

non-alloy nickel-plated carbon products, with a substrate of cold-rolled battery grade sheet ("CRBG") with both sides of the CRBG initially electrolytically plated with pure, unalloyed nickel and subsequently annealed to create a diffusion between the nickel and iron substrate, with the nickel plated coating having a thickness of 0–5 microns per side with one side equaling at least 2 microns; and with the nickel carbon sheet having a thickness of from 0.004" (0.10mm) to 0.030" (0.762mm) and conforming to the following chemical specifications (%): C  $\leq$  0.08; Mn  $\leq$  0.45; P  $\leq$  0.02; S  $\leq$  0.02; Al  $\leq$  0.15; and Si  $\leq$  0.10; and the following physical specifications: Tensile = 65 KSI maximum; Yield = 32 - 55 KSI; Elongation = 18% minimum (aim 34%); Hardness = 85 - 150 Vickers; Grain Type = Equiaxed or Pancake; Grain Size (ASTM) = 7–12; Delta r value = aim less than +/- 0.2; Lankford value =  $\geq$  1.2.; and (2) next generation diffusion-annealed nickel plate meeting the following specifications: (a) nickel-graphite plated, diffusion annealed, tin-nickel plated carbon products, with a natural composition mixture of nickel and graphite electrolytically plated to the top side of diffusion annealed tin-nickel plated carbon steel strip with a cold rolled or tin mill black plate base metal conforming to chemical requirements based on AISI 1006; having both sides of the cold rolled substrate electrolytically plated with natural nickel, with the top side of the nickel plated strip electrolytically plated with tin and then annealed to create a diffusion between the nickel and tin layers in which a nickel-tin alloy is created, and an additional layer of mixture of natural nickel and graphite then electrolytically plated on the top side of the strip of the nickel-tin alloy; having a coating thickness: top side: nickel-graphite, tin-nickel layer  $\geq$  1.0 micrometers; tin layer only  $\geq$  0.05 micrometers, nickel-graphite layer only  $>$  0.2 micrometers, and bottom side: nickel layer  $\geq$  1.0 micrometers; (b) nickel-graphite, diffusion annealed, nickel plated carbon products, having a natural composition mixture of nickel and graphite electrolytically plated to the top side of diffusion annealed nickel plated steel strip with a cold rolled or tin mill black plate base metal conforming to chemical requirements based on AISI 1006; with both sides of the cold rolled base metal initially electrolytically plated with natural nickel, and the material then annealed to create a diffusion between the nickel and the iron substrate; with an additional layer of natural nickel-

graphite then electrolytically plated on the top side of the strip of the nickel plated steel strip; with the nickel-graphite, nickel plated material sufficiently ductile and adherent to the substrate to permit forming without cracking, flaking, peeling, or any other evidence of separation; having a coating thickness: top side: nickel-graphite, tin-nickel layer  $\geq$  1.0 micrometers; nickel-graphite layer  $\geq$  0.5 micrometers; bottom side: nickel layer  $\geq$  1.0 micrometers; (c) diffusion annealed nickel-graphite plated products, which are cold-rolled or tin mill black plate base metal conforming to the chemical requirements based on AISI 1006; having the bottom side of the base metal first electrolytically plated with natural nickel, and the top side of the strip then plated with a nickel-graphite composition; with the strip then annealed to create a diffusion of the nickel-graphite and the iron substrate on the bottom side; with the nickel-graphite and nickel plated material sufficiently ductile and adherent to the substrate to permit forming without cracking, flaking, peeling, or any other evidence of separation; having coating thickness: top side: nickel-graphite layer  $\geq$  1.0 micrometers; bottom side: nickel layer  $\geq$  1.0 micrometers; (d) nickel-phosphorous plated diffusion annealed nickel plated carbon product, having a natural composition mixture of nickel and phosphorus electrolytically plated to the top side of a diffusion annealed nickel plated steel strip with a cold rolled or tin mill black plate base metal conforming to the chemical requirements based on AISI 1006; with both sides of the base metal initially electrolytically plated with natural nickel, and the material then annealed to create a diffusion of the nickel and iron substrate; another layer of the natural nickel-phosphorous then electrolytically plated on the top side of the nickel plated steel strip; with the nickel-phosphorous, nickel plated material sufficiently ductile and adherent to the substrate to permit forming without cracking, flaking, peeling or any other evidence of separation; having a coating thickness: top side: nickel-phosphorous, nickel layer  $\geq$  1.0 micrometers; nickel-phosphorous layer  $\geq$  0.1 micrometers; bottom side : nickel layer  $\geq$  1.0 micrometers; (e) diffusion annealed, tin-nickel plated products, electrolytically plated with natural nickel to the top side of a diffusion annealed tin-nickel plated cold rolled or tin mill black plate base metal conforming to the chemical requirements based on AISI 1006; with both sides of the cold rolled strip

initially electrolytically plated with natural nickel, with the top side of the nickel plated strip electrolytically plated with tin and then annealed to create a diffusion between the nickel and tin layers in which a nickel-tin alloy is created, and an additional layer of natural nickel then electrolytically plated on the top side of the strip of the nickel-tin alloy; sufficiently ductile and adherent to the substrate to permit forming without cracking, flaking, peeling or any other evidence of separation; having coating thickness: top side: nickel-tin-nickel combination layer  $\geq$  1.0 micrometers; tin layer only  $\geq$  0.05 micrometers; bottom side: nickel layer  $\geq$  1.0 micrometers; and (f) tin mill products for battery containers, tin and nickel plated on a cold rolled or tin mill black plate base metal conforming to chemical requirements based on AISI 1006; having both sides of the cold rolled substrate electrolytically plated with natural nickel; then annealed to create a diffusion of the nickel and iron substrate; then an additional layer of natural tin electrolytically plated on the top side; and again annealed to create a diffusion of the tin and nickel alloys; with the tin-nickel, nickel plated material sufficiently ductile and adherent to the substrate to permit forming without cracking, flaking, peeling or any other evidence of separation; having a coating thickness: top side: nickel-tin layer  $\geq$  1 micrometer; tin layer alone  $\geq$  0.05 micrometers; bottom side: nickel layer  $\geq$  1.0 micrometer.

Also excluded from this order are products meeting the following specifications: (1) Widths ranging from 10 millimeters (0.394 inches) through 100 millimeters (3.94 inches); (2) thicknesses, including coatings, ranging from 0.11 millimeters (0.004 inches) through 0.60 millimeters (0.024 inches); and (3) a coating that is from 0.003 millimeters (0.00012 inches) through 0.005 millimeters (0.000196 inches) in thickness and that is comprised of either two evenly applied layers, the first layer consisting of 99% zinc, 0.5% cobalt, and 0.5% molybdenum, followed by a layer consisting of phosphate, or three evenly applied layers, the first layer consisting of 99% zinc, 0.5% cobalt, and 0.5% molybdenum followed by a layer consisting of phosphate, and finally a layer consisting of silicate.

Also excluded from this order are products meeting the following specifications: (1) Flat-rolled products (provided for in HTSUS subheading 7210.49.00), other than of high-strength steel, known as "ASE Iron Flash" and either: (A) having a base layer of zinc-based zinc-iron alloy applied by hot-