

Precision Rolled Strip and Foil Products

GLOSSARY

These terms are specific to Rolled Alloys. Please also visit our Glossary of Permanent and Soft Magnetics which may be accessed in the Technology Center section of the website.

ANNEAL	A heat treatment given to soften the material for further cold working (such as cold rolling, forming, or drawing).
AS ROLLED	No heat-treating is done after rolling to final thickness. Depending on the nature of the specific material, the amount of cold reduction usually varies between 50 and 90%.
CAMBER	A measurement of edge curvature or “bowing” of a flat strip. Camber needs to be minimized in product used in stamping applications.
COIL SET	A measurement of curl or set of a coiled strip; a measurement of the coiled configuration.
CROSSBOW	A measurement of the deviation of a strip from a flat surface transverse to the rolling direction (across the width).
EDGE WAVE	A measurement of the deviation of a strip from a flat surface parallel to the rolling direction.
ELONGATION	A term used in mechanical testing to describe the amount of extension of a test piece when stressed in tension; a measure of material ductility.
EPSTEIN TEST	A method for the determination of the magnetic properties of basic flat rolled magnetic materials such as silicon steel at power frequencies (25 to 400 Hz). It covers the determination of core loss, volt-amperes, RMS and peak exciting current and several types of a.c. permeability.
1/4 HARD	A specific mechanical strength requirement; tensile strength is approximately $\frac{1}{4} \cdot (t_{FH} - t_A)$, where t_{FH} =tensile strength of full hard condition, and t_A =tensile strength of annealed condition.
1/2 HARD	A specific mechanical strength requirement; tensile strength is approximately $\frac{1}{2} \cdot (t_{FH} - t_A)$, where t_{FH} =tensile strength of full hard condition, and t_A =tensile strength of annealed condition.
3/4 HARD	A specific mechanical strength requirement; tensile strength is approximately $\frac{3}{4} \cdot (t_{FH} - t_A)$, where t_{FH} =tensile strength of full hard condition, and t_A =tensile strength of annealed condition.
FULL HARD	A specific mechanical strength requirement; tensile strength is approaching the maximum for most applications. Little ductility is left within the material. The material is usually cold worked 40 to 50%.
HARDNESS	A measure of the resistance of a material to surface indentation or abrasion.
TENSILE TESTER	Machine used to measure mechanical strength and ductility of material.
TEMPER	A description of the metallurgical condition of the material, as in “an as-rolled temper” or “a stress relieved temper”; also a secondary or final heat treatment commonly used with tool steels to toughen them.
TENSILE STRENGTH	The ratio of maximum load to original cross-sectional area. The maximum load is the force (in pounds) to cause tensile sample to fail. Also known as the ultimate strength.
YIELD STRENGTH	The stress level at which a material exhibits a specified deviation from proportionality of stress and strain. Beyond this stress level, the tensile sample will not return to its original configuration or cross section.