## DIMENSION RANGE

| NOMINAL DIAMETER (inches) | (mm) | WALL THICKNESS (inches) | 0.039 | 0.079 | 0.118 | 0.157 | 0.197 | 0.236 | 0.276 | 0.315 | 0.394 | 0.472 | 0.551 | 0.630 | 0.709 | 0.787 | 0.866 | 0.945 | 1.024 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | (mm) | 1.0 | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 7.0 | 8.0 | 10.0 | 12.0 | 14.0 | 16.0 | 18.0 | 20.0 | 22.0 | 24.0 | 26.0 |
| ¼ | 8 | | | 2.3 | | | | | | | | | | | | | | | |
| ⅜ | 10 | | | 2.3 | | | | | | | | | | | | | | | |
| ½ | 15 | | | 2.77 | | | | | | | | | | | | | | | |
| ¾ | 20 | | | 2.87 | | | | | | | | | | | | | | | |
| 1 | 25 | | | | 3.38 | | | | | | | | | | | | | | |
| 1 ¼ | 32 | | | | 3.56 | | | | | | | | | | | | | | |
| 1 ½ | 40 | | | | 3.68 | | | | | | | | | | | | | | |
| 2 | 50 | | | | 3.91 | | | | | | | | | | | | | | |
| 2 ½ | 65 | | 1.4 | | | 5.16 | | | | | | | | | | | | | |
| 3 | 80 | | 1.4 | | | 5.49 | | | | | | | | | | | | | |
| 3 ½ | 90 | | | 2.7 | | | 5.74 | | | | | | | | | | | | |
| 4 | 100 | | 1.4 | | | | 6.02 | | | | | | | | | | | | |
| 5 | 125 | | | | | | | 6.5 | | | | | | | | | | | |
| 6 | 150 | | | | | | | | 7.11 | | 9.52 | | | | | | | | |
| 7 | 175 | | | | | | | | 6.5 | | | | | | | | | | |
| 8 | 200 | | | | 3.9 | | | | | 8.18 | | 12.7 | | | | | | | |
| 12 | 300 | | | | | | | | | | | | | | | | | | |
| 16 | 300 | | | | | | | | | | | | | | | | | | |
| 20 | 500 | | | | | | | | | | | | | | | | | | |
| 24 | 600 | | | | | | | | | | | | | | | 20.52 | | | |
| 28 | 700 | | | | | | | 6.5 | | | | | | | | | | | 25.4 |
| 32 | 800 | | | | | | | | | | | | | | | | | | |
| 36 | 900 | | | | | | | | | | | | | | | | | | |
| 40 | 1000 | | | | | | | | | | | | | | | | | | |
| 44 | 1100 | | | | | | | | | | | | | | | | | | |
| 48 | 1200 | | | | | | | | | | | | | | | | | | |
| 52 | 1300 | | | | | | | | | | | | | | | | | | |
| 56 | 1400 | | | | | | | | | | | | | | | | | | |
| 60 | 1500 | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| 80 | 2000 | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| 100 | 2500 | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| 120 | 3000 | | | | | | | | | | | | | | | | | | |

ERW PIPES
SPIRAL PIPES
HFW PIPE & SPIRAL PIPES

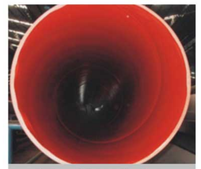
## HFW | ERW **Water Pipes**

| | |
|---|---|
| Range of Diameter | ½" - 12" |
| Range of Wall Thickness | 2.00 mm - 10.30 mm |
| Classification | Light/Medium/Heavy - **SNI 0039 Standard** |
| | Grade A/Grade B - **ASTM A53 Standard** |

## SSAW **Water Pipes**

| | |
|---|---|
| Range of Diameter | 6" - 80" |
| Range of Wall Thickness | 4.10 mm - 25.40 mm |
| Classification | Light/Medium/Heavy - **SNI 0039 Standard** |
| | **AWWA C200, AWWA C208, AS 1579** |

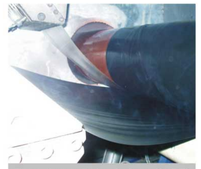
## Internal Coating



Internal Epoxy Coating

Cement Mortar Lining

## External Coating



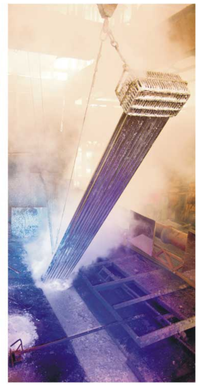
Three Layer Polyethylene (3LPE)

Three Layer Polypropelene (3LPP)

Fusion Bond Epoxy Coating (FBE)

External Epoxy Coating

## Galvanized



Application **Water Pipelines**

## HFW | ERW **Water Pipes**

Electric Resistance Welded (ERW) or High Frequency Welding (HFW) steel pipes is based on welding in flat sheet rolled into a tube. Through its proven coating process, SPINDO® steel water pipe fulfill various industrial standard.

These steel pipes are mainly used for water transmission pipelines, water treatment plants, wastewater treatment plants, cogeneration facilities & circulating water systems in the building.

Pengelasan elektrik (ERW) atau pengelasan elektrik frekwensi tinggi (HFW) untuk pipa baja mengacu pada pengelasan pada lembaran yang digulung menjadi bentuk tabung. Melalui proses pelapisan yang telah teruji, pipa baja SPINDO® memenuhi berbagai standar kelayakan penggunaannya sebagai pipa air.

Penggunaan pipa baja ini terutama untuk jaringan pipa air transmisi, pabrik pengolahan air, pabrik pengolahan air limbah, fasilitas penggunaan tenaga air dan sistem sirkulasi air pada bangunan.

## SSAW **Water Pipes**

Spiral Submerged Arc Welding (SSAW) steel pipes is a forming tube process of rolled steel sheet with centerline hose reel molding angle (adjustable), side molding edge welding and weld them into a spiral.

These steel pipes are used for large diameter of water distribution, such as water tunnel, water treatment plants, wastewater treatment plants, etc

Pengelasan spiral pada pipa baja (SSAW) adalah pembentukan tabung dengan proses menggulung lembaran baja dengan sudut tertentu mengacu pada garis pusat, sisi tepi lembaran dilas mengikuti alur spiral yang telah ditentukan.

Pipa baja ini digunakan untuk distribusi air dengan diameter besar, seperti pada terowongan air, pabrik pengolahan air, pabrik pengolahan air limbah, dan sebagainya.

Application **Underground Water Pipelines**

STEEL PIPES FOR USE IN WATER SYSTEM FACILITIES
**DIMENSION, WEIGHT & TEST PRESSURE OF PIPES**
**AWWA C 200 -91**

# SPINDO® SSAW - WATER PIPES

| OUTSIDE DIMENSIONS | | WALL THICKNESS | | WEIGHT | | HYDROSTATIC TEST PRESSURE | |
|---|---|---|---|---|---|---|---|
| inch | mm | inch | mm | lb/ft | kg/m | kgf/cm² * | lbf/inch² * |
| 8⅝ | 219.1 | 0.250 | 6.40 | 22.48 | 33.57 | 73 | 1031 |
| 10¾ | 273.1 | 0.250 | 6.40 | 28.19 | 42.09 | 59 | 833 |
| 12¾ | 323.9 | 0.160 | 4.10 | 21.50 | 32.10 | 40 | 565 |
| 14 | 355.6 | 0.176 | 4.50 | 26.00 | 38.70 | 40 | 566 |
| 16 | 406.4 | 0.176 | 4.50 | 29.70 | 44.30 | 35 | 495 |
| 18 | 457.2 | 0.192 | 4.90 | 36.50 | 54.40 | 34 | 480 |
| 20 | 508.0 | 0.192 | 4.90 | 40.60 | 60.50 | 30 | 432 |
| 22 | 558.8 | 0.212 | 5.40 | 49.30 | 73.50 | 30 | 434 |
| 24 | 609.6 | 0.212 | 5.40 | 53.80 | 80.20 | 28 | 398 |
| 26 | 660.4 | 0.250 | 6.40 | 68.70 | 102.40 | 30 | 433 |
| 28 | 711.2 | 0.250 | 6.40 | 74.10 | 110.40 | 28 | 402 |
| 30 | 762.0 | 0.250 | 6.40 | 79.40 | 118.30 | 26 | 375 |
| 32 | 812.8 | 0.250 | 6.40 | 84.70 | 126.30 | 25 | 352 |
| 34 | 863.6 | 0.250 | 6.40 | 90.10 | 134.20 | 23 | 331 |
| 36 | 914.4 | 0.312 | 7.90 | 118.90 | 177.10 | 27 | 390 |
| 40 | 1016.0 | 0.312 | 7.90 | 132.20 | 197.00 | 25 | 351 |
| 42 | 1066.8 | 0.375 | 9.50 | 166.60 | 248.30 | 28 | 402 |
| 44 | 1117.6 | 0.375 | 9.50 | 174.60 | 260.30 | 27 | 375 |
| 48 | 1219.2 | 0.375 | 9.50 | 190.70 | 284.10 | 25 | 352 |
| 52 | 1320.8 | 0.500 | 12.70 | 274.90 | 409.70 | 30 | 433 |
| 56 | 1422.4 | 0.500 | 12.70 | 296.20 | 441.50 | 28 | 402 |
| 60 | 1524.0 | 0.500 | 12.70 | 317.60 | 473.30 | 26 | 384 |
| 64 | 1625.6 | 0.500 | 12.70 | 338.90 | 505.10 | 25 | 352 |
| 68 | 1727.2 | 0.625 | 15.90 | 449.50 | 669.90 | 29 | 414 |
| 72 | 1828.8 | 0.625 | 15.90 | 476.20 | 709.70 | 27 | 391 |
| 76 | 1930.4 | 0.625 | 15.90 | 502.90 | 749.50 | 26 | 370 |
| 80 | 2032.0 | 0.625 | 15.90 | 529.60 | 789.30 | 25 | 352 |

* SM.Y.S = 30,000 Psi

Other Diameter and Wall Thickness can be supplied on customer request / specification

Minimum Wall Thickness : 4 mm
Maximum Wall Thickness : 25.4 mm
Minimum Diameter : 219.1 mm
Maximum Diameter : 3000 mm (ASTM)
: 2032 mm (API & Stand)

# TECHNICAL SPECIFICATION OF SPINDO® SSAW - WATER PIPES

| GRADE | | CHEMICAL COMPOSITIONS (%) | | | | MECHANICAL PROPERTIES | | | ON LINE TEST |
|---|---|---|---|---|---|---|---|---|---|
| | | C Max | Mn Max | P Max | S Max | OTHERS | YIELD STRENGTH Mpa | TENSILE STRENGTH Mpa | ELONGATION (%) Min |
| SNI 0039 | LIGHT | 0.20 | 1.40 | 0.035 | 0.030 | - | - | 320 - 460 | 50 |
| | MEDIUM | 0.20 | 1.40 | 0.035 | 0.030 | | - | 320 - 460 | 50 |
| | HEAVY | 0.20 | 1.40 | 0.035 | 0.030 | | - | 320 - 460 | 50 |
| ASTM | A36 | 0.25 | 0.80 -1.20 | 0.040 | 0.050 | Cu - 0.20 when specified | (36) 25.3 | (58-80) 40.8-56.3 | 23 |
| ASTM A283 | C | - | - | 0.040 | 0.050 | Cu - 0.20 when specified | (30) 21.1 | (55-65) 38.7-45.7 | 25 |
| | D | - | - | 0.040 | 0.050 | | (33) 23.2 | (60-72) 42.2-50.6 | 23 |
| ASTM A570 | 30 | 0.25 | 0.90 | 0.040 | 0.050 | Cu - 0.20 when specified | (30) 21.1 | (49) 34.5 | 25 |
| | 33 | 0.25 | 0.90 | 0.040 | 0.050 | | (33) 23.2 | (52) 36.6 | 23 |
| | 36 | 0.25 | 0.90 | 0.040 | 0.050 | Cu - 0.20 when specified | (30) 21.1 | (53) 37.3 | 22 |
| | 40 | 0.25 | 0.90 | 0.040 | 0.050 | | (33) 23.2 | (55) 38.7 | 21 |
| | 45 | 0.25 | 1.35 | 0.040 | 0.050 | Cu - 0.20 when specified | (30) 21.1 | (60) 42.2 | 19 |
| | 50 | 0.25 | 1.35 | 0.040 | 0.050 | | (33) 23.2 | (65) 45.7 | 17 |
| ASTM 572 | 42 | 0.21 | 1.35 | 0.040 | 0.050 | Si 0.40 | (42) 29.5 | (60) 42.2 | 24 |
| | 45 | 0.23 | 1.35 | 0.040 | 0.040 | Si 0.40 | (50) 35.2 | (65) 45.7 | 21 |
| | 60 | 0.26 | 1.35 | 0.040 | 0.050 | Si 0.40 | (60) 42.2 | (75) 52.7 | 18 |

# SPINDO® MAJOR EXPERIENCE PROJECTS

| No. | CUSTOMER / PROJECT | OD (inch) | THICKNESS (mm) | VOLUME | SPEC. | YEAR |
|---|---|---|---|---|---|---|
| 1 | Fresh Water Supply - Fakfak, West of Papua | 16 | 6.50 | 201 ton | AWWA C 200 | 2013 |
| 2 | Fresh Water Supply - South and West of Sulawesi | 10¾, 12¾, 16 | 5.00 - 6.00 | 381 ton | AWWA C 200 | 2013 |
| 3 | Fresh Water Supply - Manokwari, West of Papua, 2nd phase | 11¾, 15¾ | 5.00 - 6.50 | 478 ton | AWWA C 200 | 2013 |
| 4 | Fresh Water Supply - Bregas (Brebes, Tegal, Slawi) area at North Coast of Java | 10¾ - 24 | 4.80 - 8.00 | 1008 ton | AWWA C 200 | 2011 |
| 5 | Summarecon - Serpong | 10¾ - 20 | 9.00 - 15.00 | 100 ton | ASTM A 53 | 2007 |
| 6 | Mall Kelapa Gading | 10¾ - 24 | 9.00 - 12.00 | 140 ton | ASTM A 53 | 2007 |
| 7 | PDAM - Bali | 14 | 6.35 | 554 ton | AWWA C 200 | 2005 |
| 8 | PDAM - Medan | 10¾, 15¾ | 5.20 - 6.40 | 300 ton | AWWA C 200 | 2003 |

# SPINDO® ERW | HFW - WATER PIPES

**CARBON STEEL PIPES FOR GENERAL APPLICATIONS**
**ASTM A53 : 2012**
**GRADE A / GRADE B**

| NOMINAL DIAMETER | | SPECIFIED OUTSIDE DIAMETER | SPECIFIED WALL THICKNESS | NOMINAL WEIGHT PLAIN END | SCHEDULE No |
|---|---|---|---|---|---|
| mm | inch | mm | mm | kg/m | |
| 15 | ½ | 21.3 | 2.77 | 1.27 | 40 |
| 20 | ¾ | 26.7 | 2.87 | 1.69 | 40 |
| 25 | 1 | 33.4 | 3.38 | 2.50 | 40 |
| 32 | 1¼ | 42.2 | 3.56 | 3.39 | 40 |
| 40 | 1½ | 48.3 | 3.68 | 4.05 | 40 |
| 50 | 2 | 60.3 | 3.91 | 5.44 | 40 |
| 65 | 2½ | 73.0 | 5.16 | 8.63 | 40 |
| 80 | 3 | 88.9 | 5.49 | 11.29 | 40 |
| 90 | 3½ | 101.6 | 5.74 | 13.57 | 40 |
| 100 | 4 | 114.3 | 6.02 | 16.07 | 40 |
| 125 | 5 | 141.3 | 6.55 | 21.77 | 40 |
| 150 | 6 | 168.3 | 7.11 | 28.26 | 40 |
| 200 | 8 | 219.1 | 6.35 | 33.31 | 20 |
| | | 219.1 | 7.04 | 36.31 | 30 |
| | | 219.1 | 8.18 | 42.55 | 40 |
| 250 | 10 | 273.0 | 6.35 | 41.75 | 20 |
| | | 273.0 | 9.27 | 60.29 | 40 |
| 300 | 12 | 323.8 | 6.35 | 49.71 | 20 |
| | | 323.8 | 9.52 | 73.78 | STD |
| | | 323.8 | 10.31 | 79.70 | 40 |

**CARBON STEEL PIPES FOR PRESSURE SERVICES**
**JIS G 3454 : 1988 (STPG)**

| SYMBOL OF GRADE | TENSILE STRENGTH kgf/mm² (N/mm²) | YIELD STRENGTH kgf/mm² (N/mm²) |
|---|---|---|
| STPG 38 | 38 Min (373 Min) | 22 Min (216 Min) |
| STPG 42 | 42 Min (412 Min) | 25 Min (245 Min) |

| NOMINAL DIAMETER | | SPECIFIED OUTSIDE DIAMETER | SCHEDULE 20 | | SCHEDULE 40 | |
|---|---|---|---|---|---|---|
| | | | WALL THICKNESS | UNIT MASS | WALL THICKNESS | UNIT MASS |
| mm | inch | mm | mm | kg/m | mm | kg/m |
| 15 | ½ | 21.7 | - | - | 2.8 | 1.31 |
| 20 | ¾ | 27.2 | - | - | 2.9 | 1.74 |
| 25 | 1 | 34.0 | - | - | 3.4 | 2.57 |
| 32 | 1¼ | 42.7 | - | - | 3.6 | 3.47 |
| 40 | 1½ | 48.6 | - | - | 3.7 | 4.10 |
| 50 | 2 | 60.5 | 3.2 | 4.52 | 3.9 | 5.44 |
| 65 | 2½ | 76.3 | 4.5 | 7.97 | 5.2 | 9.12 |
| 80 | 3 | 89.1 | 4.5 | 9.39 | 5.5 | 11.3 |
| 90 | 3½ | 101.6 | 4.5 | 10.8 | 5.7 | 13.5 |
| 100 | 4 | 114.3 | 4.9 | 13.2 | 6.0 | 16.0 |
| 125 | 5 | 139.8 | 5.1 | 16.9 | 6.6 | 21.7 |
| 150 | 6 | 165.2 | 5.5 | 21.7 | 7.1 | 27.7 |
| 200 | 8 | 216.3 | 6.4 | 33.1 | 8.2 | 42.1 |
| 250 | 10 | 267.4 | 6.4 | 41.2 | 9.3 | 59.2 |
| 300 | 12 | 318.5 | 6.4 | 49.3 | 10.3 | 78.3 |

Water Treatment
**Plant**

Water Transmission
**Building**



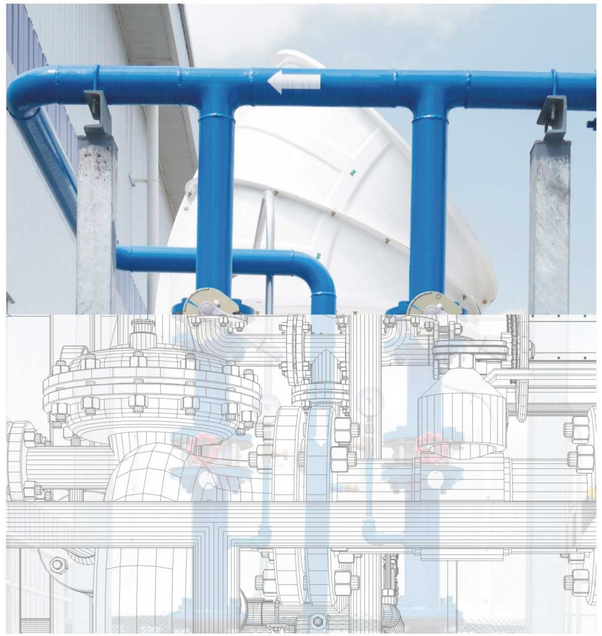
PT STEEL PIPE INDUSTRY OF INDONESIA, Tbk.

SAI GLOBAL Certified System ISO 9001

SAI GLOBAL OHSAS 18001

KAN Komite Akreditasi Nasional Certification Body for Quality System LSSM - 008 - IDN

SNI



**SSAW & HFW | ERW**
Spiral Submerged Arc Welded
High Frequency Welded |
Electric Resistance Welded

# Water Pipes

SPINDO

PT Steel Pipe Industry of Indonesia, Tbk.

SPINDO® s high quality pipe is used in a wide variety of applications including water and sewage transmission. Greater strength in proportion to wall thickness of any competitive product means the pipe performs safely at higher pressures and its strength provides distinct handling and laying advantages in difficult locations.

Industrial Standards
**SNI 0039 | ASTM A53 | AWWA C200 | AWWA C208 | AS 1579**