

NATIONAL AEROSPACE AND DEFENSE CONTRACTORS  
ACCREDITATION PROGRAM  
REQUIREMENTS FOR PERCUSSION STUD WELDING

1. SCOPE

This Aerospace Standard (AS) is to be used to supplement AS7110. In addition to the requirements contained in AS7110, the requirements contained herein shall apply to suppliers seeking NADCAP accreditation for percussion stud welding.

2. REFERENCES

2.1 SAE Publications:

AS7110 National Aerospace and Defense Contractors Accreditation Program (NADCAP) - Requirements for Welding

3. REFERENCE REQUIREMENTS

3.1 Applicable customer specifications shall be available at the facility.

4. MATERIALS/MATERIAL CONTROL

4.1 Cleaned studs shall be packaged in hermetically sealed, oil free, polyethylene bags.

5. EQUIPMENT CONTROL

5.1 Welding equipment shall meet the requirements of applicable customer specifications.

5.2 Welding machines shall be automatically controlled and capable of consistently producing welds meeting all the requirements of the applicable customer specifications.

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## SAE AS7110/9 Revision A

- 5.3 Automatic machine controls shall provide for the following:
- a. A controlled drop weight
  - b. A controlled stud travel for each weld cycle
  - c. A stabilized capacitor discharge voltage
- 5.4 All fixtures or tooling that come into contact with production parts shall be free of contaminants which are detrimental to the welding process.
- 5.5 Test and measurement equipment shall show evidence of valid calibration status prior to use.
- 5.6 Calibrated torque measuring equipment shall be available.
- 5.7 Equipment shall be available for preparing and examining macrosections.
6. QUALIFICATION PROCEDURES/SCHEDULES
- 6.1 Welding machines shall be qualified in accordance with applicable customer specification.
- 6.2 Welding machines shall be requalified if rebuilt or if significant operational changes are made.
- 6.3 After schedule is developed, the appropriate number of test specimens shall be prepared and tested.
- 6.4 Welding operators shall be trained and qualified in accordance with applicable specification.
- 6.5 Weld schedules shall be certified by qualified personnel.
- 6.6 Weld schedules shall include all customer required data, as applicable.
7. PROCESS CONTROL
- 7.1 Parts shall be properly cleaned prior to welding per applicable customer specification. Clean cotton gloves shall be worn when handling cleaned parts.
- 7.2 Surfaces of the details and representative test specimens shall be free from contaminants such as oxides, scale, oil, dirt, ink, or other surface condition detrimental to welding process.