

CARBON STEEL BALLS

Carbon steel balls provide substantial savings for applications where conditions do not require a through-hardened ball. They add superior performance and dependability to products which utilize inexpensive anti-friction bearings. Typical applications include: casters, conveyors, roller skates, bicycles, overhead trolleys, drawer slides, garage doors, door locks and many others.

Material	AISI	Federal	Military	ASTM	UNS	AMS
Carbon Steel	C 1010 C1020	QQ-W-461	MIL-S 11310	A-29	G-10100 G-10200	-

(Additional testing may be required to certify that materials comply with specific standards.)

Material Analysis:	
Chemical Analysis	
Carbon (core)	0.10 to 0.20%
Manganese	0.60 to 0.90%
Silicon	0.10 to 0.20%
Sulphur	0.50% maximum
Phosphorus	0.040% maximum

Mechanical Properties:

Hardness for carbon steel balls, as measured on the balls surface, is Rockwell "C" 60 (minimum) and subject to correction factors. See chart for minimum case depth. Case depth reported is the effective case measured to the HRC 50 position (ref. ABMA Std. 10-83). Minimum thickness considerations apply to case depth.

Mechanical Properties	
Tensile strength	53,000 psi
Yield strength	44,000 psi
Elongation in two inches	26%
Reduction in area	50%
Modulus of elasticity	28,000,000 psi
Density	0.284 lbs/cu. in.

Available Grades & Sizes:			
Grade	Size Range (inches)	Sphericity (inches)	Diameter Tolerance Per Container (inches)
100	1/16" - 1"	0.0001	+/-0.0001
200	1/16" - 1"	0.0002	+/-0.0002
500	1/16" - 1"	0.0005	+/-0.0005
1000	1/16" - 1"	0.001	+/-0.001

General Information:				
Size (inches)	Minimum Case Depth (inches)	Balls (p/lb)	Ball (p/carton)	Net Weight Per Carton In Pounds
1/16"	0.015	27,500	550,000	20.0
3/32"	0.020	8,160	163,200	20.0
1/8"	0.025	3,440	68,800	20.0

5/32"	0.025	1,760	35,200	20.0
3/16"	0.030	1,020	40,800	40.0
7/32"	0.035	642	25,680	40.0
1/4"	0.045	430	17,200	40.0
9/32"	0.045	302	12,080	40.0
5/16"	0.045	220	8,800	40.0
11/32"	0.045	166	6,640	40.0
3/8"	0.055	128	5,120	40.0
13/32"	0.055	100	4,000	40.0
7/16"	0.065	80.3	3,212	40.0
15/32"	0.065	65.3	2,612	40.0
1/2"	0.070	53.8	2,152	40.0
17/32"	0.070	44.8	1,796	40.0
9/16"	0.075	37.5	1,512	40.0
5/8"	0.075	27.5	1,100	40.0
11/16"	0.075	20.7	828	40.0
3/4"	0.080	15.9	636	40.0
13/16"	0.080	12.5	500	40.0
7/8"	0.080	10.0	400	40.0
1"	0.080	6.72	269	40.0

(Standard carton quantities shown. Special packaging available.)

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