

## Aging and Mechanical Behavior of Be-treated 7075 Aluminum Alloys

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**Abstract :** The present study was undertaken to investigate the effect of pre-aging and aging parameters (time and temperature) on the mechanical properties of Al-Mg-Zn (7075) alloys. Ultimate tensile strength, 0.5% offset yield strength and % elongation measurements were carried out on specimens prepared from cast and heat treated 7075 alloys. Aging treatments were carried out for the as solution treated (SHT) specimens (after quenching in warm water). The specimens were aged at different conditions; Natural aging was carried out at room temperature for different periods of time. Double aging was performed for SHT conditions (pre-aged at different time and temperature followed by high temperature aging). Ultimate tensile strength, yield strength and % elongation as a function of different pre-aging and aging parameters are analysed to acquire an understanding of the effects of these variables and their interactions on the mechanical properties of Be-treated 7075 alloys.

**Keywords :** duplex aging treatment, mechanical properties, Al-Mg-Zn (7075) alloys, manufacturing

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