Material Specifications

Hot Rolled Steel (ASTM A569)

A low carbon, hot finished steel, produced by passing bar stock between a set of rolls at a temperature above the recrystallization temperature. Scale is removed by means of a hot, weak sulfuric acid bath, after which a film is applied.

Cold Rolled Steel (ASTM A366)

A low carbon, cold finished steel, produced by passing bar stock between a set of rolls.

Galvanized Steel (ASTM A526)

Steel which is zinc coated to provide corrosion resistance. Hot dip galvanizing is the most common method of applying zinc coating. Other methods include electodeposition and metal spraying. Galvanizing provides protection against corrosion by serving as a sacrificial barrier and providing cathodic protection.

Galvannealed Steel (ASTM A525)

Steel which is zinc coated on both sides. It is designed to be used in the painted condition. Typically hot dipped to A40 and A60 designations.

Features of Galvannealed Steel:

- Corrosion resistance
- Excellent for paint
- Easy for weld
- The combination of galvannealed steel and properly selected paint offers resistance to peeling and blistering

Fiberglass

Thermoset polyester reinforced with glass fiber, processed by injection molding, compression molding, pultrusion, and open molding.

Features of Fiberglass:

- High impact resistance
- A superior range of temperature limits
- Excellent dimensional stability
- Excellent electrical properties
- Excellent chemical resistance
- Excellent moisture resistance

Polyamide (Nylon)

A high performance thermoplastic processed by injection molding.

Features of Polyamide:

- High impact resistance.
- Wide temperature limits.
- Excellent wear resistance.
- Excellent chemical resistance.

Stainless Steel (Type 304)

Stainless steel is a highly corrosion resistant iron based alloy containing between 18% and 20% chromium. Stainless steel is a good corrosion resistant material which is generally considered non-magnetic. It exhibits many of the same resistance's attributed to fiberglass material and resistance to highly polar solvents such as acetone.

Stainless Steel (Type 316)

Type 316 provides improved corrosion resistance to that of other chrome nickel steels. It is used when exposed to chemical corrodents, as well as marine atmospheres. It provides improved resistance to salt, some acids and high temperature. Resistance to sulfates and chlorine is less than type 304.

Aluminum (Type 5052)

A lightweight metal that forms a natural oxide layer which shields its surface from most corrosive elements. Type 5052 is the strongest non-heat treatable aluminum alloy.

Polycarbonate

A high performance thermoplastic resin that is processed by injection molding or sheet extrusion.

Features of polycarbonate:

- High impact resistance
- A wide range of temperature limits
- Good dimensional stability
- Good electrical properties

Polyester (PET)

A high performance thermoplastic resin that is processed by injection molding.

Features of Polyester:

- High impact resistance
- A wide range of temperature limits
- Good dimensional stability
- Excellent electrical properties
- Excellent chemical resistance
- Excellent moisture resistance

Zinc Die Casting (Zamak #5)

A zinc die cast is formed when a molten zinc alloy is forced under high pressure into a steel die. SCE uses zinc die casting application Zamak #5, which is the addition of approx. 1% copper to the #3 alloy. This increases the tensile strength of the casting approx. 15%.

Features of Zinc die casting:

- Zinc die castings are strong, economical and often cast to the exact shape needed without additional machining.
- Zinc is a non- ferrous metal, it will not rust.
- Zinc is an abundant natural element which is mined and used in many applications.