Incorporating waste materials in the production of Greenlandic bricks

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Mål på bæredygtighed – og hvordan med genbrug?

Measuring sustainability – and what about recycling?

Jakob Thaysen Rørbech, DTU

Environmental sustainability has become a key issue for politicians, companies and consumers within the latest couple of decades. Unfortunately, it has also become an ambiguous term and an easy label to put on all sorts of products and activities without any insurance of the associated environmental effect. I will outline a way to approach environmental sustainability conceptually. Further I will present the tool of Life Cycle Assessment (LCA) and how it can be used to compare different solutions environmentally as well as important shortcomings and limitations in the application. With the increasing public focus at resource scarcity and increased material recycling, I would finally like to highlight some of the difficulties in assessing especially the environmental benefit of recycling and show how the issue of natural resource depletion is still a very open question in environmental sustainability assessment without a clear recommendation on how to proceed.

Brugen af sekundære ressourcer i byggematerialer, dets muligheder og begrænsninger

Possibilities and limitations in the use of secondary resources in building materials

Lisbeth M. Ottosen, DTU

Exploring the recovery potential of Rare Earth Elements (REEs) from waste flows in Denmark

Komal Habib, SDU

Genvinding af sjældne jordarter – en praktisk vinkel eksemplificeret ved neodymmagneter i harddiske

Recycling of rare-earth elements – illustrated by neodymium magnets in hard disc drives

Andreas Peter Vestbø, Teknologisk Institut

Fra spildevand til gødning - genvinding af fosfor ved struvitudfældning

From waste water to fertilizer - recovering phosphorus using struvite precipitation

Peter Balslev, Norconsult Danmark A/S

- udgangspunktet er driftsproblem på renseanlæg
- hvordan gøres det
- besparelser på energiforbrug og drift
- massebalance for ressourcegenvinding
- igangværende forsøg og resultater
- renhed i forhold til slam og kunstgødning
- perspektiver

Ressourcer i kredsløb

Resources in circulation

Jonas Nedenskov, Amager Ressourcecenter

Vi oplever allerede, at vores forbrug kan mærkes i form af klimaforandringer og råstoffer, der bliver knappe. Produktionen af mange af de produkter, vi forbruger i hverdagen forbruger ressourcer i form af energi eller materialer. Det er derfor uhyre vigtigt, at vi bliver bedre til at undgå affald, genbruge produkter og genanvende materialerne. Hvordan vi kan bidrage til, at vi taber færre ressourcer og i stedet bevarer dem i cirkulation vil blive diskuteret.

Inkorporering af affaldsmaterialer i produktionen af grønlandske mursten

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Interessen for brug af forskellige typer affald som sekundære ressourcer i produktionen af byggematerialer såsom mursten, beton og cement er stigende. I Grønland er de fleste byggematerialer importeret, og i den forbindelse har vi derfor undersøgt mulighederne for at anvende affald fra lokal forbrænding og mineindustri til en eventuel produktion af mursten eller lignende keramiske byggematerialer. Undersøgelsen har omfattet karakterisering af råmaterialer, produktion af keramiske piller og forskellige test for at vurdere fx miljøbelastningen ved udvaskning.

Different types of wastes are gaining increased interest as new potential resources in the production of building materials, such as bricks, concrete and cement. In Greenland most of the construction materials are imported and this study has therefore investigated the potential for using waste from local incineration and mining industry in the production of bricks or similar ceramic building materials. The study has involved characterisation of the raw materials, production of miniature ceramic pellets and tests in order to evaluate e.g. the environmental impact by leaching.

Use of secondary raw materials in stone wool production

Andreas Leismann, ROCKWOOLInternational A/S

The ROCKWOOL® Group is the world's largest producer of firesafe and environmentally sound stone wool insulation. In 28 factories mainly in Europe, but also in Asia and North America we produce more than 2 mio metric ton stone wool per year using approx. 2,8 mio MT/a of melt raw material. The prevalent melt aggregates are Cupolas (shaft oven) and the main raw material is still mafic rock but also several types of secondary raw materials such as slags or residues from various industries. In 2013 more than 20% of raw materials have been secondary sources. Differences between countries are significant and indicate the awareness for recycling in the dedicated country.
The presentation gives an overview about the general Stone wool production process under special consideration of raw materials. It shows the possibilities how to use secondary materials from external as well as how to recycle internal waste materials by use of cement briquettes. This strategy of course requires some internal procedures to avoid negative effects on process, working condition, product quality and environment which should be presented briefly.

Genbrugsglas i skumglasproduktionen

Recycled glass in foam glass production
Rasmus R. Petersen, AAU

The foam glass industry turn recycle glass into heat insulating building materials. The foaming process is not sensitive to impurities in the recycle glass. It is therefore considered to play an important role in future glass recycling. We show and discuss trends of use of recycled glasses in foam glass industry and the supply sources and capacity of recycle glass.

Genbrug af glas i emballagefremstilling. Muligheder og udfordringer

Recycled glass in container production. Possibilities and challenges
Henrik Larsen, Ardagh Glass Holmegaard A/S

Der anvendes årligt i omegnen af 125.000 tons indsamlede og oparbejdede glasskår i produktionen på Ardagh Glass Holmegaard.
Anvendelse af skår giver en besparelse i energiforbruget til smeltning, håndteringen af skår som råvare er relativt ukompliceret og skår er billigere end jomfruelige råvarer.
Samtidig giver anvendelsen af skårene udfordringer med farvestyring af både hvidt og grønt glas, med indhold af bly i glasmassen og med indeslutninger i det færdige glas..

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