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Date 08 June 2010
Initials ldkr/chf/ac

Test Report

Material: Seat and back of finished chair, designated: 40/4 finless plast, article no. 3007.

Material: Nyloy NG-0034N-V2 (Polyamide-6 with 33% glas fiber, a flame retardant grade product).

(Customer's information)

Sampling: The material was submitted by the assignor and received on Danish Technological Institute 25.05.2010

Method: Modified testing of ignitability to the requirements for "Medium Hazard" classification given in BS 7176:2007 -"Specification for Resistance to Ignition of Upholstered Furniture for Non-Domestic Seating by testing Composites".

Period: The testing was completed 06.06.2010

Results: The upholstery composite under test **do meet (pass)** all requirements to " Medium Hazard" classification according to BS 7176:2007.

Comments: The test method is modified.

Details of the test are given on page 2-4 of this report.

Terms: The test has been performed according to the rear side conditions, which are according to the guidelines laid down by DANAK (The Danish Accreditation). The testing is only valid for the tested specimen. The test report may only be extracted, if the laboratory has approved the extract.

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08 June 2010, Danish Technological Institute, Textile

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Material under test: Seat and back of finished chair, designated: 40/4 finless plast, article no. 3007.

Material: Nyloy NG-0034N-V2 (Polyamide-6 with 33% glas fiber, a flame retardant grade product).

Test methods.

A. BS EN 1021-1:2006, Furniture - Assessment of ignitability of upholstered furniture – Part 1: Ignition source: Smouldering cigarette.

B. BS EN 1021-2:2006, Furniture - Assessment of ignitability of upholstered furniture – Part 2: Ignition source: Match flame equivalent.

C. BS 5852:2006, Methods of test for assessment of the ignitability of upholstered seating by smouldering and flaming ignition sources. Ignition source: 5

Results, continued: The test results relate only to the ignitability of the combination of materials under the particular conditions of test; they are not intended as a means of assessing the full potential fire hazard of the materials in use.

Comments: The test has not been carried out at the test rig. Two cigarettes were placed upon the middle of the finished seat.

A.) BS EN 1021-1:2006 Assessment of ignitability:

Ignition source: Smouldering cigarette.

Test results: **Non-ignition**

	Cigarette		Comments
	1	2	
Smouldering criteria:	*	*	
Unsafe escalating combustion (3.1.a)	No	No	
Test assembly largely consumed (3.1.b)	No	No	
Smoulders to extremities (3.1.c)	No	No	
Smoulders through thickness (3.1.c)	No	No	
Smoulders more than 1 hour (3.1.d)	No	No	
Active smouldering on final examination (3.1.e)	No	No	
Flaming criteria:			
Any flames initiated by smouldering source (3.2)	No	No	
*) Enter “Yes” if criteria exceeded or “No” if criteria not exceeded.			

Material under test: Seat and back of finished chair, designated: 40/4 finless plast, article no. 3007.

Material: Nyloy NG-0034N-V2 (Polyamide-6 with 33% glas fiber, a flame retardant grade product).

Results, continued: The test results relate only to the ignitability of the combination of materials under the particular conditions of test; they are not intended as a means of assessing the full potential fire hazard of the materials in use.

The test has not been carried out at the test rig. 3 match flames were placed upon the finished seat and 3 upwards the finished back.

Comments: The test has not been carried out at the test rig. 3 match flames were placed upon the finished seat and 3 upwards the finished back.

B.) BS EN 1021-2:2006 Assessment of ignitability:

Ignition source: Match flame equivalent.

Test results: **Non-ignition**

	Match flame equivalent			
	1	2	3	
Smouldering criteria:	*	*	*	
Unsafe escalating combustion (3.1.a)	No	No	No	
Test assembly consumed (3.1.b)	No	No	No	
Smoulders to extremities (3.1.c)	No	No	No	
Smoulders through thickness (3.1.c)	No	No	No	
Smoulders more than 1 hour (3.1.d)	No	No	No	
Active smouldering on final examination (3.1.e)	No	No	No	
Flaming criteria:				
Unsafe escalating combustion (3.2.a)	No	No	No	
Test assembly essentially consumed (3.2.b)	No	No	No	
Flames to extremities, except upper margins (3.2.c)	No	No	No	
Flames through thickness (3.2.c)	No	No	No	
Flames longer than 120 sec. (3.2.d)	No	No	No	
*) Enter “Yes” if criteria exceeded or “No” if criteria not exceeded.				

Material under test: Seat and back of finished chair, designated: 40/4 finless plast, article no. 3007.

Material: Nyloy NG-0034N-V2 (Polyamide-6 with 33% glas fiber, a flame retardant grade product).

Test Method: BS 5852:2006 Method of test for the ignitability of upholstery composites. Ignition source: Crib 5, weight 17±2 g.

Results: The following test results relate only to the ignitability of the combination of materials under the particular conditions of test; they are not intended as a means of assessing the full potential fire hazard of the materials in use.

Test result: PASS

	Test 1	Test 2
Duration of afterflames in minutes	3	4
Smouldering ceased within 60 minutes	Yes	yes
Damage in the horizontal section (seat):		
- length in mm.	15	10
- width in mm.	5	10
- thickness in mm.	2	2
Damage in the vertical section (back):		
- width in mm.	5	5
- thickness in mm.	2	2

Requirements:

Criteria given in BS 5852:2006

Progressive smouldering failure, clause 4.1.a, c, e and f are regarding crib 5

a. Escalating combustion behaviour so that it is unsafe to continue the test and requires forcible extinction.
c. Smouldering until the specimen is essentially consumed or to the extremities of the specimen that is upper or lower margins, either side or to its full thickness, within the test duration (60 minutes).
e. Production of externally detectable amounts of smoke, heat or glowing 60 minutes after ignition of the crib.
f. On final examination: Evidence of charring other than discolouration, more than 100 mm in any direction, apart from upwards, from the nearest part of the original position of the source.

Flaming failure, clause 4.2.a, b, c, e and g are regarding crib 5

a. Escalating combustion flaming behaviour so that it is unsafe to continue the test and requires forcible extinction.
b. Burning until the specimen is essentially consumed within the test duration.
c. Flame front reaches the lower margin, either side or passes through the full thickness of the specimen within the duration of the test.
e. Flaming for more than 10 minutes after ignition of the crib.
g. Flaming debris causing an isolated floor fire that continues to flame longer than 10 minutes.

DANISH TECHNOLOGICAL INSTITUTE

The general conditions pertaining to assignments accepted by Danish Technological Institute shall apply in full to the technical testing and calibration at Danish Technological Institute and to the completion of test reports and calibration certificates within the relevant field.

Danish Accreditation (DANAK)

DANAK was established in 1991 in pursuance of the Danish Act No. 394 of 13 June 1990 on the promotion of Trade and Industry.

The requirements to be met by accredited laboratories are laid down in the "Danish Agency for Trade and Industry's ("Erhvervsfremme Styrelsens") Statutory Order on accreditation of laboratories to perform testing etc. and GLP inspection. The statutory order refers to other documents, where the criteria for accreditation are specified further.

The standards DS/EN ISO/IEC 17025 "General requirements for the competence of testing and calibration laboratories" and DS/EN 45002 "General criteria for the assessment of testing laboratories" describe fundamental criteria for accreditation. DANAK uses guidance documents to clarify the requirements in the standards, where this is considered to be necessary. These will mainly be drawn up by the "European co-operation of Accreditation (EA)" or the "International Laboratory Accreditation Co-operation (ILAC)" with the purpose of obtaining uniform criteria for accreditation. In addition, DANAK draws up Technical Regulations with specific requirements for accreditation that are not contained in the standards.

In order for a laboratory to be accredited it is, among other things, required:

- that the laboratory and its personnel are not subject to any commercial, financial or other pressures, which might influence their technical judgement
- that the laboratory operates a documented quality system
- that the laboratory has at its disposal all items of equipment, facilities and premises required for correct per formance of the service that it is accredited to perform
- that the laboratory management and personnel have technical competence and practical experience in performing the service that they are accredited to perform
- that the laboratory has procedures for traceability and uncertainty calculations
- that accredited testing or calibration is performed in accordance with fully validated and documented methods
- that the laboratory keeps records, which contain sufficient information to permit repetition of the accredited test or calibration
- that the laboratory is subject to surveillance by DANAK on a regular basis
- that the laboratory shall take out an insurance, which covers liability in connection with the performance of accredited services

Reports carrying DANAK's logo are used, when reporting accredited services and show that these have been performed in accordance with the rules for accreditation.