

Chapter 18. Codes and Standards

Many phases of design and construction are governed by documents known as codes and standards. Other names for such documents include guides, practices, recommendations, regulations, rules, and specifications. Since no universally acceptable definitions appear to exist for these terms, they are often used on an interchangeable basis. Some of the better known organizations that prepare codes and standards of interest to the welding inspector are listed at the end of this chapter.

Many purchasing organizations develop and issue specifications designed to meet their individual requirements. Whenever such specifications are cited in purchase documents, they will influence the product quality and the work of the welding inspector. Often, such specifications reflect the desires or the needs of a given situation and thus have limited industry application.

Common interest in subjects like safety and reliability started the development of nationwide or industry-wide codes and standards. Committees of engineering or technical societies are organized to evaluate such problems and to propose specific guidelines. Membership in these committees is usually balanced among technical experts representing all interested parties. For instance, the AWS Filler Metal Committee consists of engineers associated with electrode manufacturers, with fabricators using electrodes, and with purchasers of welded components. In addition, organizations representing the public interest, such as government agencies and insurance companies, participate in the committee's deliberations. Representation is balanced so that no one group can control the actions of the committee.

After the document produced by a specific committee is endorsed by one or more review boards, it is published in the name of the appli-

cable engineering society as a code, as a standard, or as any of the other aforementioned terms. The title appears to have little importance, since the quality and the need or desirability of such a document are determined by its acceptance by industry, users, or the government. When incorporated into purchase orders, it becomes a contractual document whether it is called a code, a specification, or an industrial practice.

Documents having a significant influence upon public health and safety are sometimes accepted by legislative bodies or by federal regulating agencies. In those jurisdictions, such documents become the law-of-the-land and are referred to as Codes or Regulations. Since each state enacts its own laws, the acceptance and scope of such Codes may differ widely throughout the country.

In view of the preceding, a welding inspector must understand which Codes and Regulations have been mandated for the component, for its intended service, and for its final destination. Neither the supplier nor the purchaser can waive the requirements of such Codes and Regulations; however, well justified requests for relaxation or modification can at times be obtained from the governing bodies or their technical representatives. Other standards and specifications are contractual documents that can be renegotiated between all affected parties. While few welding inspectors are authorized negotiators in such matters, they can and should recommend changes whenever technical justifications or incentives can be demonstrated.

The following organizations are some of the better known writers of codes and specifications:

- (1) Aerospace Industries Association (AIA)
1725 DeSales Street, N.W.
Washington, D.C. 20036

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- (2) American Bureau of Shipping (ABS)
45 Broad Street
New York, NY 10004
- (3) American National Standards Institute, Inc. (ANSI)
1430 Broadway
New York, NY 10018
- (4) American Society for Testing and Materials (ASTM)
1916 Race Street
Philadelphia, PA 19103
- (5) American Society of Mechanical Engineers (ASME)
345 East 47th Street
New York, NY 10017
- (6) American Welding Society (AWS)
2501 N.W. 7th Street
Miami, FL 33125
- (7) Department of Defense (DOD)
Washington, DC
- (8) Ship Structure Committee (SSC)
U.S. Coast Guard Headquarters
Washington, DC 20590
- (9) Society of Automotive Engineers, Inc. (SAE)
400 Commonwealth Drive
Warrendale, PA 15096