

Design of demineralization plant:

Application:

Demineralization of water is a major requirement of almost all major process industries. Water, which is required for industrial or process use, is available from 2 sources:

- 1) Surface supplies such as from rivers, lakes and surface wells
- 2) Underground supplies such as tube wells

Natural water contains dissolved salts. The water dissolved these salts in flowing over limestone, gypsum, dolomite and other mineral salts containing them. They are basically of two types viz. alkaline salts and neutral salts. Other dissolved impurities such as silica, dissolved carbon dioxide and metals-iron, manganese- and organic matter may also be present to a lower extent.

The range of water used in the industry is very wide. Where water is to be heated within a process such as in boilers, heating and cooling systems, laundries, bottle washing, scale purposes, electronic and metal finishing industries, any dissolved impurities in the water may contaminate the product and the complete removal of all ions becomes necessary. Herein lies the importance of demineralization of water.

Role:

As this was a part of my curriculum, we viz. myself, Subhashish Rakshit, Ritaban Basu and Sudip Ghoshal have worked as a team and have been involved with the whole project which included first of all...finding a suitable plant layout. This was followed by design of the individual equipments like pressure sand filter, activated carbon filter, degasser e.t.c. Cost estimation of the plant finally concluded the project.