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Investigation of mechanism and causes pinhole and strip break formation in thin aluminum foil at HEZAR aluminum foil company

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Abstract: Thin Aluminum sheets used as packaging, household and Pharma foil in 20- 30-40 micron thickness. As with rolling method thickness of foil is reduced the possibility of having pinholes and strip break increases. In this study various samples of foil with a thickness between 20-60 µm that produced with twin roll cast (TRC) AA8011 and AA8006 coils are gathered. Causes of pinhole and strip breaks are investigated using optical, Scanning electron microscopy (SEM) and energy-dispersive X-ray spectroscopy. Results of experiments elucidate mechanisms which lead to pinholes and strip breaks in foil production . exogenic inclusions such as silicates and iron and chromium oxides (as known roll chips) are as important sources of these defects that can lead various breaks (as known butt breaks) in long lines during rolling direction.

Keywords: "Aluminum; Foil; Pinhole; Strip breaks; Butt; Roll Chip ;Twin roll casting; Rolling".