Insert the following definition into QG-109:

“welding, explosion (EXW): a solid-state welding process producing a weld by high velocity impact of the workpieces as a result of a controlled detonation.”
electrode setback. The distance the electrode is recessed behind the constraining orifice of the plasma arc torch or thermal spraying gun, measured from the outer face of the constraining nozzle. See Figure B.35. See also contact tip setback.

electrode skid. A surface discontinuity resulting from electrode skidding.

electrode skidding, resistance welding. The transverse movement of the electrode with respect to the workpiece resulting from the application of electrode force.

electrode tip. A nonstandard term when used for electrode cap or electrode face.

electrogas welding (EGW). An arc welding process using an arc between a continuous filler metal electrode and the weld pool, employing approximately vertical welding progression with backing to confine the molten weld metal. The process is used with or without an externally supplied shielding gas and without the application of pressure.

electron beam braze welding (EBBW). A braze welding process variation employing a defocused or oscillating electron beam as the heat source. See Figures A.1 and A.6. See Tables A.1, A.2, and A.3.


electron beam cutting (EBC). A thermal cutting process severing metals by melting them with the heat from a concentrated beam, composed primarily of high-velocity electrons, impinging on the workpiece.

electron beam cutting operator. See thermal cutting operator.

electron beam gun. A device for producing and accelerating electrons. Typical components include the emitter (also called the filament or cathode) heated to produce electrons via thermionic emission, a cup (also called the grid or grid cup), and the anode.

electron beam gun column. The electron beam gun plus auxiliary mechanical and electrical components that may include beam alignment, focus, and deflection coils.

electron beam welding (EBW). A welding process producing coalescence with a concentrated beam, composed primarily of high-velocity electrons, impinging on the joint. The process is used without shielding gas and without the application of pressure. See also high vacuum electron beam welding, medium vacuum electron beam welding, and nonvacuum electron beam welding.

electroslag welding (ESW). A welding process producing coalescence of metals with molten slag, melting the filler metal and the surfaces of the workpieces. The weld pool is shielded by this slag, which moves along the full cross section of the joint as welding progresses. The process is initiated by an arc that heats the slag. The arc is then extinguished by the conductive slag, which is kept molten by its reaction to electric current passing between the electrode and the workpieces. See also electroslag welding electrode and consumable guide electroslag welding. See Figure B.37.

electroslag welding electrode. A filler metal component of the welding circuit through which current is conducted from the electrode guiding member to the molten slag.

elongated porosity. A form of porosity having a length greater than its width that lies approximately parallel to the weld axis.

emissive electrode. A filler metal electrode consisting of a core of a bare electrode or a composite electrode to which a very light coating has been applied to produce a stable arc.

end return. A nonstandard term for boxing.

erosion, brazing. The condition in which the base metal thickness has been reduced by dissolution.

exhaust booth. A mechanically ventilated, semi-enclosed area in which an air flow across the work area is used to remove fumes, gases, and solid particles.

exothermic braze welding (EXBW). A braze welding process variation using an exothermic chemical reaction as heat source with the brazing filler metal provided as a reaction product. See Figures A.1 and A.6. See Tables A.1, A.2, and A.3.

exothermic brazing (EXB). A brazing process using an exothermic chemical reaction as the heat source for the joint in which the brazing filler metal has been preplaced. See Figures A.1 and A.6. See Tables A.1, A.2, and A.3.

explosion welding (EXW). A solid-state welding process producing a weld by high velocity impact of the workpieces as the result of controlled detonation.

expulsion, resistance welding. The ejection of molten metal during welding, either at the faying surface or the contact point(s) of the electrode face. See also surface expulsion.