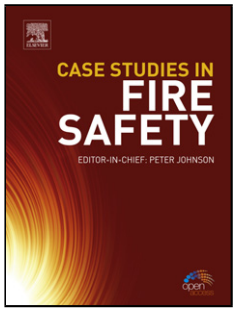

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Role of Al_2O_3 inclusions on the localized corrosion of Q460NH weathering steel in marine environment

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Highlights:

- The role of Al_2O_3 inclusions in the pitting corrosion initiation stage in a marine environment was studied.
- A high dislocation density region existed around Al_2O_3 inclusions in the cold rolling Q460NH steel.
- A different mechanism was used to explain the selective dissolution of the matrix around inclusions, rather than the usual existence of a galvanic coupling.
- Al_2O_3 clusters had a more negative effect on the corrosion behaviour of the Q460NH steel analysed than single inclusions.

ABSTRACT

The influence of Al_2O_3 inclusions on the localized corrosion behaviour of Q460NH steel was investigated in a simulated marine environment. According to the current