Results of the tensile tests carried out on nine *samples declared by the Applicant as:*
"Security seals for goods' transport - type STRAPSEAL".
Applicant: LEGHORN s.r.l, via degli Arrotini, 34 – Livorno.
Order letter received on: 13/05/2015
Material received in the Laboratory on: 13/05/2015.

1 INTRODUCTION

The tensile tests on samples were carried out in this Laboratory on the dates indicated in Table 1. The following tests were conducted as per the indications given by the Applicant:

- tensile test on three samples as provided by the applicant;
- tensile test on three samples previously maintained for 24 hours at a temperature of +60°C;
- tensile test on three samples previously maintained for 24 hours at a temperature of -30°C.

Figure 1 shows the sample as provided by the applicant.

2 TEST PROCEDURES AND INSTRUMENT SET-UP

The test aims at evaluating the maximum load for the sample in his operational condition.
Each sample was closed and subsequently placed between two annular elements connected to the test machine. The rate of increase of the distance between the annular elements was set to 20 mm / min.
The load was applied to the sample by means of an universal testing device INSTRON 1186, with maximum load capability of 200 kN, adopting the full scale equal to 0.5 kN. Such load was measured by means of a mechanical dynamometer type A435 Sn. 724 649 with full scale equal to 1000 N.
Figure 2a shows the testing device, while Figure 2b shows the force measuring system.

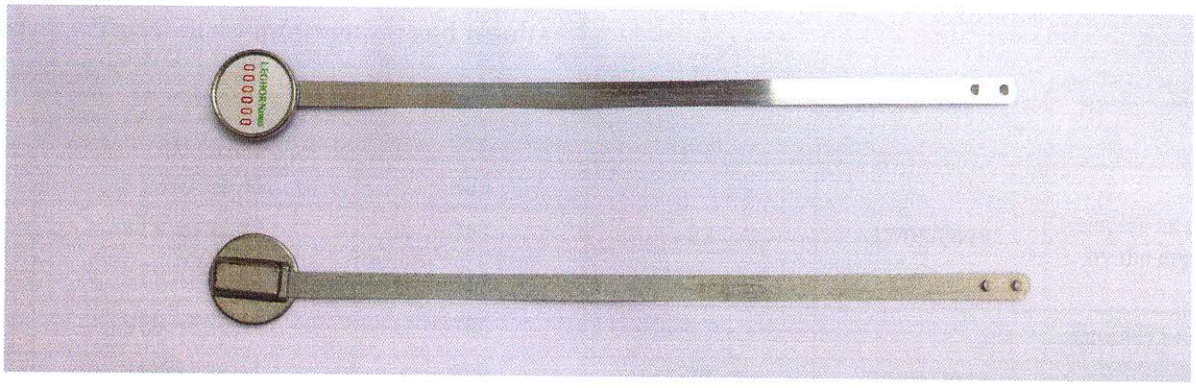
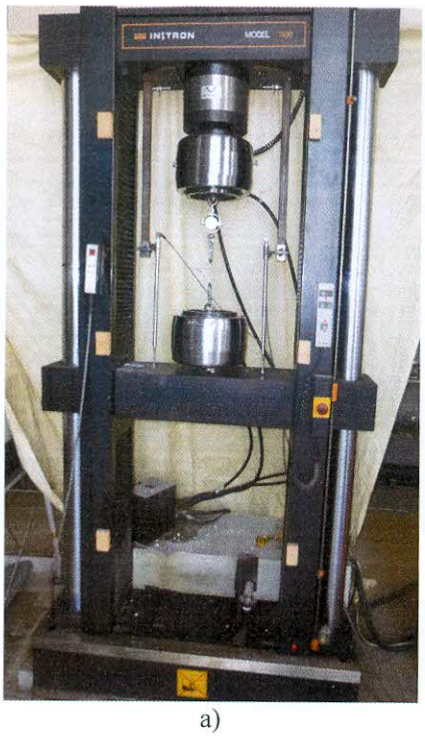


Figure 1. Test sample "Security seals for goods' transport - type STRAPSEAL".

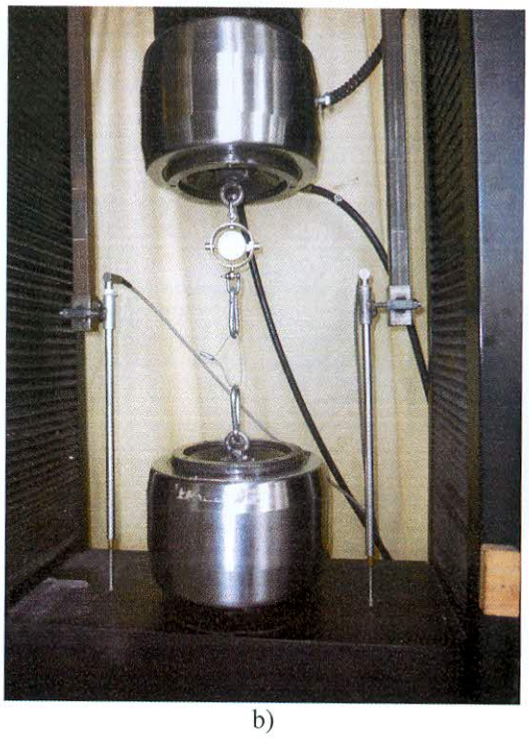
EXPERIMENTER
Giuseppe Chellini, PhD

HEAD OF LABORATORY
Prof. Stefano Bennati

TECHINCAL MANAGER
Prof. Riccardo Barsotti



a)



b)

Figure 2. a) the testing device; b) the force measuring system.

3 TEST RESULTS

Table 1 presents the tests' main information and results for each sample: the markings , the maximum load (in N) and the room temperature at which the tests were executed, along with the date and type of test. Figure 3 shows the samples condition after the test.

Table 1. Tests' main information and results.

Sample #	Mark	Ultimate load [N]	Air Temperature [°C]	Test Date	Sample condition
1	STRAPSEAL	425	22	27/05/2015	samples as provided by the applicant
2	STRAPSEAL	353			
3	STRAPSEAL	411			
4	STRAPSEAL	385	22	28/05/2015	samples previously maintained for 24 hours at a temp. of +60°C
5	STRAPSEAL	299			
6	STRAPSEAL	438			
7	STRAPSEAL	359	22	28/05/2015	samples previously maintained for 24 hours at a temp. of -30°C.
8	STRAPSEAL	482			
9	STRAPSEAL	320			

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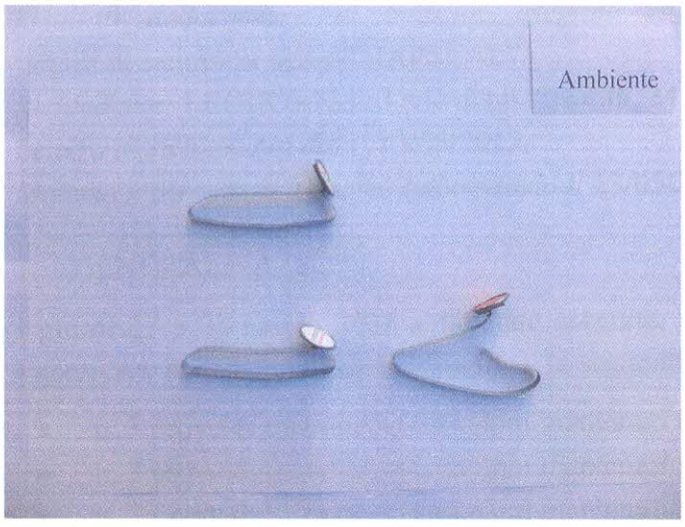
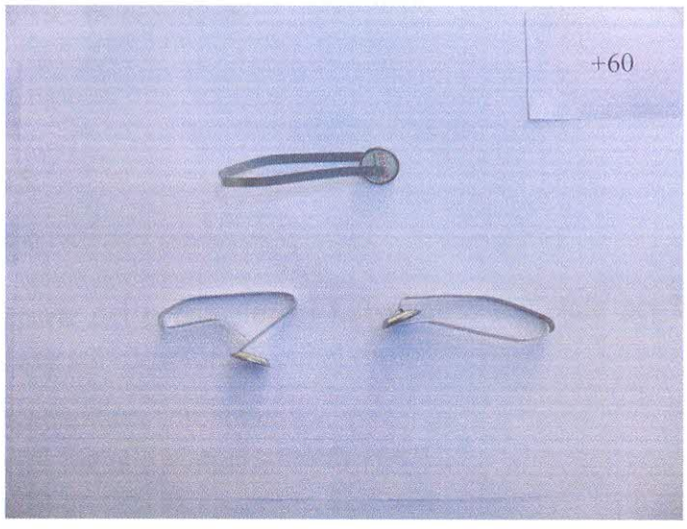
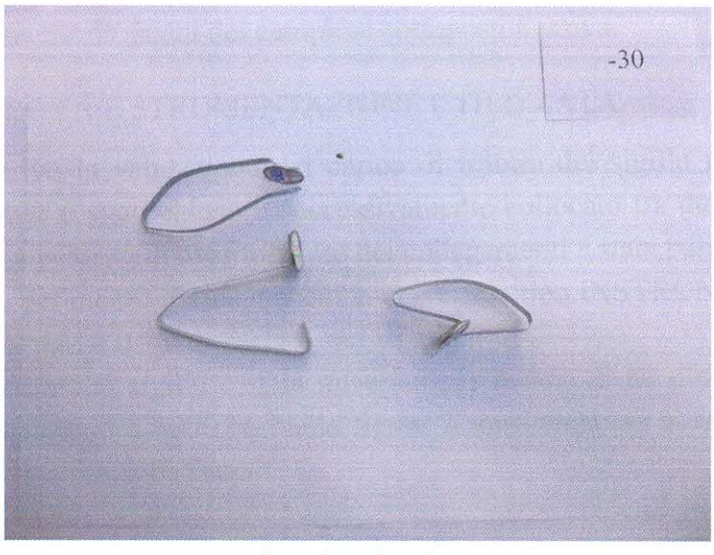


Sample 1, 2 and 3



Sample 4, 5 and 6



Sample 7, 8 and 9

Figure 3. Samples condition after the tensile test.

Experimental tests were executed by : P.I. Michele DI RUSCIO, Giuseppe CHELLINI, PhD.

EXPERIMENTER
Giuseppe Chellini, PhD

HEAD OF LABORATORY
Prof. Stefano Bennati

TECHINCAL MANAGER
Prof. Riccardo Barsotti