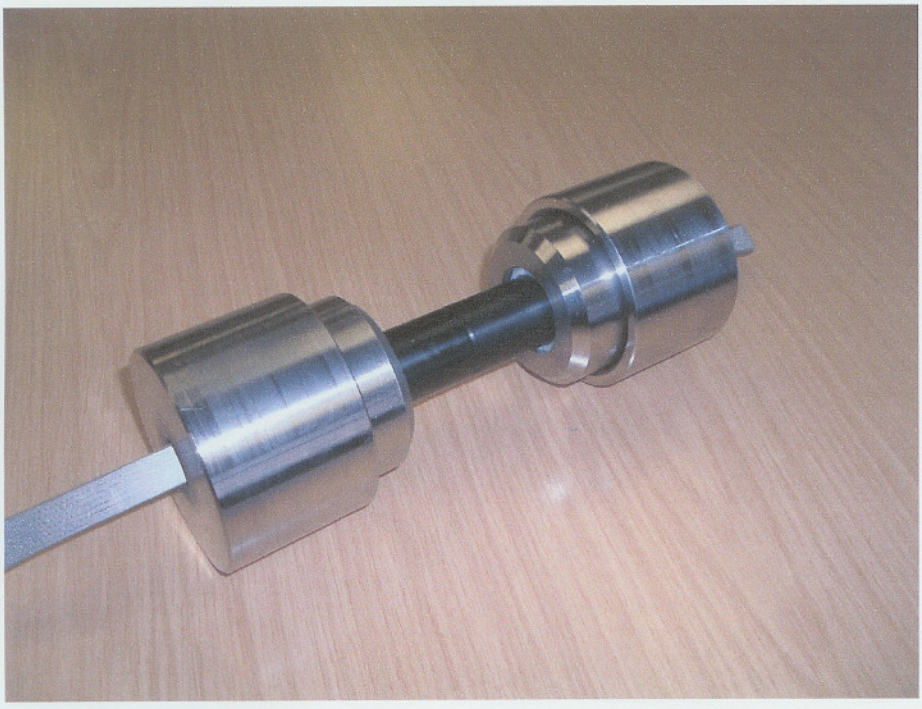
TEST OF PARTS FOR DOWELOCK SYSTEM

1.0 Introduction

From 28th Feb to 3rd March 2005 tests were carried out to determine Tensile strength of Bosworth Plastics Dowelock product.
Parts for Dowelock system consist of two "Collets" made of Injection moulded Polyacetal supplied by Bosworth Plastics, one at each end of plastic rod produced by Nylacast to drawing MBK02474, having diameter of 30 mm and length of 134 mm.

Assembled part for Dowelock system should withstand pulling forces greater than 50 000 N before "collets" or "rod" were damaged (by pulling apart the assembly).
Jig supplied by Bosworth Plastics.



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2.0 Experimental

Test performed on Instron UTM (universal test machine) 5581 having load cell of 100 000 N which has been UKAS Certified by UKAS Accredited Laboratory in November 2004. (Nylacast machine has load cell of 50000N)
The created test method was based on Tensile strength test.
For this test, the cross head speed was set on 5.0 mm/minute and Gauge length (distance between jaws) was set according to the length of assembled testing part in the jaws.
The calculation of extension and elongation at break were based only on the movement of cross head, as it was impossible to use the clip-on extensometer for this particular test due to the size of the specimen tested
(Gauge length of clip-on extensometer was 25 mm).

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Tensile Test Report

Nylacast Limited
Manufacturing Division
200 Hastings Road
Leicester
LE5 0HL

Attn: Steve Allen

Report Number: **WB050076**

Testing Information:

Report Date:	28th February 2005
WMTR Quote No:	QB150-02-05
Material:	XF069
Test Temperature:	19°C 28%RH
Testing Speed:	5mm/min
Test Operator:	M. Beal

The results in this report relate only to items tested.

Specimen Material Details	WMTR Testlog Number	Tensile Strength MPa	Specimen Notch Diameter mm	Maximum Load kN
XF069	6350	73	30	51.697
XF069	6351	75	30	53.137
XF069	6352	76	30	53.697

Approved Signatory: M Beal

M. Beal – Quality Manager

Bosworth Plastics

Dowelock 30 tests

Above Ultimate tensile results for Dowelock from Independent test house.

Independent tests carried out to establish Ultimate Tensile strength of Dowelock at Westmoreland Mechanical Testing & Research Ltd. Banbury England.

The change in length of the part (extension) was also determined by measuring the length of part before and after test.

Extension under load was measured at 1.44mm max (See Graph).

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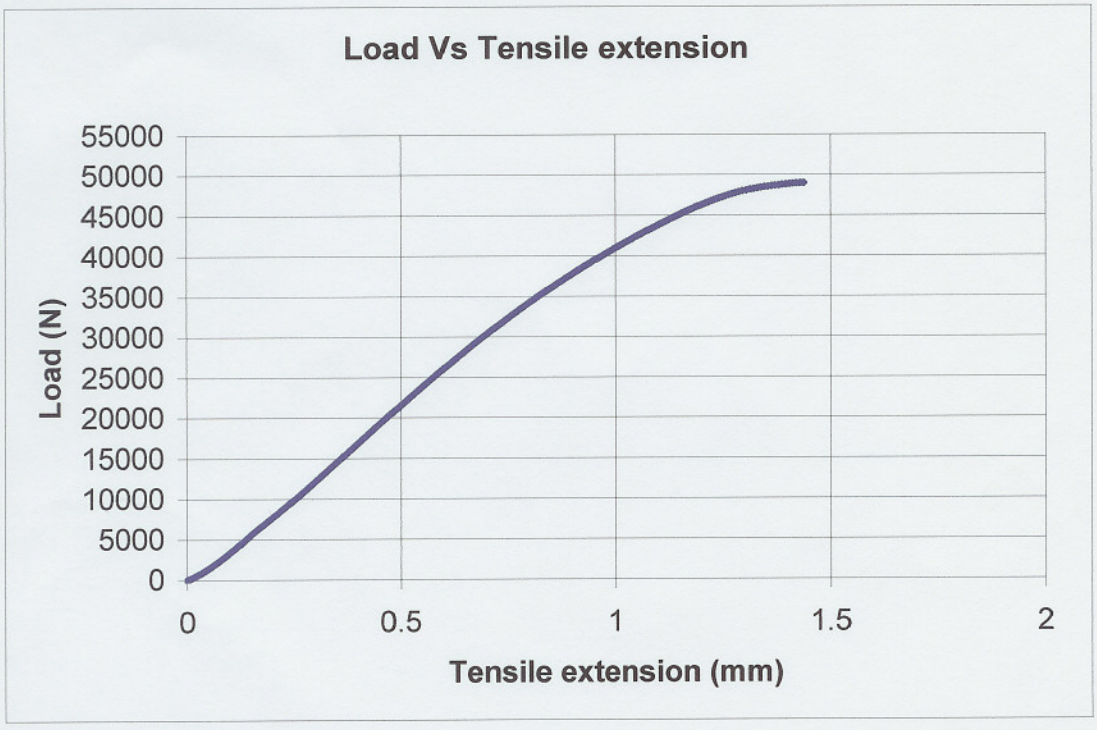
3.0 Results and Discussion

Below is a graph of 10 sample Dowelock parts tested by Nylacast. All parts gave the same result. The test was stopped at 49000 N as the load cell is 50 000 N. No break of collet or component was evident.



4.0 Conclusion

Nylacast HV-XF0069 is a suitable polymer material for this application.
Shear strength of this material is approx 69Mpa (10 000 psi). ASTM D732.