

Figure 8 During the oxygen blow, most of the impurities are oxidised and a slag forms on the surface of the molten iron.

Figure 5 Adding (a) scrap steel and (b) molten iron to the converter.

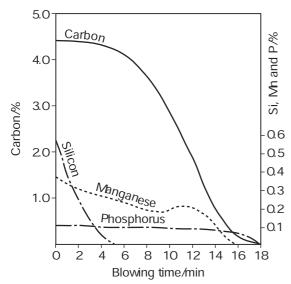


Figure 10 Removal of elements during steelmaking (note that %C and %Si, Mn and P are plotted on different scales; the rise in %Mn after 10 min is because the scrap steel used had a relatively high manganese content).

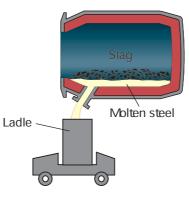


Figure 11 Tapping off the molten steel.



Figure 13 Removing the slag.

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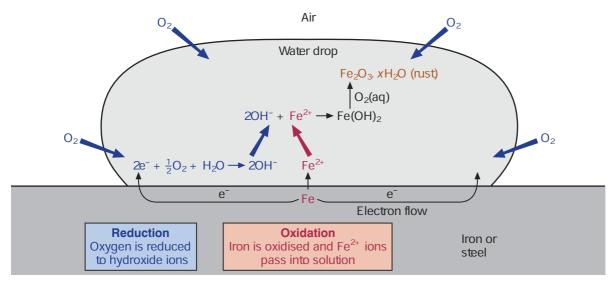


Figure 17 Rusting is an electrochemical process.

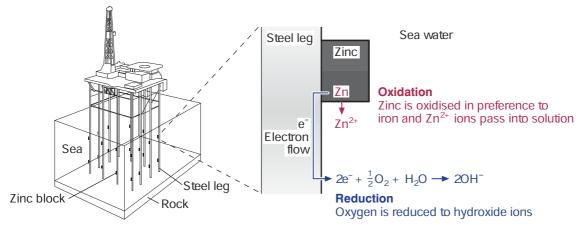
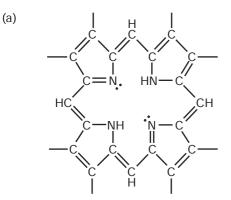
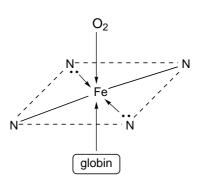


Figure 21 In a North Sea oil-rig sacrificial protection of the steel supports is achieved by using zinc blocks: zinc is oxidised in preference to iron and so protects the steel legs from corrosion.



The *porphyrin* ring attaches itself to the central Fe2+ ion via its four nitrogen atoms. In doing so it loses two hydrogen ions.

Figure 29 (a) The porphyrin ring system; (b) haemoglobin bound to an oxygen molecule to form oxyhaemoglobin.



The nitrogen atoms of the *porphyrin* ring occupy four ligand sites. One of the remaining sites is taken up by the protein, globin (which also binds to the metal through a nitrogen atom); the remaining site can be taken up by a molecule of oxygen.

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