

The Dolocrete Technology

Dolocrete® is a magnesium oxide-based binder prepared to a patented process from very high magnesium carbonate content dolomite or magnesite material. Depending on the waste material, a selection of proprietary catalysts can be used to facilitate the formation of chemical bonds in a mineral matrix. Dolocrete® additives and special binders work synergistically to form "a double layer" barrier, trapping the waste and repelling moisture.

The treatment process involves the mixing of the waste material with a purpose-formulated blend of Dolocrete® in commercially available equipment such as pug mills, ribbon mixers or any high shear mixing equipment. This results in the homogenous mixing action required to successfully blend the Dolocrete® reagents with the waste, and in the process, immobilising the contaminants of concern.

Depending on the nature of the material, the waste to Dolocrete® ratio typically varies from 2:1 to 6:1, depending on the level of contaminant present. The treated waste is then allowed to cure prior to validation protocols. The encapsulated waste satisfies both the stringent US EPA method 1311 TCLP and the strength requirements to allow the safe and environmentally sound disposal of the waste.

A significant difference between the Dolocrete® process and other waste solidification and stabilisation techniques is its ability to utilise contaminated process waters in the encapsulation process, thus eliminating the requirement for use of potable water and potentially removing the need to treat liquid wastes independently. Sea water and even more concentrated brines and mine waters have been used in the manufacture of successful encapsulation matrices.