CORROSION RESISTANCE STUDY OF ZAMAK 5 ALLOY

The goal of the present project was to investigate the microstructure and corrosion of the Zamak 5 alloy piece in its three spatial directions X,Y and Z, planes (1 0 0), (0 1 0) and (0 0 1) respectively, in order to study this group of moulding alloys, widely used in the motive sector and, in concrete, to be focus in the relationship between the microstructure (the number of defects it possess) and the corrosion resistance. It should be noted that there are few studies that have focused attention on this relation, what can be really important for its behaviour in service, due to the fact that moulding alloys have often heterogeneous microstructures and they are full of defects.

The specimens studied were obtained from the same part, a moulding piece, which was cutted in the longitudinal (L), transverse (T) and vertical (A) directions, being reoriented in the most optimal way. The results show that there are great differences in those three planes.

The alloys have a markedly intergranular corrosion, which could cause the catastrophic failure of this type of pieces. The longitudinal specimens appear to be more resistant to corrosion than the other specimens studied (X, Y direction).

Materias o Palabras Clave (máximo 5) / Gaiak edo hitz gakoak (gehienez 5)

- Zamak 5
- Crystallographic planes
- Microstructure
- Molding defects
- Corrosion resistance
- Mechanical properties
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<th><strong>Abstract</strong> (Resumen de 100-250 palabras) / / Abstract (Laburpena 100-250 hitzetan)</th>
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