

# Corrosion Glossary

---

**lamellar corrosion**

See *exfoliation corrosion*.

**lamellar tearing**

Occurs in the base metal adjacent to weldments due to high through-thickness strains introduced by weld metal shrinkage in highly restrained joints. Tearing occurs by decohesion and linking along the working direction of the base metal; cracks usually run roughly parallel to the fusion line and are steplike in appearance. Lamellar tearing can be minimized by designing joints to minimize weld shrinkage stresses and joint restraint. See also *cold cracking*, *hot cracking*, and *stress-relief cracking*.

**Langelier saturation index**

An index calculated from total dissolved solids, calcium concentration, total alkalinity, pH and solution temperature that shows the tendency of a water solution to precipitate or dissolve calcium carbonate.

**ledeburite**

The eutectic of the iron-carbon system, the constituents of which are *austenite* and *cementite*. The austenite decomposes into *ferrite* and *cementite* on cooling below the temperature at which transformation of austenite to ferrite or ferrite plus cementite is completed.

**ligand**

The molecule, ion, or group bound to the central atom in a *chelate* or a *coordination compound*.

**limiting current density**

The maximum current density that can be used to obtain a desired electrode reaction without undue interference such as from *polarization*.

**linear elastic fracture mechanics**

A method of fracture analysis that can determine the stress (or load) required to induce fracture instability in a structure containing a cracklike flaw of known size and shape. See also *fracture mechanics* and *stress-intensity factor*.

**lipophilic**

Having an amenity for oil. See also *hydrophilic* and *hydrophobic*.

**liquid metal embrittlement**

Catastrophic brittle failure of a normally ductile metal when in contact with a liquid metal and subsequently stressed in tension.

**local action**

Corrosion due to the action of "local cells," that is, galvanic cells resulting from inhomogeneities between adjacent areas on a metal surface exposed to an *electrolyte*.

**local cell**

A *galvanic cell* resulting from inhomogeneities between areas on a metal surface in an *electrolyte*. The inhomogeneities may be of physical or chemical nature in either the metal or its environment.

**localized corrosion**

Corrosion at discrete sites, *stress-corrosion cracking*.

**long-line current**

Current that flows through the earth from an anodic to a cathodic area of a continuous metallic structure. Usually used only where the areas are separated by considerable distance and where the current results from concentration-cell action.

**luggin probe (Luggin Haber capillary)**

A small tube or capillary filled with electrolyte, terminating close to the metal surface under study, and used to provide an ionically conducting path without diffusion between an *electrode* under study and a *reference electrode*.