

Nowadays, medium density fibreboard (MDF) composite wood is more and more used in the furniture industry to replace bulk wood such as oak, beech, etc. Indeed, this material presents good mechanical properties, is easy to machine, homogeneous, exists in different dimensions (thickness, etc.), is cheaper than bulk wood and finally can be covered by an adhesive decorative coat. Nevertheless, even if this material is homogeneous, it is abrasive enough to tend to the breakdown of the conventional carbide tools employed during its routing process. That is why it is necessary to improve the wear resistance of these tools. One solution is to protect them with a hard coating. The present study deals with the development of ternary CrAlN hard layers obtained by PVD method on carbide tools employed in second transformation of wood. CrAlN coatings have been optimized and then applied on carbide tools in routing of three types of MDF: standard, waterproof and fireproof. The aim of these wood machining tests was first to define the ability to be machined of the three kinds of MDF and second to compare the effectiveness of CrAlN coatings during the routing tests of these materials