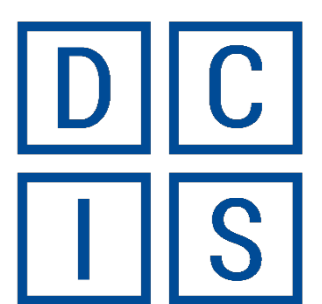


Investigation of the metal materials from the terms carbon footprint and logistics of transport



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ABSTRACT

Carbon footprint is very important tema in the terms global warming on the Earth. During production metal materials are a lot emissions (CO₂, CO, NO_x etc.) which are going to the atmosfere and increase the temperature on the Earth. According to other research happens oppositely subsequently with increasing temperature releases CO₂ into the atmosphere. Is goal during a few years have to reduce temperature on the Earth.

Emissions created during transport of the material around the world. In some cases it would be better to limit the transport of materials and to produce on the spot. This is cause study where possibly produce and import material. Those problematics describe this article.

INTRODUCTION

Obligatory

ARBON FOOTPRINT

The main are from burning fossil fuels. Oil, gas and coal in themselves contain carbon millions of years old. Carbon dioxide, which is generated them burning, they use photosynthesis plants and "fossil carbon" thus transforming into their biomass.

The climate changes are very interesting tema to solve and which is causing an increasing amount of greenhouse gases in the atmosphere.



Fig.2: Sample No.24 - Material 70 chips

Nearly every human activity from transport to food releases directly or indirectly greenhouse gases and thus disrupts the balance of gases in the atmosphere. Carbon footprint is the amount of carbon dioxide and other greenhouse gases released during the life cycle of a product or service our life or one way etc. It is a tool to measure the impact of human activities on the environment expressed dioxide equivalent.

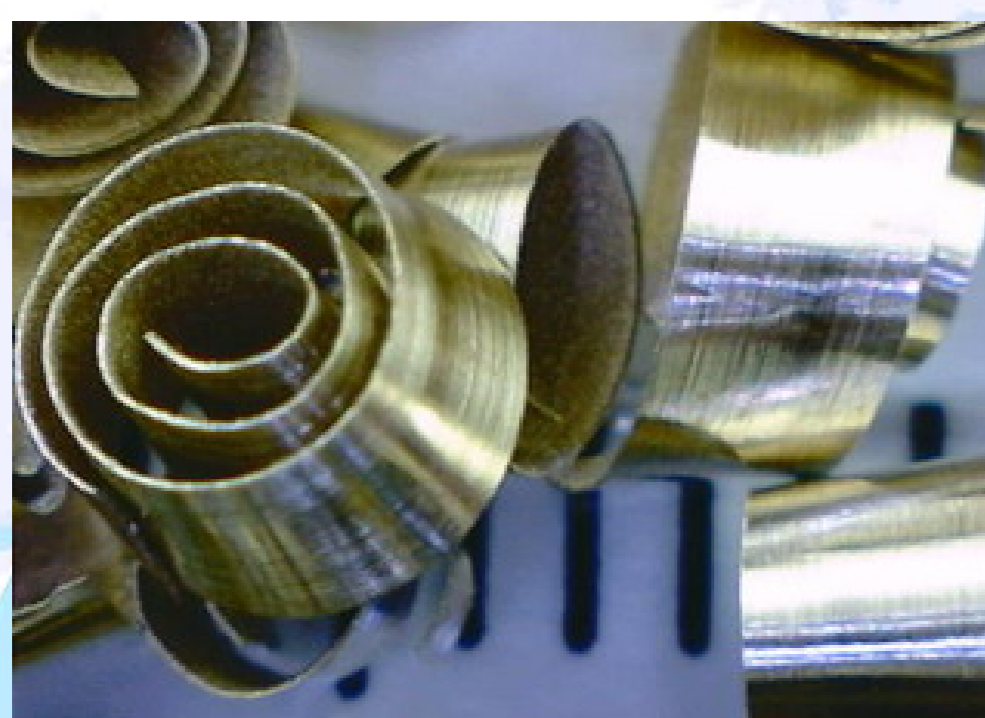


Fig.3: Sample No.24 - Material 70 detail of chips

BRASS MATERIALS

Two materials of ecological brass (sign 70 and 74 with components copper) and other brass with components of leaded. Two materials of ecologically brass and materials of brass with components leaded was compare during exams drilling yoke constant force. Other exams was turning where were compare only two materials of ecological brass (sign 70 and 74).

MACHINABILITY TESTS

Short: tentative, less time consuming, less material consumption, does not allow the inclusion of the material in class machinability. Long-term: more precise, time-consuming, more material consumption, enable the inclusion of the material in class machinability. Short-term tests:

- 1) drilling yoke constant force (VKPS),
- 2) Turning Machinability materials: the ability of the material to be machined under certain operating conditions. Machinability divided: Kinetic, Dynamic, Mikrogeometric, Technology.



Fig.4: Sample No. 7 - Material 74 chips



Fig.5: Sample No. 7 - Material 74 detail of chips

DRILLING YOKE CONSTANT FORCE

Fast, simple test used in the evaluation of machinability, particularly when assessing and comparing new environmental alloys. Description of the test: there is a penetration of the drill into the material under the influence of a constant feed force

The aim of the test: To determine the time required for drilling a constant depth in all the studied materials.

The basic modes of transportation are water, rail,

motor carrier, air and pipeline. Water being the slowest mode with rail, motor carrier, and air following in order of speed of delivery. Generally, the order is reversed when looking at costs.

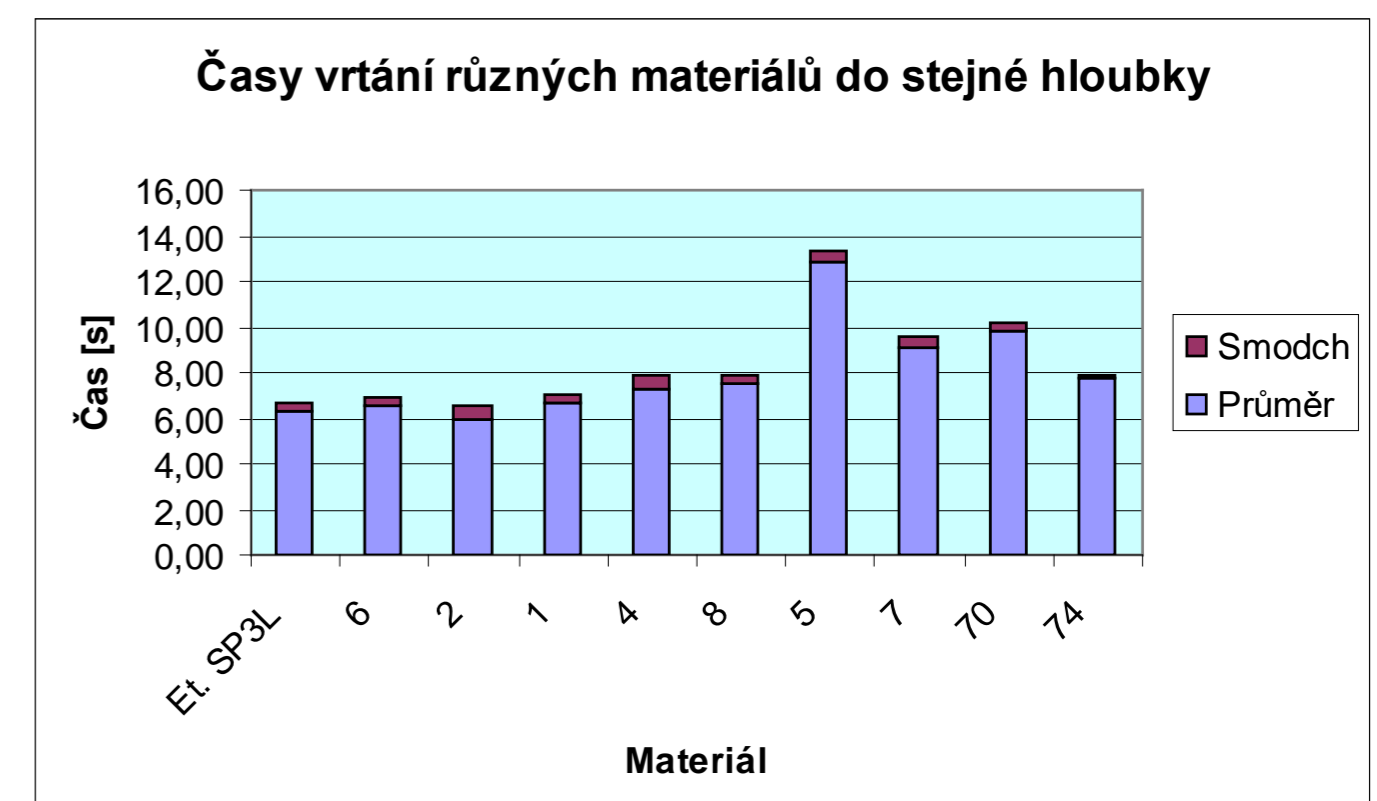


Fig.6: compare materials 74 and 70

TRANSPSPORTATION

The basic modes of transportation are water, rail, motor carrier, air and pipeline. Water being the slowest mode with rail, motor carrier, and air following in order of speed of delivery. Generally, the order is reversed when looking at costs.

Transport is needed to consider with regard to ecology and environment in the Earth.

CONCLUSION

Important is objective need to think about the environmental aspects of production, transport and households. All of these factors produce for their activities carbon footprint. It is necessary releasing emissions into the atmosphere reduced.

The necessity to address the situation solve firms and individuals.

Goal is minimize carbon footprint of ecologically brass and brass during produce, transport and storage and manipulation, and until transport to customers.

It is important to achieve lower production of CO₂ and other emissions.

Although according to other studies, the increase of CO₂ affect other factors as increased solar activity which increases the temperature of Earth's atmosphere and the temperature then causes the growth of CO₂.

ACKNOWLEDGEMENT

Optional

REFERENCES

Up to 5 references – example:

- [1] Preclík, V. *Průmyslová logistika*, ČVUT Praha 2006, ISBN 80-010-3449-6
- [2] Horváth, G.: *Logistika ve výrobním podniku*, Západočeská univerzita v Plzni 2007
- [3] Slíva, A. *Základy logistiky*, VŠB-TUO, 2004 ISBN 80-248-0678-9
- [4] ENERGETICS. *The Reality of Karbon Neutrality* [online]. London, 2007 <www.energetics.com>
- [5] GARTNER. *Partner Estimates ICT Industry Accounts for 2 Percent of Global CO2 Emissions* [online]. Stamford, 2007 <www.gartner.com>
- [6] Ambrosino, G. Boero, M. Nelson, J. D. Romanazzo, M. *Système and Advanced Solutions for eLogistics in the Sustainable City*, ENEA 2005 Rome (Italy)