

Sheet1

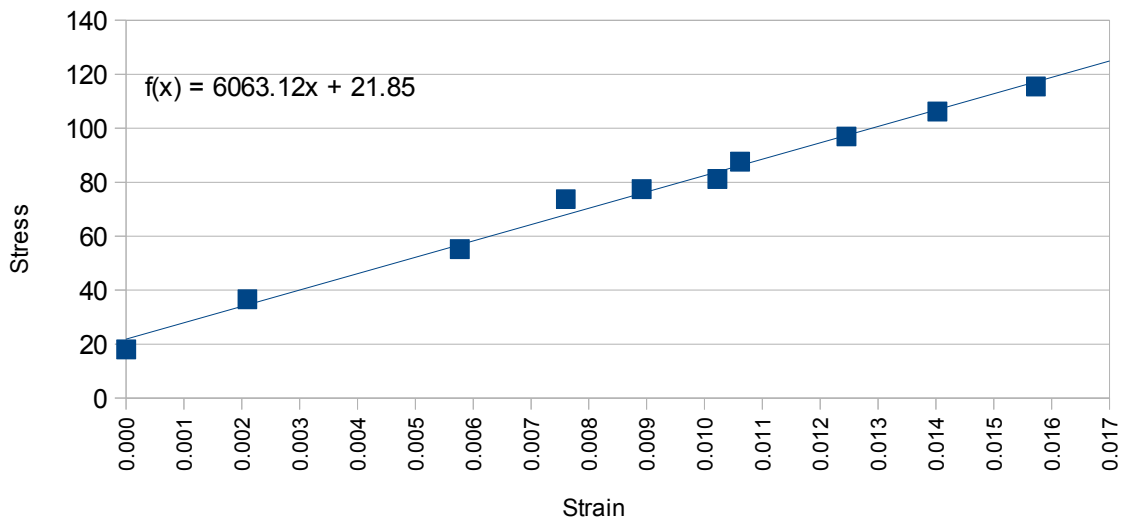
20 Gauge Copper Wire Experiment

Measured diameter (mm) 0.82
 Advertised diameter (mm) 0.81

Strain shift amount

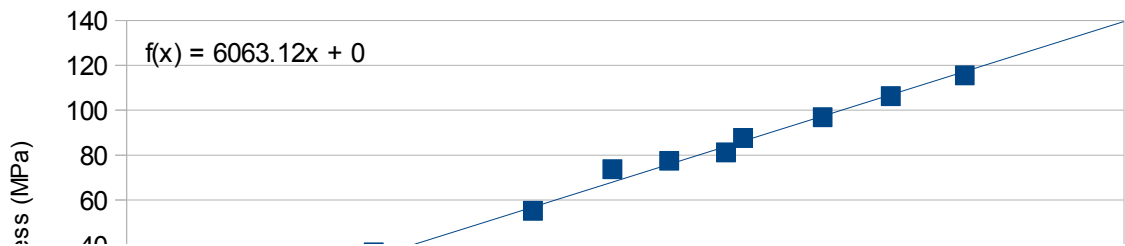
Applied Mass (g)	Total Length (cm)	Change of Length (10 ⁻⁵ m)	Strain (m/m)
973.4	76.3	48	0.00000000
1973	76.46	64	0.00209699
2972.7	76.74	92	0.00576671
3974.2	76.88	106	0.00760157
4174.2	76.98	116	0.00891219
4374.2	77.08	126	0.01022280
4724.2	77.11	129	0.01061599
5224.2	77.25	143	0.01245085
5724.2	77.37	155	0.01402359
6224.2	77.5	168	0.01572739

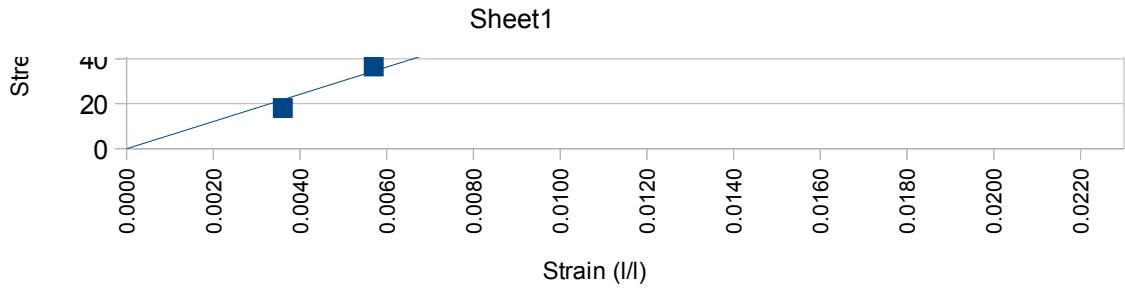
Copper Wire (20 Gauge)



Copper Wire (20 Gauge)

Elastic Region



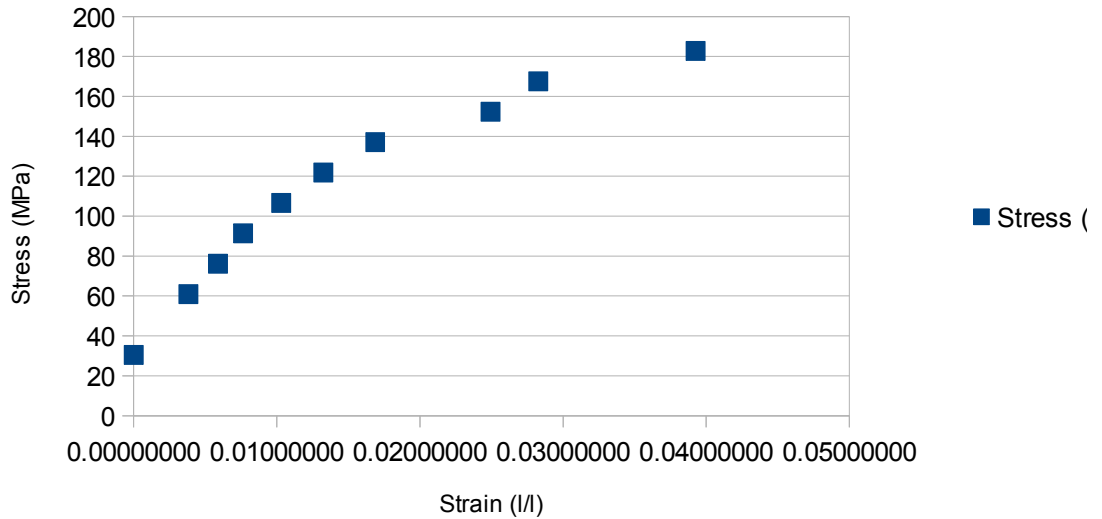


22 Gauge Copper Wire Experiment

Measured diameter (mm) 0.64
 Advertised diameter (mm) 0.66 Strain shift amount

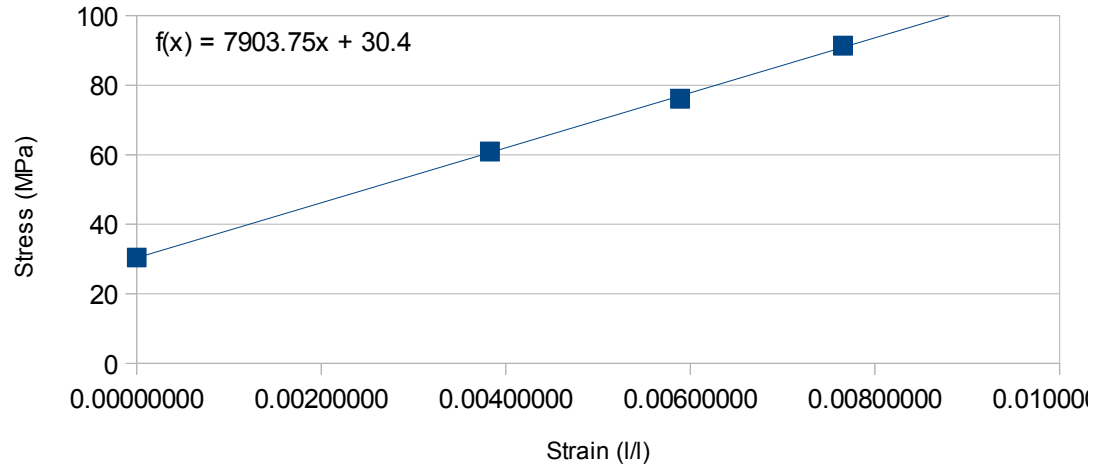
Applied Mass (g)	Total Length (cm)	Change of Length (10^{-5} m)	Strain (m/m)
999.5	101.9	10.48	0.0000000
1999.5	102.29	10.87	0.00382728
2499.5	102.5	11.08	0.00588813
2999.5	102.68	11.26	0.00765456
3499.5	102.95	11.53	0.01030422
3999.5	103.25	11.83	0.01324828
4499.5	103.62	12.2	0.01687929
4999.5	104.44	13.02	0.02492640
5499.5	104.78	13.36	0.02826300
5999.5	105.9	14.48	0.03925417

Copper Wire (22 Gauge)



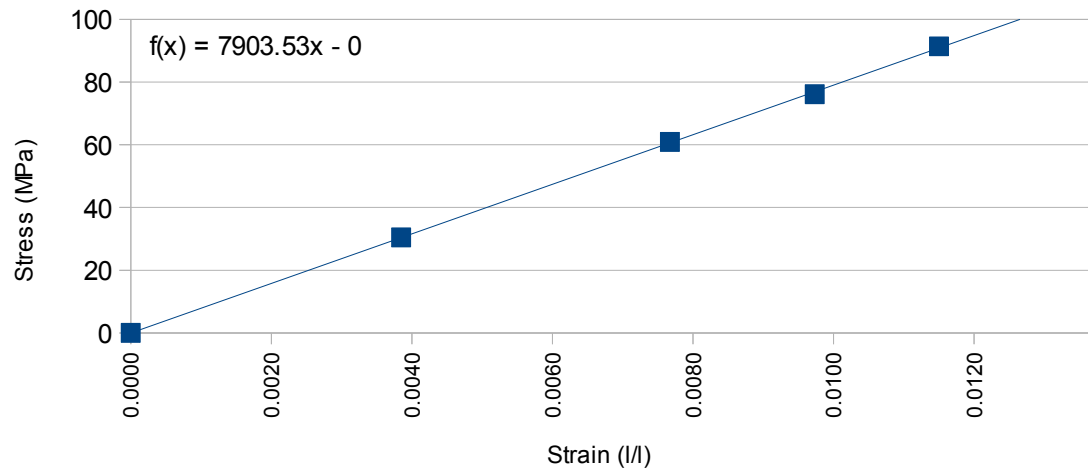
Copper Wire (22 Gauge)

Elastic Region



Copper Wire (22 Gauge)

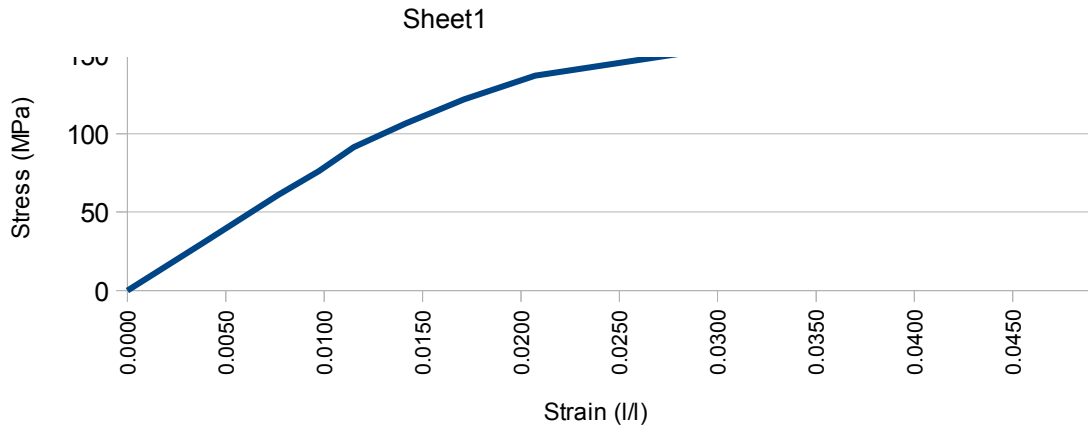
Elastic Region



Copper Wire (22 Gauge)

Plastic Deformation





30lb Monofilament Fishing Line

Measured diameter (mm)

0.54

Advertised diameter (mm)

n/a

Strain shift amount

Applied Mass (g)

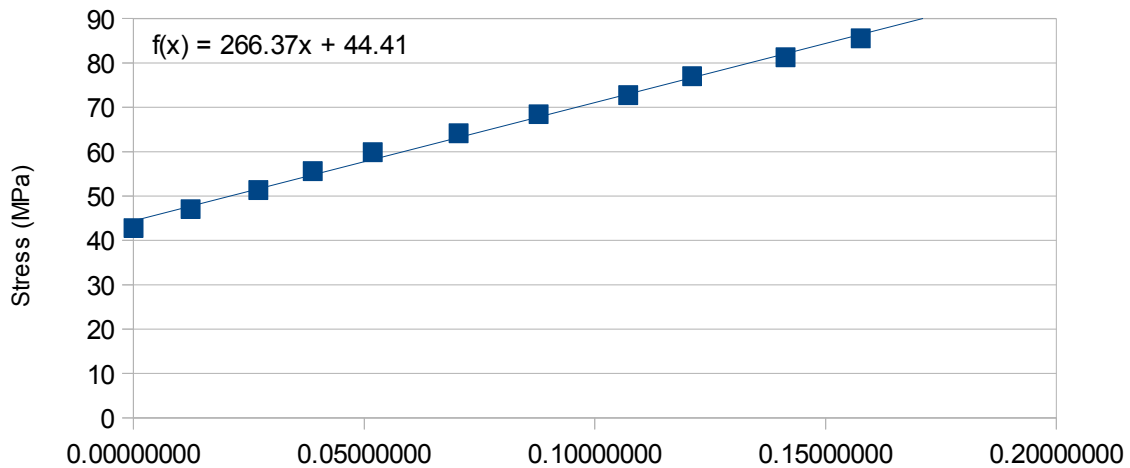
Total Length (cm)

Change of Length (10⁻⁵ m)

Strain (m/m)

999.5	48.4	1.91	0.0000000
1099.5	49	2.51	0.01239669
1199.5	49.71	3.22	0.02706612
1299.5	50.28	3.79	0.03884298
1399.5	50.91	4.42	0.05185950
1499.5	51.81	5.32	0.07045455
1599.5	52.65	6.16	0.08780992
1699.5	53.59	7.1	0.10723140
1799.5	54.26	7.77	0.12107438
1899.5	55.24	8.75	0.14132231
1999.5	56.03	9.54	0.15764463

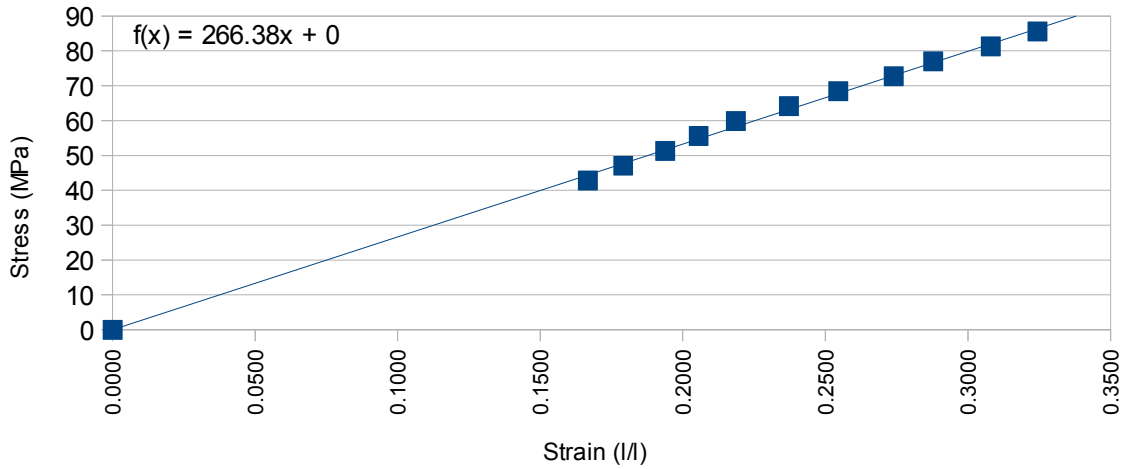
30lb Monofilament Fishing Line



Strain (l/l)

30lb Monofilament Fishing Line

Elastic Region



30lb Monofilament Fishing Line

Measured diameter (mm)

0.76

Advertised diameter (mm)

n/a

Strain shift amount

Applied Mass (g)

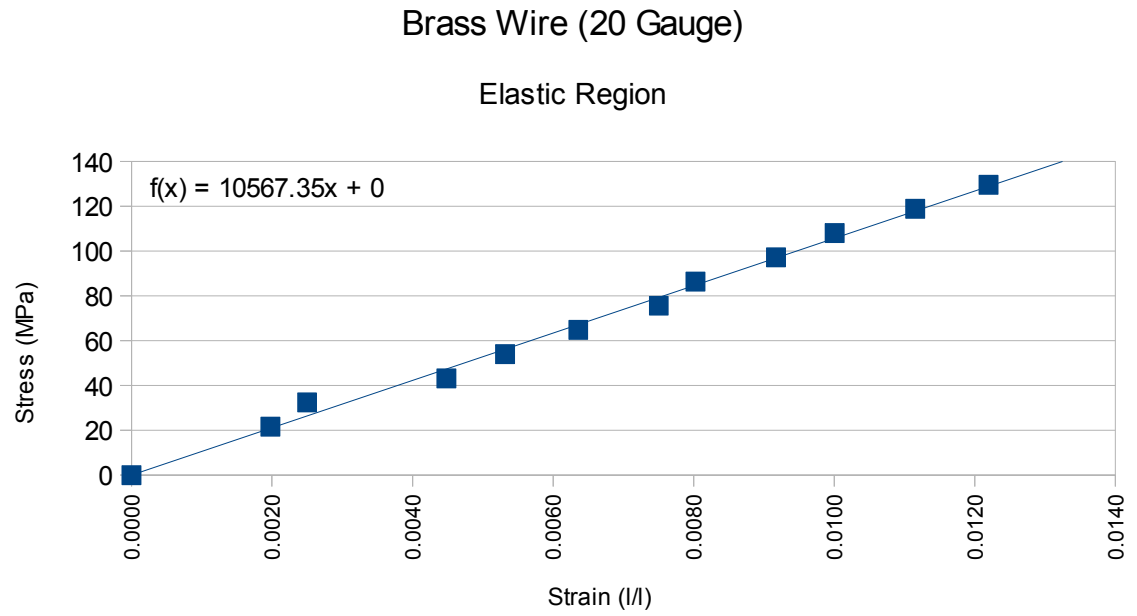
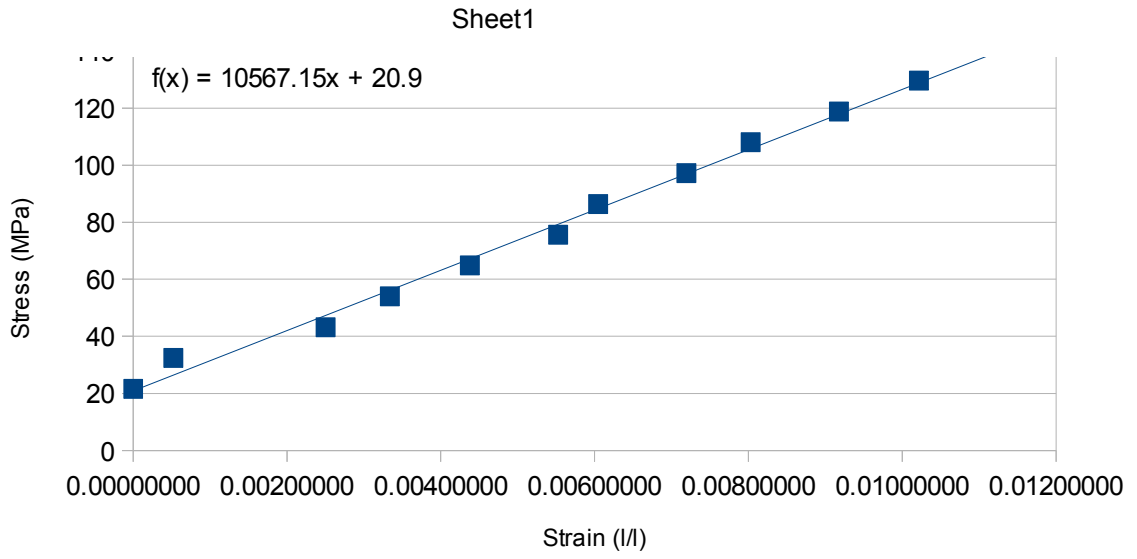
Total Length (cm)

Change of Length (10⁻⁵ m)

Strain (m/m)

999.5	95.9	6.16	0.0000000
1499.5	95.95	6.21	0.00052138
1999.5	96.14	6.4	0.00250261
2499.5	96.22	6.48	0.00333681
2999.5	96.32	6.58	0.00437956
3499.5	96.43	6.69	0.00552659
3999.5	96.48	6.74	0.00604797
4499.5	96.59	6.85	0.00719499
4999.5	96.67	6.93	0.00802920
5499.5	96.78	7.04	0.00917623
5999.5	96.88	7.14	0.01021898

Brass Wire (20 Gauge)



Sheet1

0.0036037550 Estimated original length (cm) 76.0260

Stress (Mpa)	Strain (m/m)	Stress (Mpa)
18.06	0.00360376	18.06
36.61	0.00570074	36.61
55.16	0.00937047	55.16
73.75	0.01120533	73.75
77.46	0.01251594	77.46
81.17	0.01382656	81.17
87.67	0.01421974	87.67
96.95	0.01605461	96.95
106.22	0.01762735	106.22
115.5	0.01933115	115.5

Sheet1

0.0038462760 Estimated original length (cm) 101.5096

Stress (Mpa)	Strain (m/m)	Stress (Mpa)
30.45	0	0
60.91	0.00384628	30.45
76.14	0.00767356	60.91
91.37	0.00973440	76.14
106.61	0.01150084	91.37
121.84	0.01415050	106.61
137.07	0.01709456	121.84
152.3	0.02072557	137.07
167.53	0.02877267	152.3
182.76	0.03210928	167.53
	0.04310045	182.76

(Mpa)

000



0.0500

0.166723000 Estimated original length (cm) 41.4837

Stress (Mpa)	Strain (m/m)	Stress (Mpa)
42.77	0	0
47.05	0.16672300	42.77
51.33	0.17911969	47.05
55.61	0.19378912	51.33
59.89	0.20556598	55.61
64.16	0.21858250	59.89
68.44	0.23717755	64.16
72.72	0.25453292	68.44
77	0.27395440	72.72
81.28	0.28779738	77
85.56	0.30804531	81.28
	0.32436763	85.56

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0.0019778280 Estimated original length (cm) 95.7107

Stress (Mpa)	Strain (m/m)	Stress (Mpa)
21.59	0	0
32.39	0.00197783	21.59
43.19	0.00249920	32.39
54	0.00448043	43.19
64.8	0.00531464	54
75.6	0.00635739	64.8
86.4	0.00750442	75.6
97.2	0.00802579	86.4
108	0.00917282	97.2
118.8	0.01000703	108
129.61	0.01115405	118.8
	0.01219681	129.61

