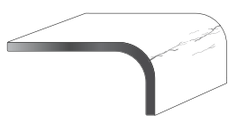
Stamping Material Selection Guide

Bend Rating Key:	Green	Yellow	Orange	Red
ESI's Bend Rating scale measures the formability of a material based on its ability to bend or form without tearing or breaking. "Green" designates easier formability all the way through "red" as most difficult.	Easy formability	Moderate formability; possible strain	Limited formability; chance of tearing	Difficult formability; likelihood of tearing
				
Radii for various thicknesses, whereas "t"=times thickness.	0t to 3t	3t to 6t	6t to 9t	9t +

Brass

	Summary	Recommended Finishes?	Applications	Conditions Available	Bend Rating	Magnetic?	Tensile Strength Minimum (KSI)		Elongation Minimum (% 2" Gauge)	Yield Strength Minimum (0.2% offset)		Hardness (Min-Max)	Density (lb/cu in)		Corrosion Resistance	Cost?
							KSI	MPa		KSI	MPa		(lb/in^3)	(g/cm^3)		
230	Copper Alloy 230 has excellent resistance against pitting, season cracking, and dezincification. It's often referred to as Alloy 230 Red Brass for its inherent rich color, and has become a popular option for adding architectural details as well as outdoor settings.	Nickel, Chrome, Tin, Gold, Silver	Costume jewelry, eyelets, fasteners, conduit, heat exchangers, flexible metal hose, pipe, couplings	230 Brass Annealed	Green	No	N/A	N/A	N/A	N/A	N/A	N/A	0.316	8.747	2 of 4	$$$$
				230 Brass H1, 1/4 Hard	Green	No	49	338	40%	40	276	Rockwell B40 Min	0.316	8.747	2 of 4	$$$$
				230 Brass H2, 1/2 Hard	Yellow	No	57	393	20%	52	359	Rockwell B60 Min	0.316	8.747	2 of 4	$$$$
				230 Brass H3, 3/4 Hard	Orange	No	64	441	12%	58	400	Rockwell B72 Min	0.316	8.747	2 of 4	$$$$
				230 Brass H4, Full Hard	Orange	No	71	490	8%	63	434	Rockwell B79 Min	0.316	8.747	2 of 4	$$$$
				230 Brass H6, Extra Hard	Red	No	83	572	5%	63	434	Rockwell B85 Min	0.316	8.747	2 of 4	$$$$
				230 Brass H8 Spring	Red	No	91	627	4%	64	441	Rockwell B89 Min	0.316	8.747	2 of 4	$$$$
				230 Brass H10 Extra Spring	Red	No	95	655	3%	65	448	Rockwell B91 Min	0.316	8.747	2 of 4	$$$$
260	Also known as cartridge brass or yellow brass, 260 Brass is the most economical and popular of the brass alloys available. It has excellent corrosion resistance to many chemical corrodents, marine environments, and industrial atmospheres.	Nickel, Chrome, Tin, Gold, Silver	Automotive. electrical components, electronic parts, mechanical fasteners	260 Brass Annealed	Green	No	N/A	N/A	N/A	16	110	N/A	0.308	8.525	2 of 4	$$$$
				260 Brass H1, 1/4 Hard	Green	No	49	338	55%	40	276	Rockwell B40 Min	0.308	8.525	2 of 4	$$$$
				260 Brass H2, 1/2 Hard	Yellow	No	57	393	25%	52	359	Rockwell B60 Min	0.308	8.525	2 of 4	$$$$
				260 Brass H3, 3/4 Hard	Orange	No	64	441	12%	58	400	Rockwell B72 Min	0.308	8.525	2 of 4	$$$$
				260 Brass H4, Full Hard	Orange	No	71	490	8%	63	434	Rockwell B79 Min	0.308	8.525	2 of 4	$$$$
				260 Brass H6, Extra Hard	Red	No	83	572	5%	63	434	Rockwell B85 Min	0.308	8.525	2 of 4	$$$$
				260 Brass H8 Spring	Red	No	91	627	4%	64	441	Rockwell B89 Min	0.308	8.525	2 of 4	$$$$
				260 Brass H10 Extra Spring	Red	No	95	655	3%	65	448	Rockwell B91 Min	0.308	8.525	2 of 4	$$$$
270	270 Brass has a range of benefits including good corrosion resistance, formability, and strength, making it an excellent option for pump cylinders, heat exchangers, fasteners, and tubing for industrial projects. It hot forms easily and is stronger than 260 Brass while still retaining a solid amount of electrical conductivity.	Nickel, Chrome, Tin, Gold, Silver	Automotive, electrical, locks, fasteners, heat exchangers, pump cylinders, industrial projects	270 Brass Annealed	Green	No	45	310	50	35	241	N/A	0.306	8.470	2 of 4	$$$$
				270 Brass H1, 1/4 Hard	Green	No	49	338	43%	40	276	Rockwell B40 Min	0.306	8.470	2 of 4	$$$$
				270 Brass H2, 1/2 Hard	Yellow	No	57	393	25%	50	345	Rockwell B60 Min	0.306	8.470	2 of 4	$$$$
				270 Brass H3, 3/4 Hard	Orange	No	64	441	12%	58	400	Rockwell B72 Min	0.306	8.470	2 of 4	$$$$
				270 Brass H4, Full Hard	Orange	No	71	490	8%	60	414	Rockwell B79 Min	0.306	8.470	2 of 4	$$$$
				270 Brass H6, Extra Hard	Red	No	83	572	5%	61	421	Rockwell B85 Min	0.306	8.470	2 of 4	$$$$
				270 Brass H8 Spring	Red	No	91	627	4%	62	427	Rockwell B89 Min	0.306	8.470	2 of 4	$$$$
				270 Brass H10 Extra Spring	Red	No	95	655	3%	65	448	Rockwell B91 Min	0.306	8.470	2 of 4	$$$$

About Us

Engineering Specialties Inc. (ESI) delivers custom manufacturing solutions, specializing in production metal stamping, CNC machining and advanced assembly capabilities. For more information about ESI, visit www.esict.com.

Contact Us Today | View our Resource Library

452 Twin Lakes Rd • North Branford, CT 06471
www.esict.com • Email: info@esict.com • Phone: 800-486-5546 • Fax: 800-486-2825