

Project number: É3-7162N-03628-2014/3

Topic number: A-95/2014

TEST REPORT

Name of the product and determination of the test: **Load tests of the Lindab Rainline roof gutter and its brackets according to Annex B of MSZ EN 1462:2005 standard**

Applicant: **Lindab Kft.**
Biatorbágy, Állomás utca 1/a, 2051 hrsz.

Denomination of test standards: **MSZ EN 1462:2005**

Location of the test: **ÉMI Non-profit Llc.**
Material Testing Laboratory
Budapest

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25.08.2014

The test results apply only to the individual tested.

Without the written permission of the laboratory the test report may only be duplicated in full.

The expertise, interpretation and assessment indicated in the test report means an activity performed in non-accredited status.

The report contains 13 numbered pages and - attachments.

1. DATA

1.1 1.1 Our institution was asked by the Customer to make a test on the supplied roof gutters and their bracket elements according to Annex B of MSZ EN 1462: 2005 standards:

Manufacturer: LINDAB Profil AB
Sweden

Lindab Kft.
Biatorbágy, Állomás utca 1/a, 2051 hrsz.

2. TESTS

For performing the test the Customer delivered gutter brackets and roof gutters that can be used for this type, 6 pieces of each, to our laboratory for performing the load test and classification on the basis of MSZ EN 1462: 2005 standards „Roof gutter brackets. Requirements and test”.

Time of the tests: August, 2014

Other data are available in the report of the project leader, the Laboratory of building structures.

2.1 Testing devices applied

Testing devices and equipment applied, as well as the test circumstances were as follows.

Type of test	Name and registration number of the testing device	Inspection method
Mass measurement	Digital scale no. 88	calibrated
Length measurement	Dial gauge no. 114	calibrated
	Measuring tape no. 96	calibrated
Time measurement	Stopwatch no. 27	calibrated
Temperature and humidity measurement:	Heat and humidity meter type Testoterm 6010, no. 26	calibrated

Temperature, humidity of the laboratory: 24.0°C, 55 %

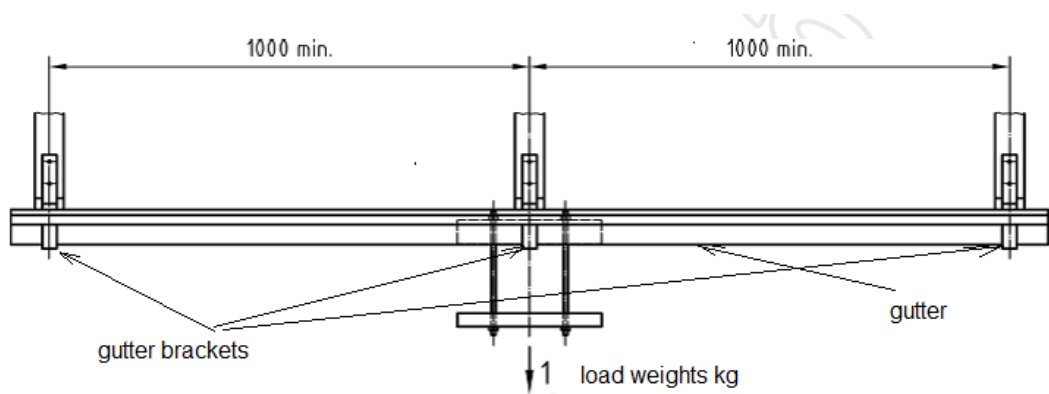
3. 3. RESULTS

3.1 Load tests according to Annex B of MSZ EN 1462: 2005 standards

The test was performed on the basis of Annex B of the standards, as arranged in figure 1:

After working out the specimens according to figure 1 we placed the mass of ≈ 76.5 kg corresponding to a force of 750 N to the place that we reserved for 310 ± 10 s, then we stopped loading.

After eliminating the load forces, we measured the vertical deformations remaining after force of 750 N in order to state if it exceeds 5 mm.



1. load (500 or 750 N, in our case 750)

Picture 1, on the basis of figure B1 of the standards

Test arrangement of some types is shown in figure 2 as below.



Picture 2

Name of the type in Hungarian: KFL Classic
 in Swedish: BRL

Shape of the specimen is shown in picture 3 below



Picture 3

Results of type test as per picture 3

Type and size R	Load	Remaining deformation (mm)
KFL/BRL 150	750 N, ≈ 76.5 kg	4.51
KFL/BRL 125		4.05

Name of the type in Hungarian: KFL 33 Classic
 in Swedish: BRL 33

Shape of the specimen is shown in picture 4 below



Picture 4

Results of type test as per picture 4

Type and size R	Load	Remaining deformation (mm)
KFL 33/BRL 33 150	750 N, ≈ 76.5 kg	3.65
KFL 33/BRL 33 125		3.42

Name of the type in Hungarian: KFL Elite
in Swedish: KFL

Shape of the specimen is shown in picture 5 below



Picture 5

Results of type test as per picture 5

Type and size R	Load 750 N, ≈ 76.5 kg	Remaining deformation (mm)
KFL 150		0.68
KFL 125		0.56
KFL 100		0.51

Name of the type in Hungarian: KFL 35
in Swedish: KFL 35

Shape of the specimen is shown in picture 6 below



Picture 6

Results of type test as per picture 6

Type and size R	Load 750 N, ≈ 76.5 kg	Remaining deformation (mm)
KFL 35 150		0.45
KFL 35 125		0.38

Name of the type in Hungarian: KFM
in Swedish: KFM

Shape of the specimen is shown in picture 7 below



Picture 7

Results of type test as per picture 7

Type and size R	Load	Remaining deformation
KFM 150	750 N, ≈ 76.5 kg	0.80
KFM 125		0.71

Name of the type in Hungarian: K 07
in Swedish: K 07/BR 05

Shape of the specimen is shown in picture 8 below



Picture 8

Results of type test as per picture 8

Type and size R	Load	Remaining deformation (mm)
K 07 100	750 N, ≈ 76.5 kg	0.98
K 07 125		1.05
K 07 150		1.98
K 07 190		0.66
K 07/BR 05 125		0.95

Name of the type in Hungarian: K 11
in Swedish: K 11

Shape of the specimen is shown in picture 9 below



Picture 9

Results of type test as per picture 9

Type and size R	Load 750 N, ≈ 76.5 kg	Remaining deformation (mm)
K 11 100		1.27
K 11 125		1.38
K 11 150		1.51
K 11 P 150		1.48

Name of the type in Hungarian: K16
in Swedish: K 16

Shape of the specimen is shown in picture 10 below



Picture 10

Results of type test as per picture 10

Type and size R	Load 750 N, ≈ 76.5 kg	Remaining deformation (mm)
K 16 100		0.17
K 16 125		0.21
K 16 150		0.18

Name of the type in Hungarian: K 21
in Swedish: K 21

Shape of the specimen is shown in picture 11 below



Picture 11

Results of type test as per picture 11

Type and size R	Load	Remaining deformation (mm)
K 21 125	750 N, ≈ 76.5 kg	0.53
K 21 150		0.55

Name of the type in Hungarian: K 24
in Swedish: K 24

Shape of the specimen is shown in picture 12 below



Picture 12

Results of type test as per picture 12

Type and size R	Load	Remaining deformation (mm)
K 24 190	750 N, ≈ 76.5 kg	1.10

Name of the type in Hungarian: K 33
in Swedish: K 33

Shape of the specimen is shown in picture 13 below



Picture 13

Results of type test as per picture 13

Type and size R	Load	Remaining deformation (mm)
K 33 150	750 N, ≈ 76.5 kg	0.58
K 33 190		0.24

Name of the type in Hungarian: K 40
in Swedish: K 40

Shape of the specimen is shown in picture 14 below



Picture 14

Results of type test as per picture 14

Type and size R	Load	Remaining deformation (mm)
K 40 150	750 N, ≈ 76.5 kg	0.72
K 40 125		0.67

Name of the type in Hungarian: KFK
in Swedish: KFK

Shape of the specimen is shown in picture 15 below



Picture 15

Results of type test as per picture 15

Type and size R	Load 750 N, ≈ 76.5 kg	Remaining deformation (mm)
KFK 150		0.57
KFK 125		0.51
KFK 100		0.49

Name of the type in Hungarian: REK 07
in Swedish: REK 07

in Hungarian: REK 21
in Swedish: REK 21

Shape of the specimen is shown in picture 16 below



Picture 16

Results of type test as per picture 16

Type and size R	Load 750 N, ≈ 76.5 kg	Remaining deformation (mm)
REK 07 136		0.28
REK 21 136		0.37

Name of the type in Hungarian: KPK/BFB
 in Swedish: KPK/BFB

Shape of the specimen is shown in picture 17 below



Picture 17

Results of type test as per picture 17

Type and size R	Load	Remaining deformation (mm)
KPK/BFB 125 brown	750 N, ≈ 76.5 kg	3.54
KPK/BFB 125 wine-red		3.47

Name of the type in Hungarian: SKM
 in Swedish: SKM

in Hungarian: SKL
 in Swedish: SKL

Shape of the specimen is shown in picture 18 below



Picture 18

Results of type test as per picture 18

Type and size R	Load	Remaining deformation (mm)
SKM 125	750 N, ≈ 76.5 kg	1.78
SKM 150		1.97
SKXL 125		1.86
SKL 125		1.96
SKL 150		2.05

Type SSK

Shape of the specimen is shown in picture 19 below



Picture 19

Results of type test as per picture 19

Type and size R	Load	Remaining deformation (mm)
SSK 150	750 N, \approx 76.5 kg	0.79
SSK 125	750 N, \approx 76.5 kg	0.87
SSK 100	750 N, \approx 76.5 kg	0.91

Use of the type SSK is shown in picture 20 below



FRK (lying)



Picture 21

Test of deformation in shape of the FRK (lying) gutter bracket was senseless due to the way of use.

4. DECLARATION

Based on the test results the gutter brackets tested on the basis of the table 3 of MSZ EN 1462: 2004 standards belong to load class **H**, and the load class for FRK cannot be interpreted due to the way of use.

5. ANNEXES

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Budapest, 25. 08. 2014

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