PLATING, ELECTROLYTIC ZINC, 5 MICROMETERS, THIN FILM PASSIVATE	**WSS-M1P85-B1**
PLATING, ELECTROLYTIC ZINC, 8 MICROMETERS, THIN FILM PASSIVATE	**WSS-M1P85-B2**
PLATING, ELECTROLYTIC ZINC, 8 MICROMETERS, THICK FILM PASSIVATE	**WSS-M1P85-B3**
PLATING, ELECTROLYTIC ZINC, 8 MICROMETERS, THIN FILM PASSIVATE, SEALANT	**WSS-M1P85-B4**
PLATING, ELECTROLYTIC ZINC, 8 MICROMETERS, THICK FILM PASSIVATE, SEALANT	**WSS-M1P85-B5**

1. SCOPE

These specifications define performance requirements for passivated, electrolytically plated zinc coatings on ferrous parts (stampings, forgings, castings, etc.), some of which additionally have a topcoat sealant as well as threaded fasteners where friction control is not required.

2. APPLICATION

These specifications were originally released to define performance requirements for electrolytically plated zinc coatings where corrosion protection and/or decorative appearance of ferrous surfaces is required. Parts may be rack or barrel plated, and the plating bath chemistry (acid or alkaline) should be chosen for best performance in the application.

A passivation treatment, either trivalent chromium or chromium-free, shall be applied to zinc plated parts to retard the formation of white corrosion products. A thin film passivate will preserve the silver color of the plating or impart a slight blue tint. Thick film passivates give the plating an iridescent or colored appearance.

Sealers are applied to extend the corrosion protection of the plated part. Sealers can be organically or inorganically based, or a mixture of organic and inorganic components. Inorganic sealers will generally resist heat and degradation due to automotive fluids better than organic sealers.

WSS-M1P85-B1 is suitable for use on body in white fasteners and WSS-M1P85-B2 is suitable for non-visible interior parts; both are suitable for parts painted after plating. The passivate prevents white corrosion products from forming during transport from the plating facility to the painting facility. The passivate may not be needed if the parts are painted within a few hours of electroplating.

WSS-M1P85-B3 are suitable for non-visible interior parts.

WSS-M1P85-B4 and –B5 are suitable for non-visible exterior or non-visible underhood parts. Organic sealer is recommended for use at service temperatures of 150 °C maximum. Inorganic sealer is suitable for applications where exposure to heat or incidental exposure to automotive fluids is anticipated, and are recommended for use at service temperatures of 250 °C maximum.

Date	Action	Revisions	Rev 01
2017 07 28	Revised	See Summary of Revisions	L. Click, FNA
2011 08 03	Activated	Replaces WSD-M1P85-A1/2/3	C. Weber, FNA

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2.1. LIMITATIONS

Only WSS-M1P85-B1 or B2 should be used for parts that will subsequently be painted. Not all passivates can be successfully painted, so part trials must be performed to verify adhesion of the paint to passivate. Paint lines with strong alkaline cleaners may remove the passivate which is acceptable if a pretreatment such as zinc phosphate is applied prior to paint. Sealers typically prevent paint from bonding to the surface.

3. REQUIREMENTS

3.1 APPROVED SOURCES

This specification is performance based and does not have approved sources.

3.2 THICKNESS
(ASTM B659 / ASTM B568 / ASTM B487)

WSS-M1P85-B1	5 µm min
WSS-M1P85-B2/B3/B4/B5	8 µm min

The minimum thickness applies to all significant surfaces as defined in section 4.1 unless otherwise specified on the Engineering Drawing. A maximum plating thickness should be stated on the Engineering Drawing if thick deposits will negatively impact tolerances, functional requirements, assembly, or appearance. In case of dispute, the thickness measurement umpire method shall be metallographic sectioning per ASTM B487.

The passivate and sealant layers are not subject to measurement, but shall be sufficient to meet the Appearance and Laboratory Accelerated Corrosion Test requirements.

3.3 APPEARANCE

WSS-M1P85-B1, -B2 and -B4: Parts naturally have a silver or silver-blue appearance. When dyes are used to produce other colors, the color shall be stated on the Engineering Drawing.

WSS-M1P85-B3 and -B5: Parts naturally show a slight iridescence. When dyes are used to produce other colors, the color shall be stated on the Engineering Drawing.

3.4 PLATING ADHESION
(ASTM B571)

The coating shall withstand normal handling, storage, and installation without flaking or peeling or other loss of adhesion. Electroplate adhesion to the base metal shall conform to the requirements of one of the following test methods per ASTM B571 unless otherwise indicated on the Engineering Drawing.

3.4.1 Grind-Saw Test

No lifting or peeling of the electroplate from the substrate is permitted following the grind-saw test.

3.4.2 Burnishing Test

No blistering, lifting, or peeling of the electroplate from the substrate is permitted following the burnishing test.

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