Influence of the Workpiece Quality on the Cutting Tool Life when Gear Wheel are Machined

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The stability of the machining process is depending on the machined materials properties. But the material properties are influence by the heat treatment process and in this case it is forging. For these study three different company made the "same" forging process and then the material properties are evaluated and their influences on the cutting process were monitored. For the tests the steel DIN 18 CrNiMo 6-7 was used. This material is typically used for the gear wheels where the cutting tools by tool steel is used for the machining. So for the tests the mills from tool steel were used and during the machining the cutting tool life and cutting forces were monitored.

Keywords: Gear wheel, Material analysis, Cutting tool wear, Cutting tool life, Cutting forces

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