NMP3 - CT - 2004 - 500311

Sustainpack

D5.30 Innovation and sustainable Development in the Fibre Based Packaging Value Chain

Instrument: **IP**

Cushion material made on nanoscale entities to be delivered for test mechanical properties, D5.30

Due date of deliverable: 2006-11-30
Actual submission date: 2007-06-20

Start date of project: **2004-06-01** Duration: **4 years**

Organisation name of lead contractor for this deliverable: KTH

Project co-funded by the European Commission within the Sixth Framework Programme (2002-2006)		
Dissemination Level		
PU	Public	PU
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

Cushion material for mechanical testing has not been delivered to WP 5.3. The mechanical testing of the cushions was performed by KTH themselves. The samples were proof-of-concept samples 52 mm in diameter and 20 mm in height of very limited availability and representing one week of work per sample. Freeze-drying was used as preparation method. This method is used just to investigate if the concept of nanocomposite biofoams has potential to solve the problem of lower performance of starch foams compared with petroleum-based expanded polystyrene foams used in industry today. Investigation of more industrially feasible processing routes are underway. Testing for the present specimens must be performed in very specific manners, and it was decided to carry out this in the KTH laboratory due to the limited availability. Data are provided below. The materials were much higher in energy absorption as compared with the starch foam reference. This proves that the potential for improved properties of MFC reinforced foams is very high. In addition, the moisture sensitivity is reduced.