

Light Weight Alloys in Seat Design

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The number of passengers in typical airplanes range between 117 in an A318 to 213 in an A321 and finally up to about 700 in an A380. Taking a single pax weight of a FAR 25.562 certified economy seat of 11kg into consideration which can easily rise up to 20kg per pax with IFE integration in a wide body the airplanes have to lift and accelerate "seat material" with masses between 1200kg up to 14000kg (30000 pounds). These values make clear that weight is a decisive factor for the economic efficiency in service. Rising oil prices in combination with the competition between airlines and its seat suppliers request continuous weight savings. Therefore the usage of light weight alloys with their individual opportunities combined with the design gets a core role in future for aircraft seats.

Current certification requirements do not allow the usage of magnesium. The growing pressure from airlines on to the suppliers and even authorities lead to intensive discussion in working groups to take care for solutions. Besides approaches with modern aluminum alloys the lecture will cover possible Mg-alloy applications in seat design, and a brief status of a current magnesium program.