

Structure of rapidly solidified aluminium alloys

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Rapidly solidified alloys are very promising structural materials. When prepared by melt spinning technique in form of thin ribbons, these materials exhibit structural gradient. On the cross section of the ribbon can be clearly distinguished two areas: the ultra rapidly solidified area on the wheel side of the ribbon and the free side of the ribbon. In this article, the microstructure of AlCr3Fe3Ce1 and AlFe6Ce1 rapidly solidified alloys is described. The possibilities of observing of the wheel side and free side areas by transmission electron microscopy are discussed. The classical way of TEM samples from metals – electropolishing is compared to the ion polishing. The cross-sectioned TEM sample of AlFe6Ce1 ribbon was prepared. The TEM micrographs were assembled in one cross-section image. The position of observed area in sample prepared by ion polishing is validated by cross section TEM observation.

Keywords: rapid solidification, melt spinning, aluminium alloys, TEM

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