

PRESS RELEASE

Boost quality and increase production with Toolox 44

Industry can increase productivity while improving the surface finish of machined products, manufacture faster and at a lower cost by using tool steel Toolox 44 on cutting tools.

A result shown by Mayank Kumar's in his thesis conducted at the KTH Royal Institute of Technology.

"We compared Toolox 44 with conventional tool steel alloyed with chromium, molybdenum and vanadium. Toolox produced better results on all points," says Mayank Kumar. In general the trials indicated a 25-50 percent improvement in performance for Toolox. That is not including all the advantages offered by a material that can be used directly and without the requirements of any post processing.

The background to the study is that tool manufacturers who use Toolox regularly have noticed SSAB's tool steel appears to have in-built, vibration dampening properties. Dr. Lorenzo Daghini is a lecturer specialised in manufacturing and measurement systems at the department of Industrial Production at KTH. He has conducted many years of research into different ways to reduce tool vibration during processing by cutting. So far the development has concentrated on different surface treatments to dampen vibration.

Major step

Lorenzo Daghini describes this study as a major step for companies working with automated industrial production. He says, "In truth tool vibration is one of the main limiting factors behind increased productivity. The build and stability of today's machines allow for significantly higher rates. Compared with tools made of conventional materials it's possible to increase the removal rate significantly by changing to Toolox 44," says Lorenzo Daghini.

Tremendous opportunities

He doesn't want to quote exact figures, as conditions vary widely depending on the application, but he still sees tremendous opportunities for industry. He explains, "Up until now it could be said that the work involved trimming a car from the 50s. We started from a tradition design and optimised it. Now we have access to a brand new Ferrari! It can have a fantastic effect on industry." In his thesis, Mayank Kumar has identified a number of examples of quality improvements on surfaces processed with Toolox tools.

Large gains

Just maintaining the right product quality can represent large gains for industry. Lorenzo Daghini uses one of Europe's leading car manufacturers as an example:

"In this case tool vibration resulted in problems with the flat surface on cylinder heads," says Lorenzo. The cost was € 0.35 spread over all heads in the entire manufacturing series. This means that many were rejected and were either adjusted or completely discarded. Mayank Kumar also emphasized the other advantages offered by Toolox tools in his study: He adds, "Toolox means tool manufacturing also wins." The material's qualities make Toolox easy to use. It has uniform properties and the tool is ready to use as soon as it's manufactured. Conventional tools must undergo different types of post processing, which usually takes days or weeks.

Simplifies the manufacturing of tools

Lorenzo Daghini also stresses that Toolox makes it easier to produce tools tailored for special production needs. "When it concerns conventional steel grades, large batches are needed in order for it to be of interest to start the whole process of manufacturing and post processing," concludes Lorenzo. There are no such limitation with Toolox.

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