Non Destructive Testing Report

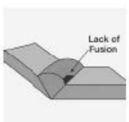
Created Fri, 11 Apr 2025, 2:20 PM (UTC+08)

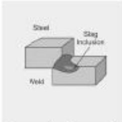
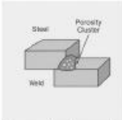
Test Date:	Wed, 09 Apr 2025
Report No.	NDT-UT-240411-001

1. Report Information

Test Method:	Ultrasonic Testing (UT)
Inspection Location:	Boeing Manufacturing Facility – Everett, WA, USA
Part Number/ID:	WELD-FR-772-B7
Part Description:	Fuselage Frame Support Weld – Section B7
Material Type:	Welds
Welds	Butt Weld
Other (Specify)	
Inspector Name:	
Certification/Qualification:	ASNT Level II – Ultrasonic Testing (UT), Cert. No. UT-29874, Valid Until: 12/2026
2. Purpose of Inspection	To evaluate the integrity of the butt weld on the fuselage frame support and detect any internal discontinuities such as lack of fusion, cracks, or inclusions in accordance with Boeing internal quality standards and AWS D1.1.
Equipment Used:	Ultrasonic Thickness
Equipment (Make, Model)	GE Krautkramer USM 36 Ultrasonic Flaw Detector
SR No	21-UT-67439
Calibration Details	Calibrated on 15/03/2025 using ASTM E317-compliant reference blocks (IIW Type 1). Next calibration due: 15/09/2025. Calibration performed by: AeroNDT Labs, ISO 17025 Accredited
Test Procedure:	**UT Procedure No. BOE-UT-302, Rev. 2** (Based on AWS D1.1 and Boeing internal NDT protocols)

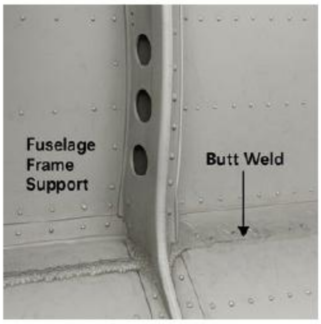
4. Test Results

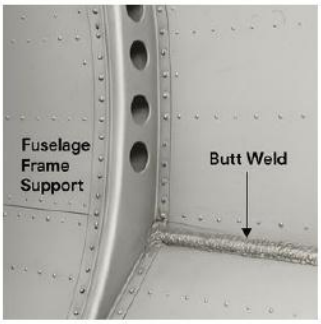
Location	Defect Type	Size/Depth	Action Required	Photo
18" from left end of weld	Lack of Fusion	4mm/6mm	Grind and re-weld affected area	 See photos attached at end of PDF

Location	Defect Type	Size/Depth	Action Required	Photo
32" from start of weld	Slag Inclusion	3mm/4mm	Monitor – within acceptable limits	 See photos attached at end of PDF
44" from right end of weld	Porosity Cluster	Surface to 2mm depth	Re-inspect after 10 hours – borderline	 See photos attached at end of PDF

Do you need to add an additional sketch or photo? Photo

Photos





See photos attached at end of PDF

5. Interpretation and Analysis

- **18" from left end:**
- Lack of fusion detected. Approx. 4mm deep, 6mm long. High signal amplitude, sharp reflector. **Reject per AWS D1.1 Table 6.1.** Recommend grind and re-weld.
- **32" from start:**
- Slag inclusion found. 3mm deep, 4mm dia. Rounded signal, minor backwall loss. **Acceptable. No action needed.**
- **44" from right end:**
- Clustered porosity near centerline. Surface to 2mm depth. Scattered signals. **Borderline. Re-inspect after 10 hrs.**

6. Conclusion

Weld ID **WELD-FR-772-B7** has one rejectable indication (lack of fusion at 18"). Two other areas (slag inclusion and porosity) are within acceptable limits.

Repair required on the rejected section. Remaining areas to be **monitored and re-inspected** as noted.

7. Recommendations for Further Action

Grind and re-weld the defective area at 18" from the left end.

Re-inspect the porosity cluster at 44" after 10 hours.

Include this weld in the **next routine inspection cycle** for monitoring.

Document repair and re-test results in the updated weld log.

NDT Inspector:

Authorized Reviewer: