



Master Thesis / Diploma works Erasteel Kloster AB 2021

1. ASP® in cutting tool applications

High speed steels produced by powder metallurgy is Erasteel's main product and sold under the trade name ASP. The main application of ASP is for larger and more complex cutting tools, such as gear cutting hobs and broaches.

The purpose with the diploma work is to examine and characterise failure mechanism in cutting tools made in ASP. As an input to the work you will use open literature, examine a few used and new cutting tools, and go through our statistics and reports of earlier Erasteel examinations on cutting tools.

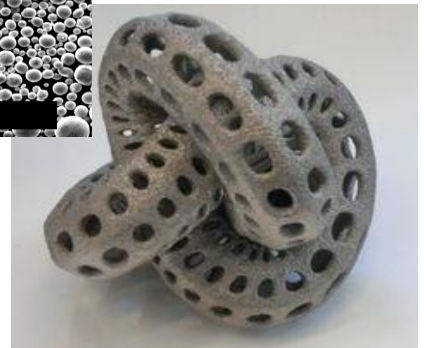
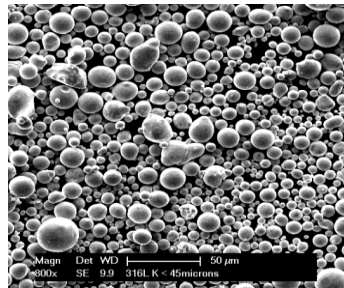
The diploma work will provide insight and training in areas such as material structure, heat treatment, PVD-coating, surface and edge preparation, grinding, cutting, and end user processes.



A gear cutting hob used for manufacturing of gears in transmissions of trucks

2. Properties of powder for additive manufacturing

With additive manufacturing (AM) it is possible to produce parts without the design constraints of traditional manufacturing routes. The range of steel powders used for AM is rapidly extending. In this diploma work suitable for master degree, the task is to correlate powder characteristics to the properties of the final printed and heat treated parts of the chosen AM technology. Examples of properties to evaluate are powder size distribution, chemical composition, hardness response, microstructure and tensile properties. The work includes aspects of powder manufacturing process, profitability, and practical tests at our lab in Söderfors.



Erasteel produces gas atomized metal powder, top/left. The powder can be used for AM manufacturing of complex shapes, bottom/right.

If you find any of these diploma works interesting or if you have a different idea that is relatable to the mentioned opportunities do not hesitate to contact us.

You application should be sent to HR at:

stian.pharo@eramet.com

There is no final application date, but the process to fill the diploma works will start 16th of November.

The master thesis are done mainly on site in Söderfors, between Uppsala and Gävle. We pay a fair compensation for thesis projects that are approved by both us and the university.

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