



2.19 Effect of welding on 6061 T6 age-hardened alloy – as welded.

similar losses in tensile strength can be found. The loss is caused by a dissolution of the precipitates in the 2XXX series alloys and a coarsening or overageing of the precipitates in the 6XXX and 7XXX alloys. These effects are illustrated in Fig. 2.19. Greater detail on these effects for individual alloys can be found in Chapter 3.

One last comment is the potential for the loss of alloying elements from the weld pool that may result in a reduction in strength. It is true that some elements, mainly magnesium with its low boiling point and lithium which is highly reactive with oxygen, may be lost or oxidised during welding. There is, however, a dearth of information quantifying any effects, which suggests that it is not perceived as being a problem. Loss of magnesium is worst when MIG welding, resulting in the sooty deposit occasionally seen along the weld toes but in this case, and in the case of lithium, careful attention to gas shielding will minimise any problem.