



Test report

For
K9-SPORT Ltd.

24 of November 2017



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1. Test plan

Determination of top closing force of 5 given clasps supplied by K9-SPORT Kft. (2310 Szigetszentmiklós Ipar u. 10-12.). 5 specimens were tested in each size. The applied notations were the following:

- „16 mm clasp” – „16 mm, Julius k-9 emblem clasp 2017”
- „20 mm clasp” – „20 mm, Julius k-9 emblem clasp 2017”
- „25 mm clasp” – „25 mm, Julius k-9 emblem clasp 2017”
- „40 mm clasp” – „40 mm, Julius k-9 emblem clasp 2017”
- „50 mm clasp” – „50 mm, Julius k-9 emblem clasp 2017”

2. The place and date of the tests

The place of tests: Department of Polymer Engineering, Faculty of Mechanical Engineering, Budapest University of Technology and Economics, Materials Testing Laboratory (H-1111 Budapest, Műgyetem rkp. 3., MT building)

The date of tests: 23 November 2017

3. Tensile tests

The tensile tests were performed on a Zwick Z250 type computer-controlled universal testing machine at room temperature. The clasps were held by the girth supplied by the Customer.

Measurement parameters:

Device type: Zwick Z250

Load cell capacity: 20 kN

Test speed: 50 mm/min

Grip to grip distance: 200 mm

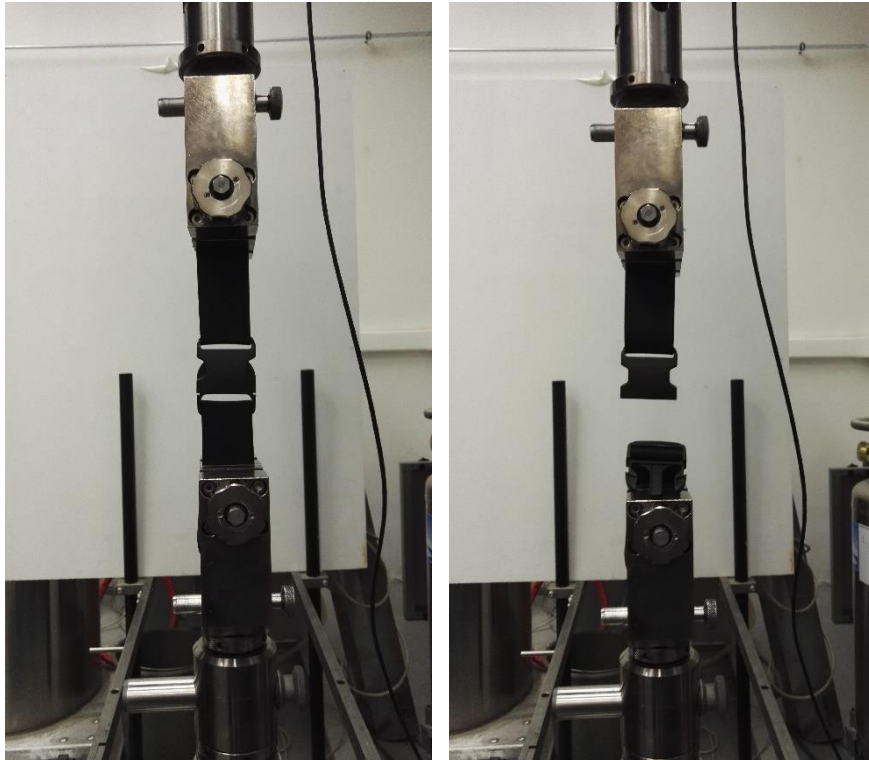


Figure 1. Tensile test layout

The results of the tensile tests are presented in Figures 2-6 and in Table 1. Only the highest forces were evaluated, which were measured at break or full opening of the clasps. There was no visible damage on the opened clasps.

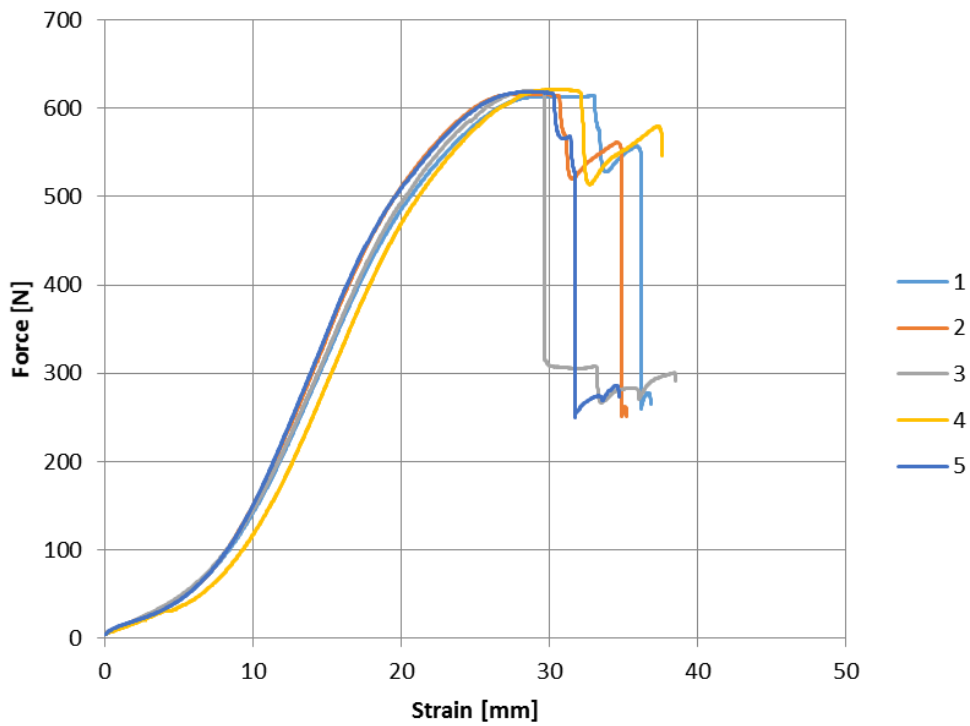


Figure 2. The Force - strain diagram of “16 mm clasp”

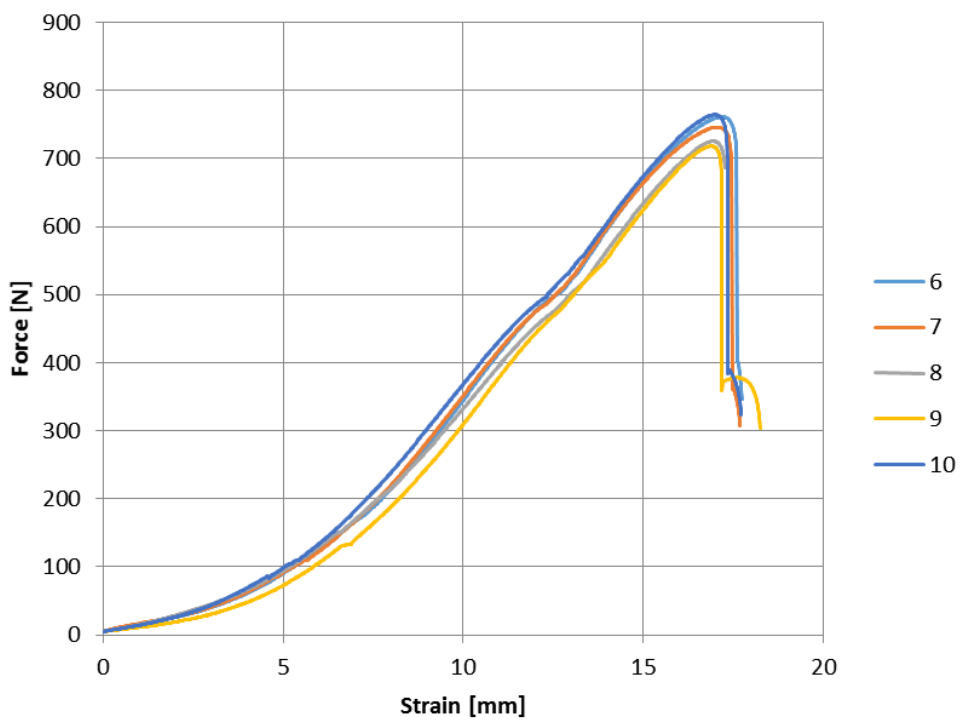


Figure 3. The Force - strain diagram of “20 mm clasp”

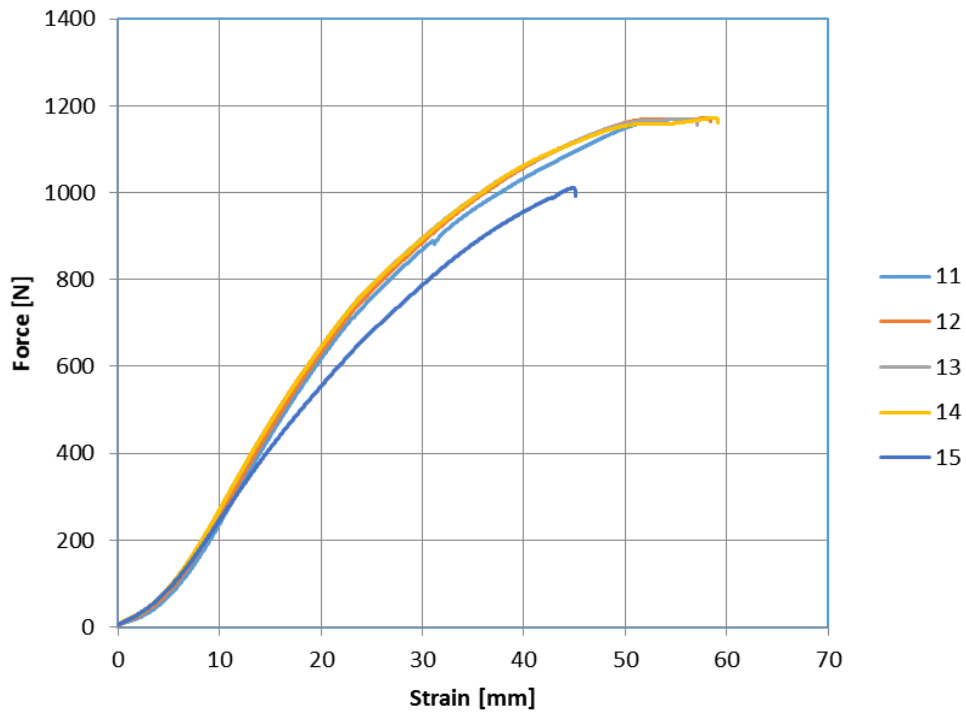


Figure 4. The Force - strain diagram of “25 mm clasp”

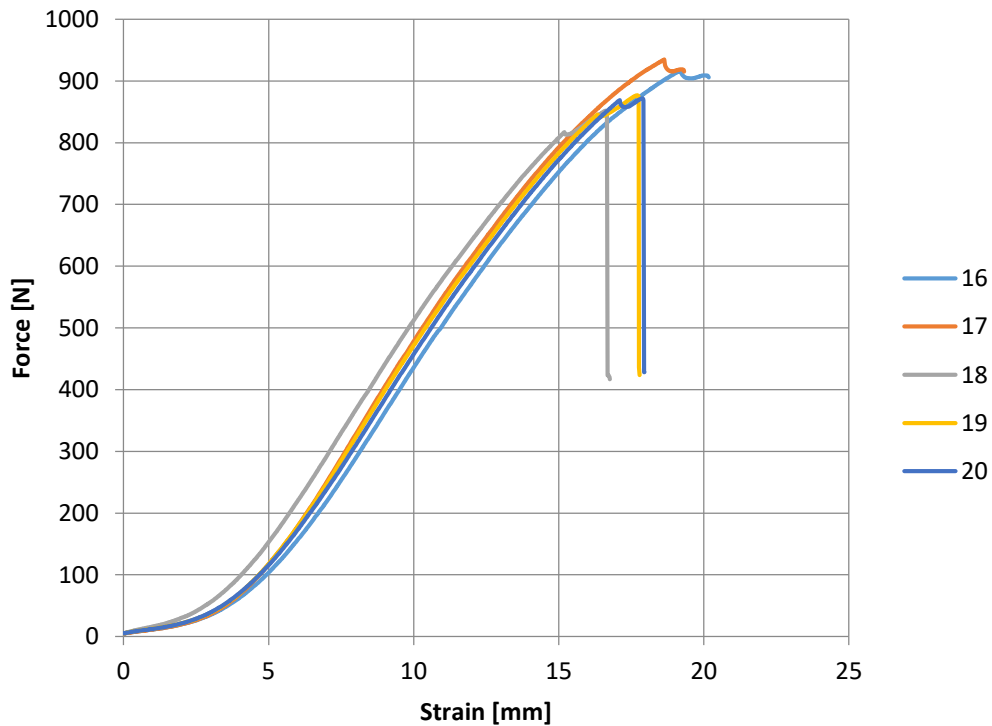


Figure 5. The Force - strain diagram of “40 mm clasp”

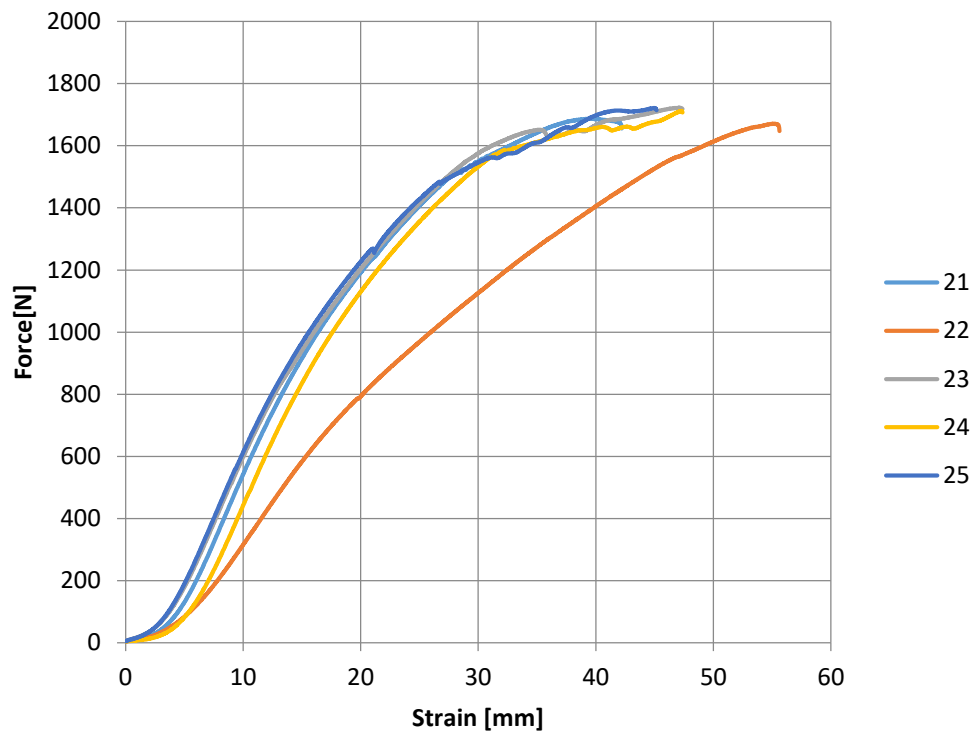


Figure 6. The Force - strain diagram of “50 mm clasp”



Number of sample	Clasp size [mm]	Maximum Force [N]	Type of failure
1	16	616	break
2	16	620	break
3	16	621	break
4	16	618	break
5	16	614	break
average		618	
<i>deviation</i>		3	
6	20	746	opening
7	20	725	opening
8	20	718	opening
9	20	764	opening
10	20	761	opening
average		743	
<i>deviation</i>		21	
11	25	1171	break
12	25	1170	break
13	25	1172	break
14	25	1011	break
15	25	1167	break
average		1138	
<i>deviation</i>		71	
16	40	935	opening
17	40	852	opening
18	40	877	opening
19	40	872	opening
20	40	917	opening
average		890	
<i>deviation</i>		34	
21	50	1671	break
22	50	1652	break
23	50	1712	break
24	50	1721	break
25	50	1687	break
average		1689	
<i>deviation</i>		29	

Table 1. The results of the tensile tests