520 N/mm<sup>2</sup>  
Elongasi : 20 %

Toleransi ketebalan : ± 10 %  
Toleransi berat : ± 7,5 %  
Panjang Standar : 6 atau 6,4 meter  
Panjang Random : 4 - 16, dengan 2 range  
Toleransi Panjang Standar : +150 / 50  
Toleransi Panjang Random : 10 % (0,75 x 4 meter min.)



# ISO 9001 : 2008 CERTIFIED

## STEEL PIPE ASTM A252 Grade 1, 2 & 3

### SPESIFIKASI TEKNIS

| Nominal Size<br>in | Outside Diameter |       | Wall Thickness |       | Sch No. | Weight |       |
|--------------------|------------------|-------|----------------|-------|---------|--------|-------|
|                    | In               | mm    | In             | mm    |         | lbs/ft | kg/m  |
| 4                  | 4.500            | 114.3 | 0.188          | 4.78  | -       | 8.66   | 12.91 |
|                    |                  |       | 0.219          | 5.56  | -       | 10.01  | 14.91 |
|                    |                  |       | 0.237          | 6.02  | 40/STD  | 10.79  | 16.07 |
| 6                  | 6.625            | 168.3 | 0.250          | 6.35  | -       | 11.35  | 16.90 |
|                    |                  |       | 0.188          | 4.78  | -       | 12.92  | 19.27 |
|                    |                  |       | 0.219          | 5.56  | -       | 14.98  | 22.31 |
|                    |                  |       | 0.250          | 6.35  | -       | 17.02  | 25.36 |
|                    |                  |       | 0.280          | 7.11  | 40/STD  | 18.97  | 28.26 |
|                    |                  |       | 0.312          | 7.92  | -       | 21.04  | 31.32 |
|                    |                  |       | 0.344          | 8.74  | -       | 23.08  | 34.39 |
| 8                  | 8.625            | 219.1 | 0.375          | 9.52  | -       | 25.03  | 37.28 |
|                    |                  |       | 0.188          | 4.78  | -       | 16.9   | 25.26 |
|                    |                  |       | 0.203          | 5.16  | -       | 18.26  | 27.22 |
|                    |                  |       | 0.219          | 5.56  | -       | 19.66  | 29.28 |
|                    |                  |       | 0.250          | 6.35  | 20      | 22.36  | 33.31 |
|                    |                  |       | 0.277          | 7.04  | 30      | 24.70  | 36.31 |
|                    |                  |       | 0.312          | 7.92  | -       | 27.70  | 41.24 |
|                    |                  |       | 0.322          | 8.18  | 40/STD  | 28.55  | 42.55 |
|                    |                  |       | 0.344          | 8.74  | -       | 30.42  | 45.34 |
| 10                 | 10.750           | 273.0 | 0.375          | 9.52  | -       | 33.04  | 49.20 |
|                    |                  |       | 0.438          | 11.13 | -       | 38.30  | 57.08 |
|                    |                  |       | 0.188          | 4.78  | -       | 21.23  | 31.62 |
|                    |                  |       | 0.203          | 5.16  | -       | 22.89  | 34.08 |
|                    |                  |       | 0.219          | 5.56  | -       | 24.65  | 36.67 |
|                    |                  |       | 0.250          | 6.35  | 20      | 28.06  | 41.75 |
|                    |                  |       | 0.279          | 7.09  | -       | 31.23  | 46.49 |
|                    |                  |       | 0.307          | 7.80  | 30      | 34.27  | 51.01 |
|                    |                  |       | 0.344          | 8.74  | -       | 38.27  | 56.96 |
|                    |                  |       | 0.365          | 9.27  | 40/STD  | 40.52  | 69.29 |
| 12                 | 12.750           | 323.8 | 0.438          | 11.13 | -       | 48.28  | 71.87 |
|                    |                  |       | 0.203          | 5.16  | -       | 27.23  | 40.55 |
|                    |                  |       | 0.219          | 5.56  | -       | 29.34  | 43.63 |
|                    |                  |       | 0.250          | 6.35  | 20      | 33.41  | 49.71 |
|                    |                  |       | 0.281          | 7.14  | -       | 37.46  | 55.75 |
|                    |                  |       | 0.312          | 7.92  | -       | 41.48  | 61.69 |
|                    |                  |       | 0.330          | 8.38  | 30      | 43.81  | 65.18 |
|                    |                  |       | 0.344          | 8.74  | -       | 45.62  | 67.90 |
|                    |                  |       | 0.375          | 9.52  | STD     | 49.61  | 73.78 |
|                    |                  |       | 0.406          | 10.31 | 40      | 53.57  | 79.70 |
|                    |                  |       | 0.438          | 11.13 | -       | 57.65  | 85.82 |
|                    |                  |       | 0.500          | 12.70 | XS      | 65.48  | 97.43 |





| Nominal Size<br>in | Outside Diameter |       | Wall Thickness |       | Sch No. | Weight |        |
|--------------------|------------------|-------|----------------|-------|---------|--------|--------|
|                    | In               | mm    | In             | mm    |         | lbs/ft | kg/m   |
| 14                 | 14.000           | 355.6 | 0.210          | 5.33  | -       | 30.96  | 46.04  |
|                    |                  |       | 1.219          | 5.56  | -       | 32.26  | 47.99  |
|                    |                  |       | 0.250          | 6.35  | 10      | 36.75  | 54.69  |
|                    |                  |       | 0.281          | 7.14  | -       | 41.21  | 61.35  |
|                    |                  |       | 0.312          | 7.92  | 20      | 45.65  | 67.90  |
|                    |                  |       | 0.344          | 8.74  | -       | 50.22  | 74.76  |
|                    |                  |       | 0.375          | 9.52  | 30/STD  | 54.62  | 81.25  |
|                    |                  |       | 0.438          | 11.13 | 40      | 63.50  | 94.55  |
|                    |                  |       | 0.469          | 11.91 | -       | 67.84  | 100.94 |
|                    |                  |       | 0.500          | 12.70 | XS      | 72.16  | 107.39 |
| 16                 | 16.000           | 406.4 | 0.219          | 5.56  | -       | 36.95  | 54.96  |
|                    |                  |       | 0.250          | 6.35  | 10      | 42.09  | 62.64  |
|                    |                  |       | 0.281          | 7.14  | -       | 47.22  | 70.30  |
|                    |                  |       | 0.312          | 7.92  | 20      | 52.32  | 77.83  |
|                    |                  |       | 0.344          | 8.74  | -       | 57.57  | 85.71  |
|                    |                  |       | 0.375          | 9.52  | 30/STD  | 62.64  | 93.17  |
|                    |                  |       | 0.438          | 11.13 | -       | 72.86  | 108.49 |
|                    |                  |       | 0.469          | 11.91 | -       | 82.85  | 115.86 |
|                    |                  |       | 0.500          | 12.70 | 40/XS   | 107.60 | 123.30 |
| 18                 | 18.000           | 457   | 0.250          | 6.35  | 10      | 47.44  | 70.60  |
|                    |                  |       | 0.281          | 7.14  | -       | 53.23  | 79.24  |
|                    |                  |       | 0.312          | 7.92  | 20      | 58.99  | 87.75  |
|                    |                  |       | 0.344          | 8.74  | -       | 64.93  | 96.66  |
|                    |                  |       | 0.375          | 9.52  | STD     | 70.65  | 105.10 |
|                    |                  |       | 0.406          | 10.31 | -       | 76/36  | 113.62 |
|                    |                  |       | 0.438          | 11.13 | 30      | 82.23  | 122.43 |
|                    |                  |       | 0.469          | 11.91 | -       | 87.89  | 130.78 |
|                    |                  |       | 0.500          | 12.70 | XS      | 93.54  | 139.20 |
|                    |                  |       | 0.562          | 14.27 | 40      | 104.76 | 155.87 |
| 20                 | 20.000           | 508   | 0.250          | 6.35  | 10      | 52.78  | 78.55  |
|                    |                  |       | 0.281          | 7.14  | -       | 59.23  | 88.19  |
|                    |                  |       | 0.312          | 7.92  | -       | 65.66  | 97.67  |
|                    |                  |       | 0.344          | 8.74  | -       | 72.28  | 107.60 |
|                    |                  |       | 0.375          | 9.52  | 20/STD  | 78.67  | 117.02 |
|                    |                  |       | 0.406          | 10.31 | -       | 84.04  | 126.53 |
|                    |                  |       | 0.438          | 11.13 | -       | 91.59  | 136.37 |
|                    |                  |       | 0.469          | 11.91 | -       | 97.92  | 145.70 |
|                    |                  |       | 0.500          | 12.70 | 30/XS   | 104.23 | 155.12 |
|                    |                  |       | 0.594          | 15.09 | 40      | 123.23 | 183.42 |

Chemical Composition : Phosphorous max 0,050%

| Tensile Requirement                           | Grade 1      | Grade 2      | Grade 3      |
|-----------------------------------------------|--------------|--------------|--------------|
| Tensile Strength, min, psi (MPa)              | 50 000 (345) | 60 000 (415) | 66 000 (455) |
| Yield point or yield strength, min, psi (MPa) | 30 000 (205) | 35 000 (240) | 45 000 (310) |



# ISO 9001 : 2008 CERTIFIED

## STEEL PIPE ASTM A53

Grade A and Grade B

### SPESIFIKASI TEKNIS

| Nominal<br>Size in | Outside Diameter |       | Wall Thickness |       | Sch No. | Weight |       | Test Pressure |        |         |       |
|--------------------|------------------|-------|----------------|-------|---------|--------|-------|---------------|--------|---------|-------|
|                    |                  |       |                |       |         |        |       | Grade A       |        | Grade B |       |
|                    | In               | mm    | In             | mm    |         | lbs/ft | kg/m  | psi           | kPa    | psi     | kPa   |
| 1/2                | 0.840            | 21.3  | 0.119          | 2.77  | 40/STD  | 0.85   | 1.27  | 700           | 4800   | 700     | 4800  |
| 3/4                | 1.050            | 26.7  | 0.113          | 2.87  | 40/STD  | 1.13   | 1.69  | 700           | 4800   | 700     | 4800  |
| 1                  | 1.315            | 33.4  | 0.133          | 3.38  | 40/STD  | 1.68   | 2.50  | 700           | 4800   | 700     | 4800  |
| 1 1/4              | 1.660            | 42.2  | 0.140          | 3.56  | 40/STD  | 2.27   | 3.39  | 1200          | 8300   | 1300    | 9000  |
| 1 1/2              | 1.900            | 48.3  | 0.145          | 3.68  | 40/STD  | 2.72   | 4.05  | 1200          | 8300   | 1300    | 9000  |
| 2                  | 2.375            | 60.3  | 0.154          | 3.91  | 40/STD  | 3.66   | 5.44  | 2300          | 15900  | 2500    | 17200 |
| 2 1/2              | 2.875            | 73    | 0.203          | 5.16  | 40/STD  | 5.80   | 8.63  | 2500          | 17200  | 2500    | 17200 |
| 3                  | 3.500            | 88.9  | 0.125          | 3.18  | -       | 4.51   | 6.72  | 1290          | 8900   | 1500    | 1000  |
|                    |                  |       | 0.156          | 0.96  | -       | 5.58   | 8.29  | 1600          | 11000  | 1870    | 12900 |
|                    |                  |       | 0.188          | 4.78  | -       | 6.66   | 9.92  | 1930          | 13330  | 2260    | 15600 |
|                    |                  |       | 0.216          | 5.49  | 40/STD  | 7.58   | 11.29 | 2220          | 15300  | 2500    | 17200 |
| 4                  | 4.500            | 114.3 | 0.188          | 4.78  | -       | 8.66   | 12.91 | 1500          | 10340` | 1750    | 12070 |
|                    |                  |       | 0.219          | 5.56  | -       | 10.01  | 14.91 | 1750          | 12070  | 2040    | 14070 |
|                    |                  |       | 0.237          | 6.02  | 40/STD  | 10.79  | 16.07 | 1900          | 13100  | 2210    | 15240 |
|                    |                  |       | 0.250          | 6.35  | -       | 11.35  | 16.90 | 2000          | 13790  | 2330    | 16060 |
| 6                  | 6.625            | 168.3 | 0.188          | 4.78  | -       | 12.92  | 19.27 | 1020          | 7030   | 1190    | 8200  |
|                    |                  |       | 0.219          | 5.56  | -       | 14.98  | 22.31 | 1190          | 8200   | 1390    | 9580  |
|                    |                  |       | 0.250          | 6.35  | -       | 17.02  | 25.36 | 1360          | 9380   | 1580    | 10890 |
|                    |                  |       | 0.280          | 7.11  | 40/STD  | 18.97  | 28.26 | 1520          | 10480  | 1780    | 12270 |
|                    |                  |       | 0.312          | 7.92  | -       | 21.04  | 31.32 | 1700          | 11720  | 1980    | 13650 |
|                    |                  |       | 0.344          | 8.74  | -       | 23.08  | 34.39 | 1870          | 12890  | 2180    | 15030 |
|                    |                  |       | 0.375          | 9.52  | -       | 25.03  | 37.28 | 2040          | 14070  | 2380    | 16410 |
| 8                  | 8.625            | 219.1 | 0.188          | 4.78  | -       | 16.9   | 25.26 | 780           | 5380   | 920     | 6340  |
|                    |                  |       | 0.203          | 5.16  | -       | 18.26  | 27.22 | 850           | 5860   | 1000    | 6890  |
|                    |                  |       | 0.219          | 5.56  | -       | 19.66  | 29.28 | 910           | 6270   | 1070    | 7380  |
|                    |                  |       | 0.250          | 6.35  | 20      | 22.36  | 33.31 | 1040          | 7170   | 1220    | 8410  |
|                    |                  |       | 0.277          | 7.04  | 30      | 24.70  | 36.31 | 1160          | 7800   | 1350    | 9310  |
|                    |                  |       | 0.312          | 7.92  | -       | 27.70  | 41.24 | 1300          | 8960   | 1520    | 10480 |
|                    |                  |       | 0.322          | 8.18  | 40/STD  | 28.55  | 42.55 | 1340          | 9240   | 1570    | 10820 |
|                    |                  |       | 0.344          | 8.74  | -       | 30.42  | 45.34 | 1440          | 9930   | 1680    | 11580 |
|                    |                  |       | 0.375          | 9.52  | -       | 33.04  | 49.20 | 1570          | 10820  | 1830    | 12620 |
|                    |                  |       | 0.438          | 11.13 | -       | 38.30  | 57.08 | 1830          | 12620  | 2130    | 14690 |
| 10                 | 10.750           | 273.0 | 0.188          | 4.78  | -       | 21.23  | 31.62 | 630           | 4300   | 730     | 5000  |
|                    |                  |       | 0.203          | 5.16  | -       | 22.89  | 34.08 | 680           | 4700   | 800     | 5500  |
|                    |                  |       | 0.219          | 5.56  | -       | 24.65  | 36.67 | 730           | 5000   | 860     | 5900  |
|                    |                  |       | 0.250          | 6.35  | 20      | 28.06  | 41.75 | 840           | 5800   | 980     | 6800  |
|                    |                  |       | 0.279          | 7.09  | -       | 31.23  | 46.49 | 930           | 6400   | 1090    | 7500  |
|                    |                  |       | 0.307          | 7.80  | 30      | 34.27  | 51.01 | 1030          | 7100   | 1200    | 8300  |
|                    |                  |       | 0.344          | 8.74  | -       | 38.27  | 56.96 | 1150          | 7900   | 1340    | 9200  |
|                    |                  |       | 0,365          | 9.27  | 40/STD  | 40.52  | 69.29 | 1220          | 8400   | 1430    | 9900  |
|                    |                  |       | 0.438          | 11.13 | -       | 48.28  | 71.87 | 1470          | 10100  | 1710    | 11800 |



| Nominal Size in | Outside Diameter |       | Wall Thickness |       | Sch No. | Weight |        | Test Pressure |      |         |      |
|-----------------|------------------|-------|----------------|-------|---------|--------|--------|---------------|------|---------|------|
|                 |                  |       |                |       |         |        |        | Grade A       |      | Grade B |      |
|                 | In               | mm    | In             | mm    |         | lbs/ft | kg/m   | psi           | kPa  | psi     | kPa  |
| 12              | 12.750           | 323.8 | 0.203          | 5.16  | -       | 27.23  | 40.55  | 570           | 3900 | 670     | 4600 |
|                 |                  |       | 0.219          | 5.56  | -       | 29.34  | 43.63  | 620           | 4300 | 720     | 5000 |
|                 |                  |       | 0.250          | 6.35  | 20      | 33.41  | 49.71  | 710           | 4900 | 820     | 5700 |
|                 |                  |       | 0.281          | 7.14  | -       | 37.46  | 55.75  | 790           | 5400 | 930     | 6400 |
|                 |                  |       | 0.312          | 7.92  | -       | 41.48  | 61.69  | 880           | 6100 | 1030    | 7100 |
|                 |                  |       | 0.330          | 8.38  | 30      | 43.81  | 65.18  | 930           | 6400 | 1090    | 7500 |
|                 |                  |       | 0.344          | 8.74  | -       | 45.62  | 67.90  | 970           | 6700 | 1130    | 7800 |
|                 |                  |       | 0.375          | 9.52  | STD     | 49.61  | 73.78  | 1060          | 7300 | 1240    | 8500 |
|                 |                  |       | 0.406          | 10.31 | 40      | 53.57  | 79.70  | 1150          | 7900 | 1340    | 9200 |
| 14              | 14.000           | 355.6 | 0.210          | 5.33  | -       | 30.96  | 46.04  | 540           | 3700 | 630     | 4300 |
|                 |                  |       | 1.219          | 5.56  | -       | 32.26  | 47.99  | 560           | 3900 | 660     | 4500 |
|                 |                  |       | 0.250          | 6.35  | 10      | 36.75  | 54.69  | 640           | 4400 | 750     | 5200 |
|                 |                  |       | 0.281          | 7.14  | -       | 41.21  | 61.35  | 720           | 5000 | 840     | 5800 |
|                 |                  |       | 0.312          | 7.92  | 20      | 45.65  | 67.90  | 800           | 5500 | 940     | 6500 |
|                 |                  |       | 0.344          | 8.74  | -       | 50.22  | 74.76  | 880           | 6100 | 1030    | 7100 |
|                 |                  |       | 0.375          | 9.52  | 30/STD  | 54.62  | 81.25  | 960           | 6600 | 1120    | 7700 |
|                 |                  |       | 0.438          | 11.13 | 40      | 63.50  | 94.55  | 1130          | 7800 | 1310    | 9000 |
| 16              | 16.000           | 406.4 | 0.219          | 5.56  | -       | 36.95  | 54.96  | 490           | 3400 | 570     | 3900 |
|                 |                  |       | 0.250          | 6.35  | 10      | 42.09  | 62.64  | 560           | 3900 | 660     | 4500 |
|                 |                  |       | 0.281          | 7.14  | -       | 47.22  | 70.30  | 630           | 4300 | 740     | 5100 |
|                 |                  |       | 0.312          | 7.92  | 20      | 52.32  | 77.83  | 700           | 4800 | 820     | 5700 |
|                 |                  |       | 0.344          | 8.74  | -       | 57.57  | 85.71  | 770           | 5300 | 900     | 6200 |
|                 |                  |       | 0.375          | 9.52  | 30/STD  | 62.64  | 93.17  | 840           | 5800 | 980     | 6800 |
|                 |                  |       | 0.438          | 11.13 | -       | 72.86  | 108.49 | 990           | 6800 | 1150    | 7900 |
|                 |                  |       | 0.469          | 11.91 | -       | 82.85  | 115.86 | 1060          | 7300 | 1230    | 8500 |
|                 |                  |       | 0.500          | 12.70 | 40      | 107.60 | 123.30 | 1120          | 7700 | 1310    | 9000 |
| 18              | 18.000           | 457   | 0.250          | 6.35  | 10      | 47.44  | 70.60  | 500           | 3400 | 580     | 4000 |
|                 |                  |       | 0.281          | 7.14  | -       | 53.23  | 79.24  | 560           | 3900 | 660     | 4500 |
|                 |                  |       | 0.312          | 7.92  | 20      | 58.99  | 87.75  | 620           | 4300 | 730     | 5000 |
|                 |                  |       | 0.344          | 8.74  | -       | 64.93  | 96.66  | 690           | 4800 | 800     | 5500 |
|                 |                  |       | 0.375          | 9.52  | STD     | 70.65  | 105.10 | 750           | 5200 | 880     | 6100 |
|                 |                  |       | 0.406          | 10.31 | -       | 76/36  | 113.62 | 810           | 5600 | 950     | 6500 |
|                 |                  |       | 0.438          | 11.13 | 30      | 82.23  | 122.43 | 880           | 6100 | 1020    | 7000 |
|                 |                  |       | 0.469          | 11.91 | -       | 87.89  | 130.78 | 940           | 6500 | 1090    | 7500 |
|                 |                  |       | 0.562          | 14.27 | 40      | 104.76 | 155.87 | 1120          | 7700 | 1310    | 9000 |
| 20              | 20.000           | 508   | 0.250          | 6.35  | 10      | 52.78  | 78.55  | 450           | 3100 | 520     | 3600 |
|                 |                  |       | 0.281          | 7.14  | -       | 59.23  | 88.19  | 510           | 3500 | 590     | 4100 |
|                 |                  |       | 0.312          | 7.92  | -       | 65.66  | 97.67  | 560           | 3900 | 660     | 4500 |
|                 |                  |       | 0.344          | 8.74  | -       | 72.28  | 107.60 | 620           | 4300 | 720     | 5000 |
|                 |                  |       | 0.375          | 9.52  | 20/STD  | 78.67  | 117.02 | 680           | 4700 | 790     | 5400 |
|                 |                  |       | 0.406          | 10.31 | -       | 84.04  | 126.53 | 730           | 5000 | 850     | 5900 |
|                 |                  |       | 0.438          | 11.13 | -       | 91.59  | 136.37 | 790           | 5400 | 920     | 6300 |
|                 |                  |       | 0.469          | 11.91 | -       | 97.92  | 145.70 | 850           | 5900 | 950     | 6500 |
|                 |                  |       | 0.500          | 12.70 | 30      | 104.23 | 155.12 | 900           | 6200 | 1050    | 7200 |
|                 |                  |       | 0.594          | 15.09 | 40      | 123.23 | 183.42 | 1170          | 8100 | 1250    | 8600 |

Chemical Composition (%)

| ASTM A53 | Carbon | Manganese | Phosphorus | Sulfur | Copper | Nickel | Chromium | Molbdenum | Vanadium | Cu+Ni+Cr+Mo+V |
|----------|--------|-----------|------------|--------|--------|--------|----------|-----------|----------|---------------|
| Grade A  | 0.25   | 0.950     | 0.05       | 0.45   | 0.40   | 0.40   | 0.40     | 0.15      | 0.08     | 1.00          |
| Grade B  | 0.30   | 1.200     | 0.05       | 0.45   | 0.40   | 0.40   | 0.40     | 0.15      | 0.08     | 1.00          |

Mekanikal Properties:

|         | Yield Strength (mm) | Tensile Strength (mm) |
|---------|---------------------|-----------------------|
| Grade A | 30,000 ps (205 Mpa) | 48,000 psi (330 Mpa)  |
| Grade B | 30,000 ps (240 Mpa) | 60,000 psi (415 Mpa)  |

Galvanized : Zinc Coating Eight : 550 µ/m2 (77 µm) minimum

Toleransi panjang : ± 2 %

Panjang pipa : 6 meter per batang

Toleransi Tebal : Plus tidak terbatas  
Minus (-) 12,5%







**PIPE & COATING**  
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