## TECHNICAL DATA OF BLACK AND HOT DIP GALVANIZED STEEL PIPES CONFORMING TO ASTM A 53 GRADE A & B SCH-40 ASTM A795 GRADE A & B SCH - 40

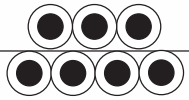
| | | OUTSIDE DIAMETER | | WALL THICKNESS | | WEIGHT OF BLACK PIPES | | | | TEST PRESSURE | | | | SOCKET DIMENSIONS | | | | NO. OF PCS PER LIFT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NOMINAL PIPE SIZE | | STANDARD | | STANDARD | | PLAIN END | | | | GRADE A | | GRADE B | | MIN OUTSIDE DIA | | MIN LENGTH | | |
| INCH | MM | INCH | MM | INCH | MM | KG/MTR | MTR/TON | LB/FT | FT/TON | PSI | KPA | PSI | KPA | INCH | MM | INCH | MM | |
| 1/2 | 15 | 0.840 | 21.3 | 0.109 | 2.77 | 1.27 | 787 | 0.85 | 2583 | 700 | 4800 | 700 | 4800 | 1.063 | 27.0 | 1.500 | 38.1 | 120 |
| 3/4 | 20 | 1.050 | 26.7 | 0.113 | 2.87 | 1.69 | 592 | 1.13 | 1941 | 700 | 4800 | 700 | 4800 | 1.313 | 33.4 | 1.563 | 39.7 | 84 |
| 1 | 25 | 1.315 | 33.4 | 0.133 | 3.38 | 2.50 | 400 | 1.68 | 1312 | 700 | 4800 | 700 | 4800 | 1.576 | 40.0 | 1.938 | 49.2 | 60 |
| 1.1/4 | 32 | 1.660 | 42.2 | 0.140 | 3.56 | 3.39 | 295 | 2.27 | 968 | 1200 | 8300 | 1300 | 9000 | 1.900 | 48.3 | 2.000 | 50.8 | 42 |
| 1.1/2 | 40 | 1.900 | 48.3 | 0.145 | 3.68 | 4.05 | 247 | 2.72 | 810 | 1200 | 8300 | 1300 | 9000 | 2.200 | 55.9 | 2.000 | 50.8 | 36 |
| 2 | 50 | 2.375 | 60.3 | 0.154 | 3.91 | 5.44 | 184 | 3.66 | 603 | 2300 | 15900 | 2500 | 17200 | 2.750 | 69.8 | 2.063 | 52.4 | 26 |
| 2.1/2 | 65 | 2.875 | 73.0 | 0.203 | 5.16 | 8.63 | 116 | 5.80 | 380 | 2500 | 17200 | 2500 | 17200 | 3.250 | 82.5 | 3.063 | 77.8 | 18 |
| 3 | 80 | 3.500 | 88.9 | 0.216 | 5.49 | 11.29 | 89 | 7.58 | 291 | 2220 | 15300 | 2500 | 17200 | 4.000 | 101.6 | 3.188 | 81.0 | 14 |
| 3.1/2 | 90 | 4.000 | 101.6 | 0.226 | 5.74 | 13.57 | 74 | 9.12 | 242 | 2030 | 14000 | 2370 | 16300 | 4.625 | 117.5 | 3.313 | 84.1 | 12 |
| 4 | 100 | 4.500 | 114.3 | 0.237 | 6.02 | 16.07 | 62 | 10.80 | 204 | 1900 | 13100 | 2210 | 15200 | 5.000 | 127.0 | 3.438 | 87.3 | 10 |
| 5 | 125 | 5.563 | 141.3 | 0.258 | 6.55 | 21.77 | 46 | 14.63 | 151 | 1670 | 11500 | 1950 | 13400 | 6.296 | 159.9 | 3.688 | 93.7 | 7 |
| 6 | 150 | 6.625 | 168.3 | 0.280 | 7.11 | 28.26 | 35 | 18.99 | 116 | 1520 | 10500 | 1780 | 12300 | 7.390 | 187.7 | 4.938 | 125.4 | 7 |
| 8 | 200 | 8.625 | 219.1 | 0.322 | 8.18 | 42.55 | 24 | 28.58 | 79 | 1340 | 9200 | 1570 | 10800 | -- | -- | -- | -- | 5 |

## TECHNICAL DATA OF BLACK AND HOT DIP GALVANIZED STEEL PIPES CONFORMING TO ASTM A53 GRADE A & B SCHEDULE 80

| NOMINAL PIPE SIZE | | OUTSIDE DIAMETER | | WALL THICKNESS | | WEIGHT OF BLACK PIPES | | | | TEST PRESSURE | | | | NO. OF PCS PER LIFT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | STANDARD | | STANDARD | | PLAIN END | | | | GRADE A | | GRADE B | | |
| INCH | MM | INCH | MM | INCH | MM | KG/MTR | MTR/ TON | LB/FT | FT/ TON | PSI | KPA | PSI | KPA | |
| 2 | 50 | 2.375 | 60.3 | 0.218 | 5.54 | 7.48 | 134 | 5.03 | 439 | 2500 | 17200 | 2500 | 17200 | 26 |
| 2.1/2 | 65 | 2.875 | 73 | 0.276 | 7.01 | 11.41 | 88 | 7.67 | 288 | 2500 | 17200 | 2500 | 17200 | 18 |
| 3 | 80 | 3.500 | 88.9 | 0.300 | 7.62 | 15.27 | 65 | 10.26 | 215 | 2500 | 17200 | 2500 | 17200 | 14 |
| 4 | 100 | 4.500 | 114.3 | 0.337 | 8.56 | 22.32 | 45 | 15.00 | 147 | 2700 | 18600 | 2800 | 19300 | 10 |

## TECHNICAL DATA OF BLACK AND HOT DIP GALVANIZED STEEL PIPES CONFORMING TO ASTM A53 GRADE A & B/ ASTM A 795 GRADE A & B SCH-10

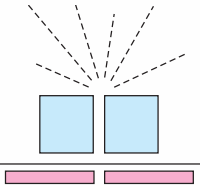
| | | OUTSIDE DIAMETER | | WALL THICKNESS | | WEIGHT OF BLACK PIPES | | | | TEST PRESSURE | | | | NO. OF PCS PER LIFT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NOMINAL PIPE SIZE | | STANDARD | | STANDARD | | PLAIN END | | | | GRADE A | | GRADE B | | |
| INCH | MM | INCH | MM | INCH | MM | KG/MTR | MTR/ TON | LB/FT | FT/ TON | PSI | KPA | PSI | KPA | |
| 3/4 | 20 | 1.050 | 26.7 | 0.083 | 2.11 | 1.28 | 781 | 0.86 | 2563 | 700 | 4800 | 700 | 4800 | 84 |
| 1 | 25 | 1.315 | 33.4 | 0.109 | 2.77 | 2.09 | 478 | 1.41 | 1570 | 700 | 4800 | 700 | 4800 | 60 |
| 1.1/4 | 32 | 1.660 | 42.2 | 0.109 | 2.77 | 2.69 | 372 | 1.81 | 1220 | 1000 | 6900 | 1000 | 6900 | 42 |
| 1.1/2 | 40 | 1.900 | 48.3 | 0.109 | 2.77 | 3.11 | 322 | 2.09 | 1055 | 1000 | 6900 | 1000 | 6900 | 36 |
| 2 | 50 | 2.375 | 60.3 | 0.109 | 3.05 | 3.93 | 254 | 2.64 | 835 | 1000 | 6900 | 1000 | 6900 | 26 |
| 2.1/2 | 65 | 2.875 | 73 | 0.120 | 3.05 | 5.26 | 190 | 3.53 | 624 | 1000 | 6900 | 1000 | 6900 | 18 |
| 3 | 80 | 3.500 | 88.9 | 0.120 | 3.05 | 6.46 | 155 | 4.34 | 508 | 1000 | 6900 | 1000 | 6900 | 14 |
| 3.1/2 | 90 | 4.000 | 101.6 | 0.120 | 3.05 | 7.41 | 135 | 4.98 | 443 | 1200 | 8300 | 1200 | 8300 | 12 |
| 4 | 100 | 4.500 | 114.3 | 0.120 | 3.05 | 8.37 | 119 | 5.62 | 392 | 1200 | 8300 | 1200 | 8300 | 10 |
| 5 | 125 | 5.563 | 141.3 | 0.134 | 3.4 | 11.58 | 86 | 7.78 | 283 | 1200 | 8300 | 1200 | 8300 | 7 |
| 6 | 150 | 6.625 | 168.3 | 0.134 | 3.4 | 13.85 | 72 | 9.30 | 237 | 1000 | 6900 | 1000 | 6900 | 7 |
| 8 | 200 | 8.625 | 219.1 | 0.188* | 4.78 | 25.26 | 40 | 16.96 | 130 | 800 | 5500 | 800 | 5500 | 5 |
| 8 | 200 | 8.625 | 219.1 | 0.148 | 3.76 | 19.97 | 50 | 13.41 | 164 | 800 | 5500 | 800 | 5500 | 5 |



Strip Levelling



Square end cutting



Butt welding

## MECHANICAL PROPERTIES

| Properties → | Tensile Strength | | Yield Strength | |
|---|---|---|---|---|
| | psi | MPa | psi | MPa |
| Grade-A | 48000 | 330 | 30000 | 205 |
| Grade-B | 60000 | 415 | 35000 | 240 |

Min Percentage Elongation in 2"[ 50mm] rounded to nearest 1/2

$$e = 625{,}000[1940] \times (A^{0.2}/U^{0.9})$$

A= cross sectional area of the tension specimen, rounded to the nearest 0.01 inch$^2$[1mm$^2$], based on specified outside diameter. If the area is more than 0.75 inch$^2$ [500mm$^2$], then the value 0.75 inch$^2$ [500mm$^2$] shall be used.
U= specified minimum tensile strength, psi[MPa].

## TOLERANCES

### OUTSIDE DIAMETER

| SIZE FROM | SIZE TO | TOLERANCE INCH(MM) | |
|---|---|---|---|
| INCH (MM) | INCH (MM) | POSITIVE | NEGATIVE |
| 1/2 (15) | 1.1/2(40) | 1/64 (0.40) | 1/64 (0.40) |
| 2 (50) | 8 (200) | 1% OF OD | 1% OF OD |

THICKNESS — 12.5% max under the nominal wall thickness.

WEIGHT — + / - 10% on calculated standard weight.

**END FINISH** — Square Cut Ends for sizes less than or equal to 1.1/2" NPS
Beveled Ends at $30^0$ $-0^0/+5^0$ for sizes 2" NPS and above.

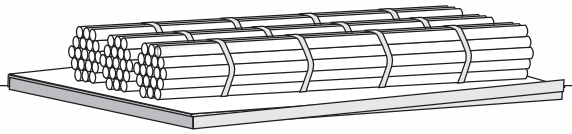
**BEND TEST** — Applicable for sizes 2" NPS and below
$90^0$ bending radius should be 12 times of the tube diameter.

**FLATTENING TEST** — Applicable for sizes 2" NPS and above in three stages.

STAGE-1 — For weld ductility until 2/3 of outside dia of specimen tube.
STAGE-2 — For ductility of steel until 1/3 of outside dia of specimen tube.
STAGE-3 — Full flattening for testing of laminated and unsound material.

**ZINC COATING**
MINIMUM : 1.60 oz / ft$^2$ [490 Gm / Mtr$^2$]
AVERAGE : 1.80 oz / ft$^2$ [550 Gm / Mtr$^2$]

**MARKING**



**MARKING:**

**1. METALLIC SPRINKLER PIPES**

**For ½" & ¾" ASTM A53 Grade A SCH 40**

(UL) LISTED 3KBY STEEL AJSPC/ASTM A53/ASME SA53/SIZE/SCH 40/GRADE A /TYPE E/NDE/LENGTH/ HEAT NO…../OMAN.

**For 1" to 8" ASTM A53 Grade A & B SCH 40**

(UL) LISTED 3KBY STEEL FM APPROVED AJSPC/ASTM A53/ASTM A795/ ASME SA53/SIZE/ SCH 40/

GRADE /TYPE E /NDE/LENGTH/ HEAT NO/OMAN.

**For 1/2" to 6" ASTM A53 Gr A/B & ASTM A795 Grade A/B SCH 10**

(UL) LISTED 3KBY STEEL AJSPC/ASTM A53/ASTM A795/SIZE/SCH 10/GRADE/TYPE E/NDE/LENGTH/ HEAT NO/ OMAN.

**For 8" ASTM A53 Gr A/B & ASTM A795 Grade A/B 0.188" WALL THICKNESS**

(UL) LISTED 3KBY STEEL AJSPC/ASTM A53/ASTM A795/SIZE/0.188"/GRADE/TYPE E/NDE/LENGTH/ HEAT NO/ OMAN.

NOTE: AJSPC – AL JAZEERA STEEL PRODUCTS CO. SAOG

**2. GALVANIZED NSF/ ANSI 372 CERTIFIED PIPES**

**(Galvanized Steel Pipes: ½" to 3/4" diameter size in Schedule 40)**

UND. LAB. CLFD STEEL PIPE NSF 372 MH49792 AJSPC/ASTM A53/ SIZE/SCH 40/GRADE/ TYPE E /NDE/LENGTH/ HEAT NO/OMAN.

**(Galvanized Steel Pipes: 1" to 8" diameter size in Schedule 40)**

UND. LAB. CLFD STEEL PIPE NSF 372 MH49792 FM APPROVED AJSPC/ASTM A53/ASTM A795/SIZE/SCH 40/GRADE/ TYPE E/NDE/LENGTH/ HEAT NO/OMAN.

**(Galvanized Steel Pipes: ½" to 8" diameter size in Schedule 10)**

UND. LAB. CLFD STEEL PIPE NSF 372 MH49792 AJSPC/ASTM A53/ASTM A795/SIZE/SCH 10/GRADE/TYPE E/ NDE/LENGTH/ HEAT NO/OMAN.

NOTE: A) AJSPC – AL JAZEERA STEEL PRODUCTS CO. SAOG

**3.BLACK STEEL NSF/ ANSI 61 AND NSF/ ANSI 372 CERTIFIED PIPES**

**(Black Steel Pipes) – ½" to 3/4" diameter in Schedule 40)**

UL CLFD. PIPE NSF 61/NSF 372 MH49792 AJSPC/ASTM A53/SIZE/ SCH 40/ GRADE /TYPE E/NDE/LENGTH/ HEAT NO/OMAN.

**(Black Steel Pipes) – 1" to 3", 5" to 08" diameter in Schedule 40)**

UL CLFD. PIPE NSF 61/NSF 372 MH49792 FM APPROVED AJSPC/ASTM A53/ASTM A795/ SIZE/ SCH 40/ GRADE/ TYPE E/NDE/LENGTH/ HEAT NO/OMAN.

**(Black Steel Pipes – ½" to 3", 5" to 08" diameter in Schedule 10)**

UL CLFD. PIPE NSF 61/NSF 372 MH49792 AJSPC/ASTM A53/ASTM A795/ SIZE/SCH 10/ GRADE/ TYPE E/NDE/LENGTH/ HEAT NO/OMAN.

NOTE: A) AJSPC – AL JAZEERA STEEL PRODUCTS CO. SAOG

**B. ASTM A53 SCHEDULE 80 PIPES**

**AJSPC/ASTM A53/SIZE/SCH 80/GRADE/TYPE E/LENGTH/NDE/ HEAT NO. XXXXXXX/ OMAN**



# TECHNICAL DATA OF BLACK AND HOT DIP GALVANIZED STEEL PIPES CONFORMING TO ASTM A 135/A795 GRADE A / B

| NOMINAL PIPE SIZE | | OUTSIDE DIAMETER STANDARD | | WALL THICKNESS STANDARD | | WEIGHT OF BLACK PIPES PLAIN END PIPES | | | | TEST PRESSURE | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| INCH | MM | INCH | MM | INCH | MM | KG/MTR | MTR/TON | LB/FT | FT/TON | PSI | KPA |
| 3/4 | 20 | 1.050 | 26.7 | 0.083* | 2.11 | 1.28 | 781 | 0.86 | 2562 | 700 | 4830 |
| 1 | 25 | 1.315 | 33.4 | 0.109* | 2.77 | 2.09 | 478 | 1.41 | 1568 | 700 | 4830 |
| 1.1/4 | 32 | 1.660 | 42.2 | 0.109* | 2.77 | 2.69 | 372 | 1.81 | 1221 | 1000 | 6890 |
| 1.1/2 | 40 | 1.900 | 48.30 | 0.109* | 2.77 | 3.11 | 322 | 2.09 | 1056 | 1000 | 6890 |
| 2 | 50 | 2.375 | 60.3 | 0.109* | 2.77 | 3.93 | 254 | 2.64 | 833 | 1000 | 6890 |
| 2.1/2 | 65 | 2.875 | 73.0 | 0.120* | 3.05 | 5.26 | 190 | 3.53 | 623 | 1000 | 6890 |
| 3 | 80 | 3.500 | 88.9 | 0.120* | 3.05 | 6.46 | 155 | 4.34 | 509 | 1000 | 6890 |
| 3.1/2 | 90 | 4.000 | 101.6 | 0.120* | 3.05 | 7.41 | 135 | 4.98 | 443 | 1200 | 8270 |
| 4 | 100 | 4.500 | 114.3 | 0.120* | 3.05 | 8.37 | 119 | 5.62 | 390 | 1200 | 8270 |
| 5 | 125 | 5.563 | 141.3 | 0.134* | 3.40 | 11.58 | 86 | 7.78 | 283 | 1200 | 8270 |
| 6 | 150 | 6.625 | 168.3 | 0.134* | 3.40 | 13.85 | 72 | 9.30 | 237 | 1000 | 6890 |
| 8 | 200 | 8.625 | 219.1 | 0.188** | 4.78 | 25.26 | 40 | 16.96 | 130 | 800 | 5520 |

* Schedule 10 Thickness
** Not Schedule 10

## CHEMICAL PROPERTIES

| ELEMENT ⟶ | Carbon C | Manganese Mn | Phosphorus P | Sulphur S |
|---|---|---|---|---|
| GRADE-A | 0.25 | 0.95 | 0.035 | 0.035 |
| GRADE-B | 0.30 | 1.20 | 0.035 | 0.035 |

## MECHANICAL PROPERTIES

| Properties ⟶ | Tensile Strength | | Yield Strength | |
|---|---|---|---|---|
| | psi | MPa | psi | MPa |
| Grade-A | 48000 | 330 | 30000 | 205 |
| Grade-B | 60000 | 415 | 35000 | 240 |

Min percent elongation in 2"(50mm) is
% El (Grade-A) = 56t + 16.5

% El (Grade-B) = 48t + 14
Where t = specified wall thickness (inch)

## TOLERANCES

OUTSIDE DIAMETER

| SIZE FROM | SIZE TO | TOLERANCE INCH(MM) | |
|---|---|---|---|
| INCH (MM) | INCH (MM) | POSITIVE | NEGATIVE |
| 3/4 (20) | 1.1/2(40) | 1/64 (0.40) | 1/64 (0.40) |
| 2 (50) | 8 (200) | 1% OF OD | 1% OF OD |

## THICKNESS

12.5% max under the nominal wall thickness.

## WEIGHT

+/-10% on calculated standard nominal weight.

## MARKING

Each pipe is stenciled as "JAZEERA STEEL OMAN, ASTM A135/A795 GR A / B-ERW SCH 10(or Thk-Inch) NPS-LENGTH-HEAT NO"

## HEAT TREATMENT

Weld seam of the ERW pipe in Grade-B shall be heat treated after welding to a minimum temperature of 1000$^0$F [540$^0$C] so that no untempered martensite remains.

## ZINC COATING

MINIMUM: 1.30 oz / ft$^2$ [400 Gm / Mtr$^2$]

AVERAGE : 1.50 oz / ft$^2$ [460 Gm / Mtr$^2$]

## FLATTENING TEST

STAGE-1 : For weld ductility until 2/3 of outside dia of specimen tube.
STAGE-2 : For ductility of steel until 1/3 of outsidedia ofspecimen tube.
STAGE-3 : Fullflattening for testing of laminated and unsound material.