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Summary

Background

Teknologisk Institutt (TI) was contacted by Fiber Protector Norge AS to investigate carpets impregnated with Fiber Protector.

The investigation was to compare carpets impregnated with Fiber Protector and unimpregnated carpets. TI got a new carpet piece with one half impregnated with Fiber Protector and the other half unimpregnated.

The following properties was examined:

- 1 Alteration in texture and colour.
- 2 Fiberloss
The examination was done just before and after the impregnation
- 3 Antistatic effect, personal-charge when walking

At autumn 99 TI got a carpet which was 369cm long and 85,5cm wide. The carpet was divided in to seven parts where every second part was impregnated. The carpet was placed in a traffic area.

It was an appreciation of:

4. Absorbing of dirt

At last a complete evaluation was done for the:

5. Consequence of the indoor environment.

Conclusions and recommendations.

There was no alteration in the texture and colour on the impregnated carpet in a year.

The investigation showed that the impregnated carpet was more antistatic than the untreated carpet, but the fiberloss was the same.

The latest appreciation showed that it was easier to remove dust from an impregnated carpet. This ought to be positively for the indoor environment, because one of the problems with carpets, is there ability to hold on the dust and dirt.

Pawel Wargocki at The Technological University of Denmark did an investigation in 1998 that showed that dirty carpets had negative influents on the indoor environment and the persons near to. Because of this, it is important to remove as much dust and dirt as possible from the carpet

Based on this investigation, impregnation of carpets, have a positive influence on the carpets with regard to the indoor environment.

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OSLO KONGSBERG STAVANGER GJØVIK ÅLESUND

Rapport Report



Rapportnummer Report no

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1 Background

Teknologisk Institutt (TI) was contacted by Fiber Protector Norge AS to investigate carpets impregnated with Fiber Protector.

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2 Methods

1. Alteration in texture and colour was analysed at 4-50x magnifications in a Wildt microscope. Impregnated and unimpregnated carpets were compared.
2. The amount of fiberloss was tested by sampling fibers with gelatinous foils before and after impregnation of the carpet, and measuring the percentage area of the foils covered with fibers with a BM-Dustdetector laser extinction meter.
3. Antistatic effect was measured with an ACL-300 instrument. Personal charge evaluates by NS-INSTA 800 comparing to 5 quality levels shown in table 1.

Electric-charge quality levels, in Volt

Quality levels	Description	Field intensity in Volt
Static electricity level 1	Some antistatic effect	2000-2999
Static electricity level 2	Fairly good antistatic effect	1000-1999
Static electricity level 3	Good antistatic effect	500-999
Static electricity level 4	Very good antistatic effect	100-499
Static electricity level 5	Extremely good antistatic effect	0-99

Table 1



4. The amount of dust deposited in the carpet was measured by vacuuming each part separate. The dust was sampled on a filter weighed before and after sampling. The carpet was 369cm long and 85,5cm wide, and divided into 7 parts and every second was impregnated (see sketch 1). The carpet was placed in a traffic-area . The carpet should stay for about one year and was maintained by vacuuming with a vacuum cleaner with rotating brush-nozzle.

12	15 Impregnated	13	16 Impregnated	17	18 Impregnated	19
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Sketch 1

3 Results

- 1 It was no difference in texture and colour on impregnated and unimpregnated areas.
- 2 The fiberloss corresponded to a dust-cover percentage at 5% at both impregnated and unimpregnated carpets.
- 3 The unimpregnated carpet gave a personal charge at 5 -700Volt
The impregnated carpet gave a personal charge at 0 -100Volt
- 4 The results are presented in appendix 1.
The vacuum cleaner removed more dust out of the impregnated parts of the carpet than out of the unimpregnated part.

4 Conclusions and recommends

There was no alteration in the texture and colour on the impregnated carpet in a year. The investigation showed that the impregnated carpet was more antistatic than the untreated carpet, but the fiberloss was the same. The latest appreciation showed that it was easier to remove dust from an impregnated carpet. This ought to be positively for the indoor environment, because one of the problems with carpets, is there ability to hold on the dust and dirt. Pawel Wargocki at The Technological University of Denmark did an investigation in 1998 that showed that dirty carpets had negative influents on the indoor environment and the persons near to. Because of this, it is important to remove as much dust and dirt as possible from the carpet

Based on this investigation, impregnation of carpets, have a positively influence on the carpets according to the indoor environment.

Amount dust in unimpregnated carpet and carpet impregnated with Fiber Protector

