

Report of the swelling characteristics of PC Elastoswell 20x10mm and 20x5mm in seawater (NaCl 3%)

1. Test Method

Out of a roll PC Elastoswell 20x10mm swell strip and PC Elastoswell 20x5mm swell strip, a few pieces are cut off with a length of appr. 10 cm. After measuring the dimensions of each piece, the volume of the strips are calculated following the principles described below. After weighing each piece, the density and weight per m strip are determined.

The pieces PC Elastoswell 20x10 and 20x5 are put in small buckets, which are filled with artificial seawater. The artificial seawater consists of demineralized water and 3% NaCl. Between measurements, the buckets are stored in a conditioned area at a temperature of 20°C. Every day, each piece PC Elastoswell 20x10 and 20x5 is weighed and the volume percentage of the swelling is calculated. The measurements are stopped when a maximum and constant swelling is achieved.

2. Results of test

All the results described below are the mean results of triple measured values.

The length, the height and the width of PC Elastoswell 20x10mm and PC Elastoswell 20x5mm profile are measured with a caliper. The volume of the PC Elastoswell TLS profile can be determined by using the formula: $V[cm^3] = length * height * width$

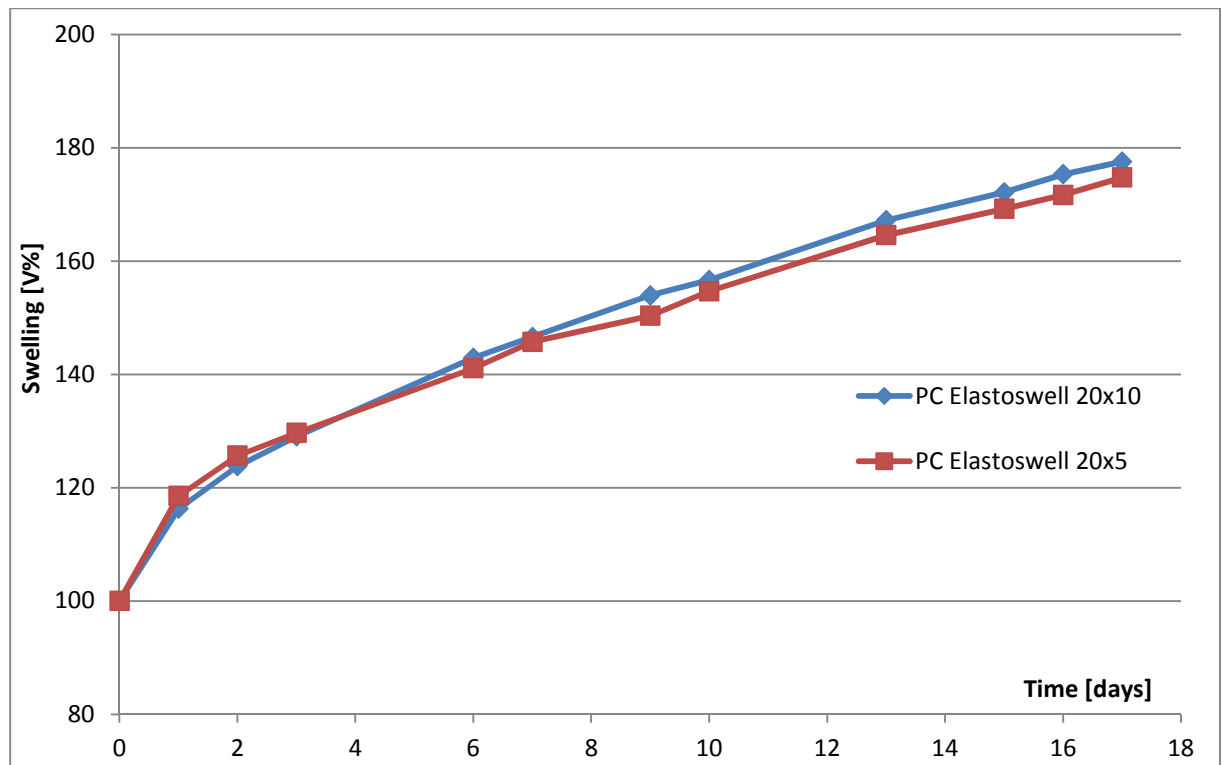
The calculated values of PC Elastoswell 20x10mm: The average volume amounts to 20,89 cm³.
The average density = 1,28 g/cm³.
The average weight per m strip = 249,2 g/m.

The calculated values of PC Elastoswell 20x5mm: The average volume amounts to 10,79 cm³.
The average density = 1,31 g/cm³.
The average weight per m strip = 129,8 g/m.

The next chart shows the volumetric % swelling of PC Elastoswell 20x10mm and PC Elastoswell 20x5mm when immersed in artificial seawater (3% NaCl). The measured values are given in comparison to original volume.


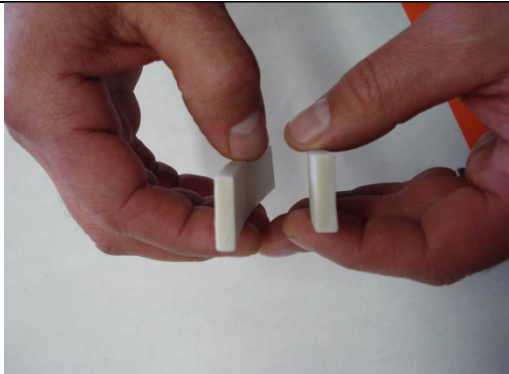
	24 hours	72 hours	10 days
Specifications for PC Elastoswell 20x10mm and PC Elastoswell 20x5mm [V%]	Min. 110 %	Min. 120 %	Min. 140 %
Measured values [V%] of PC Elastoswell 20x10mm	116 %	124 %	157 %
Measured values [V%] of PC Elastoswell 20x5mm	119 %	126 %	155 %






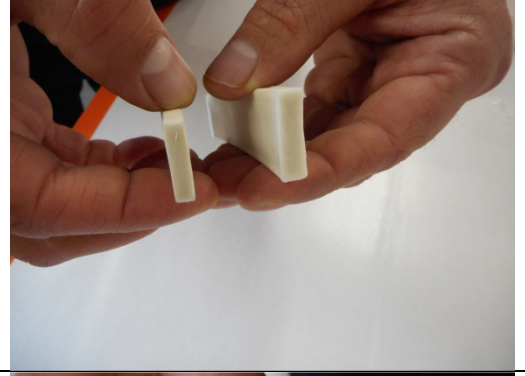
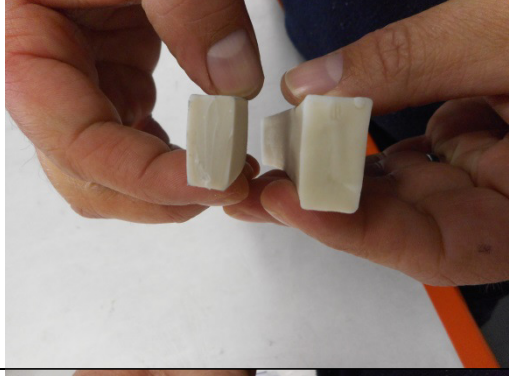
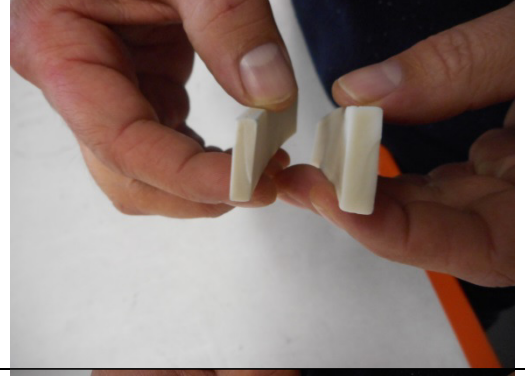
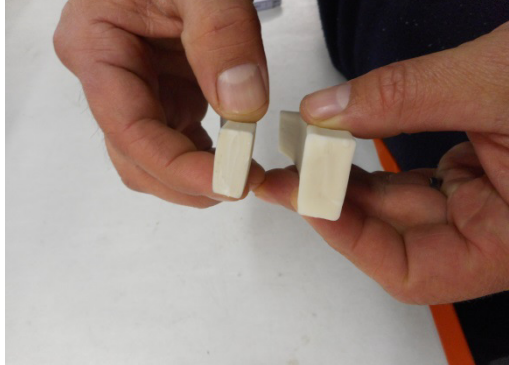
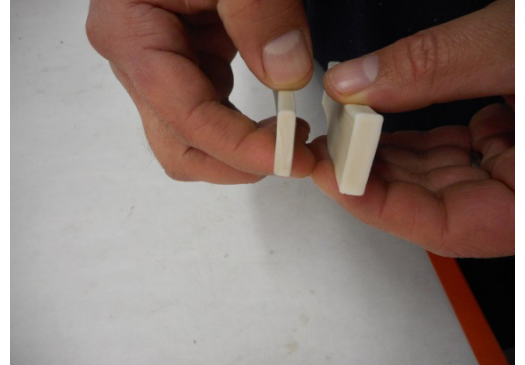
The next graph depicts the average swelling of the PC Elastoswell 20x10mm and PC Elastoswell 20x5mm in artificial seawater. The measured values are shown in comparison to original volume.



After 17 days the graph indicates that the swelling of PC Elastoswell 20x10mm and 20x5mm hasn't reached a maximum and constant value. The swelling will be observed the next days, until the maximum is reached.

During the test, every day a photo is taken of the top view of the PC Elastoswell pieces. A photo of two pieces PC Elastoswell 20x10mm: a swollen piece (right) in comparison with the original piece (left). A photo of two pieces PC Elastoswell 20x5mm: a swollen piece (right) in comparison with the original piece (left).

Time	PC Elastoswell 20x10mm	PC Elastoswell 20x5mm
Day 1		

Day 2		
Day 6		
Day 10		
Day 15		
Day 17		

3. Conclusions

PC Elastoswell 20x10mm and 20x5mm show a good swelling in artificial seawater (3% NaCl), better than the minimum specifications of 24 hours, 72 hours and 10days. After 17 days the pieces PC Elastoswell haven't reached their maximum swelling yet. The strips are further being monitored in order to determine their maximum swelling in a 3% NaCl solution.