

DEPARTMENT OF THE ARMY
SOUTH PACIFIC DIVISION, CORPS OF ENGINEERS
630 Sansome Street, Room 720
San Francisco, California 94111-2206

CESPD-ED-T

DIVISION TECHNICAL
LETTER 1110-4-45
1991

27 September

Expires 27 September 1992
Engineering and Design
(ETL 90-3 TEMPEST PROTECTION FOR FACILITIES, CHANGE 2

1. Purpose. Reference DTL 1110-4-39. The enclosed letter dated 7 June 1991, subject as above, with two enclosures, replaces Paragraph 9E, acceptance test, of subject ETL, and provides guidance for dealing with contractor test failures.
2. Applicability. It is applicable to Los Angeles and Sacramento Districts.
3. Implementation. These criteria shall have routine application as defined in paragraph 6c of ER 1110-345-100.

FOR THE COMMANDER:

Encl
HQUSAF Ltr, 7 June 1991
w/2 Encls

(SIGNED)
JAY K. SOPER
Director, Engineering

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON DC 20330-5140

REPLY TO ATTN OF: CEC
JUN 1991

7

SUBJECT: Change 2 to Engineering Technical Letter (ETL) 90-3: TEMPEST
Protection for Facilities

TO: SEE DISTRIBUTION

1. Attached for your information and action is Change 2 to subject ETL.
2. Purpose. The change:
 - a. Replaces paragraph 9e, Acceptance est, of subject ETL.
 - b. Provides guidance for dealing with contractor test failures.
3. Effective Date: This ETL is effective starting with those projects which have not reached design completion as of the date of this letter.
4. Our point of contact is Mr. Fernandez at DSN 225-8178. 703-695-8178.

<signed by Thomas H. Gion>

CHARLES L. PEARCE, Colonel, USAF
Director, Military Construction
Office of The Civil Engineer

- 2 Attachments
1. Distribution List
 2. Criteria

7 June 91

Change 2 to ETL 90-3

Replace Paragraph 9e with the following paragraphs:

9e. Acceptance Test - By Contract (Military Construction).

(1) General. The government will contract with an Independent Testing Laboratory (ITL) to perform this test. This laboratory will not be affiliated with the construction contractor, his sub-contractors, or the shield manufacturer. The ITL shall perform an RF-tightness acceptance test after the building contractor completes installation of the shield, penetrations and/or filters, and any interior finishes. Correct timing for testing is when the building or room(s) is RF-tight, all shielded doors are in place (including associated fingerstock and gasketing), all electrical/electronic lines have filters in place, and cosmetics, such as sheetrock, paneling, are installed to conceal welded or soldered joints, and before mission essential equipment (MEE) are installed.

(2) Purpose. This shield effectiveness test will inform the contractor and Air Force whether the shield installation is acceptable. As a minimum, a probe must be made for RF leaks at the shield joints, shielded doors, signal and power lines and other types of penetrations. The test can consist of a SELDS or equivalent test, and tests per U.S. Air Force Handbook for the Design and Construction of HEMP/TEMPEST Shielded Facilities.

(3) Test Time. This test may range from only one to two days for small rooms to several weeks for large facilities. The government may save time by fielding several ITL teams. At some locations, this test may have to be done at night, or weekends to avoid RF interference with other systems in the area.

(4) Building Contractor Support. The building contractor must provide support to the ITL team. Generally, the testing team only tests. The contractor is responsible for correcting any shielding or facility deficiencies. The contractor will have personnel available to immediately correct minor deficiencies uncovered by testing.

(5) Acceptance Test Plan Approval. Before the ITL can use its test plan, it must be submitted for approval to HQ ESC/LEECC. This review could require a minimum of 30 days and must be submitted in a timely fashion by the Air Force Construction Manager to HQ ESC. Appendix 8 (reference ETL 90-3) provides a listing of minimum information required in a test plan.

Atch 2 (1 of 3)

(6) Qualified ITL. Qualified means the testing firm has the expertise to perform shield testing per the USAF handbook and has a good track record (successfully tested four or five facilities with shielding surfaces of 1,000 surface square feet (SSF) or greater) of testing shielded facilities.

(7) Air Force Test Monitor.

(a) An Air Force TEMPEST OPR or his representative must be present during at least part of ITL's testing to ensure it is being done according to the test plan. To effectively serve as the Air Force's representative during the acceptance test, the monitoring Air Force agency must be included in the review cycle for the test plan.

(b) The 1839th EIG/EIX can be contacted through the EID/EIW to serve as the Air Force representative to monitor the ITL's test. It is possible that a private consultant may have to be hired by the requiring command to perform this work, if the workload at the 1839th does not permit it to be the Air Force representative.

(c) The monitoring team must work closely with the contracting officer or his representative during the testing by the ITL and correction of deficiencies by the building contractor.

(d) The ITL must maintain appropriate records to ensure that all welds and joints are checked and results recorded. All unsatisfactory welds, soldered, or snapped-together joints shall be repaired by the building contractor and retested by the ITL. Records shall be available for review by responsible Air Force offices. After the acceptance test, these records must be turned over to the user or requiring command.

(8) ITL Test Result Approval. The test results must be submitted to HQ ESC/LEEEEC to review within 30 days after the test is performed. Copies of the test results will also be provided to the construction contractor, user or Requiring MAJCOM, and the Host MAJCOM TEMPEST Manager.

(9) Test Failure.

(a) General. If the test indicates a shielding failure, then the building contractor will be responsible for making appropriate repairs to the shield, and/or filtering components, and must pay for related retest.

(b) Cost for Retest. The building contractor payment for retesting by the ITL will be based on the number of points that failed divided by the total number of points tested. This fraction will then be multiplied times the total cost for testing the entire facility.

Atch 2 (2 of 3)

(c) Time to Repair. Time allowances for time to repair of shielding deficiencies by the contractor must be included in the facility construction contract. The building contractor should be charged for delays beyond the allowed time for repairs. Historical information at the 1839th EIG/EIEE indicates that repairs can take from a few minutes (replace filters, door gaskets, etc.) to a few hours (removing finishes and rewelding/soldering/re-snapping) to one year (replacement of shielded door because it was the wrong type).

Atch 2 (3 of 3)