APPENDIX C

GLOSSARY

ANSI – American National Standards Institute

ASME – American Society of Mechanical Engineers

ASTM – American Society of Testing and Materials

Aircraft Quality – In the fastener industry, this refers to parts that are made to more stringent specifications, and tested more thoroughly, than commercial fasteners because they are used in high-risk and/or high-stress applications requiring near-zero defects.

Alloy Steel – A variety of steel, which includes elements in addition to carbon, giving the material the ability to retain its strength at higher temperatures. Additionally, alloy steel has greater tensile and yield strength than medium carbon steel.

Annealed – The condition of a fastener when it has been heated, then cooled to make it soft or less brittle.

Bolt – An externally threaded rod, headed at one end, designed to pass through an oversized hole and mate with a nut so as to hold two or more objects together.

Carbon Steel – A steel whose only significant alloying material is carbon.

Case Depth – That area of a fastener, measured from the surface inward, which has a different hardness requirement than its core.

Case Hardening – The process performed on quenched, tempered, ferrous fasteners which makes the surface of those parts harder than the inner core. Case hardness is measured in the threaded section of the fastener.

Core Hardness – The resistance a fastener material has to being permanently deformed, measured at a spot deeper than the case depth.

Ductility – The ability of material to be permanently bent or stretched without breaking.

Elongation – the lengthening of a fastener caused by a tensile force.

Embedment, minimum – The minimum depth an anchor must be installed to meet the minimum pull-out values. It is the distance measured from the concrete surface to the bottom of the anchor.

Ferrous – That which contains iron; usually refers to fasteners containing more iron than any other element.

Fillet – The concavely curved Section at the angle formed at two intersecting surfaces of a fastener.

Galvanizing:
Hot-Dip Galvanizing - The process of coating iron or steel with zinc by means of hot-dipping.

Electro-Galvanizing - The process of coating iron or steel with zinc through an electric current. This results in a somewhat smoother, shinier finish than hot-dipping.

Mechanical-Galvanizing - The process of coating iron or steel with zinc at room temperature where the zinc powder becomes cold welded to the metal parts. It results in a more uniform finish than hot-dipping and greatly reduces the chance of hydrogen embrittlement which can occur in electro-galvanizing.

Gimlet Point – a conically shaped, threaded point having an angle of 45-50º. Lag screws, wood screws, Type A & AB tapping screws all have gimlet points.

Grip Range – The minimum and maximum thicknesses of materials a rivet can join together.

Header Point – A blunt point with chamfered edges. Machine screws typically have header points.

Hydrogen Embrittlement – The condition of a fastener, which had hydrogen introduced into its steel, causing it to be substantially less ductile and prone to sudden and premature failure.

GLOSSARY

Key engagement – The distance from the head surface of a socket to that depth to which the hex wrench will penetrate.

Locknut – A nut constructed to resist loosening when subjected to vibration or axial load. A prevailing torque type locknut achieves its locking action without being against another nut or a bearing surface, but by a controlled distortion in its threads or by means of another locking element (e.g. a nylon ring) built into the nut. A free-spinning locknut achieves its locking action when tightened against another surface.

Mandrel Break Load – The axially applied load required to break the mandrel while a rivet is being set.

Milled from Bar – A description of fasteners made from bar stock on a screw machine or a lathe.

Passivating – The process performed on stainless fasteners of removing surface imperfections and producing a slight film on the surface which enhances the parts' resistance to corrosion.

Penetration Gauge Depth – A range of measurements, which determine the acceptability of a recess in the head of a screw. It is measured from a plane where the edge of the recess wings meet the top of the head's surface, downward into the recess.

Pilot Hole Size – An opening of sufficient size for a specific fastener to be properly installed.

Pitch:
Thread Pitch – The distance between corresponding points on adjacent threads in the same plane parallel to the part's axis and on the same side of the axis.

Pitch Cylinder – An imaginary cylinder, which sharing the same axis as a fastener, would cut through the threaded portion of that fastener in a way that made the widths of the thread ridge and groove equal, or half way between the major and minor diameters.

Pitch Diameter – The diameter of the pitch cylinder.

Plating – The application of a metallic deposit on the surface of a fastener for protective and/or decorative purposes.

Point Taper Length – The length of the pointed portion of the fastener measured parallel to the axis, from the end of the point to the first full form thread.

Proof Load – The tension applied force a fastener must support without any permanent change in size or shape.

Recess Depth – The distance measured, axially, from the plane where the edge of the recess wings meet the top of the head's surface to the bottom of the recess.

Reduction of Area – One of the tests performed on a cap screw or bolt when determining its tensile and yield strengths. After a test specimen has been broken in a tensile tester, the original diameter of the specimen (d) is compared to its smallest diameter after fracture (t). The formula for determining reduction of area is:
[1.000 – (.5 x t)2 / (.5 x d)2] x 100 = % area reduction.

Rockwell Hardness – A test performed on fasteners to determine the resistance a fastener material has to being permanently deformed by a specifically shaped object under a specific amount of weight. The test measures how deep an indentation is made in the fastener. That measurement is converted to a reading on the Rockwell hardness scale.

Runout of Thread – A threaded portion with incomplete profile generated by chamfering part or leading part of tool. The incomplete threads are generated at the boundary between body and complete thread and also at thread-end portion as for an external threaded fastener with body.
The same are generated at under-head portion and thread end portion as for an external threaded fastener with continuous thread.

SAE – Society of Automotive Engineers

GLOSSARY

Screw - An externally threaded fastener designed to be tightened or loosened by torquing the head.

Shear Load, Ultimate – A minimum amount of force, applied transversely, which a blind rivet must withstand without failing.

Stud – A headless fastener with threads at both ends of the shank.

Tensile Strength – The greatest longitudinal stress a fastener can withstand prior to, or at the time of breaking apart.

Tolerance – The difference between the lower and upper limits between which a fastener's size(s) must be measured.

Torque:
Drive Torque – A screw shall form a mating internal thread in a test plate, without damaging its own thread with the application of a rotational force not in excess of the drive torque.

Minimum Torsional Strength – The amount of rotational force a fastener must endure before failure occurs. This presumes the screw is driven into a proper size hole.

Tightening Torque – The amount of rotational force which is approximately midway between a fastener's "drive torque" and "ultimate torque".

UNC – Unified National Coarse Threads

UNF – Unified National Fine Threads

Washer Face – A circular boss on the bearing surface of a screw, bolt or nut.

Yield Strength – The tension-applied stress at which a fastener, under strain, is deformed a measurable amount.