

Mechanical Spring Wire

Cold-drawn wire used in manufacturing of a large range of mechanical springs for torsion, tension, extension, compression applications and wire forms.

Manufactured under strict quality standards. *Camesa* spring wire meets or exceeds the industry standards.

Production of this wire comprises a cold drawing process to achieve tensile strength and heat treatment to provide optimal ductility for your specifications. This allows manufacturing of springs with high working resistance.

STANDARDS

ASTM A-227 for Class 1 and Class 2 tensile strengths
ASTM A-228 for music wire applications
ASTM A-679 for Class 3 tensile strengths
EN 10270-1
DIN 17223

USES

> Springs for the automotive industry, including control cables, precision springs and reinforced hoses



- > Agricultural applications, including greenhouse cultivation and bale wire
- > As reinforcement of air conditioning flexible ducts
- > Screens for mining, plastics, pharmaceuticals and sand industries, among others
- > Springs for appliances
- > Fabrication of hair barrettes and clips
- > Wire for the garment industry
- > Spiral springs for handbooks, paper clips, toys' parts and much more

ADVANTAGES

- > Ease in manufacturing: *Camesa* spring wire is designed to support deformations without losing its mechanical properties.
- > Consistent performance because of our excellent heat-treating control.
- > Surface quality improves adhesion of paints and coatings.
- > Surface free of defects and consistent coating ensures performance.
- > Manufactured and packaged to your specifications in an ISO 9001:2000 facility.

PACKAGING

Coils:	441-1,100 lb (200-500 kg)
Tubular carriers:	1,500-2,000 lb (680-907 kg)
Spoolless cores:	3,000 or 6,000 lb (1,361-2,722 kg)
Spoolless cores or steel reels for finer diameters:	110-1,000 lb (50-454 kg)

MECHANICAL SPRING WIRE SPECIFICATIONS

METRIC

Diameter mm	Tensile Strength MPa					
	CLASS I/CLASS I		CLASS II/CLASS II		CLASS III/CLASS III	
	min	max	min	max	min	max
0.50	1,960	2,240	2,240	2,520	2,400	2,650
0.55	1,940	2,220	2,220	2,500	2,380	2,620
0.60	1,920	2,200	2,200	2,480	2,350	2,600
0.65	1,900	2,180	2,180	2,460	2,320	2,580
0.70	1,870	2,140	2,140	2,410	2,300	2,550
0.80	1,830	2,100	2,100	2,370	2,250	2,500
0.90	1,800	2,070	2,070	2,340	2,200	2,450
1.00	1,770	2,040	2,040	2,310	2,150	2,400
1.10	1,740	2,000	2,000	2,260	2,120	2,380
1.20	1,720	1,980	1,980	2,240	2,100	2,350
1.40	1,670	1,930	1,930	2,180	2,050	2,300
1.60	1,640	1,880	1,880	2,120	2,000	2,250
1.80	1,600	1,840	1,840	2,080	1,980	2,220
2.00	1,580	1,810	1,810	2,040	1,950	2,200
2.20	1,550	1,780	1,780	2,010	1,900	2,150
2.50	1,510	1,730	1,730	1,960	1,850	2,100
2.80	1,480	1,700	1,700	1,920	1,820	2,050
3.00	1,460	1,680	1,680	1,900	1,800	2,000
3.50	1,420	1,630	1,630	1,840	1,750	1,950
4.00	1,380	1,590	1,600	1,700	1,700	1,900
4.50	1,350	1,550	1,550	1,750	1,680	1,880
5.00	1,320	1,510	1,510	1,700	1,650	1,850
5.50	1,300	1,490	1,490	1,670		
6.00	1,280	1,470	1,470	1,650		
6.50	1,250	1,440	1,440	1,630		
7.00	1,220	1,410	1,410	1,600		
7.50	1,200	1,390	1,390	1,580		
8.00	1,190	1,370	1,370	1,550		
9.00	1,160	1,340	–	–		
10.00	1,130	1,310	–	–		
11.00	1,110	1,280	–	–		
12.00	1,090	1,260	–	–		
14.00	1,050	1,210	–	–		
16.00	1,010	1,170	–	–		

Diameter mm	Permissible Variation Plus and Minus mm	Permissible Out of Round mm
0.51 - 0.70	0.02	0.02
0.71 - 2.00	0.03	0.03
2.01 - 9.00	0.05	0.05
9.01 - 15.80	0.08	0.08

IMPERIAL

Diameter in	Tensile Strength Ksi					
	CLASS I/CLASS I		CLASS II/CLASS II		CLASS III/CLASS III	
	min	max	min	max	min	max
0.020	283	323.0	324	364.0	350.0	387.0
0.023	279	319.0	320	360.0	343.0	380.0
0.026	275	315.0	316	353.0	337.0	373.0
0.029	271	311.0	312	352.0	331.0	366.0
0.032	266	306.0	307	347.0	327.0	361.0
0.035	261	301.0	302	342.0	322.0	356.0
0.041	255	293.0	294	332.0	314.0	347.0
0.048	248	286.0	287	325.0	306.0	339.0
0.054	243	279.0	280	316.0	300.0	331.0
0.062	237	272.0	273	308.0	293.0	324.0
0.072	232	266.0	267	301.0	287.0	317.0
0.080	227	261.0	262	296.0	282.0	312.0
0.092	220	253.0	254	287.0	275.0	304.0
0.106	216	248.0	249	281.0	268.0	296.0
0.120	210	241.0	242	273.0	263.0	290.0
0.135	206	237.0	238	269.0	258.0	285.0
0.148	203	234.0	235	266.0	253.0	279.0
0.162	200	230.0	231	261.0	249.0	275.0
0.177	195	225.0	226	256.0	245.0	270.0
0.192	192	221.0	222	251.0	241.0	267.0
0.207	190	218.0	219	247.0	238.0	264.0
0.225	186	214.0	215	243.0		
0.250	182	210.0	211	239.0		
0.312	174	200.0	201	227.0		
0.375	167	193.0	194	220.0		
0.438	165	190.0	191	216.0		
0.500	156	180.0	181	205.0		
0.562	152	176.0	177	201.0		
0.625	147	170.0	171	194.0		

Diameter in	Permissible Variation Plus and Minus in	Permissible Out of Round in
0.020 - 0.028	0.0008	0.0008
0.029 - 0.075	0.001	0.001
0.076 - 0.375	0.002	0.002
0.376 - 0.625	0.003	0.003