REPORT
issued by an Accredited Testing Laboratory

Contact person	Date	Reference	Page
Patrik Spånglund	2012-01-20	PX18507	1 (4)
Building Technology and Mechanics			
+46 10 516 56 00			
Patrik.Spanglund@sp.se			

1002
ISO/IEC 17025

Peder Nielsen Beslagfabrik A/S
Nörregade 25
DK-9700 BRÖNDERSLEV
Danmark

Test of 'PN Lock Bar 3835' child safety locking device for windows
(1 appendix)

Summary

A non integrated locking device for windows, PN Lock bar 3835, has been tested according to SS 3587 and paragraph 7 of the Nordtest method NT CONS 018.
PN Lock bar 3835 is a redesign of previous tested PN Lock bar 3800 (reported in P804763, 2008-11-25) and only the relevant parts are retested (500 N test in chapter 9.1 in SS 3587). This report contains the results from the previous tested PN Lock bar 3800 and the retested parts.

The device fulfilled the requirements of all performed tests.

1 Introduction

SP has been commissioned by PN Beslag A/S to perform tests of a childproof non integrated locking device for windows according to SS 3587 and paragraph 7 of the Nordtest method NT CONS 018. The tests were performed with the safety restrictor mounted on a PN Lock Bar 3835. PN Lock bar 3835 is a redesign of previous tested PN Lock bar 3800 and only the relevant parts are retested (500 N test in chapter 9.1 in SS 3587).

2 Test objects

Designation:	PN Lock Bar 3835
Material:	Steel.
Selection of test object:	Performed by the client without assistance from SP.
Arrival of test object:	2008-09-04 PN Lock Bar 3800
	2012-12-14 PN Lock Bar 3835

3 Test performance

Test methods:	Function test (child safety): Paragraph 7 of NT-CONS 018, ed. 1990-09. SP is not accredited for this method. Other tests: SS 3587 'Byggnadsbeslag – Barnskyddande beslag för fönster och fönsterdörrar – Hållfasthet – Krav och provning', 1st ed.
Assessment:	Based on engineering experience and considering the differences, the performance of the safety locking device on a different window series was assessed.
Test dates:	September 2008 –November 2008 (PN Lock Bar 3800) December 2011 (PN Lock Bar 3835)
Place of testing:	The mechanical tests were performed by the department Building Technology and Mechanics and the ageing tests by the department Chemistry and Materials Technology, both of SP in Borås, Sweden. The child safety function tests were performed at preschools in and around Borås, as specified below.
Preschools:	Götagården, Borås 2008-10-03 Lorensbergsgården, Borås 2008-10-08 Trollgården, Borås 2008-11-12

3.1 Test program

The test program is shown in Table 1. Short descriptions of the performed tests are presented in respective subchapter of Chapter 4.

Table 1   Test program

Test order	Reference*	Test
0**	NT 7	Function test (child safety)
1	7.1	Ageing
2	7.2	Wear of opening restriction
3	9.1	Static loading
4	9.2	Impact testing
5	9.3	Stamping test

*   NT refers to NT-CONS 018, remaining paragraph numbers are referring to SS 3587.
** The function test was performed, on a separate test sample, parallel with the other tests.

3.2 Used equipment

Table 2   Used equipment

Used equipment	Inventory number
Dynamometer Mecmesin	40 33 00
Measuring tape	40 32 76
Micrometer	40 11 05
Impact test machine	-
Stamping test machine	-
Dead weights	-

REPORT

Date
2012-01-20

Reference
PX18507

Page
3 (4)

4 Results

All results shown in this report refer only to the tested samples. Each test is shortly described in the following subchapters. The numbers in parenthesis in each heading refer to the corresponding paragraphs in the used standards. 'NT' refers to NT-CONS 018, remaining paragraph numbers are referring to SS 3587. The retested part are only the 500 N test in chapter 9.1 in SS 3587. All other results are from the previous test from report P804763, 2008-11-25.

4.1 Function test (child safety) (NT 7)

This test is designed to assess the child safety of the device. The test was performed with a group of children aged 36 -60 months, with uniform age and sex distributions. Each child has five minutes to try to open the window by disengaging the device without being shown how to do. If the child does not succeed the test leader shows how to disengage the device and the child gets another five minutes to try to solve the problem.

The tested device met the requirements.

1 child of 36 managed to disengage the device.

Requirement: A maximum of 2 children out of 36 are allowed to disengage the device.

4.2 Ageing (7.1)

Devices made (partly) of polymers are submitted to UV outdoor light and an increased temperature for 3000 hours.

This test is not applicable for the tested device.

4.3 Wear of opening restriction (7.2)

The device is mounted on a window according to its instruction manual. The window is opened until the device restricts the movement with a force of 50 N. Then the window is closed again. This is repeated for a total of 5000 cycles.

Two samples were tested. Both fulfils the requirements.

4.4 Static loading (9.1)

With the device engaged, the window is submitted to a load of $F_1 = 500$ N in the opening direction at the point which implies the most onerous condition for the safety locking device. The load is maintained for one minute. The procedure is repeated three times.
The uniting part of the device is then submitted to a load of 200 N in a direction perpendicular to F_1. The load is maintained for one minute. The procedure is repeated three times.

Two samples were tested. Both fulfils the requirements.

4.5   Impact testing (9.2)

The device is subjected to impact loading 10 times with a defined pendulum.

Two samples were tested. Both fulfils the requirements.

4.6   Stamping test (9.3)

The part of the device uniting the window frame and casement is stamped with a defined equipment and a load of 2000 N.

This test is not relevant since the device is made of steel.

5   Measurement uncertainty

The total calculated measurement uncertainty for the force is < 2 %, the length measurement uncertainty using a micrometer is < 0.01 mm, the length measurement uncertainty using a measuring tape is < 0.5 mm and the uncertainty of the dead weight is < 0.5% .
Reported uncertainties correspond to an approximate 95 % confidence interval around the measured value. The interval has been calculated in accordance with GUM (The ISO guide to the expression of uncertainty in measurements), which is normally accomplished by quadratic addition of the actual standard uncertainties and multiplication of the resulting combined standard uncertainty by the coverage factor k=2.

SP Technical Research Institute of Sweden
Building Technology and Mechanics

Performed by

Patrik Spånglund

Examined by

Göran Malmqvist

Appendix 1 Drawing of PN Lock Bar 3815

REPORT

Date
2012-01-20

Reference
PX18507

Page
1 (1)

Appendix 1