FINISHES & COATINGS

MW Components

NO FINISH	TIN PLATE - (electro deposit) plus Solder-ability ASTM 8 545-92 - Class C
ANODIZE M1L-A-8625F - Type II Class 2 - (Sulphuric) Hot water seal (dark gray)	TIN/LEAD per ASTM B579**
ANODIZE - Mu-A 8625F Type U - Class I (Sulphuric) Hot water seal (clear)	BRIGHT DIP (Brass finish)
ANODIZE MI L-A-8625F Type II - Class 2 - (Sulphuric) Hot water seal (blue)	IRIDITE- MIL-C-5541-E - Class 3 (Clear)
ANODIZE - MIL-A -8625F - Type II - Class 2 - (Sulphuric) Hot water seal (red)	IRIDITE- MIL-C-5541-E - Class 3 (Yellow)
ANODIZE - MIL-A-8625F Type II - Class 2 (dyed gold)	IRIDITE- MIL-C-5541-E - Class 3 1a (Gold)**
ANODIZE - MIL-A-8625F - Type II - Class 2 Hot water seal (black)	GOLD FLASH - 0.000015 thick over silver plate (0.0003 Thickness)
CADMIUM PLATE SAE-AMS-Q0-P-416- Class 2* Clear chromate	CHROMIUM PLATING - SAE-AMS-QQ-C-320 (bright finish) Class 1 – Type I
CADMIUM PLATE - SAE-AMS-QO-P-416 Class 2 Color chromate finish	CHROMIUM PLATING - SAE-AMS-Q0-C-320 (satin finish) Class 1 - Type B
CADMIUM PLATE COMMERCIAL- Type I - Class 3*	CHROMIUM PLATING - SAE-AMS-QQ-C-320 (engineering) Class 2
CADMIUM PLATE - SAE-AMS-QQ-P-416 - Type II - Class 3* Color chromate finish	CLEAR LACQUER
NICKEL PLATE - SAE-AMS-OQ-N-290 1 - Grade G (Thickness .0002-SB) (Single layer coating fully bright)	WATER DIP LACQUER
NICKEL PLATE - SAE-AMS-QO-N-290 1 - Grade F (Thickness - .0004-SB) (Single layer coating fully bright)	ZINC PLATE -ASTM B633/85 Type I - Class FE/ZN5-SC-1 (Thickness .00025)
SILVER PLATE - ASTM- B700 - Type II Grade B (Thickness -.0003)	ZINC PLATE - colored chromate - ASTM B633/85 Type II - FE/ZN5-SC-1 (Thickness -.00025)
BLACK OXIDE - MIL-DTL-139240 Class 4 For 300 series corrosion resistance steel alloys only	ZINC PLATE - colorless (clear) chromate - ASTM B633/ 85, Type III - Class FE/ZN5-S.C-1 (Thickness .00025)
BLACK OXIDE - MIL-DTL-1 39240 - Class 1 For plain carbon and low alloy steels	ZINC PLATE - (phosphate coat) - ASTM B633/85 Type V Class FE/ ZNS-SC-1 (Thickness .00025)
PASSIVATE- MIL-F-14072-D (ER) AMEND #1 -Type I Finish #E300 - Passivate per ASTM-A-380-96	ZINC PLATE - per ASTM B633 - Type B - (olive drab)
PASSIVATE - AMS-QQ-P-35, ASTM A967 -Type II	SOLDER PLATE - (.000 1 TO -.0083 thick; solder per J-STD-004, SN 60 PG 40) over nickel plate thickness 0.0001-0.0005 in AC/W SAE-AMS-P-81 728 plus solder-ability
ALODINE 1200**	BLACK PHOSPHATE
ALODINE 5200 (For RoHS Compliant Part Only - Yellow)	BLACK ZINC
GOLD FLASH (Thickness -.00003 to .00005)	BLACK FI NISH - (used on steel parts - strictly cosmetic)
GOLD FLASH over nickel flash (Thickness - .00003 to .00005)	ELECTRO TIN PLATE - over copper flash - ASTM 8545 - Type I
GOLD PLATE - AMS 2422, ASTM 8488 - Type II - Grade C -Class 2 (Thickness .00010 minimum)	LUBRICANT - Solid film - heat cured - corrosion inhibiting MIL-PRF-46010F - Type I - cure temperature of 150 ±3°C
TIN PLATE - (bot dipped) ASTM B 339 “PIG TIN” Grade A - Type II	LUBRICANT - Solid film - heat cured - corrosion inhibiting - MIL-PRF-46010F - Type II - cure temperature of 204 ±3°C
TIN PLATE - (electro deposit) ASTM 8545 - Type I	ELECTRO POLISH - No military specification assigned. An electric process used to remove the outer layer of material to brighten primarily steel, stainless steel and brass alloys.

*RoHS Complaint: RoHS compliance of cadmium plating depends on the classification of the end use of the product. Cadmium plating is RoHS compliant unless the end product is in contact with food, human skin or indoor air. Each customer must determine it their product’s end use meets the requirements for RoHS certification.

**These plating codes are not RoHS compliant, and we do not offer a substitute for these platings. Do not specify these finishes if RoHS certification is required.

RECOMMENDED FINISHES

ALUMINUM

Anodized Finishes: Anodized finishes are intended to provide corrosion resistance, improve paint a dhesion and abrasion resistance, for aluminum and aluminum alloy parts. Good dielectric properties.

Anodized (Hard) Finishes: Color will vary from light tan to black depending on alloy and thickness. Provides very hard ceramic type coating. Good dielectric properties. Corrosion resistance is good.

Caution: Anodized finishes are recommended on aluminum alloys of 1/2″ in diameter or greater due to the higher current required to apply said coating.

Silver Plated Finish: Use on aluminum to enhance conductivity.

Alodine: Provides protection and corrosion resistance. For aluminum and aluminum alloys.

Iridite: Primarily used for protection against corrosion where lower electrical resistance is required. Will improve adhesion of paint systems on aluminum and aluminum alloys.

Lubricant – Solid Film – Heat Cured – Corrosion inhibiting: Reduces wear and prevents galling when used on aluminum and aluminum alloys.

BRASS

Nickel Plated finishes: Nickel finish is hard, bright – has an attractive look – and is corrosive resistant, Copper plated – Copper – Copper alloys – Zinc, Zinc based alloys, and brass parts. Steel parts.

Bright Dip: Used to brighten brass material.

Tin Plate: Depending on the thickness/application specified by the customer. Tinplate can be utilized for articles to be soldered; to prevent galling; to prevent corrosion or to prevent the formation of a case during nitriding.

Clear Lacquer: Provides protective tarnish and corrosion resistance, used mostly on brass.

Water Dip Lacquer: Provides protective tarnish and corrosion resistance, used mostly on brass.

Zinc Plate: Electrodeposited zinc coatings applied to brass articles provides protection from corrosion.

Black Zinc: Provides corrosion resistance, decorative, used on brass.

Black Satin Finish: Is a decorative finish, used on brass.

RECOMMENDED FINISHES *continued*

COPPER

Nickel Plated finishes: Nickel finish is hard, bright, – has an attractive look – and is corrosive resistant. copper plated – Copper – Copper Alloys.

Silver Plate Finish: Semi-bright in appearance. Good corrosion resistance depending on the base metal. Will tarnish easily. Solderability is excellent but decreases with age. For articles such as terminals which are to be soldered. Also used on copper to enhance electrical Conductivity.

Lubricant- Solid Film – Heat Cured – Corrosion inhibiting: Reduces wear and prevents galling.

STAINLESS STEEL

Passivate: A process designed to remove foreign metals from the surface of stainless steel and corrosion resistant steels and to prevent natural tendency of the surface to oxidize.

Zinc Plate: Electrodeposited zinc coatings applied to brass, steel, and stainless steel articles provides protection from corrosion. Service lift of zinc coating is a function of its thickness and the type of environment to which it is exposed. Bright or dull finish acceptable.

Black Zinc: Provides corrosion resistance, decorative, used on stainless steel.

Black Satin Finish: Is a decorative finish, used on stainless steel.

Lubricant – Solid Film – Heat cured – Corrosion inhibiting: Reduces wear and prevents galling when used on stainless steel.

Black oxide: For 300 series corrosion resistance – steel only.

RECOMMENDED FINISHES *continued*

STEEL

Cadmium: Bright silvery supplementary treatments for Type II can be golden, iridescent. Corrosion resistance is very good.

Black Oxide: Black oxide coatings; without supplementary preservative treatment are used when a black surface is required. Limited corrosion protection under mildly corrosive conditions, For decorative purposes or decrease in light reflection.

Chromium Platings: Provides a bright decorative finish; corrosion protection; wear resistance and pleasing appearance.

Known as industrial or hard chromium; provides wear and abrasion resistance and incidental corrosion protection of parts as the specified thickness of the plating may afford.

Zinc Plate: Electrodeposited zinc coatings applied to iron, steel, stainless steel and brass articles provides protection from corrosion. The service life of zinc coating is a function of its thickness and the type of environment to which it is exposed. Bright or dull finish is acceptable.

Black Zinc: Provides corrosion resistance, decorative, used on steel alloys.

Solder Plate: Provides corrosion protection and solderability.

Black Phosphate: Provides corrosion resistance; also acts as a lubricant. (28): Engineering chromium is usually applied directly to base metal and is finished by grinding to the specific dimensions.

Black Finish: Is a decorative finish, used on steel alloys.

Lubricant – Solid Film – Heat Cured – Corrosion inhibiting: Reduces wear and prevents galling when used in steel alloys.

RECOMMENDED FINISHES *continued*

STEEL, ALLOY

Cadmium: Bright silvery supplementary treatments for type II can be golden, iridescent. Corrosion resistance is very good

Nickel Plate Finishes: Nickel Finish is hard, bright – has an attractive look – and is corrosive resistant. Copper plated – Copper – Copper alloys – Zinc, Zinc based alloys and brass parts. Steel parts.

Black Oxide: Black oxide coatings; with or without supplementary preservative treatment, are used when a black surface is required, Limited corrosion protection under mildly corrosive conditions, for decorative purposes or decrease in light reflection.

Zinc Plate: Electrodeposited zinc coatings applied to iron or stainless steel, and brass articles provide protection from corrosion. The service life of zinc coating is a function of its thickness and the type of environment to which it is exposed. Bright or dull finish is acceptable.

Black Phosphate: Provides corrosion resistance; also acts as a lubricant. (28): Engineering chromium is usually applied directly to base metal and is finished by grinding to the specified dimensions.

Solder Plate: Provides corrosion protection and solderability.

Black Chrome Satin: Decorative.

TIN PLATING SHELF LIFE INFORMATION

MW Components plates tin in various forms in accordance with ASTM B545. Within that specification, Sect: X6. DESIGN CONSIDERATIONS , subsections X6.2.3 Tin Oxidation and X6.3 Whisker Growth, discusses the issues of electro tin's condition over time.

Furthermore, during April 2006 a NASA technical brief was published " Tin Whiskers: A History of Documented Electrical System Failures." Based on this information, RAF places a 90 day shelf life, from the process completion date, on any electro tin plating performed in accordance with ASTM B545, which include but are not limited to Bright Tin ASTM B545, Electro-Tin ASTM B545-13, and Electro-Tin with Nickel Undercoat.

MW Components

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