

CEMP-ET

DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
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ETL 1110-3-447

Engineer Technical
Letter 1110-3-447

30 April 1993

Engineering and Design
ENGINEER OF RECORD AND DESIGN RESPONSIBILITIES

1. Purpose. This letter provides guidance on the role of the Engineer of Record (EOR) and responsibilities for the design and construction of structures.

2. Applicability. This letter applies to HQUSACE elements, major subordinate commands, districts, and field operating activities (FOA) having military construction design responsibility.

3. References.

- a. TM 5-809-3
- b. ER 1110-345-53
- c. ACI 318
- d. Precast Prestressed Institute (PPI) Manual
- e. Precast Concrete Institute (PCI) Manual
- f. CEGS 13120

4. Discussion.

a. Controversies, diversified opinions, and extensive discussions have surfaced with regard to the role and responsibilities of the EOR. ER 1110-345-53, Structural Steel Connections, addresses the role of the EOR for design of structural steel connections. The Corps of Engineers, in recent months, has recognized the need to clearly define the EOR role to all aspects of structural designs, whether these designs are completed within Corps of Engineers offices, or completed by an Architect-Engineer (A-E).

b. Since structural designs encompass materials other than structural steel, this letter will address extension of the role of the EOR to those structural systems. The letter will also bring to attention, acceptance of design procedures and methods such as the Load Resistance Factor Design (LRFD).

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5. General. The design guidance contained in this letter is applicable to structural steel, reinforced concrete, masonry, and structural precast prestressed elements.

a. Definitions.

(1) Engineer of Record: For in-house designs, the EOR is the chief of the engineering office performing the design. For A-E designs, the EOR is the principal-in-charge of the design firm.

(2) LRFD: Load Resistance Factor Design is a method for designing steel structures which is different from the traditionally used Allowable Stress Design (ASD) method.

(3) Reinforced Concrete: Reinforced concrete is defined as structural elements meeting the requirements of the American Concrete Institute (ACI).

(4) Masonry: Masonry is defined as structural elements meeting the requirements of TM 5-809-3.

(5) Precast Prestressed Concrete: Precast Prestressed Concrete is defined as concrete meeting requirements of ACI 318, Precast Prestressed Institute (PPI), and Precast Concrete Institute (PCI).

b. Structural Steel.

(1) Design Policy: It is Corps of Engineers policy that the design of structural steel connections will remain with the Corps of Engineers designer. In the past, there have been occasions when this responsibility has been transferred by both the A-E and Corps of Engineers designer to the contractor by either wording in the specifications or notes on the drawings. The transfer of this responsibility to the contractor will not be permitted. ER 1110-345-53 Structural Steel Connections provides clear guidance and procedures for design.

(2) Acceptable Methods of Analysis: The traditional method for structural steel design within the Corps of Engineers has been the ASD method. The LRFD method which has been in use for some time, has been used infrequently on Corps of Engineers design projects. As stated by the American Institute of Steel

Construction (AISC), the LRFD Specification for Structural Steel Buildings is intended as an alternate to the current ASD structural steel design. The Corps of Engineers encourages the use of the method that promotes a cost benefit to the project. The A-E must also be encouraged to select the method that achieves an optimum design, and therefore, cost reduction.

(3) AISC Design Assistance: The AISC Marketing Inc., provides a free-of-charge service to design professionals during the conceptual stage of design. This service includes assistance with all technical data, framing systems, drawings, comparison of materials and the requirements of both methods (LRFD & ASD). Computer software for the structural steel connection design is available from AISC. Point of contact is AISC Marketing, Inc., Pittsburgh, PA, Telephone 412-394-3700.

c. Reinforced Concrete. Transfer of design responsibilities of reinforced concrete structural systems has not occurred on Corps of Engineers designed projects. Unlike structural steel, concrete construction is not dependent on the fabricator's equipment and manufacturing procedures. Designers within the Corps and A-E firms have provided complete designs of members and connections thus assuming total design responsibility. This practice will continue to be followed. An exception is precast cladding elements which are outside the applicability of this letter. It is HQUSACE policy that the designer maintain complete design responsibility for all reinforced concrete designs. Transfer of this responsibility will not be permitted.

d. Masonry. The policy stated above for reinforced concrete also will be followed for masonry design.


6. Exceptions. The Standard Metal Building System, as defined in CECS 13120, is not covered by this letter. The Standard Metal Building System falls under the concept of performance specification with the EOR being the firm providing the product. Precast concrete cladding is not covered by this letter.

7. Actions to be Taken. The enclosed design guidance shall be used in the development of structural designs and to supplement existing design policies.

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8. Implementation. This letter will have routine application as defined in paragraph 6c, ER 1110-345-100.

FOR THE DIRECTOR OF MILITARY PROGRAMS:


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