

Chapter 2. Definition

Definitions of Welding Terms

As with most industrial processes, welding has its own terms that are not otherwise used in everyday communication; and, in instances where everyday words are used, they often have a special meaning with reference to welding. To provide common understanding, these terms have been defined and standardized. Thus, the engineer can provide instructions to the shop with the assurance that they will be clearly understood. The inspector, when employing standard nomenclature, can be assured that his ideas are properly understood.

Standard terminology is defined in AWS A3.0, Welding Terms and Definitions. Additional terms and definitions of a special nature not common to all welding are very often contained in a specific code or publication to which they are related, such as AWS D1.1, Structural Welding Code. A list of definitions for discontinuities, many of which are taken from AWS A3.0, may be found in Chapter 9.

Master Chart of Welding, Allied Processes, and Thermal Cutting

Inspection personnel involved in the inspection of welds or weld related products must be familiar with the welding and allied processes within the scope of their work. A welding or allied process is the basic classification of the operation to be performed, subdivided into the more specific processes.

In the hierarchy of welding, the "welding

process" stands first. Each welding process definition is complete so that it will stand alone. Processes are defined for prescribed elements of operation rather than for other characteristics such as metallurgy, source of energy, etc. This method of organization is the basis for the "Master Chart" of the welding and allied processes shown in Fig. 2.1.

The chart is a visual display of a hierarchy of welding and allied processes; the highest generic levels (least specific) are in the center, and the most specific are in boxes around the perimeter. The chart is intended to be comprehensive and includes not only widely used production processes, but also some that are of limited use because they have been replaced by other processes, have only recently been introduced, or have limited applications.

The basis for the separation of welding processes and allied processes depends upon the definition of a weld. A further designation specifying the method of application can be added behind the normal letter designation when applicable. The chart shown in Fig. 2.1 is a simple way of showing this breakdown. Thermal cutting processes are also shown, using the same method of subdivision because of their similarity to welding processes. In fact, in certain instances, the same basic equipment and materials are used for both cutting and welding of material. It can never be assumed that this chart is complete because of other processes and methods being continuously added to the total scope of welding and cutting.

