A Method for Planning the Cutting Ability of CBN Tools

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Cutting shop-floor experience often shows that after machining one lot the insert is changed and the next lot is started with a new insert. Thus the tool life of the cutting tool is not fully used. Therefore we analysed how to determine, after machining a lot with a given number, the number of pieces of the next lot that can be machined with the same insert. Based on the cutting experiments we determined wear curves for some specific parts. With the introduction of two new definitions (equivalent number of pieces and equivalence ratio) we elaborated a method with which the machinable number of pieces of the next lot can be determined – even if a lot is machined by other cutting parameters – until the tool life criterion is reached. Based on this method and using nomograms or an algorithm the further machinable number of pieces can also be determined.

Keywords: CBN inserts, hard turning, tool wear, tool life

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Paper number: M201437