



AN INNOVATIVE COMPANY

**EAST/WEST** INDUSTRIES, INC.

# **EWI-PC-1000**

**Revision R**

**JULY 25, 2022**

## **EAST/WEST PROCESS CODES**

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7/25/2002

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A	2	9-21-94	J.W	PF: EW34002 (was) MIL-L-8937	
				PH: ASTM-E-1444 (was) MIL-STD-1949	
	PI: EWI-FC-1000 (was) EWI-FC-001				
	3			PK: MIL-STD-6866 (was) MIL-I-6866	
				PT: MIL-STD-2219 (was) MIL-W-8604	
				PV: MIL-STD-2219 (was) MIL-W-8611	
	4			PAB: S/S BY PAE	
PAC: S/S BY PAE					
PAF: S/S BY PAD					
PAG: S/S BY PAE					
B	2	3-10-03	J.W.	PJ: ASTM-A-967 (was) MIL-S-5002 (EAI 1A)	
				PJ(C): Added (EAI 1A)	
				PS: S/S BY PU (conflict with GAC Code)	
				PK: ASTM-E-1417 (was) MIL-STD-6866 (Quality Assurance Log # 97-191) (EAI 1A)	
				PU: Added (S/S PS)	
C	1	9/8/06	J.W.	Para 1.2 "... MIL-HDBK-132 (cancelled), titled "Protective Finishes for Metal and Wood Surfaces" (Was "...MIL HDBK-132 titled Military Handbook.")	
				Para. 2.0"... the following Table ..." (Was "...Appendix I of this specification...")	
	2			PA SAE AMS 2175 (Was MIL-STD-2175)	
				PB: SAE AMS H 6088 (Was MIL-H-6088)	
				PC SAE AMS H 6875 (Was MIL-H-6875)	
				PD MIL HDBK 6870 (Was MIL-I-6970)	
				3	PL ASTM E 1742 (Was MIL-STD-453)
					PM MIL HDBK 1264 (Was MIL-STD-1264)
					PN MIL HDBK 1265 (Was MIL-STD-1265)
	4			Added: alternate PN(1)	
				Added: Specify Grade & Class on B/P	
				PN (1)(Added)	
				PO Cancelled Spec (Was DOD-STD-1866)	
				PP Cancelled Spec (Was MIL-S-45743)	
PQ SAE AS 8879 (Was MIL-S-8879)					
PR SAE AS 7105 (Was MIL-P-7105)					
4	PV SAE AMS 2219 (Was MIL-STD-2219)				
	PW SAE AMS W 6858 (Was MIL-W-6858)				
	PY: Deleted Applicable Spec (Was MIL-STD-852)				

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D	2 3  4	5/27/2009	J.W.	P1 thru P4 (ADDED) PJ See EWI-FC-1000 Code P PJ (C) See EWI-FC-1000 Code P(C) PR SAE AS71051 (WAS SAE AS7105) PW (SAE AMS W 6858) WAS SAE AMS W 6858 PX (MIL-STD-403) Was MIL-STD-403
E	2	5/21/2012	J.W.	PC (ADDED) Decarb Samples for 400 CRES
F	2	7/23/2012	J.W.	PC (ADDED) SAE AMS2759 Heat Treatment of Steel Parts (DELETED) Decarburation Samples are required for 400 Stainless (ref Para 3.4)
G	4	4/30/2013	C.I.	PT & PV AWS D17.1 (WAS) MIL-STD-2219
H	2  4  5		A.S.	(ADDED) <b>COMBINATION CODES</b> P5 (ADDED) Codes PC, PH, PY (1) PT(A) Welding, Fusion Aluminum, Class A PT(B) Welding, Fusion Aluminum, Class B PT(C) Welding, Fusion Aluminum, Class C PV(A) Welding, Fusion Steel, Class A PV(B) Welding, Fusion Steel, Class B PV(C) Welding, Fusion Steel, Class C PY(1) (ADDED) Shot Peen per SAE AMS2430
J	COVER	8/10/2016	CI	Deleted Chief Engineer sign off. Code PY Glass Bead Blast (WAS) Glass Bead Peening Procedures.
K	3	12/19/16	C.I.	CODE PK (Added) Acceptance Rejection Criteria. (Added) Etch Required.....
L	COVER		C.I.	Updated cover sheet to reflect new address.
M	3		C.I.	code "PK" (added) NOTE: Drawing should specify any ETCH MASK requirements or NO MASK.
N	8	5/1/2019	J.W.	PAH (ADDED) ref. ECR 19-081 PAJ (ADDED) ref. ECR 19-119

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<b><u>Rev</u></b>	<b><u>Page</u></b>	<b><u>Date</u></b>	<b><u>By</u></b>	<b><u>Description of Change</u></b>
P	5	03/11/2021	C.I.	<p>All pages renumbered. (ref. ECR 19-194 and ECR 20-287)</p> <p><b>Code PV(A):</b> Radiographic inspection (AWS D17.1 ¶ 7.4) in accordance with ASTM E1417. Acceptance criteria shall be in accordance with AWS D17.1, Table 7.1, Class A. <b>(WAS)</b> Class A Weld (For Critical Applications) (ref. AWS D17.1 para. 6.4) (Radiographic Inspection &amp; Liquid Penetrant Inspection, except as outlined in AWS D17.1)</p> <p><b>Code PV(B):</b> Penetrant inspect (AWS D17.1 ¶ 7.4) in accordance with ASTM E1742 or equivalent using an approved Type 1 penetrant system, any method, sensitivity level 2 or better, and with or without developer. Equivalent process may be used with engineering authority approval from East West Industries. <b>(WAS)</b> Class B Weld (For Non-Critical Structural Applications) (ref. AWS D17.1 para. 6.4) (Liquid Penetrant Inspection)</p> <p><b>Code PV(C)</b> Class C Weld (For Non-Critical &amp; Non-Structural Applications) (ref. AWS D17.1 para. 7.3) (Visual Inspection Only) <b>(WAS)</b> Class C Weld (For Non-Critical &amp; Non-Structural Applications) (ref. AWS D17.1 para. 6.4) (Visual Inspection Only)</p>
	3			<p>(ref. ECR 20-185) <b>Code PH</b> <b>(ADDED)</b> Specify Grade IAW MIL-STD-1907 PH Grade A - Critical Parts with above normal integrity PH(B) Grade B - Parts with high but well distributed stresses PH(C) Grade C - Parts with moderate stresses PH(D) Grade D - Castings with low stresses adjacent to Grade A, B, or C areas (Rarely used for all sections of castings)</p> <p><b>Code PK</b> <b>(ADDED)</b> Specify Grade IAW MIL-STD-1907 PK Grade A - Critical Parts with above normal integrity PK(B) Grade B - Parts with high but well distributed stresses PK(C) Grade C - Parts with moderate stresses PK(D) Grade D - Castings with low stresses adjacent to Grade A, B, or C areas (Rarely used for all sections of castings)</p>
R	5	7/25/2022	C.I.	<p>PU: AMS-STD-2154, Type I, Class AA (WAS) Cancelled (Was MIL-STD-1875). (ref. ECR 21-156)</p> <p>PV(A) and PV(B): Updated (ref. ECR 22-157)</p> <p>PY(2): (Added) (ref. ECR 22-139, 404D304)</p>

## 1.0 SCOPE

- 1.1 The purpose of this specification is to present, in abbreviated form, the various processes employed in preparing metals to accept protecting finish coats, as well as inspection processes.
- 1.2 Reference should be made to MIL-STD-171, titled "Finishing of Metal and Wood Surfaces" and to MIL-HDBK-132 (cancelled), titled "Protective Finishes for Metal and Wood Surfaces". Use of these two reference documents along with the process code index spelling out applicable specifications will ensure that the correct processes have been employed.

## 2.0 APPLICABLE DOCUMENTS

The documents listed in the following Table set forth, in detail, the steps to be performed in order that the requirements of the process be fully met.

**APPENDIX I****PROCESS CODE INDEX**

<b>E/W CODE</b>	<b>PROCESS</b>	<b>APPLICABLE SPECIFICATION</b>	<b>TITLE</b>
P1	General (& Sheet Metal)	MOI-1000 Section II	General Workmanship Standards
P2	Machining	MOI-1000 Sections II & III	General Workmanship Standards
P3	Assembly	MOI-1000 Section IV	General Workmanship Standards
P4	Finish	MOI-1000 Section V	General Workmanship Standards
<b>COMBINATION CODES</b>			
P5	Heat Treat	per Code PC	
	Magnetic Particle	per Code PH	
	Shot peen	per Code PY (1)	
<b>INDIVIDUAL CODES</b>			
PA	Castings	SAE AMS2175 (S/S AMS-STD-2175) (S/S MIL-STD-2175)	Castings, Classification and Inspection of
PB	Heat Treat (Aluminum)	SAE AMS2770 (S/S SAE AMS H 6088)	Heat Treatment of Aluminum Alloys
PC	Heat Treat (Steel)	SAE AMS H 6875 (Raw Material) (S/S MIL-H-6875)	Heat Treatment of Steel Raw Materials
		SAE AMS 2759 (Parts) (ref. AMS-H-6875 para 6.3 & 3.4)	Heat Treatment of Steel Parts
PD	Inspection, General Requirements	MIL HDBK 6870 (S/S MIL-I-6870)	Inspection Requirements, Non-Destructive for Aircraft Materials and Parts
PE	Laminate	L-P-383 (1)	Plastic Material, Polyester Resin, Glass Fiber Base Low Pressure Laminated
PF	Lubrication	EW34002	Lubricant, Solid Film, Heat Cured, Corrosion Inhibiting
PG	-	-	-
PH	Magnetic Particle	ASTM-E1444 (S/S MIL-STD-1949) (S/S MIL-I-6868)	Magnetic Particle Testing
		<b>NOTE:</b> Specify Grade IAW MIL-STD-1907 [ref. Codes PH thru PH(D)]	
	PH	Grade A - Critical parts with above normal integrity	
	PH(B)	Grade B - Parts with high but well distributed stresses	
	PH(C)	Grade C - Parts with moderate stresses	
	PH(D)	Grade D - Castings with low stresses adjacent to Grade A, B, or C areas (Rarely used for all sections of castings)	
PI	Painting	See EWI-FC-1000	East/West Finish Codes
PJ	Passivation	See EWI-FC-1000 Code P	East/West Finish Codes
PJ (C)	Passivation (Castings)	See EWI-FC-1000 Code P(C)	East/West Finish Codes

E/W CODE	PROCESS	APPLICABLE SPECIFICATION	TITLE
PK	Penetrant Inspection	ASTM-E-1417 (S/S MIL-STD-6866) (S/S MIL-I-6866)	Liquid Penetrant Inspection Examination, Standard Practice for
		Acceptance Rejection Criteria: Per MIL-STD-1907, Note 5, Quality Grade A. Etch required except where Tolerances of +/- .0003 are required	
		<b>NOTE:</b> Drawing should specify any ETCH MASK requirements or NO MASK	
		<b>NOTE:</b> Specify Grade IAW MIL-STD-1907 [ref. PK thru PK(D)]	
	PK	Grade A - Critical parts with above normal integrity	
	PK (B)	Grade B - Parts with high but well distributed stresses	
	PK (C)	Grade C - Parts with moderate stresses	
PK (D)	Grade D - Castings with low stresses adjacent to Grade A, B, or C areas. (Rarely used for all sections of castings)		
PL	Radiographic Inspection	ASTM E1742 (S/S MIL-STD-453)	Radiographic Examination Inspection
PM	Radiographic Inspection	MIL HDBK 1264 (S/S MIL-STD-1264)	Radiographic Inspection for Soundness of Welds in <b>Steel</b> By Comparison to Graded ASTM-E-390 Reference Radiographs
PN	Radiographic Inspection	MIL HDBK 1265 (S/S MIL-STD-1265) <b>Alternate: use PN (1)</b>	Radiographic Inspection Classification and Soundness Requirements for <b>Steel Castings</b> (Specify Grade & Class on B/P)
PN(1)	Radiographic Inspection	SAE AMS 2175	Castings, Classification and Inspection of (Specify Grade & Class on B/P)
PO	Soldering - Non-Electrical	Cancelled (Was DOD-STD-1866)	Soldering Process, General Non-electrical, Metric
PP	Soldering - Electrical	Cancelled (Was MIL-STD-2000) (S/S MIL-S-45743)	Soldering Process, Soldering, Manual Type, High Reliability, Electrical And Electronic Equipment
PQ	Threads, J	SAE AS8879 (S/S MIL-S-8879)	Screw Threads, UNJ Profile, Inch Controlled Radius Root with Increased Minor Diameter
PR	Threads, Pipe	SAE AS71051 (S/S MIL-P-7105)	Pipe Threads, Taper, Aeronautical National Form, Symbol ANPT, Design and Inspection Standard
PS	Ultrasonic Inspection	Cancelled (S/S by PU)	
PT	Welding, Fusion, Aluminum	AWS D17.1 (Was MIL-STD-2219) (Was AWS D17.1) (S/S SAE AMS 2219) (S/S MIL-STD-2219) (Was MIL-W-8604)	Fusion Welding for Aerospace Application [Use PT(A), PT(B), or PT(C), see below]
	PT(A)	Class A Weld (For Critical Applications) (ref. AWS D17.1 para. 6.4) (Radiographic Inspection & Liquid Penetrant Inspection, except as outlined in AWS D17.1)	
	PT(B)	Class B Weld (For Non-Critical Aluminum, Structural Applications) Class B (ref. AWS D17.1 para. 6.4) (Liquid Penetrant Inspection)	
	PT(C)	Class C Weld (For Non-Critical Aluminum, & Non-Structural Applications) Class C (ref. AWS D17.1 para. 6.4) (Visual Inspection Only)	
PU	Ultrasonic Inspection	AMS-STD-2154 Type I, Class AA	Inspection, Ultrasonic, Requirements for

E/W CODE	PROCESS	APPLICABLE SPECIFICATION	TITLE
PV	Welding, Fusion Steel	AWS D17.1 (See PT above) (Was MIL-W-8611)	Fusion Welding for Aerospace Applications (Use PV(A), PV(B), or PV(C), see below)
	PV(A)	Class A - <b>Radiographic inspection</b> (AWS D17.1 ¶ 7.3.3) in accordance with <a href="#">ASTM E1742</a> . Acceptance criteria shall be in accordance with AWS D17.1, Table 7.1, Class A	
	PV(B)	Class B - <b>Penetrant inspection</b> (AWS D17.1 ¶ 7.3.1) in accordance with <a href="#">ASTM E1417</a> or equivalent using an approved Type 1 penetrant system, any method, sensitivity level 2 or better, and with or without developer. Acceptance criteria shall be in accordance with AWS D17.1, Table 7.1, Class B. Equivalent process may be used with engineering authority approval from East/West Industries.	
	PV(C)	Class C - Weld (For Non-Critical & Non-Structural Applications) (ref. AWS D17.1 para. 7.3) <b>(Visual Inspection Only)</b>	
PW	Welding, Spot	SAE AMS W 6858 (S/S MIL-W-6858)	Welding, Resistance, Spot and Seam
PX	Riveting	MIL-STD-403	Preparation for and Installation of Rivets and Screws, Rocket, Missile, and Airframe Structures
PY	Mechanical Blast	-	-
	PY	Glass Bead Blast	
	PY(1)	Shot Peen per SAE AMS2430	
	PY(2)	Grit Blast	<b>Note</b> :Media type, hardness (if applicable), size, and desired surface finish should be specified on the engineering drawing
PZ	Part Marking	MIL-STD-130	Identification Marking of U.S. Property
PAA	Cleaning	EWI-CP-001	Oxygen Cleaning with Isopropyl Alcohol
PAB	Cleaning	EWI-CP-002 (Cancelled) (S/S by EWI-CP-202)	Oxygen cleaning with Low Titre Soap
PAC	Cleaning	EWI-CP-003 (Cancelled) (S/S by EWI-CP-202)	Oxygen cleaning with Detergent
PAD	Cleaning	EWI-CP-201	Cleaning Procedure for Oxygen Cylinders
PAE	Cleaning	EWI-CP-202	Oxygen Cleaning with Aqueous System
PAF	Cleaning	EWI-CP-203 (Cancelled) (S/S by EWI-CP-201)	Re-Cleaning of Oxygen Cylinders
PAG	Cleaning	EWI-CP-61-101 (Cancelled) (S/S by EWI-CP-202)	Cleaning Oxygen Components with Freon
PAH	Acid Clean (Cylinders)	AMS 2700 Method 1 (Nitric) Type VI, Class 2 <b>(Alternate use PAJ)</b>	Nassau Chrome Pickle Passivate Processes PP-01 & PP-15 (ref. EWI-TP-001, para. 6.0)
PAJ	Alkaline Clean (Cylinders)	Alkaline Clean Al <sub>2</sub> O <sub>3</sub> Blast (120 grit) Alkaline Clean Passivate (AMS 2700, TY VI) Bake 350°F – 30 minutes <b>(Alternate use PAH)</b>	Aircraft Finishing (AFC) Mechanical Clean & Passivate (ref. EWI-TP-001, para. 6.0)