HARD DRAWN STEEL WIRE

Hard Drawn Steel Wire is the most excellent wire which is variously classified by carbon contents, sizes, mechanical properties and applications. Its excellence in flexibility and casting with strict DSR's quality control system satisfy customers demands.

▪ Chemical Composition (JIS G 3506)

Classification	Chemical Composition (%)				
	C	Si	Mn	P	S
SWRH 27	0.24 ~ 0.31	0.15 ~ 0.35	0.30 ~ 0.60	0.040 under	0.040 under
SWRH 32	0.29 ~ 0.36	0.15 ~ 0.35	0.30 ~ 0.60	0.040 under	0.040 under
SWRH 37	0.34 ~ 0.41	0.15 ~ 0.35	0.30 ~ 0.60	0.040 under	0.040 under
SWRH 42A	0.39 ~ 0.46	0.15 ~ 0.35	0.30 ~ 0.60	0.040 under	0.040 under
SWRH 42B	0.39 ~ 0.46	0.15 ~ 0.35	0.60 ~ 0.90	0.040 under	0.040 under
SWRH 47A	0.44 ~ 0.51	0.15 ~ 0.35	0.30 ~ 0.60	0.040 under	0.040 under
SWRH 47B	0.44 ~ 0.51	0.15 ~ 0.35	0.60 ~ 0.90	0.040 under	0.040 under
SWRH 52A	0.49 ~ 0.56	0.15 ~ 0.35	0.30 ~ 0.60	0.040 under	0.040 under
SWRH 52B	0.49 ~ 0.56	0.15 ~ 0.35	0.60 ~ 0.90	0.040 under	0.040 under
SWRH 57A	0.54 ~ 0.61	0.15 ~ 0.35	0.30 ~ 0.60	0.040 under	0.040 under
SWRH 57B	0.54 ~ 0.61	0.15 ~ 0.35	0.60 ~ 0.90	0.040 under	0.040 under
SWRH 62A	0.59 ~ 0.66	0.15 ~ 0.35	0.30 ~ 0.60	0.040 under	0.040 under
SWRH 62B	0.59 ~ 0.66	0.15 ~ 0.35	0.60 ~ 0.90	0.040 under	0.040 under
SWRH 67A	0.64 ~ 0.71	0.15 ~ 0.35	0.30 ~ 0.60	0.030 under	0.040 under
SWRH 67B	0.64 ~ 0.71	0.15 ~ 0.35	0.60 ~ 0.90	0.030 under	0.030 under
SWRH 72A	0.69 ~ 0.76	0.15 ~ 0.35	0.30 ~ 0.60	0.030 under	0.030 under
SWRH 72B	0.69 ~ 0.76	0.15 ~ 0.35	0.60 ~ 0.90	0.030 under	0.030 under
SWRH 77A	0.74 ~ 0.81	0.15 ~ 0.35	0.30 ~ 0.60	0.030 under	0.030 under
SWRH 77B	0.74 ~ 0.81	0.15 ~ 0.35	0.60 ~ 0.90	0.030 under	0.030 under
SWRH 82A	0.79 ~ 0.86	0.15 ~ 0.35	0.30 ~ 0.60	0.030 under	0.030 under
SWRH 82B	0.79 ~ 0.86	0.15 ~ 0.35	0.60 ~ 0.90	0.030 under	0.030 under

▪ Packing

Inner dia. of coil		Dia. (mm)	Packing Unit (Kg)						
Inch	mm		Coil	Carrier	Steel Reel	Din 355	MEG Bobbin	Z-2 Coil	Z-3 Coil
8	220	0.20 ~ 0.29	10	-	-	40	15	-	-
10	250	0.30 ~ 0.49	20	-	150	40	15	-	-
12	300	0.50 ~ 0.69	50	-	300	40	15	400	-
14	350	0.70 ~ 0.89	70	-	400	-	-	250	-
16	400	0.90 ~ 1.49	100	400	400	-	-	400	-
20	500	1.50 ~ 1.99	150	600	400	-	-	400	-
24	600	2.00 ~ 2.99	250	800	400	-	-	400	-
28	700	3.00 ~ 6.00	250	1,000	-	-	-	-	1,000
30	760	3.00 ~ 6.00	250	1,000	-	-	-	-	-
32	820	5.50 ~ 12.50	300	2,000	-	-	-	-	-

HARD DRAWN STEEL WIRE

▪ Mechanical Properties (JIS G 3521, KS D 3510)

Dia. (mm)	Tensile Strength											
	SWA				SWB				SWC			
	N/mm^2		Kg/mm^2		N/mm^2		Kg/mm^2		N/mm^2		Kg/mm^2	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
0.20	1910	2210	195	226	2210	2500	226	255	2500	2790	255	285
0.23	1860	2160	190	220	2160	2450	220	250	2450	2750	250	281
0.26	1810	2110	185	215	2110	2400	215	245	2400	2700	245	276
0.29	1770	2060	181	210	2060	2350	210	240	2350	2650	240	270
0.32	1720	2010	176	205	2010	2300	205	235	2300	2600	235	265
0.35	1720	2010	176	205	2010	2300	205	235	2300	2600	235	265
0.40	1670	1960	170	200	1960	2260	200	231	2260	2550	231	260
0.45	1620	1910	165	195	1910	2210	195	226	2210	2500	226	255
0.50	1620	1910	165	195	1910	2210	195	226	2210	2500	226	255
0.55	1570	1860	160	190	1860	2160	190	220	2160	2450	220	250
0.60	1570	1810	160	185	1810	2110	185	215	2110	2400	215	245
0.65	1570	1810	160	185	1810	2110	185	215	2110	2400	215	245
0.70	1520	1770	155	181	1770	2060	181	210	2060	2350	210	240
0.80	1520	1770	155	181	1770	2010	181	205	2010	2300	205	235
0.90	1520	1770	155	181	1770	2010	181	205	2010	2260	205	231
1.00	1470	1720	150	176	1720	1960	176	200	1960	2210	200	226
1.20	1420	1670	145	170	1670	1910	170	195	1910	2160	195	220
1.40	1370	1620	140	165	1620	1860	165	190	1860	2110	190	215
1.60	1320	1570	135	160	1570	1810	160	185	1810	2060	185	210
1.80	1270	1520	130	155	1520	1770	155	181	1770	2010	181	205
2.00	1270	1470	130	150	1470	1720	150	176	1720	1960	176	200
2.30	1230	1420	126	145	1420	1670	145	170	1670	1910	170	195
2.60	1230	1420	126	145	1420	1670	145	170	1670	1910	170	195
2.90	1180	1370	120	140	1370	1620	140	165	1620	1860	165	190
3.20	1180	1370	120	140	1370	1570	140	160	1570	1810	160	185
3.50	1180	1370	120	140	1370	1570	140	160	1570	1770	160	181
4.00	1180	1370	120	140	1370	1570	140	160	1570	1770	160	181
4.50	1130	1320	115	135	1320	1520	135	155	1520	1720	155	176
5.00	1130	1320	115	135	1320	1520	135	155	1520	1720	155	176
5.50	1080	1270	110	130	1270	1470	130	150	1470	1670	150	170
6.00	1030	1230	105	126	1230	1420	126	145	1420	1620	145	165
6.50	1030	1230	105	126	1230	1420	126	145	1420	1620	145	165
7.00	980	1180	100	120	1180	1370	120	140	1370	1570	140	160
8.00	980	1180	100	120	1180	1370	120	140	1370	1570	140	160
8.50	930	1130	95	115	1130	1320	115	135	1320	1520	135	155
9.00	930	1130	95	115	1130	1320	115	135	1320	1520	135	155
10.00	930	1130	95	115	1130	1320	115	135	1320	1520	135	155
11.00	-	-	-	-	1080	1270	110	130	1270	1470	130	150
12.00	-	-	-	-	1080	1270	110	130	1270	1470	130	150
12.50	-	-	-	-	1030	1230	105	126	1230	1420	126	145

• Zinc-Coated Hard Drawn Steel Wire can be produced from 0.5mm to 7.0mm

▪ Mechanical Properties (DIN 17223)

Dia. (mm)	CLASS A		CLASS B	
	Tensile Strength (N/mm^2)		Tensile Strength (N/mm^2)	
	Min	Max	Min	Max
0.30	-	-	2370	2650
0.32	-	-	2350	2630
0.34	-	-	2330	2600
0.36	-	-	2310	2580
0.38	-	-	2290	2560
0.40	-	-	2270	2550
0.43	-	-	2250	2520
0.45	-	-	2240	2500
0.48	-	-	2220	2480
0.50	-	-	2200	2470
0.53	-	-	2180	2450
0.56	-	-	2170	2430
0.60	-	-	2140	2400
0.63	-	-	2130	2380
0.65	-	-	2120	2370
0.70	-	-	2090	2350
0.75	-	-	2070	2320
0.80	-	-	2050	2300
0.85	-	-	2030	2280
0.90	-	-	2010	2260
0.95	-	-	2000	2240
1.00	1720	1970	1980	2220
1.05	1710	1950	1960	2200
1.10	1690	1940	1950	2190
1.20	1670	1910	1920	2160
1.25	1660	1900	1910	2140
1.30	1640	1890	1900	2130
1.40	1620	1860	1870	2100
1.50	1600	1840	1850	2080
1.60	1590	1820	1830	2050
1.70	1570	1800	1810	2030
1.80	1550	1780	1790	2010
1.90	1540	1760	1770	1990

Dia. (mm)	CLASS A		CLASS B	
	Tensile Strength (N/mm^2)		Tensile Strength (N/mm^2)	
	Min	Max	Min	Max
2.00	1520	1750	1760	1970
2.10	1510	1730	1740	1960
2.25	1490	1710	1720	1930
2.40	1470	1690	1700	1910
2.50	1460	1680	1690	1890
2.60	1450	1660	1670	1880
2.80	1420	1640	1650	1850
3.00	1410	1620	1630	1830
3.20	1390	1600	1610	1810
3.40	1370	1580	1590	1780
3.60	1350	1560	1570	1760
3.80	1340	1540	1550	1740
4.00	1320	1520	1530	1730
4.25	1310	1500	1510	1700
4.50	1290	1490	1500	1680
4.75	1270	1470	1480	1670
5.00	1260	1450	1460	1650
5.30	1240	1430	1440	1630
5.60	1230	1420	1430	1610
6.00	1210	1390	1400	1580
6.30	1190	1380	1390	1560
6.50	1180	1370	1380	1550
7.00	1160	1340	1350	1530
7.50	1140	1320	1330	1500
8.00	1120	1300	1310	1480
8.50	1110	1280	1290	1460
9.00	1090	1260	1270	1440
9.50	1070	1250	1260	1420
10.00	1060	1230	1240	1400
10.50	-	-	1220	1380
11.00	-	-	1210	1370
12.00	-	-	1180	1340
12.50	-	-	1170	1320

• Zinc-Coated Hard Drawn Steel Wire can be produced from 0.5mm to 7.0mm

▪ Mechanical Properties (ASTM A 227)

Dia. (mm)		CLASS I				CLASS II			
		Tensile Strength (N/mm^2)		Tensile Strength (Kpsi)		Tensile Strength (N/mm^2)		Tensile Strength (N/mm^2)	
Inch	mm	Min	Max	Min	Max	Min	Max	Min	Max
0.020	0.51	1940	2220	283	323	2220	2500	324	364
0.023	0.58	1920	2200	279	319	2200	2480	320	360
0.026	0.66	1870	2140	275	315	2140	2410	316	356
0.028	0.71	1830	2100	271	311	2100	2370	312	352
0.029	0.74	1830	2100	271	311	2100	2370	312	352
0.032	0.81	1800	2070	266	306	2070	2340	307	347
0.035	0.89	1800	2070	261	301	2070	2340	302	342
0.041	1.04	1740	2000	255	293	2000	2260	294	332
0.048	1.22	1670	1930	248	286	1930	2180	287	325
0.054	1.37	1670	1930	243	279	1930	2180	280	316
0.062	1.57	1640	1880	237	272	1880	2120	273	308
0.072	1.83	1580	1810	232	266	1810	2040	267	301
0.075	1.91	1580	1810	227	261	1810	2040	262	296
0.080	2.03	1550	1780	223	261	1780	2010	262	296
0.092	2.34	1510	1730	220	253	1730	1960	254	287

Dia. (mm)		CLASS I				CLASS II			
		Tensile Strength (N/mm^2)		Tensile Strength (Kpsi)		Tensile Strength (N/mm^2)		Tensile Strength (N/mm^2)	
Inch	mm	Min	Max	Min	Max	Min	Max	Min	Max
0.106	2.69	1480	1700	216	248	1700	1920	249	281
0.120	3.05	1460	1680	210	241	1680	1900	242	273
0.135	3.43	1420	1630	206	237	1630	1840	238	269
0.148	3.76	1380	1590	203	234	1590	1700	235	266
0.162	4.11	1380	1590	200	230	1590	1700	231	261
0.177	4.50	1350	1550	195	225	1550	1750	226	256
0.192	4.88	1320	1510	192	221	1510	1700	222	251
0.207	5.26	1300	1490	190	218	1490	1670	219	247
0.225	5.72	1280	1470	185	214	1470	1650	215	243
0.250	6.35	1250	1440	182	210	1440	1630	211	239
0.312	7.92	1190	1370	174	200	1370	1550	201	227
0.375	9.53	1130	1310	167	193	1340	1520	194	220
0.438	11.13	1090	1260	165	190	1320	1490	191	216
0.492	12.50	1050	1210	156	180	-	-	-	-

• Zinc-Coated Hard Drawn Steel Wire can be produced from 0.5mm to 7.0mm

HARD DRAWN STEEL WIRE

▪ Mechanical Properties (BS 5216)

Dia. (mm)	Grade 1		Grade 2		Grade 3	
	Tensile Strength (N/mm^2)					
	Min	Max	Min	Max	Min	Max
0.20	2040	2340	2340	2640	2640	2940
0.224	2020	2320	2320	2620	2620	2920
0.25	2000	2300	2300	2600	2600	2900
0.28	1970	2270	2270	2570	2570	2870
0.30	1960	2250	2250	2550	2550	2850
0.315	1960	2240	2240	2520	2520	2800
0.335	1950	2230	2230	2510	2510	2790
0.355	1930	2210	2210	2490	2490	2770
0.375	1900	2180	2180	2460	2460	2740
0.40	1870	2150	2150	2430	2430	2710
0.42	1860	2120	2120	2380	2380	2640
0.45	1840	2100	2100	2360	2360	2620
0.48	1820	2080	2080	2340	2340	2600
0.50	1800	2060	2060	2320	2320	2580
0.53	1780	2040	2040	2300	2300	2560
0.56	1760	2020	2020	2280	2280	2540
0.60	1750	1990	1990	2230	2230	2470
0.63	1730	1970	1970	2210	2210	2450
0.67	1720	1960	1960	2200	2200	2440
0.71	1680	1920	1920	2160	2160	2400
0.75	1660	1900	1900	2140	2140	2380
0.80	1650	1880	1880	2110	2110	2340
0.85	1620	1850	1850	2080	2080	2310
0.90	1600	1830	1830	2060	2060	2290
0.95	1580	1810	1810	2040	2040	2270
1.00	1570	1790	1790	2010	2010	2230
1.06	1550	1770	1770	1990	1990	2210
1.12	1530	1750	1750	1970	1970	2190
1.18	1530	1740	1740	1950	1950	2160
1.25	1510	1720	1720	1930	1930	2140
1.32	1500	1700	1700	1910	1910	2120
1.40	1490	1690	1690	1890	1890	2090
1.50	1460	1660	1660	1860	1860	2060
1.60	1440	1640	1640	1840	1840	2040
1.70	1420	1620	1620	1820	1820	2020

Dia. (mm)	Grade 1		Grade 2		Grade 3	
	Tensile Strength (N/mm^2)					
	Min	Max	Min	Max	Min	Max
1.80	1400	1600	1600	1800	1800	2000
1.90	1390	1590	1590	1790	1790	1990
2.00	1370	1570	1570	1770	1770	1970
2.12	1350	1550	1550	1750	1750	1950
2.24	1330	1530	1530	1730	1730	1930
2.36	1320	1520	1520	1720	1720	1920
2.50	1300	1500	1500	1700	1700	1900
2.65	1290	1490	1490	1690	1690	1890
2.80	1270	1470	1470	1670	1670	1870
3.00	1250	1450	1450	1650	1650	1850
3.15	1240	1440	1440	1640	1640	1840
3.35	1220	1420	1420	1620	1620	1820
3.55	1200	1400	1400	1600	1600	1800
3.75	1190	1390	1390	1590	1590	1790
4.00	1170	1370	1370	1570	1570	1770
4.25	1150	1350	1350	1550	1550	1750
4.50	1130	1330	1330	1530	1530	1730
4.75	1120	1320	1320	1520	1520	1720
5.00	1110	1310	1310	1510	1510	1710
5.30	1090	1290	1290	1490	1490	1690
5.60	1070	1270	1270	1470	1470	1670
6.00	1050	1250	1250	1450	1450	1650
6.30	1040	1240	1240	1440	1440	1640
6.70	1030	1230	1230	1430	1430	1630
7.10	1010	1210	1210	1410	1410	1610
7.50	1000	1200	1200	1400	1400	1600
8.00	970	1170	1170	1370	1370	1570
8.50	960	1160	1160	1360	1360	1560
9.00	940	1140	1140	1340	1340	1540
9.50	-	-	1130	1330	1330	1530
10.00	-	-	1120	1320	1320	1520
10.60	-	-	1100	1300	1300	1500
11.20	-	-	1090	1290	1290	1490
11.80	-	-	1070	1270	1270	1470
12.50	-	-	1060	1260	1260	1460

• Zinc-Coated Hard Drawn Steel Wire can be produced from 0.5mm to 7.0mm

▪ Mechanical Properties (AS 1472)

Dia. (mm)	Range1		Range2	
	Tensile Strength (Mpa=N/mm^2)			
	Min	Max	Min	Max
0.56	1960	2250	2220	2490
0.63	1930	2220	2190	2460
0.69	1900	2190	2160	2430
0.71	1900	2190	2160	2430
0.80	1870	2160	2130	2400
0.90	1840	2130	2100	2370
1.00	1800	2070	2040	2310
1.12	1770	2040	2010	2270
1.25	1730	2000	1970	2230
1.40	1700	1960	1930	2180
1.60	1670	1920	1890	2130
1.80	1630	1880	1850	2080
2.00	1600	1840	1810	2040
2.24	1560	1800	1770	2000

Dia. (mm)	Range1		Range2	
	Tensile Strength (Mpa=N/mm^2)			
	Min	Max	Min	Max
2.50	1530	1760	1730	1950
2.80	1500	1720	1690	1910
3.15	1460	1680	1650	1870
3.55	1450	1670	1640	1850
4.00	1410	1630	1600	1810
4.50	1370	1590	1560	1760
5.00	1350	1560	1530	1730
5.60	1320	1520	1490	1680
6.30	1290	1490	1460	1650
7.10	1260	1460	1430	1620
8.00	1230	1420	1390	1570
9.00	1190	1380	1350	1530
10.00	1180	1360	1330	1510
11.20	1170	1340	1310	1480

• Zinc-Coated Hard Drawn Steel Wire can be produced from 0.5mm to 7.0mm

• Please inquire us about diameters not specified below the Spec table

▪ Mechanical Properties (EN 10270-1)

Dia. (mm)	SL		SM		SH	
	Sile Strength (Mpa=N/mm^2)					
	Min	Max	Min	Max	Min	Max
0.20	-	-	-	-	-	-
0.22	-	-	-	-	-	-
0.25	-	-	-	-	-	-
0.28	-	-	-	-	-	-
0.30	-	-	2370	2650	2660	2940
0.32	-	-	2350	2630	2640	2920
0.34	-	-	2330	2600	2610	2890
0.36	-	-	2310	2580	2590	2870
0.38	-	-	2290	2560	2570	2850
0.40	-	-	2270	2550	2560	2830
0.43	-	-	2250	2520	2530	2800
0.45	-	-	2240	2500	2510	2780
0.48	-	-	2220	2480	2490	2760
0.50	-	-	2200	2470	2480	2740
0.53	-	-	2180	2450	2460	2720
0.56	-	-	2170	2430	2440	2700
0.60	-	-	2140	2400	2410	2670
0.63	-	-	2130	2380	2390	2650
0.65	-	-	2120	2370	2380	2640
0.70	-	-	2090	2350	2360	2610
0.75	-	-	2070	2320	2330	2580
0.80	-	-	2050	2300	2310	2560
0.85	-	-	2030	2280	2290	2530
0.90	-	-	2010	2260	2270	2510
0.95	-	-	2000	2240	2250	2490
1.00	1720	1970	1980	2220	2230	2470
1.05	1710	1950	1960	2200	2210	2450
1.10	1690	1940	1950	2190	2200	2430
1.20	1670	1910	1920	2160	2170	2400
1.25	1660	1900	1910	2140	2150	2380
1.30	1640	1890	1900	2130	2140	2370
1.40	1620	1860	1870	2100	2110	2340
1.50	1600	1840	1850	2080	2090	2310
1.60	1590	1820	1830	2050	2060	2290
1.70	1570	1800	1810	2030	2040	2260

Dia. (mm)	SL		SM		SH	
	Sile Strength (Mpa=N/mm^2)					
	Min	Max	Min	Max	Min	Max
1.80	1550	1780	1790	2010	2020	2240
1.90	1540	1760	1770	1990	2000	2220
2.00	1520	1750	1760	1970	1980	2200
2.10	1510	1730	1740	1960	1970	2180
2.25	1490	1710	1720	1930	1940	2150
2.40	1470	1690	1700	1910	1920	2130
2.50	1460	1680	1690	1890	1900	2110
2.60	1450	1660	1670	1880	1890	2100
2.80	1420	1640	1650	1850	1860	2070
3.00	1410	1620	1630	1830	1840	2040
3.20	1390	1600	1610	1810	1820	2020
3.40	1370	1580	1590	1780	1790	1990
3.60	1350	1560	1570	1760	1770	1970
3.80	1340	1740	1550	1740	1750	1950
4.00	1320	1520	1530	1730	1740	1930
4.25	1310	1500	1510	1700	1710	1900
4.50	1290	1490	1500	1680	1690	1880
4.75	1270	1470	1480	1670	1680	1860
5.00	1260	1450	1460	1650	1660	1840
5.30	1240	1430	1440	1630	1640	1820
5.60	1230	1420	1430	1610	1620	1800
6.00	1210	1390	1400	1580	1590	1770
6.30	1190	1380	1390	1560	1570	1750
6.50	1180	1370	1380	1550	1560	1740
7.00	1160	1340	1350	1530	1540	1710
7.50	1140	1320	1330	1500	1510	1680
8.00	1120	1300	1310	1480	1490	1660
8.50	1110	1280	1290	1460	1470	1630
9.00	1090	1260	1270	1440	1450	1610
9.50	1070	1250	1260	1420	1430	1590
10.00	1050	1230	1240	1400	1410	1570
10.50	-	-	1220	1380	-	-
11.00	-	-	1210	1370	-	-
12.00	-	-	1180	1340	-	-
12.50	-	-	1170	1320	-	-

• Zinc-Coated Hard Drawn Steel Wire can be produced from 0.5mm to 7.0mm