GUIDE TO SELECTION

HOT ROLLED SHEET & COIL

COMMERCIAL STEEL — CS Type B is a low cost steel sheet, soft enough to bend flat on itself in any direction without cracking, ductile enough for shallow drawing. Carbon is .10 max. for improved welding and forming. Surface has normal mill oxide. Conforms to A1011 (formerly A569). Used for tanks, barrels, farm implements and other applications where surface finish is not critical.

PICKLED AND OILED — Acid pickling removes mill oxide, improving surface appearance, uniformity and finishing quality. Paint and enamel adhere well after cleaning. Same properties and forming characteristics as commerical steel but less wear on tooling. Conforms to A1011 (formerly A569). Typical applications: auto and truck parts, farm implements, tanks, stamped and roll formed parts, formed sections.

DRAWING STEEL-DS Type B — Used in fabricating parts where drawing or severe forming may be involved and surface appearance is not of primary importance. Conforms to A1011 (formerly ASTM A621). Typical applications: auto and truck parts, stamped parts and roll formed sections.

.40/.50 CARBON — High carbon content increases yield strength about 50% over low carbon. Abrasion resistance is also improved compared with low carbon. Heat treatable for still greater strength and hardness. Far less formable and weldable than low carbon. Used for scrapers, blades, tools and other applications requiring strong, moderate cost sheet.

ABRASION RESISTING — Medium carbon content plus higher manganese greatly improves resistance to abrasion. Typically used for scrapers, liners, chutes and conveyors. Outlasts low carbon steel by two to ten times. Moderate formability.

HIGH STRENGTH/LOW ALLOY SHEETS

Have much higher minimum yield strengths, improved formability, weldability and/or atmospheric corrosion resistance than ordinary low carbon commercial steel sheets. Lend themselves to applications where weight reduction is a main factor. Extra strength permits weight savings up to 25%. Produced to minimum mechanical requirements. Available in three types:

CONVENTIONAL TYPE A1011 (formerly ASTM A607) — Lowest cost HSLA steels made to specific minimum yield strengths where atmospheric corrosion resistance is not a requirement. Good formability and weldability. Typical applications: transmission towers, formed utility poles, autoparts, truck trailers.

IMPROVED ATMOSPHERIC CORROSION RESISTANCE TYPE ASTM A606 — Two to four times more resistant to atmospheric corrosion than low carbon steel. Unpainted, Cor-Ten has tightly adherent oxide surface which stops further oxidation. Excellent weldability and formability.

HSLAS-F IMPROVED FORMABILITY TYPE A1011 (formerly ASTM A715) — Maximum formability with improved toughness and fatigue resistance. Good weldability. Available with minimum yield ranging from 50 KSI to 80 KSI. Used when fabrication involves difficult forming or tight radii bending.

Minimum Mechanical Properties

Type	Yield Point ksi	Tensile Strength ksi	90° Bend**
A1011 CS-B	30-50*	—	1T
A1011 SS 50	50	65	2XT
A1011 HSLAS-F 50	50	60	1T
HSLAS-F 80	80	90	2T

*Typical
**Bend radii are suggested minimum.

COLD ROLLED SHEET & COIL

LOW CARBON (Commercial Steel) — Closer thickness tolerances and better surface than pickled and oiled. The matte finish is ideal for paints, enamels and lacquers. Soft enough to bend flat on itself in any direction without cracking — ductile enough for many moderate drawing applications. Can be electroplated. Light oil protects surface from rust. Conforms to A1008 (formerly ASTM A366). Maximum carbon content .10 for improved welding and forming. End uses: refrigerators, ranges, washing machines, auto and truck bodies, signs, panels, shelving, furniture and stamped parts.

ALUMINUM KILLED (Drawing Steel) — A sheet with maximum uniformity used for severe drawing or forming operations. Has maximum ductility plus freedom from age hardening and fluting. Conforms to A1008 (formerly ASTM A620).

SPECIAL PROTOTYPE Steel (Aluminum Killed-Drawing Steel) — An aluminum killed drawing steel sheet made within closely restricted thickness tolerances. Used for prototype die work and for other deep drawing requirements when closer than commercial tolerances are required. (Also available in HR P/O and galvanized.)

PLATING QUALITY — Two finishes suitable for most plating applications: Commercial Bright, rolled with ground and polished rolls, has a relatively bright finish; and Extra Light Matte, produced with lightly blasted rolls, has a slightly duller finish than Commercial Bright. Base metal conforms to A1008 (formerly ASTM A366).

EMBOSSED PATTERN — Has a leather grain textured surface on one side which hides dings, dents and scratches that can occur during production. Can reduce rejection rates by as much as 70% or more. End users: appliance wrappers, instrument panels, office equipment, shelving, etc. Base metal conforms to A1008 (formerly ASTM A366).

STRETCHER LEVELED STANDARD OF FLATNESS — A commercial quality matte finish sheet, further processed to improve flatness. Used for panel work where little forming is done and finished product must be flat and free from waves. Widely used in the manufacture of desk and table tops, truck body panels, partitions, templates and office furniture. Conforms to A1008 (formerly ASTM A366).

GALVANIZED SHEET & COIL

The coating weight of Ryerson's hot dipped galvanized sheets conforms to ASTM A924 (formerly A525). Electro-galvanized conforms to ASTM A591. The end use should determine the type of coated sheet and surface condition required. Regardless of coating weight, spangle size, method of manufacture or surface preparation required, Ryerson Tull can supply the material needed.

GALVANIZED sheets are continuously hot dip coated with a durable protective coating of zinc. Can be formed without flaking or peeling. Stamping, cold drawing, double seaming and brake or roll forming will not impair their protective qualities. Can be welded and soldered. Thicknesses 16 ga. and lighter are lock-forming quality. Thicknesses 14 ga. and heavier are commercial quality. All conform to ASTM A924 (formerly A525). Coatings are G90 (minimum .90 oz. per foot) or G60 (light commercial).

HOT DIPPED GALVANIZED is also available on special order in extra heavy coatings, differentially coated, extra smooth surface, coated on one side only, and with various spangle sizes.

GALVANNEALED sheets are heat treated after coating to produce zinc-iron alloy and eliminate the spangle. Can be painted without further surface preparation except for normal cleaning. May be subject to bending and simple forming without impairing its paintability or corrosion resistance. Particularly suited for signboards, metal doors and partitions, truck and trailer bodies, heater and furnace parts, etc. The coating weight is A60 or A40.

GALVALUME® is a corrosion resistant sheet, continuously hot dipped coated with an aluminum zinc alloy. For certain applications it offers a substantial increase in corrosion resistance over G90 galvanized sheet. It can be readily formed, welded and soldered. End uses: appliance and automotive parts, metal buildings and agricultural parts. Conforms to ASTM A792 AZ 50 coating.

ELECTRO-GALVANIZED BONDERIZED sheets are cold rolled steel sheets zinc coated by electrolytic deposition and conform to A591. Should be painted if subject to outdoor exposure. The coating has a uniform dull gray matte appearance without the spangles normally present on hot dipped galvanized. The surface has been phosphate treated for immediate paintability. Can also be formed, rolled or stamped without flaking, powdering, peeling or cracking. Electro-galvanized sheets have same gauge thickness as cold rolled sheets. Particularly suited for cabinets, signs, light fixtures, etc., where an excellent finish is required.

ALUMINIZED® SHEET & COIL

ALUMINIZED STEEL is a sheet steel hot dip coated on both sides with aluminum-silicon alloy by the continuous method. Has an attractive satin finish. It provides the best qualities of aluminum and steel by resisting corrosion and providing strength at a low cost. The weight of aluminum coating applied to both sides of the sheet is approximately 0.40 oz. per square foot, providing a coating of about 0.001" of aluminum per side. Resists non-atmospheric corrosion up to 1250° F. and reflects as much as 80% of incident radiant heat up to 900° F. Can be subjected to moderate forming, spinning and drawing without peeling and flaking of the coating. Conforms to A463 coating T1-40. Applications include crop dryers, dry kiln fan walls, dryers, incinerators, mufflers, oven and space heater components.

LONG TERNE SHEET & COILS — A uniform quality soft steel sheet coated with 85% lead, 15% tin alloy for maximum soldering ease. Sheets have an oiled finish, can take moderate stamping and forming operations without surface flaking. Conforms to ASTM A308 coating LT01. Used for soldered tanks, automobile accessories, hood and radiator work, many other stamped and formed products.