

特种工艺资质批准证书 Special Process Certificate

证书编号 Certificate Number: Eb-800293-18-01

中国航发商发 AECC CAE				
特种工艺资质批准证书 Special Process Certificate				
批准类型 Approve Type: 正常批准				
供应商名称 Supplier Name: PCC Structurals, Inc.			发布日期 Issue Date: 2018-04-24	
地址 Address: 4600 S.E.Harney Drive, Portland, Oregon 97206			联系人 Contact person: 顾江平	
工艺名称	子项目	特种工艺编号	供应商技术代表	认可标准
材料检测实验室 Materials Testing Laboratories	化学分析 Chemical Analysis-Spark/ Arc (OES)	F3	N/A	N/A
材料检测实验室 Materials Testing Laboratories	化学分析 Chemical Analysis-X 射线荧 光 X-Ray Fluorescence	S	N/A	N/A
材料检测实验室 Materials Testing Laboratories	化学分析 Chemical Analysis-氮 Nitrogen	G3	N/A	N/A
材料检测实验室 Materials Testing Laboratories	化学分析 Chemical Analysis-硫 Sulfur	G5	N/A	N/A
材料检测实验室 Materials Testing Laboratories	化学分析 Chemical Analysis-氢 Hydrogen	G2	N/A	N/A
材料检测实验室 Materials Testing Laboratories	化学分析 Chemical Analysis-碳 Carbon	G1	N/A	N/A
材料检测实验室	化学分析	G4	N/A	N/A



Materials Testing Laboratories	Chemical Analysis-氧 Oxygen			
材料检测实验室 Materials Testing Laboratories	化学分析 Chemical Analysis-质谱 Mass Spectroscopy	V	N/A	N/A
材料检测实验室 Materials Testing Laboratories	金相和显微硬度 Metallography and Micro Indentation Hardness - 宏观检查 Macro Examination	XL	N/A	N/A
材料检测实验室 Materials Testing Laboratories	金相和显微硬度 Metallography and Micro Indentation Hardness - 金相评估 Metallographic Evaluation	L0	N/A	N/A
材料检测实验室 Materials Testing Laboratories	力学试样制备 Mechanical Testing Specimen Preparation-标准试样加工 Standard Specimen Machining	Z	N/A	N/A
材料检测实验室 Materials Testing Laboratories	力学性能测试 Mechanical Testing - 持久 Stress Rupture	C	N/A	ASTM E 139
材料检测实验室 Materials Testing Laboratories	力学性能测试 Mechanical Testing - 高温拉伸 Elevated Temperature Tensile	B	N/A	ASTM E 21
材料检测实验室 Materials Testing Laboratories	力学性能测试 Mechanical Testing - 室温拉伸 Room Temperature Tensile	A	N/A	ASTM E 8/8M
材料检测实验室	硬度 Hardness -	M2	N/A	ASTM E 18



Materials Testing Laboratories	洛氏硬度 Rockwell			
焊接 Welding	氩弧焊 Argon Arc Welding	WLD06	顾江平	AWS D17.1 , AMS 2694
化学加工 Chemical Process	化铣 Chemical Milling- 钛合金化铣 Chemical Milling of Aluminum Alloy	CP04-2	顾江平	N/A
热处理 Heat Treatment	热等静压 Hot Isostatic Pressing (HIP)	HT05	N/A	N/A
热处理 Heat Treatment	真空热处理 Vacuum Heat Treatment	HT09	顾江平	AMS 2750
无损检测 Nondestructive Evaluation	射线检测 Radiography Inspection	NDE-05	顾江平	ASTM E 1742 , ASTM E 2033
无损检测 Nondestructive Evaluation	渗透检测 Penetrant Inspection	NDE-01	顾江平	ASTM E 1417
铸造 Casting	精密铸造 Investment Casting	CAS02	顾江平	N/A

备注 Remark:

中国航发商发具体采购控制件所涉及特种工艺的工艺规程应由中国航发商发批准。

The special process procedures shall be approved by AECC CAE for the Sourcing Control Parts of AECC CAE products.

兹证明中国航发商发对贵单位上述工艺进行了技术及质量方面的审核，并证明可满足上述规范的要求。本证书不构成对规范要求、检验、测试、记录保持、及/或合同订单条款的免除，也不保证产品一定被中国航发商发接收。当规范、工程图纸或订单中要求提交单独的零件或试样进行认可时，应按要求进行。中国航发商发可在任何时候对本证书所授予合格的相关设施进行检查，以确保可持续地满足中国航发商发的要求。

This is to certify that a review has been completed of your technical and quality system controls used for the above named process(es) and found them to be capable of satisfying the requirements of the above specifications. This certification does not in itself constitute a waiver of specification requirements as to inspection, testing, maintenance of records, and/or other provisions of the Purchaser Order/Sub Contract, nor does it guarantee the acceptance of articles produced for AECC CAE. Requirements for the submission and



qualification of individual parts/samples or other items as contained in specifications, engineering drawings or Purchaser Order will be completed as outlined. Inspection of the facilities for which this certification is granted may be conducted at any time by AECC CAE to determine continued compliance with AECC CAE requirements.

本合格证书的有效期为：2020-04-30

除非被中国航发商发取消。

The certification shall expire at 2020-04-30, unless canceled by an AECC CAE.

主管供应商副总经理签字：



地址 Address：上海市闵行区莲花南路 3998 号
No.3998, South Lianhua Road, Minhang District,
Shanghai

批准设备清单 Approved Equipment List

工艺	子项目	设备位置	设备名称	设备型号/编号	备注
材料检测实验室 Materials Testing Laboratories	化学分析 Chemical Analysis-Spark/ Arc (OES)	Element Portland	Laboratory	not applicable	PCC outsources all material testing to Element.
材料检测实验室 Materials Testing Laboratories	化学分析 Chemical Analysis-X 射线 X-Ray Fluorescence	Element Portland	Laboratory	not applicable	PCC outsources all material testing to Element.
材料检测实验室 Materials Testing Laboratories	化学分析 Chemical Analysis-氮 Nitrogen	Element Portland	Laboratory	not applicable	PCC outsources all material testing to Element.
材料检测实验室 Materials Testing Laboratories	化学分析 Chemical Analysis-硫 Sulfur	Element Portland	Laboratory	not applicable	PCC outsources all material testing to Element.
材料检测实验室 Materials Testing Laboratories	化学分析 Chemical Analysis-氢	Element Portland	Laboratory	not applicable	PCC outsources all material testing to



Laboratories	Hydrogen				Element.
材料检测实验室 Materials Testing Laboratories	化学分析 Chemical Analysis-碳 Carbon	Element Portland	Laboratory	not applicable	PCC outsources all material testing to Element.
材料检测实验室 Materials Testing Laboratories	化学分析 Chemical Analysis-氧 Oxygen	Element Portland	Laboratory	not applicable	PCC outsources all material testing to Element.
材料检测实验室 Materials Testing Laboratories	化学分析 Chemical Analysis-质谱 Mass Spectroscopy	Element Portland	Laboratory	not applicable	PCC outsources all material testing to Element.
材料检测实验室 Materials Testing Laboratories	金相和显微硬度 Metallography and Micro Indentation Hardness - 宏观检查 Macro Examination	Element Portland	Laboratory	not applicable	PCC outsources all material testing to Element.
材料检测实验室 Materials Testing Laboratories	金相和显微硬度 Metallography and Micro Indentation Hardness - 金相评估 Metallographic Evaluation	Element Portland	Laboratory	not applicable	PCC outsources all material testing to Element.
材料检测实验室 Materials Testing	力学试样制备 Mechanical Testing	Element Portland	Laboratory	not applicable	PCC outsources all material testing to



Laboratories	Specimen Preparation-标准试样加工 Standard Specimen Machining				Element.
材料检测实验室 Materials Testing Laboratories	力学性能测试 Mechanical Testing - 持久 Stress Rupture	Element Portland	Laboratory	not applicable	PCC outsources all material testing to Element.
材料检测实验室 Materials Testing Laboratories	力学性能测试 Mechanical Testing - 高温拉伸 Elevated Temperature Tensile	Element Portland	Laboratory	not applicable	PCC outsources all material testing to Element.
材料检测实验室 Materials Testing Laboratories	力学性能测试 Mechanical Testing - 室温拉伸 Room Temperature Tensile	Element Portland	Laboratory	not applicable	PCC outsources all material testing to Element.
焊接 Welding	氩弧焊 Argon Arc Welding	SSB1	Weld Chamber	#4339	Nadcap certificate number 10166163841
焊接 Welding	氩弧焊 Argon Arc Welding	LPC-T, LMA	Weld chamber	1, 2, 3, 4, 5, 6, 7, 10, 11, 14, 15, 17, 18, 19, 20, 21, 26, 27, 28	NADCAP Certificate Number: 3689175321
焊接 Welding	氩弧焊 Argon Arc Welding	LPC-S, LSBS 1, LSBS 2	Weld station	071 W1 - W4, 072 W1 - W6, 073 W1 - W3,	NADCAP Certificate Number:



				076 W1 - W7	3689175321
焊接 Welding	氩弧焊 Argon Arc Welding	SSB0	Weld station	W1 - W8	Nadcap certificate number 3690163840
焊接 Welding	氩弧焊 Argon Arc Welding	SSB1	Weld station	W1 - W5	Nadcap certificate number 10166163841
焊接 Welding	氩弧焊 Argon Arc Welding	SSB0	Weld Chamber	#4411, #7240, #2735, #3711	Nadcap certificate number 3690163840
热处理 Heat Treatment	热等静压 Hot Isostatic Pressing (HIP)	Camas, WA	HIP furnace	19, 21, 31, 34	PCC outsources HIP to Bodycote
热处理 Heat Treatment	热等静压 Hot Isostatic Pressing (HIP)	Camas, WA	HIP furnace	19, 21, 31, 34	PCC outsources HIP to Bodycote
热处理 Heat Treatment	真空热处理 Vacuum Heat Treatment	SSB0	Heat Treat Furnace	C-2A, C-10, C-18, C-25, C-30, C-35	NADCAP Certificate Number: 3689170623
热处理 Heat Treatment	真空热处理 Vacuum Heat Treatment	LPC-S	Heat Treat Furnace	9, 11, 17, 23, 27, 37, 47, 57	NADCAP Certificate Number: 3689170623
热处理 Heat Treatment	真空热处理 Vacuum Heat Treatment	SSB1	Heat Treat Furnace	C-41, C-42, C-43	NADCAP Certificate Number: 3689170623
熔炼 Melting	真空电弧熔炼 Vacuum Arc Remelting	various	Furnace	not applicable	PCC purchases titanium electrodes from



					outside suppliers.
熔炼 Melting	真空感应熔炼 Vacuum Induction Remelting	LPC-S	Casting furnace	Mastercaster	Ingot manufacture for casting parts at SSBO.
熔炼 Melting	真空感应熔炼 Vacuum Induction Remelting	LPC-S	Casting furnace	Mastermelt	Ingot manufacture for casting parts at SSBO.
无损检测 Nondestructive Evaluation	射线检测 Radiography Inspection	SSB0	X-ray	see list	NADCAP CERTIFIED 3690167836
无损检测 Nondestructive Evaluation	射线检测 Radiography Inspection	LPC-S, LSBS 1, LSBS 2, LSBS 3	X-ray	see list	NADCAP Certificate Number: 8938167708, 8938167704
无损检测 Nondestructive Evaluation	射线检测 Radiography Inspection	LPC-T, LMA, LSBS 3	X-ray	see list	NADCAP Certificate Number: 8938167704, 8945167705
无损检测 Nondestructive Evaluation	渗透检测 Penetrant Inspection	SSB0	FPI	SSB0 line.	NADCAP CERTIFIED 3690167836
无损检测 Nondestructive Evaluation	渗透检测 Penetrant Inspection	SSB1	FPI	SSB1 line.	NADCAP CERTIFIED 10166167837
无损检测 Nondestructive Evaluation	渗透检测 Penetrant Inspection	LPC-T	FPI	TI	NADCAP Certificate Number: 8938167704
无损检测	渗透检测	LPC-S	FPI	Steel	NADCAP



Nondestructive Evaluation	Penetrant Inspection				Certificate Number: 8945167708
无损检测 Nondestructive Evaluation	渗透检测 Penetrant Inspection	LMA	FPI	LMA	NADCAP Certificate Number: 8945167705
无损检测 Nondestructive Evaluation	渗透检测 Penetrant Inspection	LSBS-1	FPI	LSBS	NADCAP Certificate Number: 8938167704
无损检测 Nondestructive Evaluation	渗透检测 Penetrant Inspection	LPC-S	FPI	Steel	NADCAP Certificate Number: 8945167708
铸造 Casting	精密铸造 Investment Casting	LPC-T	Casting furnace	2, 3	
铸造 Casting	精密铸造 Investment Casting	LPC-S	Casting furnace	Mastercaster	Alloy is made at the casting furnace and poured directly into the TRF mold. No ingot remelt is done.
铸造 Casting	精密铸造 Investment Casting	SSB0	Casting furnace	#8, 9 & 10	Casted in furnace 8, 9 and 10 at SSB0

