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## ***AIM OF THE WORK***

In most economic sectors linked with industrial activities carbon steel alloy occupies a preferential position as structural material. Thus , the study of the electrochemical behavior of carbon steel alloy is one of the most important fields of research in metal corrosion.

In the present thesis we are aiming to study the corrosion behavior of carbon steel in natural seawater and to provide corrosion protection to carbon steel alloy by suitable corrosion prevention system . This system must be efficient in corrosion protection , industrially applicable and environmentally friendly . Polymeric coatings are among the most important systems that justify these requirements .

This work will be carried out through three parts :-

- 1 – Investigation of corrosion behavior of carbon steel alloy in seawater by different techniques .
- 2 – Specification of physioc- chemical properties of EPDM/PE blends .
- 3– Evaluation of the efficiency of EPDM/PE blends as protective coating for carbon steel alloy .

A number of interesting features are disclosed which throw more and new light on the corrosion protection of carbon steel by polymeric coatings .