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QUALITY BULLETIN

Published by Pratt & Whitney Company in Poland

Dear Suppliers,

In reference to Eagle Eye 21-12 regarding cleaning of coated PWA parts we present you below information.

Background:

Two potential escapes have occurred recently involving the cleaning of OEM HPC rotors with unapproved cleaners during production processing that resulted in damage to the alumina containing coatings on the parts. The HPC rotors were processed in heavy duty alkaline cleaning solutions without masking the coating and without approval by the cognizant approving organization.

Section I - Requirement: P&W suppliers are required to use an approved PWA 36603 light duty aqueous cleaner or mask the coating per PWA 53 (or equivalent for partners) and PWA 36254 (or equivalent for partners).

- PWA 36254 (*Plasma Sprayed Metallic Bond Coat + Flame Sprayed Alumina Top Coat*)
 - 3.5 Post-Processing: If acid or alkali cleaning or electroplating is performed after completion of coating deposition, coated surfaces shall be suitably masked to prevent contact with these solutions. Masking is not required when cleaning per PWA 36603 is performed.
- PWA 53 (*Coating, Plasma Spray Deposition*)
 - 3.3.3 When practical, any acid or alkali cleaning, electroplating, and anodizing shall precede plasma deposition. If acid or alkali cleaning, electroplating, or anodizing is performed after plasma deposition, coating shall be suitably masked to prevent contact with acid, alkali, plating or anodizing solutions unless otherwise authorized by Pratt & Whitney Materials & Processes Engineering.
- PWA 36603 (Aqueous Degreasing of Parts and Assemblies)
 - 3.4.1 Use of alternate cleaners shall be approved per PWA 36604 (*Approval of Cleaners Used in Manufacture and Overhaul of Parts*).
 - 3.4.2 Alternate cleaning process solutions and operating conditions which produce equivalent levels of cleanliness may be used if approved by Pratt & Whitney Materials & Processes Engineering (MPE).

P&W Process Material Control (PMC) specifications determine approved engine part materials (i.e., alloys, coatings) that the PMC material can contact. For questions about the engine part material intended for contact in the PMC specification, contact the Advanced Quality System organization (point of contact Suzanne Milheron).

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Section II - Alert condition:

- Use of cleaning solutions during OEM processing that are not approved in PWA 36603.
 - The use of alternate cleaning solutions requires approval by the cognizant approving organization. For P&W designed parts produced by P&W Poland suppliers, please submit SRFI according to instruction 01/ESCO to approve alternate cleaning solutions.
- Use of PMC materials during part processing that are not approved in the PMC per the PMC introduction and the associated compatibility testing requirements.

Section III - Actions to be taken:

- Partner to update their source approval procedures to include an approval by a coating specialist for material compatibility of the cleaning solution with the coating. (COMPLETE)
- MPE to update PWA 36604 for clarity on testing requirements for cleaning solutions that contact coatings.
- P&W supporting engineer, such as Manufacturing Engineer or Engineering Source Approval engineer, is to review the process materials used on engine parts and assemblies to ensure that the process solutions, including those listed in PMC specifications, are approved for the part alloys and coatings. If this is not the case, they are to request a PMC update per the Section II AQS request link.
- External suppliers should reference PWA 36603 and PWA 36604 for clarity on the application of approved cleaning solutions and the means to request testing for alternate cleaning solutions.

In a case of any questions please send your reply to received Bulletin email address.

SQA Group of P&W Poland Company.