

RELATION BETWEEN { INDENTATION TENSION & TRANVERSE TESTS											
CHARGE NO	PER CENT CARBON	TENSION TEST				TRANVERSE TEST		INDENTATION TEST HARDNESS FACTOR (for 80000 lbs load) lbs. per square inch			REMARKS
		YIELD POINT lbs per sq. inch	MAXIMUM LOAD lbs. per sq. inch	PER CENT REDUCTION IN AREA		YIELD POINT FOR L=40 in lbs	YOUNG'S MODULUS E	SPHERE D=75'	CONE 90'	PARABOLOID y=πx <sup>2</sup>	
				PER CENT REDUCTION IN AREA	PER CENT EXTENSION						
1164	.10	28 400	50,000	57.3	39.2	1050	30,000,000	195,000	190,000	200,000	
2150	.20	37,100	68,300	51.8	32.8	1250	29,480,000	240,000	245,000	255,000	
3	.30 (.25)	35,000	64,200	52.3	32.9	1250	30,800,000	245,000	245,000	255,000	
1190	.40	42,800	88,900	42.1	25.5	1500	29,000,000	305,000	325,000	325,000	
1063	.62	63,700	128,100	18.0	11.4	1950	28,600,000	430,000	450,000	455,000	
2122	.54 (.66)	62,700	126,000	21.0	9.2	2000	28,900,000	430,000	455,000	460,000	
4	.75	70,000	101,600	2.3	1.5	2250	30,300,000	455,000	500,000	495,000	
5	.90	77,200	111,700	2.2	1.2	2650	30,300,000	515,000	550,000	555,000	
		Mean of 2 trials	* Broke in clutch			Bars laid flat	from curves				

RELATION OF YIELD POINT AND PER CENT REDUCTION IN AREA TENSION TEST, TO HARDNESS FACTOR - H - INDENTATION TEST										
CHARGE NO	PER CENT CARBON	YIELD POINT				REDUCTION IN AREA			NOTE - The values 150 H, 143 H, and (59-000108 H), (61-000111 H) are derived from curves C-41 & C-42 Nos I & II respectively	
		TENSION TEST	150 H SPHERE 75 D	143 H CONE 90'	143 H PARABOLOID 4-πx <sup>2</sup>	TENSION TEST	(59- 000108 H) SPHERE 75 D	(61- 000111 H) CONE 90'		(61- 000111 H) PARABOLOID y=πx <sup>2</sup>
1164	.10	28,400	27,800	27,200	28,700	39.2	38.0	39.9	38.8	
2150	.20	37,100	36,000	35,000	36,500	32.8	33.1	33.8	32.7	
3	.30 (.25)	35,000	36,700	35,000	36,500	32.9	32.5	33.8	32.7	
1196	.40	47,800	45,700	46,500	46,500	25.5	26.0	25.0	25.0	
1063	.62	63,700	64,400	64,400	65,000	11.4	12.6	11.0	10.5	
2122	.54 (.66)	62,700	64,400	65,000	65,800	9.2	12.6	10.5	10.0	
4	.75	70,000	68,300	71,600	71,000	1.5 <sup>p</sup>	10.0	5.0	5.5	
5	.90	77,200	77,100	79,700	79,200	1.2 <sup>p</sup>	3.3	—	—	