



FILE	GENERAL REPAIR PROCEDURE FOR MATERIALS AND WELDS	IDENTIFICATION GR-8X LIGO - E950046-02-B			
		REFERENCE NO. 930212	SHT 1 OF 3		
PRODUCT	LIGO BEAM TUBE MODULES CALIFORNIA INSTITUTE OF TECHNOLOGY	OFFICE COH		REVISION 2	
		MADE BY RWP	CHKD BY BGG	MADE BY RWP	CHKD BY BGG
		DATE 2/9/94	DATE 2/15/94	DATE 4/18/94	DATE 4/18/94

1.0 SCOPE:

- 1.1 BASE METAL SURFACE NONCONFORMITIES - For repairs of all nonconformities in base metal surfaces not exceeding 24 sq. in.
- 1.2 EDGE PREPARATION NONCONFORMITIES - For repairs of all nonconformities in edge preparation.
- 1.3 WELDS - For repair of unacceptable defects in inspected weld joints.

2.0 PROCEDURES:

2.1 REPAIRS TO BASE METAL SURFACE NONCONFORMITIES (1.1)

- 2.1.1 For Repairs Not Requiring Welding (those which can be removed without reducing the material thickness more than 0.01 inch under the ordered thickness shown on the contract drawings.)
  - A. Surface defects shall be removed by grinding to sound metal. The cavity shall be blended uniformly into surrounding surfaces.
  - B. Ground surface repairs shall be inspected to verify that the nonconformity has been removed or the indication reduced to an acceptable limit.
  - C. The reduced material thickness shall be checked by depth gauge, ultrasonics, or other acceptable methods to verify that the remaining material thickness is not reduced below the minimum required.
- 2.1.2 For Repairs Requiring Welding
  - A. Remove the defect by grinding or chipping to an acceptable level.
  - B. Visually inspect the area prepared for welding.
  - C. Weld in accordance with WPS-ER308L/REPAIR.
  - D. Welded repairs shall be visually inspected.

APPROVED

*M. Jellalain*    *S. Jones*    11/14/95  
 CBI    11/10/95    LEO



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## 2.2 REPAIRS TO EDGE PREPARATION NONCONFORMITIES (1.2)

### 2.2.1 For Repairs Not Requiring Welding

- A. Defects shall be removed by grinding to sound metal. The cavity shall be blended uniformly into the surrounding surfaces.
- B. Ground surface repairs shall be visually inspected to verify that the nonconformity has been removed or the indication reduced to acceptable limit.

### 2.2.2 For Repairs Requiring Welding

- A. Remove the defect by grinding or chipping to an acceptable level.
- B. Visually inspect the area prepared for welding.
- C. Weld in accordance with WPS-ER308L/REPAIR.
- D. Welded repairs shall be visually inspected.

## 2.3 REPAIRS TO WELDS (1.3)

### 2.3.1 For Repairs Not Requiring Welding

- A. Defects shall be removed as required by grinding and the depression shall be blended uniformly into the surrounding surface.
- B. Visually inspect the blend ground area to ensure that the defect has been removed or the indication reduced to an acceptable limit.
- C. The reduced material thickness shall be checked by depth gauge, ultrasonics, or other acceptable methods to verify that the remaining material thickness is not reduced below the minimum specified on the contract drawings.



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2.3.2 For Repairs Requiring Welding

- A. Remove the defect as required by grinding or chipping.
- B. Visually inspect the area prepared for welding.
- C. Weld in accordance with WPS-ER308L/REPAIR.
- D. The repaired area surface shall be blended uniformly into the surrounding surface.
- E. Inspection of a weld repair shall be repeated as required for the original weld.

2.3.3 For Fillet Weld Repairs Requiring Welding

- A. Remove the unacceptable weld metal.
- B. If the full fillet is not essentially removed, visually inspect the area prepared for welding.
- C. Weld in accordance with WPS-ER308L/REPAIR.
- D. Re-inspect per the original NDE method.

3.0 DOCUMENTATION:

Documentation shall be in accordance with the Quality Assurance Manual (QAM).