

Steel making in New Zealand

Steel is a very strong metal and as a result it is used in industry where strength is required like in the picture above.

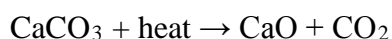
Steel is made from iron. Steel is iron that has had carbon added to it to add to its strength and durability.

The problem with making steel is obtaining iron. Adding the carbon is not difficult. In New Zealand iron is obtained from the iron sand deposits found on the beaches of the west coast of the North Island. These deposits are sometimes referred to as black iron sands. It is the iron content that makes them black.

When iron sands are heated with carbon and limestone iron can be formed.

Carbon + iron sands \rightarrow iron + carbon oxides.

The iron sands contain oxygen with the iron and in this process the oxygen is removed. That is Fe_3O_4 reacts with carbon to make Fe. The limestone is added as when limestone is heated it makes carbon dioxide which is involved with the process.



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Normally this process is carried out in a blast furnace. However at the Glenbrook steel mill this is not the case and some new technology was required. This is because the iron sands in New Zealand contain impurities not found elsewhere in the World. These impurities react when heated and block the furnace up.

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The iron which is melted in the process is normally removed through these holes. But as mentioned the holes get blocked up by the impurities. Because of this additions to the method are required.