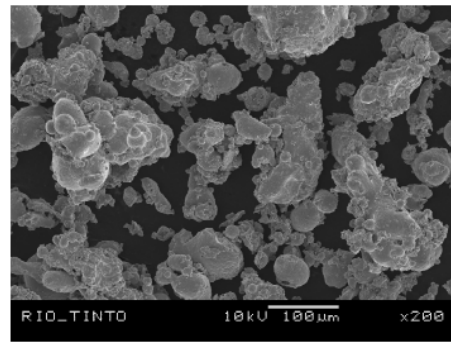
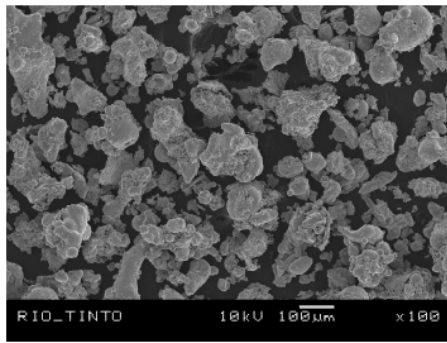


PHYSICAL AND CHEMICAL PROPERTIES

Chemistry, wt%						Particle Size Analysis, wt%				A.D.	Flow	Density*	
C	O	S	Mn	P	Fe	U.S. mesh	+60	+100	+325	-325	g/cm ³	s/50g	g/cm ³
0.01	0.15	0.007	0.02	0.007	99.4+	μm	+250	+150	+45	-45	2.46	30	6.95
							Trace	5	72	22			*@43.5 tsi @600 MPa

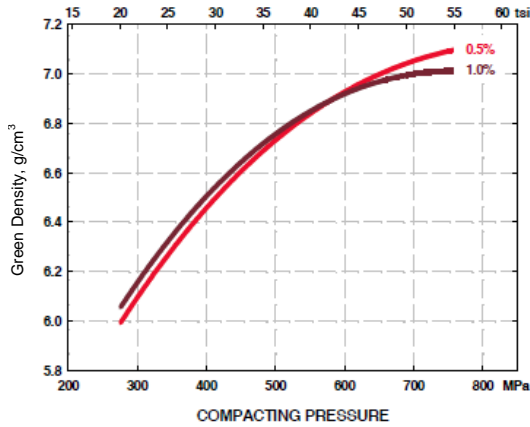
Particle Shape



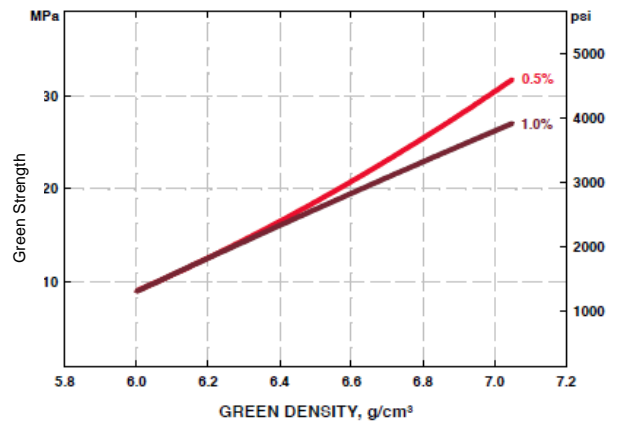
Green Properties

ATOMET 22 + Wax

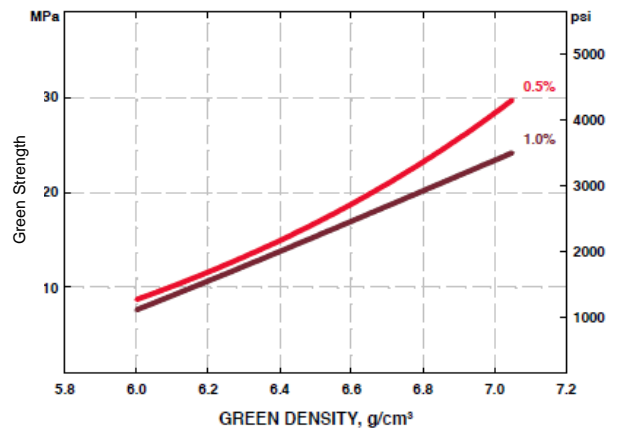
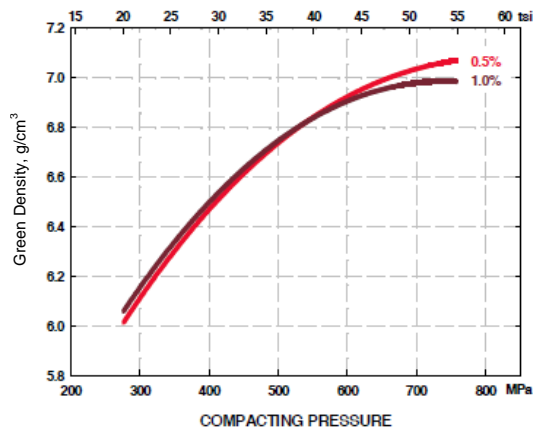
Compressibility



Green Strength



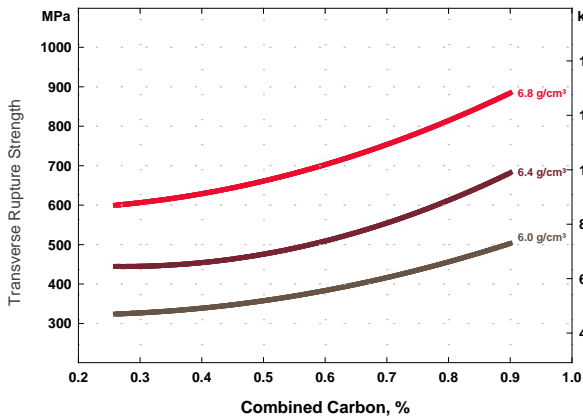
ATOMET 22 + ZnSt



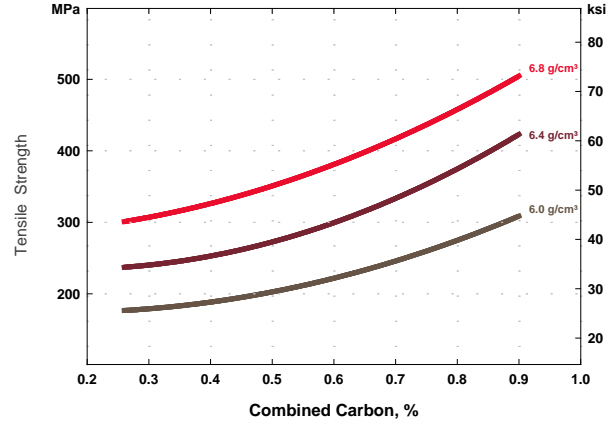
AS-SINTERED PROPERTIES - Carbon Steels

Composition: **ATOMET 22** + graphite + 0.75% wax
 Sintered in a 90% nitrogen-based atmosphere at 1120°C (2050°F) for 25 minutes.

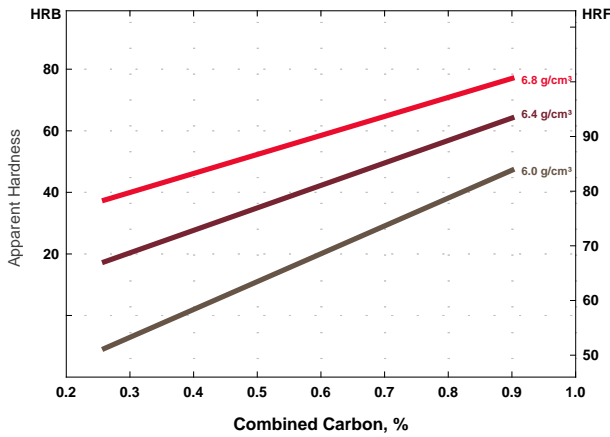
Transverse Rupture Strength



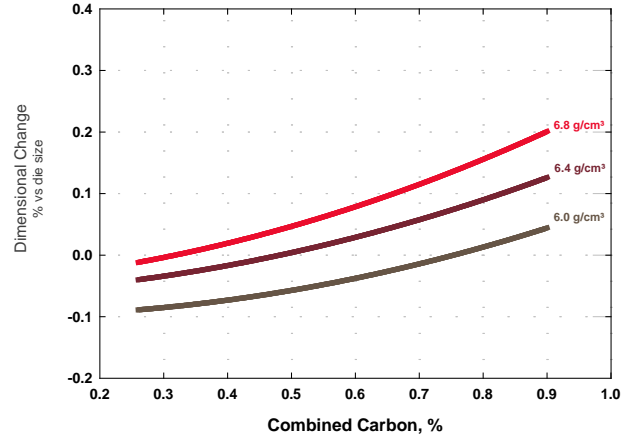
Tensile Strength



Apparent Hardness



Dimensional Change

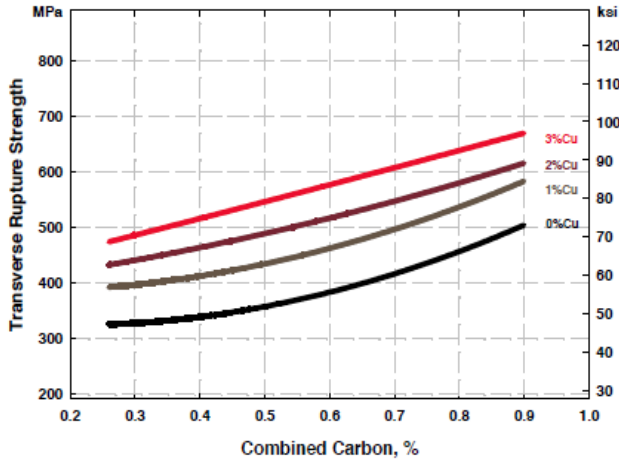


Material Designation Code	Sintered Density	Added Graphite	Combined Carbon	Transverse Rupture Strength		Apparent Hardness	Dimensional Change	Tensile Strength		Yield Strength		Elongation
				MPa	kpsi			MPa	kpsi	MPa	kpsi	
MPIF Std 35	g/cm ³	%	%	MPa	kpsi	HRB (HRF)	%	MPa	kpsi	MPa	kpsi	%
F-0000	5.99	0.35	0.29	323	47	(53)	-0.09	177	26	152	22	2.0
	6.39	0.35	0.27	445	65	(67)	-0.04	239	35	193	28	2.8
	6.79	0.35	0.26	595	86	(78)	0.03	299	43	228	33	3.5
F-0005	5.98	0.65	0.58	374	54	(65)	-0.04	214	31	195	28	1.1
	6.38	0.65	0.57	490	71	(78)	0.02	286	41	242	35	1.7
	6.78	0.65	0.54	663	96	54	0.10	357	52	284	41	2.5
F-0008	5.97	0.95	0.86	473	69	44	-0.02	283	41	234	34	1.0
	6.37	0.95	0.84	625	91	60	0.05	390	57	306	44	1.5
	6.77	0.95	0.83	821	119	72	0.16	468	68	359	52	1.6

AS-SINTERED PROPERTIES - Copper Steels

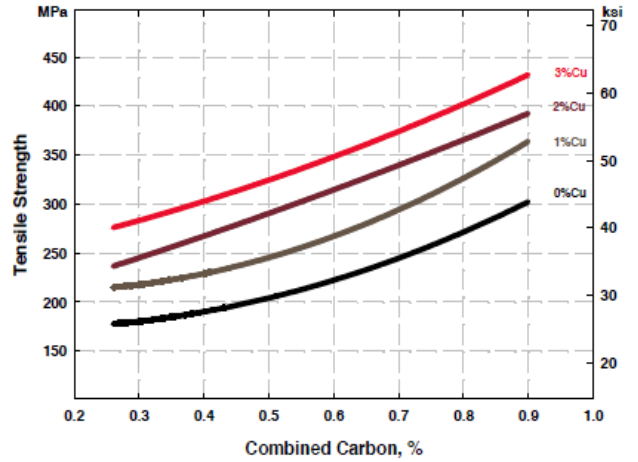
Composition: ATOMET 22 + copper + graphite + 0.75% wax
 Sintered in a 90% nitrogen-based atmosphere at 1120°C (2050°F) for 25 minutes.

Transverse Rupture Strength

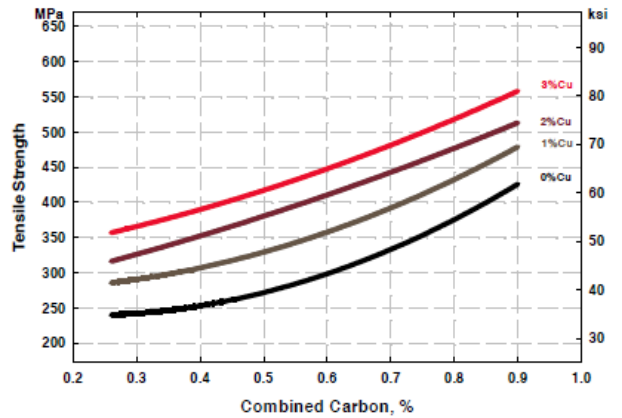
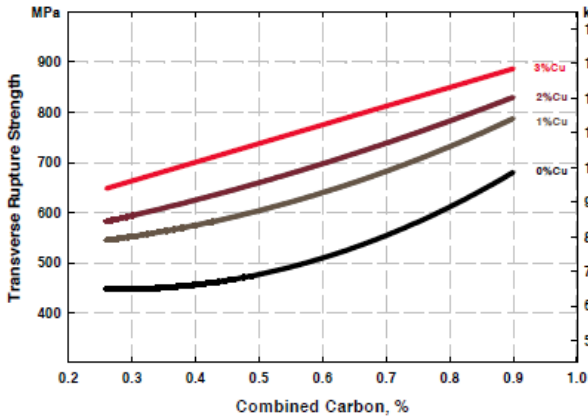


Sintered Density
6.0 g/cm³

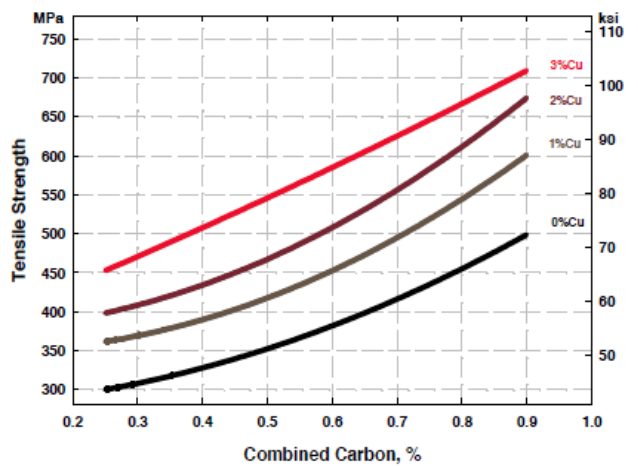
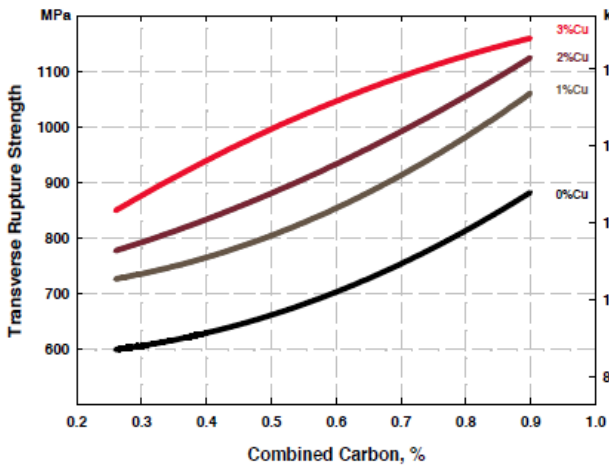
Tensile Strength



Sintered Density
6.4 g/cm³



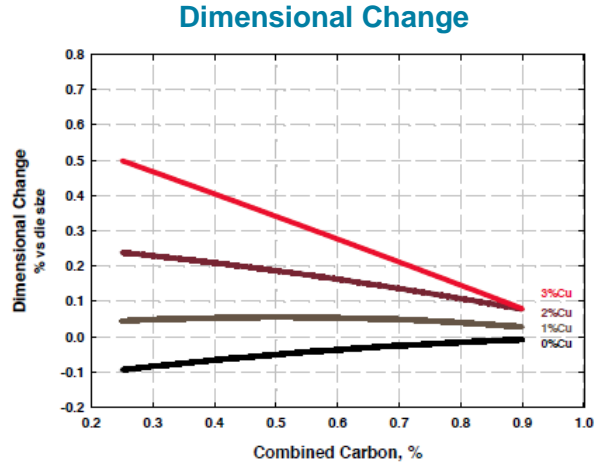
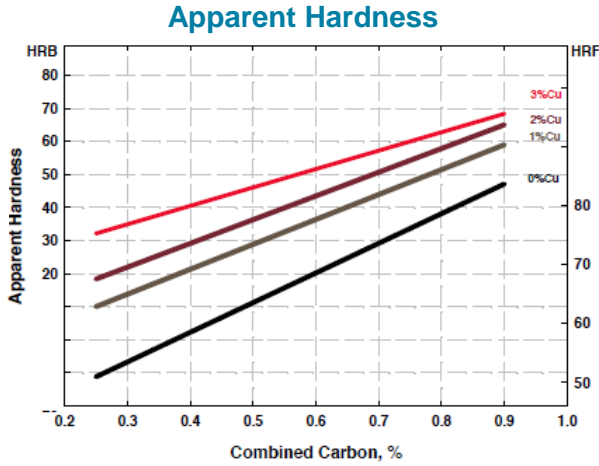
Sintered Density
6.8 g/cm³



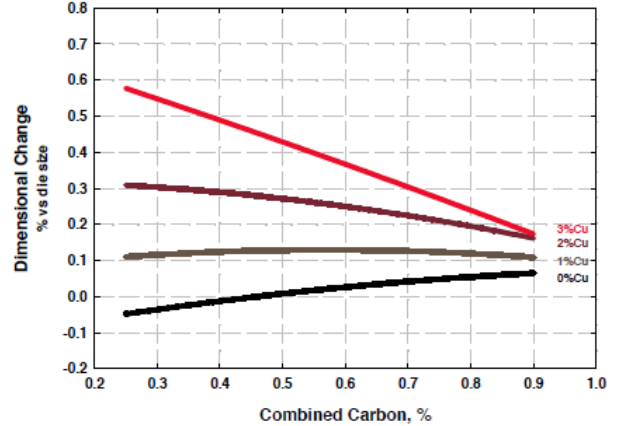
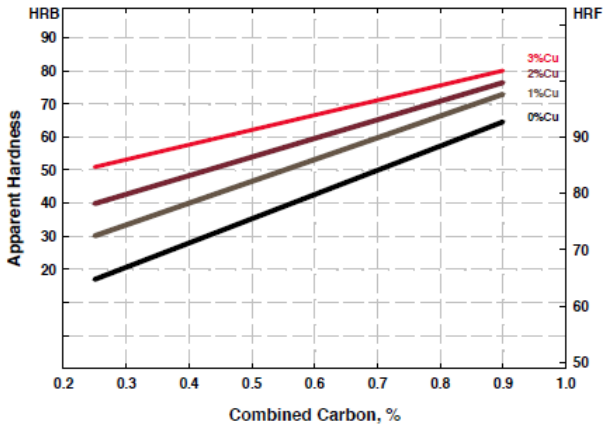
AS-SINTERED PROPERTIES (continued) - Copper Steels

Composition: **ATOMET 22** + copper + graphite + 0.75% wax
 Sintered in a 90% nitrogen-based atmosphere at 1120°C (2050°F) for 25 minutes.

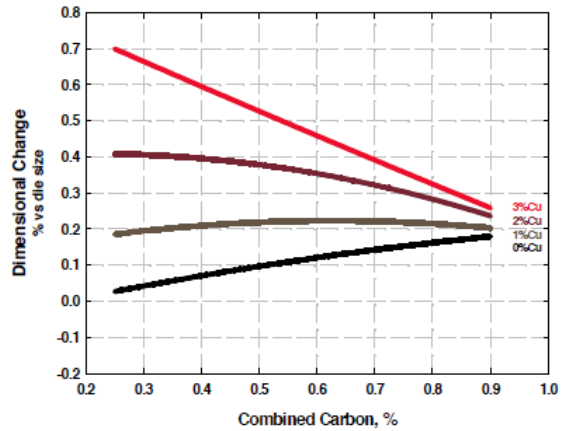
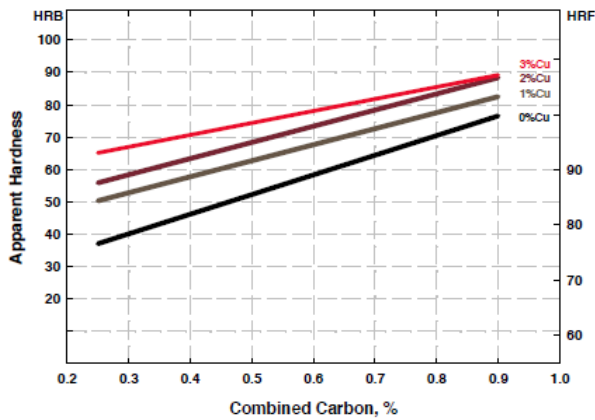
Sintered Density
 6.0 g/cm³



Sintered Density
 6.4 g/cm³



Sintered Density
 6.8 g/cm³



AS-SINTERED PROPERTIES (continued) - Copper Steels

Composition: **ATOMET 22** + copper + graphite + 0.75% wax.
Sintered in a 90% nitrogen-based atmosphere at 1120°C (2050°F) for 25 minutes.

Material Designation Code	Sintered Density	Added Graphite	Combined Carbon	Transverse Rupture Strength		Apparent Hardness	Dimensional Change	Tensile Strength		Yield Strength		Elongation
				MPa	kpsi			MPa	kpsi	MPa	kpsi	
MPIF Std 35 1	5.97	0.35	0.28	383	56	(64)	0.04	213	31	195	28	1.5
	6.36	0.35	0.27	530	77	(74)	0.11	281	41	240	35	2.1
	6.76	0.35	0.25	708	103	49	0.18	354	51	290	42	3.2
1	5.97	0.65	0.56	439	64	(72)	0.05	250	36	219	32	1.0
	6.36	0.65	0.55	592	86	46	0.12	328	48	284	41	1.4
	6.75	0.65	0.54	792	115	62	0.21	419	61	346	50	2.2
1	5.97	0.95	0.84	541	78	55	0.03	337	49	286	42	0.7
	6.36	0.95	0.83	744	108	68	0.11	449	65	377	55	1.0
	6.75	0.95	0.81	968	115	78	0.20	541	78	440	64	1.3
2	5.93	0.35	0.29	415	78	(66)	0.22	233	34	211	31	1.0
	6.32	0.35	0.28	554	108	(78)	0.29	305	44	274	40	1.6
	6.71	0.35	0.25	736	140	53	0.38	384	56	328	48	2.6
2	5.93	0.65	0.56	479	60	41	0.16	287	42	261	38	0.7
	6.33	0.65	0.56	646	80	56	0.24	383	56	342	50	1.1
	6.71	0.65	0.55	841	107	69	0.34	458	66	398	58	1.6
2	5.95	0.95	0.87	584	69	61	0.08	371	54	332	48	0.5
	6.34	0.95	0.87	784	94	73	0.16	483	70	428	62	0.8
	6.73	0.95	0.81	1042	122	84	0.26	620	90	517	75	1.2
3	5.89	0.35	0.29	437	85	(73)	0.46	263	38	239	35	0.8
	6.27	0.35	0.28	590	114	46	0.52	332	48	308	45	1.0
	6.66	0.35	0.27	774	151	61	0.63	419	61	373	54	2.0
3	5.92	0.65	0.59	536	63	49	0.27	330	48	298	43	0.6
	6.31	0.65	0.58	730	86	65	0.36	417	60	379	55	0.9
	6.69	0.65	0.56	954	112	75	0.46	530	77	461	67	1.4
3	5.95	0.95	0.88	632	92	65	0.08	409	59	374	54	0.4
	6.34	0.95	0.88	839	122	77	0.18	530	77	482	70	0.6
	6.73	0.95	0.85	1095	159	86	0.27	662	96	570	83	0.9

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