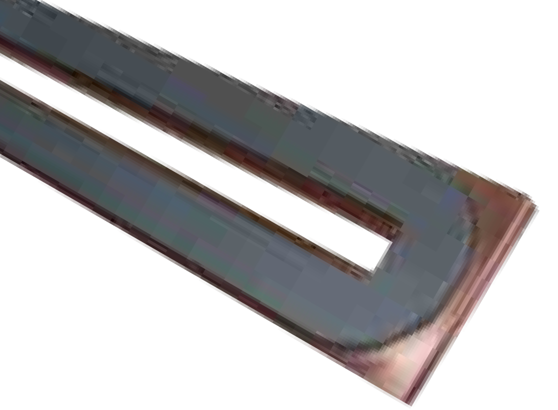
Target Bonding



Introduction

Many sputtering targets need to be bonded to a backing plate or a magnetron body. When it comes to high power sputtering with low target cracking and good mechanical stability, the bonding procedure is crucial.

Our engineers and bonding staff can look back on many years of experience in providing joining techniques to correlate with different material combinations and applications. The right choice of adherence coating, diffusion barriers and the adequate bonding method is a prerequisite for obtaining perfect results.

Bonding Technologies

robeko bonding processes ensure the thermal integrity of the interface between the system's cooling assembly and the target surface which suffers most of heat exposure. In cooperation with our customer we select the best joining technique for assembling the target/backing plate from one of the following bonding methods:

- Indium bonding
- Elastomer bonding
- Nanobond
- Epoxy bonding (conductive)

The two main methods are described in the following.

Indium Bonding

Sputtered intermediate layers and Indium or Indium-based solders are used in the prevailing technology. Backing plates and targets are wetted with Indium, placed onto each other and aligned at about 160 °C. After fixation the assembly is allowed to cool down to room temperature.