

# PLATING SPECIFICATIONS



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ORGANIZATION	SPEC	DESCRIPTION	THICKNESS	COLOR	WHITE	RED
AISIN	AESHSD2003	Electroplating (for corrosion prevention, rust prevention and decoration)				
AKEBONO	AES G 2501	Hydrogen embrittlement				
AKEBONO	AES G 304-13	Electroplated coatings of zinc and zinc alloys on iron and steel surface				
	PE-ZN5	Zinc plating, 5um	5UM		72	144
	PE-ZN8	Zinc plating, 8um	8UM		72	240
	PE-ZNNI8	Zinc nickel plating, 8um	8UM		192	1200
	PE-NZNI8V	Zinc nickel plating for galvanized steel, 8um	8UM		72	240
AKEBONO	AES G 350-1-U	Electroplated coatings of zinc and zinc alloys on iron and steel surfaces				
	ZN5/BK	Zinc plated, 5um, black trivalent	5UM	BLACK	72	144
	ZN8/BK	Zinc plated, 8um, black trivalent	8UM	BLACK	72	192
	ZN8/CR3	Zinc plated, 8um, clear trivalent	8UM	CLEAR	72	288
	ZN-NI8/CR3	Zinc nickel plated, 8um, clear trivalent	8UM	CLEAR	72	240
AMERICAN AXLE & MANUFACTURING	MS-4062	Zinc alloy plating				
	IRON (Zn-Fe)	0.4% To 0.8% Wt. Alloy	8UM	CLEAR	N/A	400
	NICKEL (ZnNi) TYPE A	5% To 15% Wt. Alloy	8UM	CLEAR	N/A	480
	NICKEL (ZnNi) TYPE B	10% To 17% Wt. Alloy	8UM	CLEAR	240	1000
AMERICAN AXLE & MANUFACTURING	MS-4053	Autocatalytic (electroless) nickel-phosphorus coatings				
	4053-1	5-10% Phosphorus , thickness 13-18 um	13UM			
	4053-2	6-9% Phosphorus, thickness 8-13um	8UM			
	4053-3	5-9% Phosphorus, thickness 5-13um	5UM			
	4053-4	6-9% Phosphorus, thickness 5-10um	5UM			
	4053-5	5-9% Phosphorus, thickness 13-18um	13UM			
ASTM	B545	Electrodeposited coatings of tin				
	CLASS A	Mild service conditions where the significant surface is shielded"	2.5UM	SILVER	N/A	
	CLASS B CLASS C CLASS D CLASS E CLASS F	Mild service conditions Moderate exposure conditions, usually indoors Severe service, including exposure to dampness and mild corrosion very severe service conditions, including elevated temperatures similar to class a, but for shorter erm contact applications	5UM 10UM 20UM 30UM 1.5UM	SILVER SILVER SILVER SILVER SILVER	N/A N/A N/A N/A	
ASTM	B633	Electrodeposited coatings of zinc on iron and steel				
	SC 1 SC 2 SC 3 SC 4 TYPE I	Mild moderate severe very severe as plated without supplementary treatment	5UM 8UM 12UM 25UM	SILVER		



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	TYPE II	With colored chromate conversion coatings		YELLOW*	96	
	TYPE III TYPE IV TYPE V	With colorless chromate conversion coatings with phosphate conversion coating With colorless passivate		SILVER GRAY CLEAR	12 72	
	TYPE VI	With colored passivate		BLACK	120	
<b>ASTM</b>	<b>B689</b>	<b>Electroplated engineering nickel coatings</b>				
	CLASS 5	Thickness 5 micrometers	5UM	SILVER		
	CLASS 25	Thickness 25 micrometers	25UM	SILVER SILVER		
	CLASS 50	Thickness 50 micrometers	50UM	SILVER SILVER		
	CLASS 100	Thickness 100 micrometers	100UM	SILVER SILVER		
	CLASS 200 X	Thickness 200 micrometers thickness as specified	200UM TBD	SILVER SILVER		
	TYPE 1	Nickel electroplated from solutions not containing hardeners, brighteners or stress				
	TYPE 2	cont. Nickel electrodeposits used at moderate temperatures containing compounds				
	TYPE 3	that increas. Nickel electrodeposits used at elevated temperatures containing				
		compounds that increase h.				
<b>ASTM</b>	<b>B733</b>	<b>Autocatalytic (electroless) nickel-phosphorous coatings on metal</b>				
	SC 0	Minimum thickness	1UM	SILVER		
	SC 1	Light service mild service moderate service severe service	5UM	SILVER SILVER		
	SC 2	No requirement for phosphorus 1 - 3% phosphorus	13UM	SILVER SILVER		
	SC 3	2 - 4% phosphorus	25UM	SILVER SILVER		
	SC 4 TYPE I TYPE II	5 - 8% phosphorus	75UM	SILVER SILVER		
	TYPE III TYPE IV TYPE V	10% - phosphorus"		SILVER		
<b>ASTM</b>	<b>B607</b>	<b>Standard specification for autocatalytic nickel boron coatings for engineering use</b>				
	TYPE I, GRADE A	Coating shall contain 0.1 To less than 3.5 Mass percent boron with the balance nickel. Thickness 0.5um	0.5UM			
	TYPE I, GRADE B	Coating shall contain 0.1 To less than 3.5 Mass percent boron with the balance nickel. Thickness 12um	12UM			
	TYPE I, GRADE C	Coating shall contain 0.1 To less than 3.5 Mass percent boron with the balance nickel. Thickness 25um	25UM			
	TYPE I, GRADE D	Coating shall contain 0.1 To less than 3.5 Mass percent boron with the balance nickel. Thickness 75um	75UM			
	TYPE II, GRADE A	Coating shall contain 3.5 To 6 mass percent boron and a minimum of 90 mass percent nickel. Thickness 0.5um	0.5UM			
	TYPE II, GRADE B	Coating shall contain 3.5 To 6 mass percent boron and a minimum of 90 mass percent nickel. Thickness 12um	12UM			
	TYPE II, GRADE C	Coating shall contain 3.5 To 6 mass percent boron and a minimum of 90 mass percent nickel. Thickness 25um	25UM			
	TYPE II, GRADE D	Coating shall contain 3.5 To 6 mass percent boron and a minimum of 90 mass percent nickel. Thickness 75um	75UM			



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ASTM	B841	Electrodeposited coatings of zinc nickel alloy deposits deposits having 5 - 12% nickel, the balance being zinc				
	CLASS 1 GRADE 5	Thickness 5 micrometers	5UM			
	GRADE 8 GRADE 10 TYPE A	Thickness 8 micrometers Thickness 10 micrometers with colorless chromate conversion coatings	8UM 10UM	SILVER	20	
	TYPE B	With yellow chromate conversion coating		YELLOW	120	
	TYPE C	With bronze chromate conversion coating		BRONZE	180	
	TYPE D	With black chromate conversion coating		BLACK	100	
	TYPE E	Any of the above types plus organic topcoat		TBD		
ASTM	B842	Electrodeposited coatings of zinc iron alloy deposits deposits having approximately 99% zinc mass, balance iron				
	CLASS 1 GRADE 6	Thickness 6 micrometers	6UM			
	GRADE 12 GRADE 18 TYPE A	Thickness 12 micrometers Thickness 18 micrometers Zinc iron with black chromate conversion coating"	12UM 18UM	BLACK	300	
	TYPE B	Zinc iron with iridescent yellow chromate conversion coating		YELLOW	210	
ASTM	B850	Post coating treatments of steel for reducing the risk of hydrogen embrittlement				
AUTOLIV	E2400279	Surface treatments for steel sheet parts				
	Zn96S	Zinc plate clear		CLEAR	N/A	96
	Zn (72) 120S	Zinc plate iridescent		IRIDESCENT	72	120
	Zn (72) 120B	Zinc plate black		BLACK	72	120
	Zn (96) 168S	Zinc plate iridescent		IRIDESCENT	96	168
	ZnNi (120) 240B	Zinc nickel black		BLACK	120	240
	ZnFe(120) 240B	Zinc iron black		BLACK	120	240
BMW	GS90010-1	Types of surface protection for metallic materials				
	ZNNI SI	Zinc nickel plating, 6um, clear trivalent	6UM	CLEAR		720
	ZN S2	Zinc plating, 8um, clear trivalent	8UM	CLEAR		480
	ZNT	Zinc plating, 8um, clear trivalent	8UM	CLEAR		240
	ZNFE SW	Zinc iron plating, 5um, black trivalent	5UM	BLACK		480
	ZNFE SI	Zinc iron plating, 5um, clear trivalent	5UM	CLEAR		480
	ZNNI SI	Zinc nickel plating, 6um, clear trivalent	6UM	CLEAR		720
	ZNNIV SI	Zinc nickel plating, 6um, clear trivalent	6UM	CLEAR		720



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	ZNNIV SW	Zinc nickel plating, 6um, black trivalent	6UM	BLACK		720
	ZNS3	Zinc plating, 8um, clear trivalent	8UM	CLEAR		720
	ZNNID SW	Zinc nickel plating, 12um, black trivalent	12UM	BLACK		720
	ZNNID SI	Zinc nickel plating, 12um, clear trivalent	12UM	CLEAR		720
<b>CUMMINS</b>	<b>74018</b>	<b>Coating, electrolytic zinc</b>				
		Zinc plating, if in accordance with astm b 117, 8um	8UM			
<b>CUMMINS</b>	<b>74052</b>	<b>Zinc nickel, chromated</b>				
		Zinc nickel plated, if in accordance with astm b b659, 8um min	8UM			
<b>DANA</b>	<b>SHAES428</b>	<b>Zinc electrolytic plating process</b>				
	4001A	Thickness - 0.0002", Clear chromate	5UM	CLEAR	N/A	48
	4001B	Thickness - 0.0003", Clear chromate	8UM	CLEAR	N/A	72
	4001C	Thickness - 0.0004", Clear chromate	10UM	CLEAR	N/A	96
<b>DELPHI</b>	<b>DX150100</b>	<b>Corrosion protective coatings - zinc alloy plating</b>				
	DX150104	Zinc nickel		YELLOW		500
	DX150105	Zinc nickel		CLEAR		240
	DX150106	Zinc iron		BLACK		288
	DX150107	Zinc iron		YELLOW		288
<b>DELPHI</b>	<b>DX551200</b>	<b>Corrosion protective coatings - hexavalent chromium free zinc plating</b>				
	DX551201	3u24/0	3UM	N/A	N/A	24
	DX551202	6u48/0	6UM	N/A	N/A	48
	DX551203	9u72/0	9UM	N/A	N/A	72
	DX551204	12u96/0	12UM	N/A	N/A	96
	DX551205	8k96/24	8UM	CLEAR	24	96
	DX551206	15k240/24	15UM	CLEAR	24	240
	DX551207	8k240/96g	8UM	CLEAR	96	240
	DX551208	8k360/120g	8UM	CLEAR	120	360
	DX551209	8k480/240g	8UM	CLEAR	240	480
	DX551210	8k72/48	8UM	CLEAR	48	72
	DX551211	8k240/120t	8UM	CLEAR	120	240
	DX551212	9k168/120g	9UM	CLEAR	120	168
	DX551213	12K240/120G	12UM	CLEAR	120	240
	DX551214	8K500/96GW	8UM	CLEAR	96	500



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	DX551215	9k120/48g	9UM	CLEAR	48	120	
	DX551216	9d168/120g	9UM	YELLOW	120	168	
	DX551217	9k168/120g	9UM	CLEAR	120	168	
	DX551218	12k240/120	12um	CLEAR	120	240	
	DX551219	8k72/24	8UM	CLEAR	24	72	
	DX551220	8k96/48	8UM	CLEAR	48	96	
	DX551221	3k32/8	3UM	CLEAR	8	32	
	DX551222	3k24/8	3UM	CLEAR	8	24	
<b>DELPHI</b>	<b>DX551300</b>	<b>Corrosion protective coatings - zinc alloy plating (hexavalent chromium free)</b>					
	DX551302	Zinc iron		CLEAR		600	
	DX551303	Zinc nickel		CLEAR		600	
	DX551305	Zinc iron		BLACK		500	
<b>DIN</b>	50979	Electroplated zinc and zinc alloy coatings					
	ZN/CN/T0	Zinc plated, 5um, clear trivalent	5UM	CLEAR	120	192	
		Zinc plated, 8um, clear trivalent	8UM	CLEAR	120	264	
		Zinc plated, 12um, clear trivalent	12UM	CLEAR	120	336	
	ZN/CN/T2	Zinc plated, 5um, clear trivalent, and topcoat	5UM	CLEAR	168	264	
		Zinc plated, 8um, clear trivalent, and topcoat	8UM	CLEAR	168	360	
		Zinc plated, 12um, clear trivalent, and topcoat	12UM	CLEAR	168	480	
	ZNFE/CN/T0	Zinc iron plated, 5um, clear trivalent	5UM	CLEAR	168	240	
		Zinc iron plated, 8um, clear trivalent	8UM	CLEAR	168	312	
		Zinc iron plated, 12um, clear trivalent	12UM	CLEAR	168	384	
	ZNFE/CN/T2	Zinc iron plated, 5um, clear trivalent, and topcoat	5UM	CLEAR	216	312	
		Zinc iron plated, 8um, clear trivalent, and topcoat	8UM	CLEAR	216	408	
		Zinc iron plated, 12um, clear trivalent, and topcoat	12UM	CLEAR	216	528	
	ZNNI/CN/T0	Zinc nickel plated, 5um, clear trivalent	5UM	CLEAR	192	600	
		Zinc nickel plated, 8um, clear trivalent	8UM	CLEAR	192	720	
		Zinc nickel plated, 12um, clear trivalent	12UM	CLEAR	192	720	
	ZNNI/CN/T2	Zinc nickel plated, 5um, clear trivalent, and topcoat	5UM	CLEAR	360	720	
		Zinc nickel plated, 8um, clear trivalent, and topcoat	8UM	CLEAR	360	720	
		Zinc nickel plated, 12um, clear trivalent, and topcoat	12UM	CLEAR	360	720	



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	ZNFE/FN/T2	Zinc iron plated, 5um, black trivalent, and topcoat	5UM	BLACK	168	264
		Zinc iron plated, 8um, black trivalent, and topcoat	8UM	BLACK	168	360
		Zinc iron plated, 12um, black trivalent, and topcoat	12UM	BLACK	168	480
	ZNNI/FN/T2	Zinc nickel plated, 5um, black trivalent, and topcoat	5UM	BLACK	240	600
		Zinc nickel plated, 8um, black trivalent, and topcoat	8UM	BLACK	240	720
		Zinc nickel plated, 12um, black trivalent, and topcoat	12UM	BLACK	240	720
	ZNNI/FN/T0	Zinc nickel plated, 5um, black trivalent	5UM	BLACK	72	600
		Zinc nickel plated, 8um, black trivalent	8UM	BLACK	72	720
		Zinc nickel plated, 12um, black trivalent	12UM	BLACK	72	720
DIN	EN 12476	Phosphate conversion coatings of metal				
	ZNPH	Zinc phosphate, 5 to 10 g/in2				
FORD	ESF-M1P41-A	Plating, zinc, supplementary chromate treatment	5UM	YELLOW	50	
FORD	ESS-M1P45-A	Plating, zinc and chromate (s36)	5UM	YELLOW	72	
FORD	WSA-M1P87-A1	Plating, zinc nickel, chromated	8UM	CLEAR	NA	768
FORD	WSB-M1P10-B	Plating, tin electrodeposited on ferrous, copper or copper alloy	2.1UM	SILVER		
FORD	WSB-M1P11-B	Plating, tin electrodeposited on ferrous, copper or copper alloy	10UM	SILVER		
FORD	WSB-M64J28-A	Cationic electrocoat	20UM			500
FORD	WSD-M1P65-B1/B2	Plating, electroless nickel				
	B1	Electroless nickel, heat treated	10UM	SILVER	NA	24
	B2	Electroless nickel, as deposited	10UM	SILVER	NA	NA
FORD	WSD-M1P85-A1/A3	Plating, zinc over ferrous surfaces				
	A1	Zinc 5um	5UM	SILVER	NA	24
	A2	Zinc 8um	8UM	SILVER	NA	48
	A3	Zinc 13um	13UM	SILVER	NA	96
FORD	WSE-M1P93-A1/A6	Plating tin zinc alloy, electroplated over ferrous surfaces				
	A1	Tin zinc 5um	5UM	YELLOW	72	288
	A2	Tin zinc 8um	8UM	YELLOW	72	408
	A3	Tin zinc 10um	10UM	YELLOW	72	504
	A4	Tin zinc 13um	13UM	YELLOW	72	600
FORD	WSF-M1P89-A1/A2	Plating, zinc iron over ferrous surfaces				
	A1		5UM			
	A2		8UM			



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FORD	WSS-M1P85-B1/B5	Electrolytic zinc				
	B1	5um thin film passivate	5UM		24	72
	B2	8um thin film passivate	8UM		48	96
	B3	8um thick film passivate	8UM		48	96
	B4	8um thin film passivate, with sealant	8UM		96	360
	B5	8um thick film passivae, with sealant	8UM		96	360
FORD	"WSS-M1P87-B1/B5	Electrolytic zinc nickel				
	B1	8um with passivate	8UM		120	600
	B2	8um with passivate, and organic sealant	8UM	CLEAR	240	960
	B3	8um with passivate, and organic sealant, black	8UM	BLACK	240	960
	B4	8um with passivate, and inorganic sealant	8UM	CLEAR	240	960
	B5	8um with passivate, and inorganic sealant, black	8UM	BLACK	240	960
FORD	WSS-M21P44-A1/A4	Corrosion protective coatings for zinc alloys				
	A1	Zinc nickel alloy, trivalent passivate, silver	6UM	SILVER	N/A	480
	A2	Zinc nickel alloy, trivalent passivate with organic seal (silver not used with new design)	7UM	CLEAR	360	960
	A3	Zinc nickel alloy, trivalent passivate with cathodic electrocoat, black	18UM	BLACK	480	960
GM	9984001	Metal surface preparation				
GM	9984120	Electrodeposition primer, cathodic elpo for small parts		BLACK		
	TYPE II	Chromium free		BLACK		
	TYPE III	Chromium and lead free		BLACK		
	TYPE IV	Chromium and lead free		BLACK		
GM	GM1000M	Restricted and reportable chemicals				
GM	GMW3034	Absence of hexavalent chrome (cr vi) in coatings				
GM	GMW3044M	Electrolytically deposited zinc coatings				
	3U24/0	Thickness 3 micrometers	3UM		24	N/A
	6U48/0	Thickness 6 micrometers	6UM		48	N/A
	9U72/0	Thickness 9 micrometers	9UM		72	N/A
	12U96/0	Thickness 12 micrometers	12UM		96	N/A
	15U120/0	Thickness 15 micrometers	15UM		120	N/A
	9K96/24	Thickness 9 micrometers	9UM		24	96
	15K240/24	Thickness 15 micrometers	15UM		24	240
	8K240/24	Thickness 8 micrometers	8UM		120	240





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	15K360/120X	Thickness 15 micrometers	15UM		120	360
	8B240/120X	Thickness 8 micrometers	8UM		120	240
	15B360/120X	Thickness 15 micrometers	15UM		120	360
	15D240/96	Thickness 15 micrometers	15UM		96	240
	8D360/120J	Thickness 8 micrometers	8UM		120	360
	15D480/120J	Thickness 15 micrometers	15UM		120	480
GM	GMW3059	Restricted and reportable substances for parts				
GM	GMW3200	Tin zinc plating 8um trivalent passivate, sealant	8UM		48	1000
GM	GMW4205	E-coat over zinc, zinc/iron, zinc/nickel			144	480
GM	GM4254M	Nickel plating				32
	CODE 100	Thickness 100 micrometers	100UM	SILVER		16
	CODE 50	Thickness 50 micrometers	50UM	SILVER		N/A
	CODE 30	Thickness 30 micrometers	30UM	SILVER		N/A
	CODE 20	Thickness 20 micrometers	20UM	SILVER		N/A
GM	GM4298P	Salt spray (mist) test				
GM	GM4344M	Corrosion protective coatings, zinc plating (obsolete - replaced by gmw3044)				
	3U 24/0	Thickness 3 micrometers	3UM	N/A	24	N/A
	6U 48/0	Thickness 6 micrometers	6UM	N/A	48	N/A
	9U 72/0	Thickness 9 micrometers	9UM	N/A	72	N/A
	12U 96/0	Thickness 12 micrometers	12UM	N/A	96	N/A
	15U 120/0	Thickness 15 micrometers	15UM	N/A	120	N/A
	3K 32/8	Thickness 3 micrometers-passivation or conversion coating-bright	3UM	CLEAR	8	32
	6K 56/8	Thickness 6 micrometers-passivation or conversion coating-bright	6UM	CLEAR	8	56
	9K 96/0	Thickness 9 micrometers-passivation or conversion coating-clear or light irid. Blue	9UM	CLEAR	N/A	96
	12K 120/0	Thickness 12 micrometers-passivation or conversion coating-clear or light irid. Blue	12UM	CLEAR	N/A	120
	15K 144/0	Thickness 15 micrometers-passivation or conversion coating-clear or light irid. Blue	15UM	CLEAR	N/A	144
	3D 72/48	Thickness 3 micrometers-passivation or conversion coating-bright yellow	3UM	YELLOW	48	72
	6D 96/48	Thickness 6 micrometers-passivation or conversion coating-bright yellow	6UM	YELLOW	48	96
	9D 120/48	Thickness 9 micrometers-passivation or conversion coating-bright yellow	9UM	YELLOW	48	120
	12D 144/48	Thickness 12 micrometers-passivation or conversion coating-bright yellow	12UM	YELLOW	48	144
	6D 120/72	Thickness 6 micrometers-passivation or conversion coating-yellow	6UM	YELLOW	72	120
	9D 144/72	Thickness 9 micrometers-passivation or conversion coating-yellow	9UM	YELLOW	72	144
	10D 192/96	Thickness 10 micrometers-passivation or conversion coating	10UM	NA	96	192



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	12D 168/72	Thickness 12 micrometers-passivation or conversion coating-brown	12UM	BROWN	72	168
	6D 144/96	Thickness 6 micrometers-passivation or conversion coating-olive drab	6UM	OLIVE	96	144
	9D 168/96	Thickness 9 micrometers-passivation or conversion coating-olive drab	9UM	OLIVE	96	168
	12D 192/96	Thickness 12 micrometers-passivation or conversion coating-olive drab	12UM	OLIVE	96	192
	15D 240/0	Thickness 15 micrometers-passivation or conversion coating-yellow-brown or olive drab	15UM	YELLOW	N/A	240
	6E 240/72	Thickness 6 micrometers-zinc phosphate/electrocoat/oil-black	6UM	BLACK	72	240
	9E 336/72	Thickness 9 micrometers-zinc phosphate/electrocoat/oil-black	9UM	BLACK	72	336
	12E 480/72	Thickness 12 micrometers-zinc phosphate/electrocoat/oil-black	12UM	BLACK	72	480
	9B 0/72	Thickness 9 micrometers-decorative black	9UM	BLACK	72	N/A
	15B 0/144	Thickness 15 micrometers-decorative black	15UM	BLACK	144	N/A
<b>GM</b>	<b>GM4345M</b>	<b>Corrosion protective coatings, zinc plating (obsolete - replaced by gmw3044)</b>				
	3U 24/0	Thickness 3 micrometers	3UM	N/A	24	N/A
	6U 48/0	Thickness 6 micrometers	6UM	N/A	48	N/A
	9U 72/0	Thickness 9 micrometers	9UM	N/A	72	N/A
	12U 96/0	Thickness 12 micrometers	12UM	N/A	96	N/A
	15U 120/0	Thickness 15 micrometers	15UM	N/A	120	N/A
	3K 32/8	Thickness 3 micrometers-passivation or conversion coating-bright	3UM	CLEAR	8	32
	6K 56/8	Thickness 6 micrometers-passivation or conversion coating-bright	6UM	CLEAR	8	56
	9K 96/0	Thickness 9 micrometers-passivation or conversion coating-clear or light irid. Blue	9UM	CLEAR	N/A	96
	12K 120/0	Thickness 12 micrometers-passivation or conversion coating-clear or light irid. Blue	12UM	CLEAR	N/A	120
	15K 144/0	Thickness 15 micrometers-passivation or conversion coating-clear or light irid. Blue	15UM	CLEAR	N/A	144
	3D 72/48	Thickness 3 micrometers-passivation or conversion coating-bright yellow	3UM	YELLOW	48	72
	6D 96/48	Thickness 6 micrometers-passivation or conversion coating-bright yellow	6UM	YELLOW	48	96
	9D 120/48	Thickness 9 micrometers-passivation or conversion coating-bright yellow	9UM	YELLOW	48	120
	12D 144/48	Thickness 12 micrometers-passivation or conversion coating-bright yellow	12UM	YELLOW	48	144
	6D 120/72	Thickness 6 micrometers-passivation or conversion coating-yellow	6UM	YELLOW	72	120
	9D 144/72	Thickness 9 micrometers-passivation or conversion coating-yellow	9UM	YELLOW	72	144
	10D 192/96	Thickness 10 micrometers-passivation or conversion coating	10UM	NA	96	192
	12D 168/72	Thickness 12 micrometers-passivation or conversion coating-brown	12UM	BROWN	72	168
	6D 144/96	Thickness 6 micrometers-passivation or conversion coating-olive drab	6UM	OLIVE	96	144
	9D 168/96	Thickness 9 micrometers-passivation or conversion coating-olive drab	9UM	OLIVE	96	168



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	12D 192/96	Thickness 12 micrometers-passivation or conversion coating-olive drab	12UM	OLIVE	96	192
	15D 240/0	Thickness 15 micrometers-passivation or conversion coating-yellow-brown or olive drab	15UM	YELLOW	N/A	240
<b>GM</b>	<b>GMW4700</b>	<b>Corrosion protective coatings-zinc alloy platings</b>	8UM			
	ZN-FE	Zinc iron				480
	ZN-NI A	Zinc nickel (5-15% nickel)				480
	ZN-NI B	Zinc nickel (10-17% nickel)			240	1000
<b>GM</b>	<b>GM6138M</b>	<b>Plating-multilayer electroplated/black type</b>				
		Ni-alloy layer (note1) thickness 5 microns min	5UM			
		Zn n1 alloy (note 2) thickness 12.5 Microns min black organic thickness 25 microns max	12.5UM			
<b>GM</b>	<b>GM6280M</b>	<b>Corrosion protective coatings, zinc alloy plating (obsolete - replaced by gmw4700)</b>				
	ZN/NI	Zinc nickel plus yellow chromate		YELLOW		500
	ZN/NI	Zinc nickel plus clear chromate		CLEAR		240
	ZN/FE SN/ZN	Zinc iron plus black chromate tin zinc plus yellow chromate		BLACK YELLOW	96	288
<b>GM</b>	<b>GMW16730</b>	<b>Cosmetic coating, black zinc-nickel based</b>				
		Zinc nickel, 10um, black trivalent, nano seal"	10UM	BLACK	240	1000
<b>HONDA</b>	<b>HES D2003-05</b>	<b>Electroplating specifications</b>				
	MFZN1-C	Zinc plating, 5um, clear trivalent	5UM	CLEAR	72	120
	MFZN1-K	Zinc plating, 5um, black trivalent	5UM	BLACK	72	120
	MFZN2-C	Zinc plating, 8um, clear trivalent	8UM	CLEAR	72	240
	MFZN2-K	Zinc plating, 8um, black trivalent	8UM	BLACK	72	240
	MFZN3-C	Zinc plating, 13um, clear trivalent	13UM	CLEAR	72	360
	MFZN-NI1-C	Zinc nickel plating, 5um, clear trivalent	5UM	CLEAR	192	1200
	MFZN-NI1-K	Zinc nickel plating, 5um, black trivalent	5UM	BLACK	192	1200
	MFSN-ZN1-C	Tin zinc plating, 5um, clear trivalent	5UM	CLEAR		500
	MFSN-ZN2-C	Tin zinc plating, 8um, clear trivalent	8UM	CLEAR		800
	MFZN-FE1-K	Zinc iron plating, 8um, black trivalent	8UM	BLACK	120	800
<b>HYUNDAI</b>	<b>MS611-15</b>	<b>Zinc alloy electro plating</b>				
		Zinc plating 3um black or clear	3UM		72	120
		Zinc plating 5um black or clear	5UM		72	168
		Zinc plating 8um black or clear	8UM		72	240
		Zinc plating 13um black or clear	13UM		72	372
		Zinc plating 25um black or clear	25UM		72	360



# PLATING SPECIFICATIONS

ORGANIZATION	SPEC	DESCRIPTION	THICKNESS	COLOR	WHITE	RED
JOHN DEERE	JFM F23	Specification for electroplated zinc coating on non-fastener parts				
	Designation C	Zinc plate 5um clear	5UM	CLEAR	120	144
	Designation F	Zinc plate 5um black	5UM	BLACK	120	144
MAZDA	MES CG 31	Electroplating specifications				
	MFZNT1-W"	Zinc plating, 5um, clear trivalent"	5UM	CLEAR	72	48
	MFZNT2-W	Zinc plating, 8um, clear trivalent	8UM	CLEAR	72	96
	MFZNT3-W	Zinc plating, 13um, clear trivalent	13UM	CLEAR	72	144
	MFZNT1-B	Zinc plating, 5um, black trivalent	5UM	BLACK	72	120
	MFZNT2-B	Zinc plating, 8um, black trivalent	8UM	BLACK	72	168
	MFZNT3-B	Zinc plating, 13um, black trivalent	13UM	BLACK	72	192
	MFZNT5-B	Zinc plating, 25um, black trivalent	25UM	BLACK	78	336
MERCEDES	DBL 7391	Supply specification coating/painting for parts with high corrosive stress				
MERCEDES	DBL 8451	Electrodeposited zinc or zinc alloy coatings				
	ZN	Zinc plated 6-8um	6UM		96	240
	ZN	Zinc plated 10-12um	10UM		168	360
	ZNFE	Zinc iron plated 6-8um	6UM		120	480
	ZNFE	Zinc iron plated 10-12um	10UM		360	600
	ZNNI	Zinc nickel plated 6-8um	6UM		120	720
	ZNNI	Zinc nickel plated 10-12um	10UM		240	720
MITSUBISHI	MS 82-3701	Zinc electroplating standard				
	MFZN3-C"	Zinc plating 3um clear trivalent	3UM	CLEAR	72	
	MFZN5-C	Zinc plating 5um clear trivalent	5UM	CLEAR	72	180
	MFZN5-K	Zinc plating 5um black trivalent	5UM	BLACK	72	132
	MFZN8-C	Zinc plating 8um clear trivalent	8UM	CLEAR	72	200
	MFZN8-K	Zinc plating 8um black trivalent	8UM	BLACK	72	152
	MFZN13-C	Zinc plating 13um clear trivalent	13UM	CLEAR	72	240
	MFZN13-K	Zinc plating 13um black trivalent	13UM	BLACK	72	192
	MFZN20	Zinc plating 20um	20UM		72	152
MFZN25-C	Zinc plating 25um clear trivalent	25UM	CLEAR	72	448	
NAVISTAR	CEMS G-22	Corporate engineering materials specifications for zinc nickel				
	ZNI-C1	Zinc nickel coating, 5um, clear trivalent	5UM	CLEAR	120	480
	ZNI-C2	Zinc nickel coating, 5um, clear trivalent, plus topcoat	5UM	CLEAR	168	620



# PLATING SPECIFICATIONS

ORGANIZATION	SPEC	DESCRIPTION	THICKNESS	COLOR	WHITE	RED
	ZNI-C3	Zinc nickel coating, 8um, clear trivalent	8UM	CLEAR	120	600
	ZNI-C4	Zinc nickel coating, 8um, clear trivalent, plus topcoat	8UM	CLEAR	168	840
	ZNI-C5	Zinc nickel coating, 8um, clear trivalent, plus topcoat	8UM	CLEAR	240	1000
	ZNI-B1	Zinc nickel coating, 5um, black trivalent, plus topcoat	5UM	BLACK	168	620
	ZNI-B2	Zinc nickel coating, 8um, black trivalent, plus topcoat	8UM	BLACK	240	1000
<b>NISSAN</b>	<b>M4040 [2006-N]</b>	<b>Zinc plating and chromate films on iron and steel</b>				
	TYPE 5 MFZN 3TC	Zinc plating, 3um, clear trivalent	3UM	CLEAR	72	96
	TYPE 5 MFZN 5TC	Zinc plating, 5um, clear trivalent	5UM	CLEAR	72	144
	TYPE 5 MFZN 8TC	Zinc plating, 8um, clear trivalent	8UM	CLEAR	72	192
	TYPE 5 MFZN 13TC	Zinc plating, 13um, clear trivalent	13UM	CLEAR	72	240
	TYPE 6 MFZN 3TC	Zinc plating, 3um, black trivalent	3UM	BLACK	72	96
	TYPE 6 MFZN 5TC	Zinc plating, 5um, black trivalent	5UM	BLACK	72	144
	TYPE 6 MFZN 8TC	Zinc plating, 8um, black trivalent	8UM	BLACK	72	192
	TYPE 6 MFZN 13TC	Zinc plating, 13um, black trivalent	13UM	BLACK	72	240
<b>NISSAN</b>	<b>M4059 [1998-N]</b>	<b>Zinc iron alloy plating on iron and steel</b>				
	TYPE 1 ZNFE5K	Zinc iron plating, 5um, black trivalent	5UM	BLACK	72	720
	TYPE 2 ZNFE5C	Zinc iron plating, 5um, clear trivalent	5UM	CLEAR	96	720
<b>NISSAN</b>	<b>M4060 [1998-2]</b>	<b>Electrolytic zinc-nickel alloy plating</b>				
	TYPE 2 ZNNI5C	Zinc nickel, 5um, clear trivalent	5UM	CLEAR	72	720
	TYPE 2 ZNNI8C	Zinc nickel, 8um, clear trivalent	8UM	CLEAR	72	1200
	TYPE 2 ZNNI13C	Zinc nickel, 13um, clear trivalent	13UM	CLEAR	72	1800
	TYPE 3 ZNNI5C	Zinc nickel, 5um, black trivalent	5UM	BLACK	72	720
	TYPE 3 ZNNI8C	Zinc nickel, 8um, black trivalent	8UM	BLACK	72	1200
	TYPE 3 ZNNI13C	Zinc nickel, 13um, black trivalent	13UM	BLACK	72	1800
<b>PARKER</b>	<b>DS-3004-001</b>	<b>Zinc nickel alloy plating with trivalent clear chromate, 8-12.5um</b>	8UM			120
<b>PARKER</b>	<b>ES2008</b>	<b>Electroless nickel plating, 17um</b>	17UM			
<b>PARKER</b>	<b>FC-F01 (PZ1)</b>	<b>Zinc plating with trivalent chromate, 8-12.5um</b>	8UM		200	500
<b>PARKER</b>	<b>HS-F15</b>	<b>Zinc plating with clear passivation and topcoat, 8-13um</b>	8UM			
<b>PARKER</b>	<b>HS-F22</b>	<b>Zinc nickel plating with clear passivation and topcoat, 8-12.5um</b>	8UM		120	720
<b>SAE INTERNATIONAL</b>	<b>AMS2404</b>	<b>Plating, electroless nickel</b>				
<b>SAE INTERNATIONAL</b>	<b>AMS2417</b>	<b>Plating, zinc-nickel alloy, 8-18um</b>	8UM	CLEAR		
<b>SCHAEFFLER</b>	<b>S 133305-01</b>	<b>Corrotect zk - zl - zn</b>				



# PLATING SPECIFICATIONS

ORGANIZATION	SPEC	DESCRIPTION	THICKNESS	COLOR	WHITE	RED
STELLANTIS	PS-PLATING	Zinc electroplated coatings				
STELLANTIS	PS-79	Standard metal parts				
	CODE 15	4um zinc coat	4UM			24
	CODE 30	8um zinc coat	8UM			56
	CODE 50	13um zinc coat	13UM			96
STELLANTIS	PS-4220	Hardened steel parts				
	CODE 15	4um zinc coat, with mandatory bake	4UM			24
	CODE 30	8um zinc coat, with mandatory bake	8UM			56
	CODE 50	13um zinc coat, with mandatory bake	13UM			96
STELLANTIS	PS-80	Zinc phosphate coating				72
	PS-80 UNOILED	Unoiled zinc phosphate coating 100-300mg ???				72
STELLANTIS	PS-1207	Chromate type conversion coating for zinc and zinc alloy coated parts				
STELLANTIS	PS-1714	Light weight phosphate coating (200-400mg/sq-ft)				
STELLANTIS	PS-5009	Electroless nickel plating				
	TYPE A	1-4% phosphorus				
	TYPE B	5-9% Phosphorus				
	TYPE C	10-13% Phosphorus	1UM			
	CODE 0	minimum service 1um				
	CODE 1	Light service 5um mild service 13um	5UM			48
	CODE 2	moderate service 25um sever service 75um	13UM			
	CODE 3	no heat treatment, as plated	25UM			
	CODE 4		75UM			
	CLASS 1					
	CLASS 2	Type a (1-4%) phosphorus				48
	CLASS 3	Type b (5-9%) phosphorus				48
	CLASS 4	Type c (10-13%) phosphorus				48
	CLASS 5	Hydrogen embrittlement and adhesion on steel				48
	CLASS 6	Adhesion (carurized steel, age hardened aluminum)				48
STELLANTIS	PS-8955	Zinc alloy electrodeposited coatings				
	ZN-NI CODE 20	Zinc nickel alloy, 5um, clear trivalent coating	5UM	CLEAR	144	780
	ZN-NI CODE 20	Zinc nickel alloy, 5um, black trivalent coating	5UM	BLACK	144	780
	ZN-NI CODE 30	Zinc nickel alloy, 8um, clear trivalent coating	8UM	CLEAR	144	864
	ZN-NI CODE 30	Zinc nickel alloy, 8um, black trivalent coating	8UM	BLACK	144	864
	ZN-NI-HA CODE 20	Zinc high nickel alloy, 5um clear trivalent coating	5UM	CLEAR	240	1000



# PLATING SPECIFICATIONS

ORGANIZATION	SPEC	DESCRIPTION	THICKNESS	COLOR	WHITE	RED
	ZN-NI-HA CODE 20	Zinc high nickel alloy, 5um black trivalent coating	5UM	BLACK	240	1000
	ZN-NI-HA CODE 30	Zinc high nickel alloy, 8um clear trivalent coating	8UM	CLEAR	240	1200
	ZN-NI-HA CODE 30	Zinc high nickel alloy, 8um black trivalent coating	8UM	BLACK	240	1200
	ZN-FE CODE 20	Zinc iron alloy, 5um, clear trivalent coating	5UM	CLEAR	120	288
	ZN-FE CODE 20	Zinc iron alloy, 5um, black trivalent coating	5UM	BLACK	120	288
	ZN-FE CODE 30	Zinc iron alloy, 8um, clear trivalent coating	8UM	CLEAR	120	432
	ZN-FE CODE 30	Zinc iron alloy, 8um, black trivalent coating	8UM	BLACK	120	432
STELLANTIS	PS-9500	Hydrogen embrittlement relief				
TESLA MOTORS	TM-0009F-M		8UM	CLEAR	48	96
	GRADE 01	Zinc (unalloyed)	8UM	CLEAR	72	240
	GRADE 02	Zinc (unalloyed)	8UM	CLEAR	120	480
	GRADE 03	Zinc (unalloyed)	8UM	CLEAR	240	1000
	GRADE 10	Zn + ni (10-15%)	8UM	CLEAR	240	720
	GRADE 11	Zn + ni (10-15%)	8UM	CLEAR	N/A	480
	GRADE 12	Zn + ni (10-15%)	8UM	CLEAR	N/A	240
	GRADE 14	Zn + ni (10-15%)	8UM	CLEAR	240	850
	GRADE 20	Zn + fe (0.4 - 0.7%)	8UM	CLEAR	N/A	96
TOYOTA	TSH5105G	Dehydrogenation treatment				
TOYOTA	TSH6500G	Electroplated zinc coating (obsolete - replaced by tsh6524g)				
	TSH6500G-BC	Zinc coating, 5um, clear trivalent	5UM	CLEAR		48
	TSH6500G-BG	Zinc coating, 5um, black trivalent	5UM	BLACK		48
	TSH6500G-AC	Zinc coating, 8um, clear trivalent	8UM	CLEAR		96
	TSH6500G-AG	Zinc coating, 8um, black trivalent	8UM	BLACK		96
	TSH6500G-SC	Zinc coating, 13um, clear trivalent	13UM	CLEAR		144
	TSH6500G-SG	Zinc coating, 13um, black trivalent	13UM	BLACK		144
	TSH6500G-UC	Zinc coating, 25um, clear trivalent	25UM	CLEAR		240
	TSH6500G-UG	Zinc coating, 25um, black trivalent	25UM	BLACK		240
TOYOTA	TSH6511G	Nickel-phosphorus alloy coating (no-electrolysis galvanizing)				
	TSH6511GA	20um or specified	20UM			144
	TSH6511GB	10um to 20um	10UM			144
	TSH6511GC	5um to 10um	5UM			72
	TSH6511GD	Specified thickness up to 5um	N/A			N/A
	TSH6511GE	Specified thickness				N/A



# PLATING SPECIFICATIONS

ORGANIZATION	SPEC	DESCRIPTION	THICKNESS	COLOR	WHITE	RED
TOYOTA	TSH6512G	<b>Electroplated tin-zinc alloy coatings</b>				
	TSH6512G-A	Tin zinc plated, 10um, clear trivalent	10UM	CLEAR		248
	TSH6512G-B	Tin zinc plated, 5um, clear trivalent	5UM	CLEAR		168
TOYOTA	TSH6524G	<b>Electroplated zinc coating (hexavalent chrome free)</b>				
	TSH6500G-BC	Zinc coating, 5um, clear trivalent	5UM	CLEAR	72	120
	TSH6500G-BE	Zinc coating, 5um, black trivalent	5UM	BLACK	72	120
	TSH6500G-AC	Zinc coating, 8um, clear trivalent	8UM	CLEAR	72	168
	TSH6500G-AE	Zinc coating, 8um, black trivalent	8UM	BLACK	72	168
	TSH6500G-SC	Zinc coating, 13um, clear trivalent	13UM	CLEAR	72	216
	TSH6500G-SE	Zinc coating, 13um, black trivalent	13UM	BLACK	72	216
	TSH6500G-UC	Zinc coating, 25um, clear trivalent	25UM	CLEAR	72	312
	TSH6500G-UE	Zinc coating, 25um, black trivalent	25UM	BLACK	72	312
TOYOTA	TSH6530G	<b>Electroplated zinc-nickel alloy coating</b>				
	TSH6530G-AC	Zinc nickel plated, 10um, clear trivalent	10UM	CLEAR	300	1000
	TSH6530G-AE	Zinc nickel plated, 10um, black trivalent	10UM	BLACK	300	1000
	TSH6530G-BC	Zinc nickel plated, 5um, clear trivalent	5UM	CLEAR	300	650
	TSH6530G-BE	Zinc nickel plated, 5um, black trivalent	5UM	BLACK	300	650
TRW AUTOMOTIVE	TS2-21-108	<b>Specification for zinc/nickel electroplating on steel</b>				
	Thickness Range 1, Conversion B	Zinc nickel plating (10-15%) , 5-15um, (black trivalent)	5UM	BLACK	120	480
	Thickness Range 1, Conversion C	Zinc nickel plating (10-15%) , 5-15um, (clear trivalent)	5UM	CLEAR	120	480
	Thickness Range 1, Conversion D	Zinc nickel plating (10-15%) , 5-15um, (blue trivalent)	5UM	BLUE	120	480
	Thickness Range 1, Conversion E	Zinc nickel plating (10-15%) , 5-15um, (light green - yellow iridescent trivalent)	8UM	YELLOW	120	480
	Thickness Range 2, Conversion B	Zinc nickel plating (10-15%) , 8-15um, (black trivalent)	8UM	BLACK	120	480
	Thickness Range 2, Conversion C	Zinc nickel plating (10-15%) , 8-15um, (clear trivalent)	8UM	CLEAR	120	480
	Thickness Range 2, Conversion D	Zinc nickel plating (10-15%) , 8-15um, (blue trivalent)	8UM	BLUE	120	480
	Thickness Range 2, Conversion E	Zinc nickel plating (10-15%) , 8-15um, (light green - yellow iridescent trivalent)	8UM	YELLOW	120	480





# PLATING SPECIFICATIONS

ORGANIZATION	SPEC	DESCRIPTION	THICKNESS	COLOR	WHITE	RED
TRW AUTOMOTIVE	TRWPS0005	Zinc plate with conversion coating free of hexavalent chromium	8UM	CLEAR	48	N/A
VOLKSWAGEN	TL 217	Zinc coatings				
	TYPE 3"	Zinc plated, 8-35um, with passivate, organic or inorganic sealant	8UM			
	TYPE 6	Zinc plated, 15um-35um, with passivate, organic or inorganic sealant	15UM			
VOLKSWAGEN	TL 244	Zinc/nickel alloy coatings				
		Zinc nickel plated, 8-25um, with passivate, organic or inorganic sealant	8UM			
VOLVO	STD-121-0003	Cathodically protective zinc nickel surface treatment				
	400-1	Zinc nickel, 3um	3UM			
	400-2	Zinc nickel, 5um	5UM			
	400-3	Zinc nickel, 8um	8UM			
	400-4	Zinc nickel, 10um	10UM			
VOLVO	STD-5732-105	Electroplated coatings with zinc				
	FE/ZN 5 C1	Zinc plated, 5um, clear trivalent	5UM	CLEAR	6	48
	FE/ZN 8 C1	Zinc plated, 8um, clear trivalent	8UM	CLEAR	6	72
	FE/ZN 12 C1	Zinc plated, 12um, clear trivalent	12UM	CLEAR	6	144
	FE/ZN 15 C1	Zinc plated, 15um, clear trivalent	15UM	CLEAR	6	174
	FE/ZN 20 C1	Zinc plated, 20um, clear trivalent	20UM	CLEAR	6	240
	FE/ZN 25 C1	Zinc plated, 25um, clear trivalent	25UM	CLEAR	6	306
	FE/ZN 5 C4	Zinc plated, 5um, black trivalent	5UM	BLACK	6	48
	FE/ZN 8 C4	Zinc plated, 8um, black trivalent	8UM	BLACK	6	72
	FE/ZN 12 C4	Zinc plated, 12um, black trivalent	12UM	BLACK	6	144
	FE/ZN 15 C4	Zinc plated, 15um, black trivalent	15UM	BLACK	6	174
	FE/ZN 20 C4	Zinc plated, 20um, black trivalent	20UM	BLACK	6	240
	FE/ZN 25 C4	Zinc plated, 25um, black trivalent	25UM	BLACK	6	306
VOLVO	STD-5735-104	Electroplated coatings of zinc iron				
	FE/ZN-FE 5 C4	Zinc iron, 5um, black trivalent	5UM	BLACK	200	292
	FE/ZN-FE 8 C4	Zinc iron, 8um, black trivalent	8UM	BLACK	200	266
	FE/ZN-FE 12 C4	Zinc iron, 12um, black trivalent	12UM	BLACK	200	338
	FE/ZN-FE 15 C4	Zinc iron, 15um, black trivalent	15UM	BLACK	200	368
YH AMERICA, INC	YES025	Zinc-nickel plate, electrodeposited, of assemblies and components				