

LAMPIRAN

Lampiran 1 Hasil uji tarik spesimen variasi kecepatan putar tool 588 RPM (1)

Testometric
materials testing machines

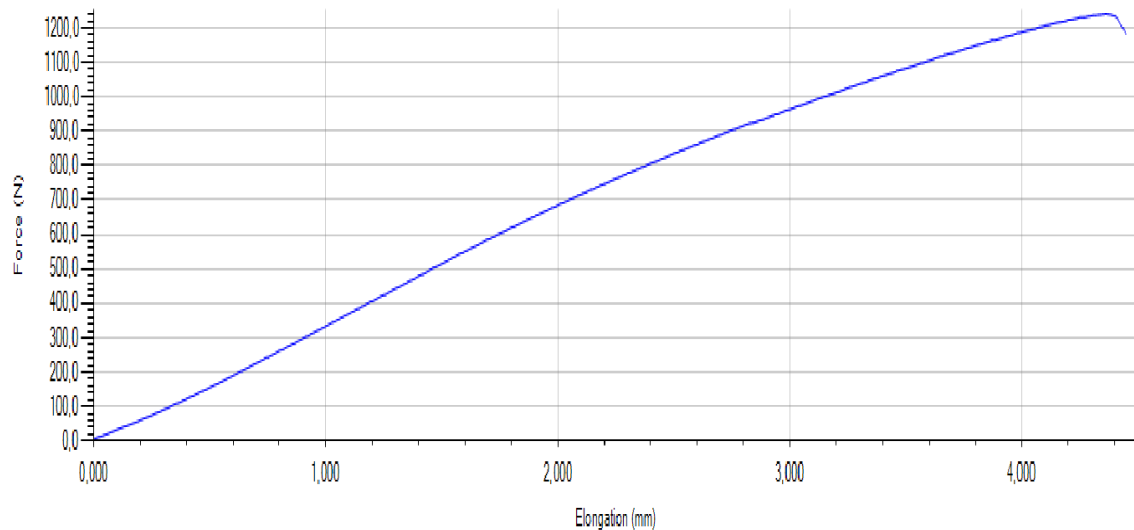
winTest™
Analysis

POLYPROPYLENE
588 rpm(1)

Ref 1 :
Ref 2 :
Ref 3 :

Test Name : ASTM D638
komposit Test Type : Tensile
Test Date : 30/04/2019
9:37 Test Speed :
10,000 mm/min
Pretension : 5,000 N
Sample Length : 120,000 mm

Test No	Elong. @ Peak (mm)	Force @ peak (N)
1	4,367	1240,800



— Test 1



Unit 1 Lincoln Business Park Lincoln Close,
Rochdale, Lancashire, England OL11 1NR

Tel: (44) (0)1706 654039 Fax: (44) (0)1706 646089
Email: info@testometric.co.uk website: www.testometric.co.uk

Lampiran 2 Hasil uji tarik spesimen variasi kecepatan putar tool 588 RPM (2)

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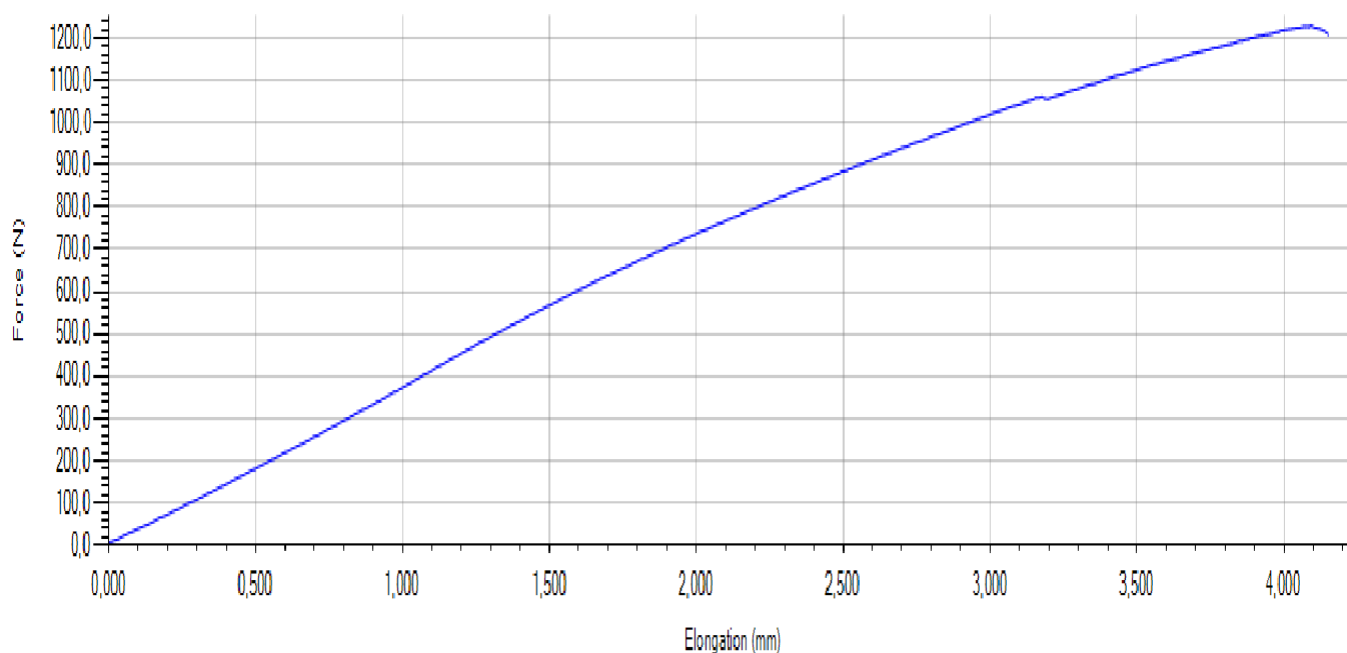
winTest™
Analysis

POLYPROPYLENE
588 rpm(2)

Ref 1 :
Ref 2 :
Ref 3 :

Test Name : ASTM D638 komposit
Test Type : Tensile
Test Date : 30/04/2019 9:40
Test Speed : 10,000 mm/min
Pretension : 5,000 N
Sample Length : 120,000 mm

Test No	Elong. @ Peak (mm)	Force @ peak (N)
1	4,089	1228,700



— Test 1



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Lampiran 3 Hasil uji tarik spesimen variasi kecepatan putar tool 977 RPM (1)

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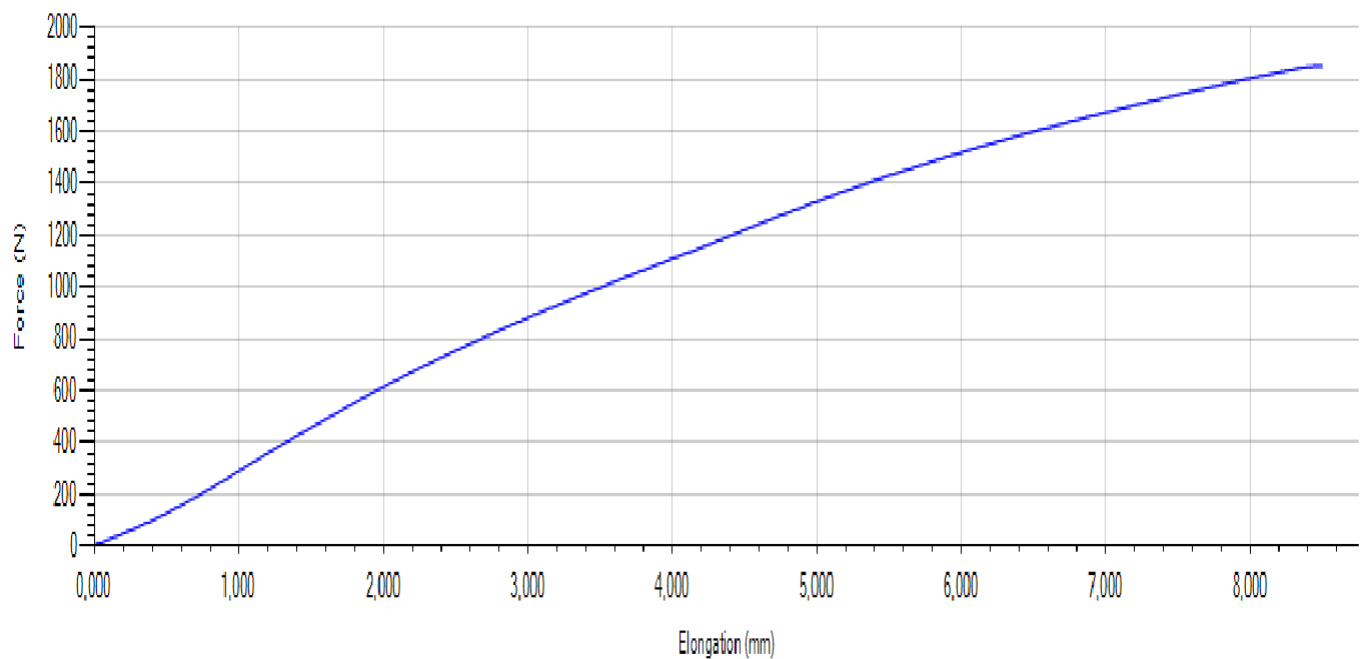
winTest™
Analysis

POLYPROPYLENE
977 rpm(1)

Ref 1 :
Ref 2 :
Ref 3 :

Test Name : ASTM D638 komposit
Test Type : Tensile
Test Date : 30/04/2019 10:01
Test Speed : 10,000 mm/min
Pretension : 5,000 N
Sample Length : 120,000 mm

Test No	Elong. @ Peak (mm)	Force @ peak (N)
1	8,447	1853,600



— Test 1



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Lampiran 4 Hasil uji tarik spesimen variasi kecepatan putar tool 977 RPM (2)

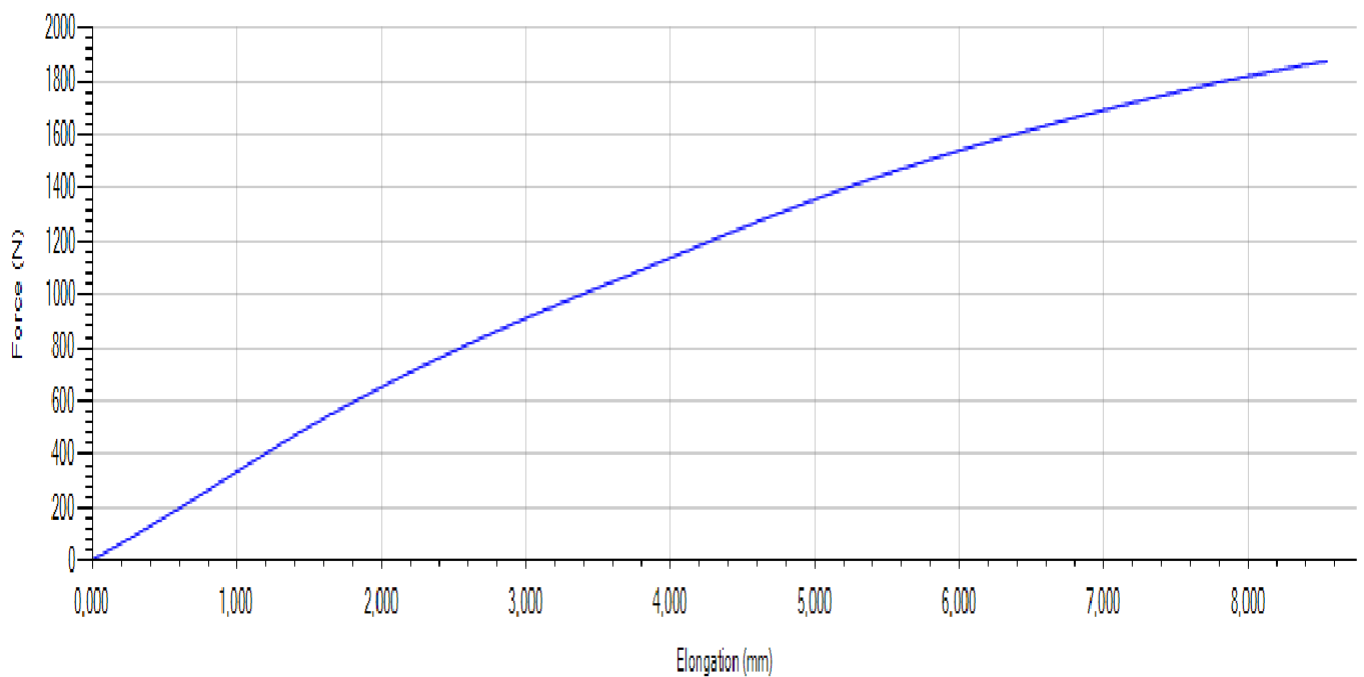
Testometric
materials testing machines

winTest™
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POLYPROPYLENE
977 rpm(2)

Ref 1 : Test Name : ASTM D638 komposit
 Ref 2 : Test Type : Tensile
 Ref 3 : Test Date : 30/04/2019 10:05
 Test Speed : 10,000 mm/min
 Pretension : 5,000 N
 Sample Length : 120,000 mm

Test No	Elong. @ Peak (mm)	Force @ peak (N)
1	8,539	1875,800



— Test 1

Lampiran 5 Hasil uji tarik spesimen variasi kecepatan putar tool 1562 RPM (1)

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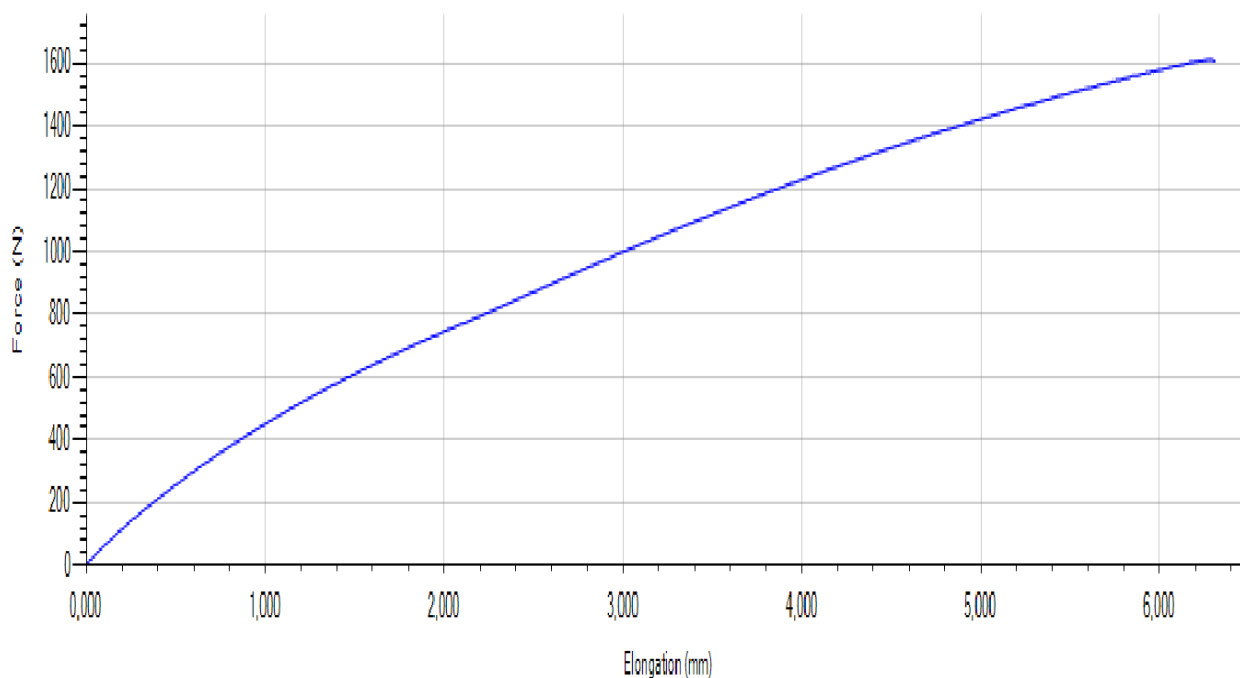
winTest™
Analysis

POLYPROPYLENE
1562 rpm(1)

Ref 1 :
Ref 2 :
Ref 3 :

Test Name : ASTM D638 komposit
Test Type : Tensile
Test Date : 30/04/2019 09:27
Test Speed : 10,000 mm/min
Pretension : 5,000 N
Sample Length : 120,000 mm

Test No	Elong. @ Peak (mm)	Force @ peak (N)
1	6,283	1611,700



— Test 1



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Lampiran 6 Hasil uji tarik spesimen variasi kecepatan putar tool 1562 RPM (2)

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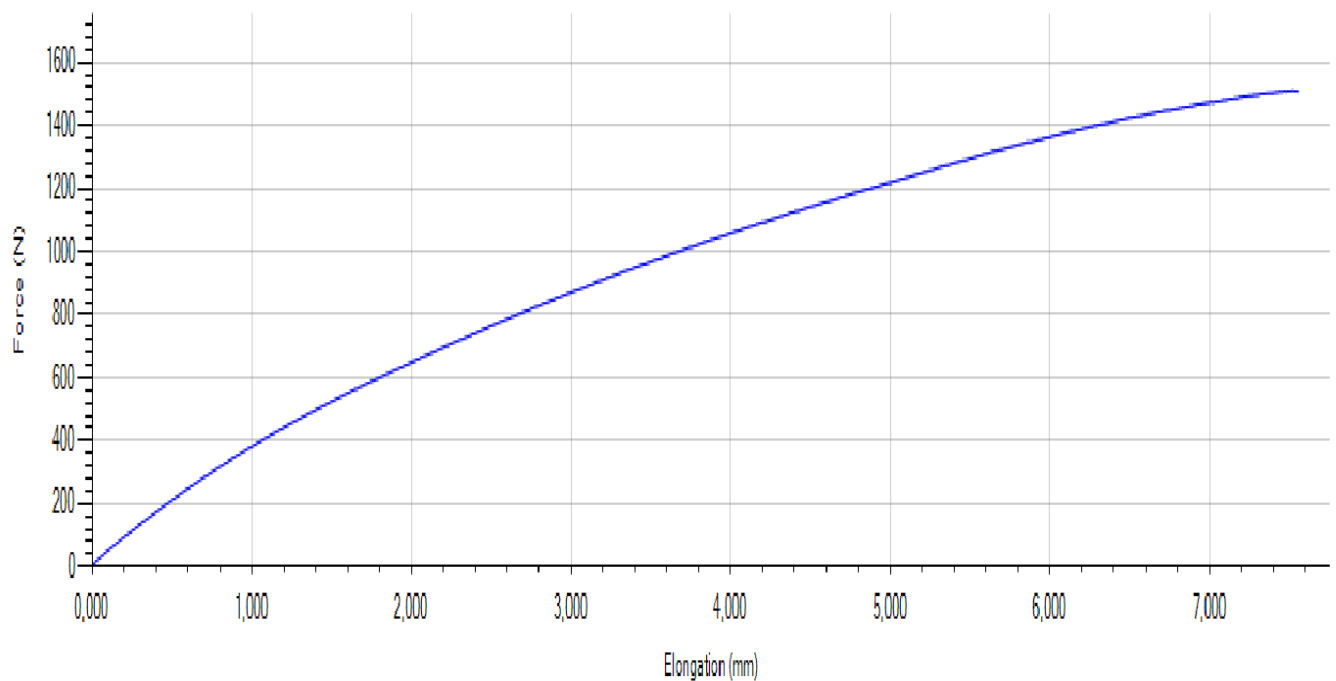
winTest™
Analysis

POLYPROPYLENE
1562 rpm(2)

Ref 1 :
Ref 2 :
Ref 3 :

Test Name : ASTM D638 komposit
Test Type : Tensile
Test Date : 30/04/2019 09:30
Test Speed : 10,000 mm/min
Pretension : 5,000 N
Sample Length : 120,000 mm

Test No	Elong. @ Peak (mm)	Force @ peak (N)
1	7,517	1510,300



— Test 1



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Lampiran 7 Hasil uji tarik spesimen variasi kecepatan putar tool 2371 RPM (1)

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Analysis

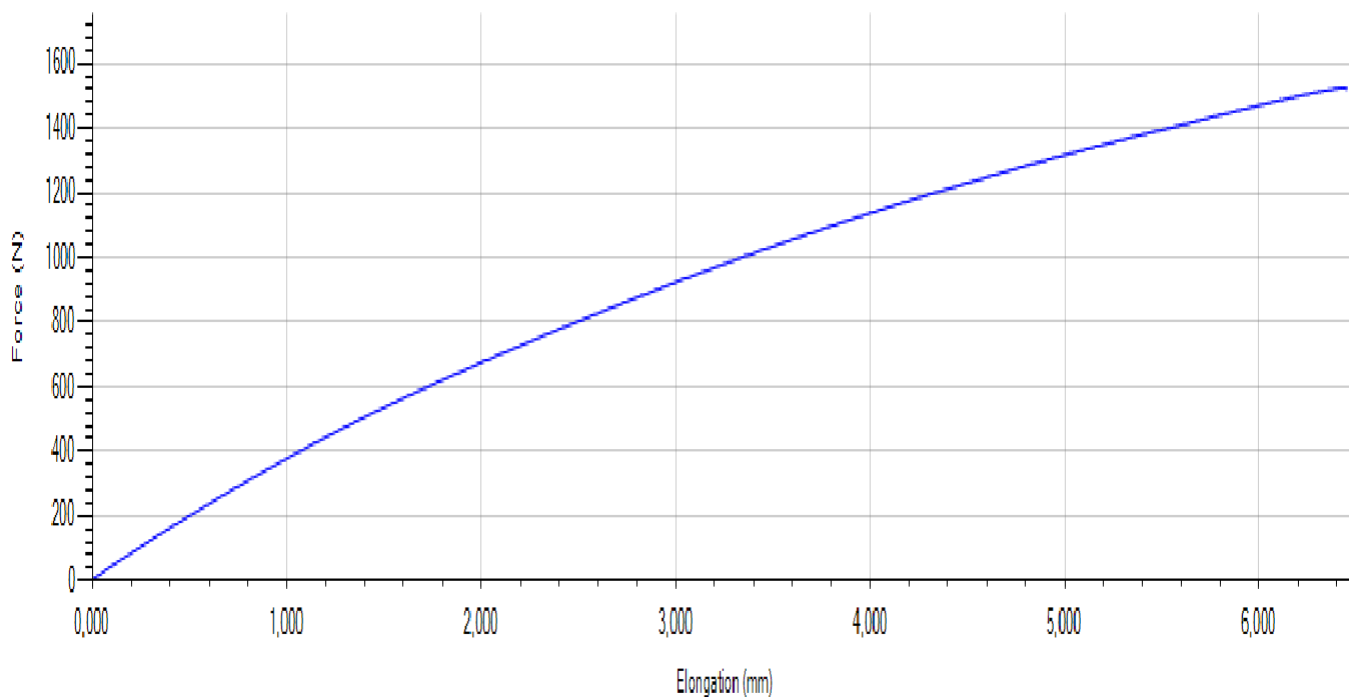
POLYPROPYLENE
2371 rpm(1)

Ref 1 :
Ref 2 :
Ref 3 :

Test Name : ASTM D638 komposit
Test Type : Tensile
Test Date : 30/04/2019 09:17
Test Speed : 10,000 mm/min
Pretension : 5,000 N
Sample Length : 120,000 mm

Test No	Elong. @ Peak (mm)	Force @ peak (N)
---------	-----------------------	---------------------

1	6.235	1575.8111
---	-------	-----------



— Test 1



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Lampiran 8 Hasil uji tarik spesimen variasi kecepatan putar tool 2371 RPM (2)

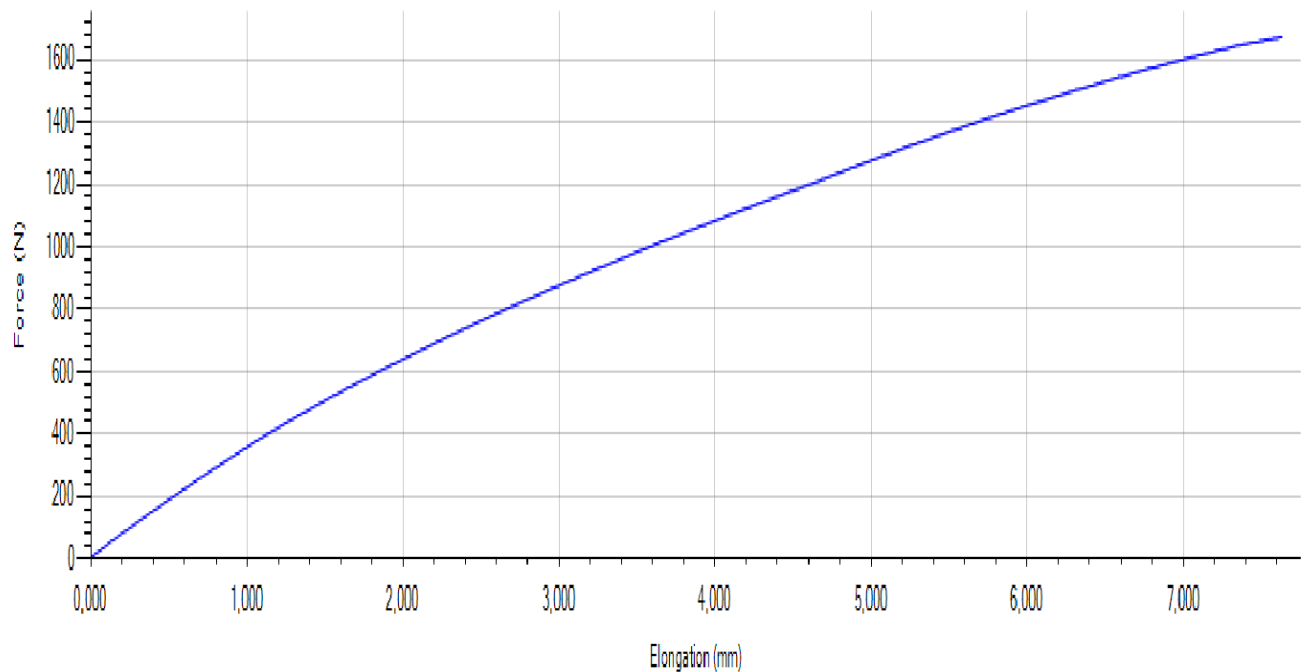
Testometric
materials testing machines

winTest™
Analysis

POLYPROPYLENE Type : Tensile
2371 rpm Test Date : 30/04/2019 09:21
Test Speed : 10,000 mm/min
Pretension : 5,000 N
Sample Length : 120,000 mm

Ref 1 :
Ref 2 :
Ref 3 :

Test No	Elong. @ Peak (mm)	Force @ peak (N)
1	7,625	1672,600



— Test 1



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Lampiran 9 Hasil uji tarik spesimen Raw Material

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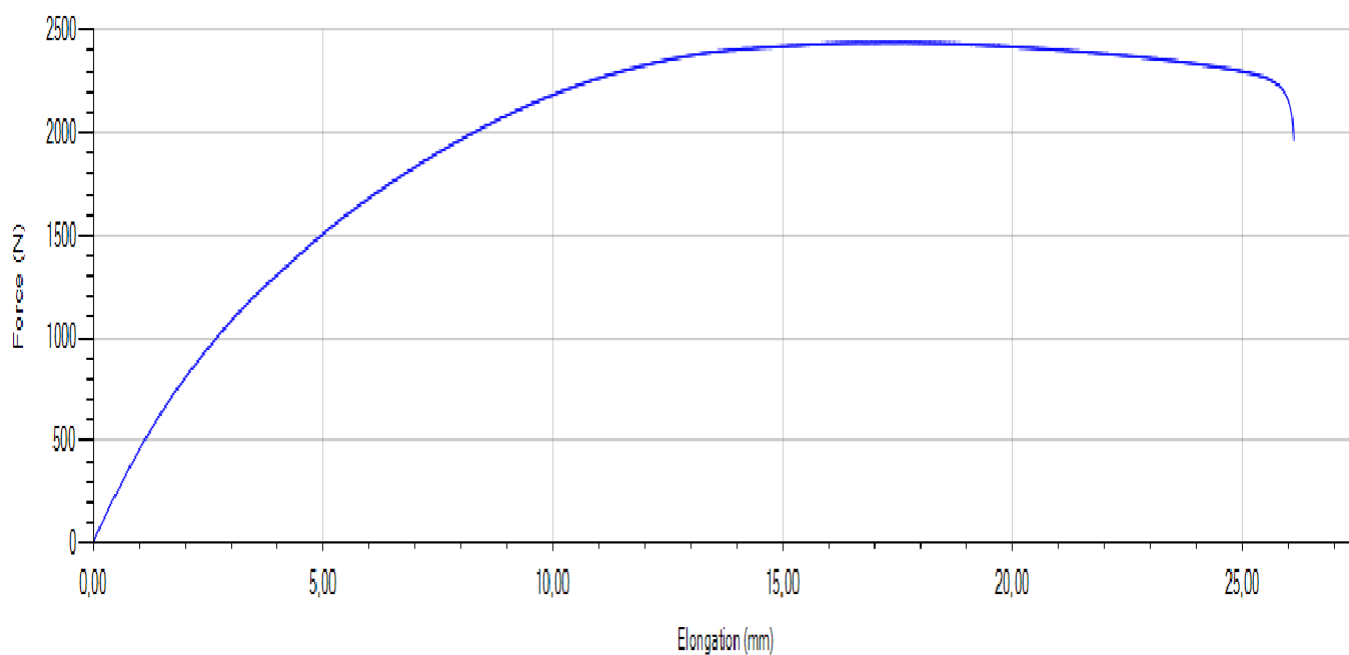
winTest™
Analysis

POLYPROPYLENE
Raw material

Ref 1 :
Ref 2 :
Ref 3 :

Test Name : ASTM D638 komposit
Test Type : Tensile
Test Date : 30/04/2019 11:02
Test Speed : 10,000 mm/min
Pretension : 5,000 N
Sample Length : 120,000 mm

Test No	Elong. @ Peak (mm)	Force @ peak (N)
T		



— Test 1



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Lampiran 10 Hasil uji tarik spesimen Perekat

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materials testing machines

winTest™
Analysis

POLYPROPYLENE

Perekat

Ref 1 :

Test Name : ASTM D638 komposit

Ref 2 :

Test Type : Tensile

Ref 3 :

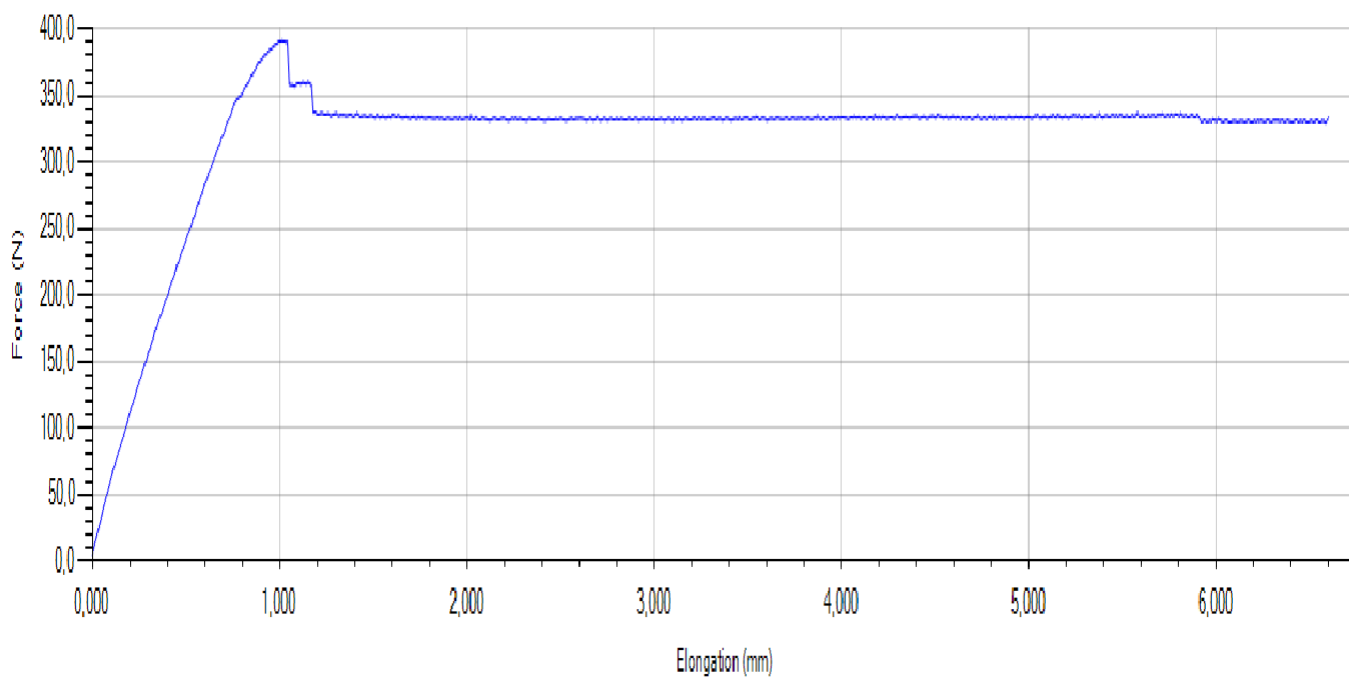
Test Date : 30/04/2019 11:12

Test Speed : 10,000 mm/min

Pretension : 5,000 N

Sample Length : 120,000 mm

Test No	Elong. @ Peak (mm)	Force @ peak (N)
1	1,013	391,300



— Test 1



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Lampiran 11 Hasil Uji Kekerasan spesimen variasi kecepatan putar 588 RPM

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Jawa Tengah, Indonesia



Hardness Test Report

Customer : Geriko Manabel Muhammad

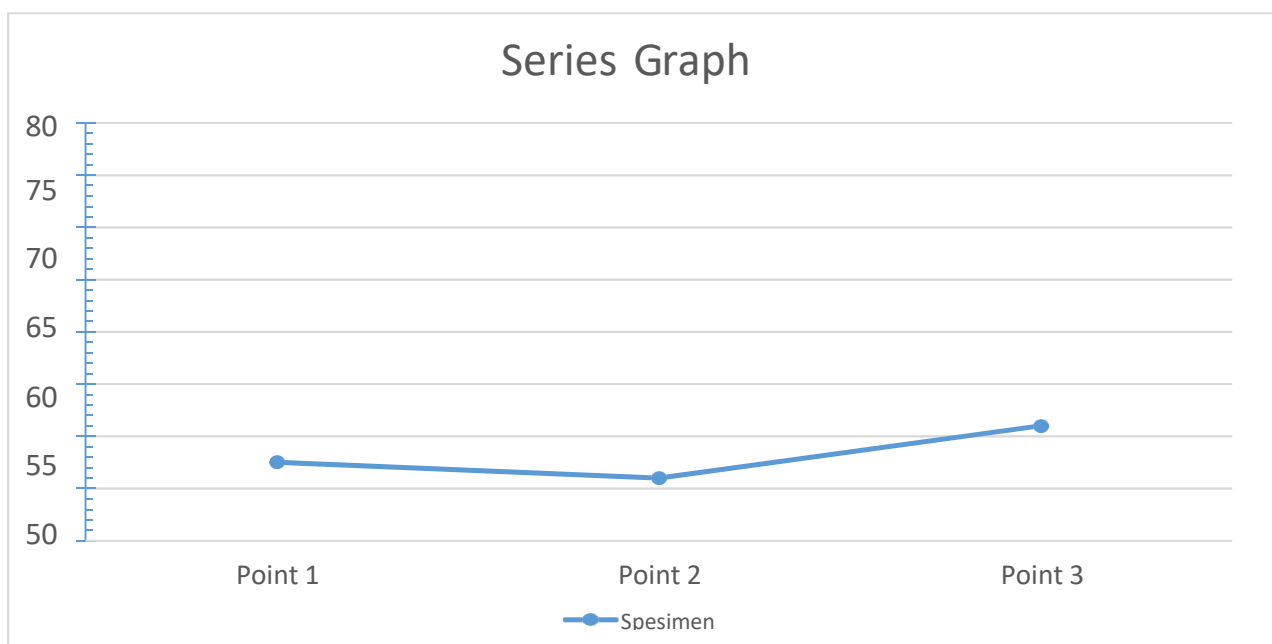
Material : Polypropylene

Note : n = 588 RPM

Standart : Shore D

Result

	Point 1	Point 2	Point 3
Spesimen 1	47,5	46	51



Statistics:

Series	Shore D
x	48,17
s	3,25
v [%]	6,75

Lampiran 12 Hasil Uji Kekerasan spesimen variasi kecepatan putar 977 RPM

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E-mail: politeknik@atmi.ac.id • Website: [http:// www.atmi.ac.id](http://www.atmi.ac.id)

Jawa Tengah, Indonesia



Hardness Test Report

Customer : Geriko Manabel Muhammad

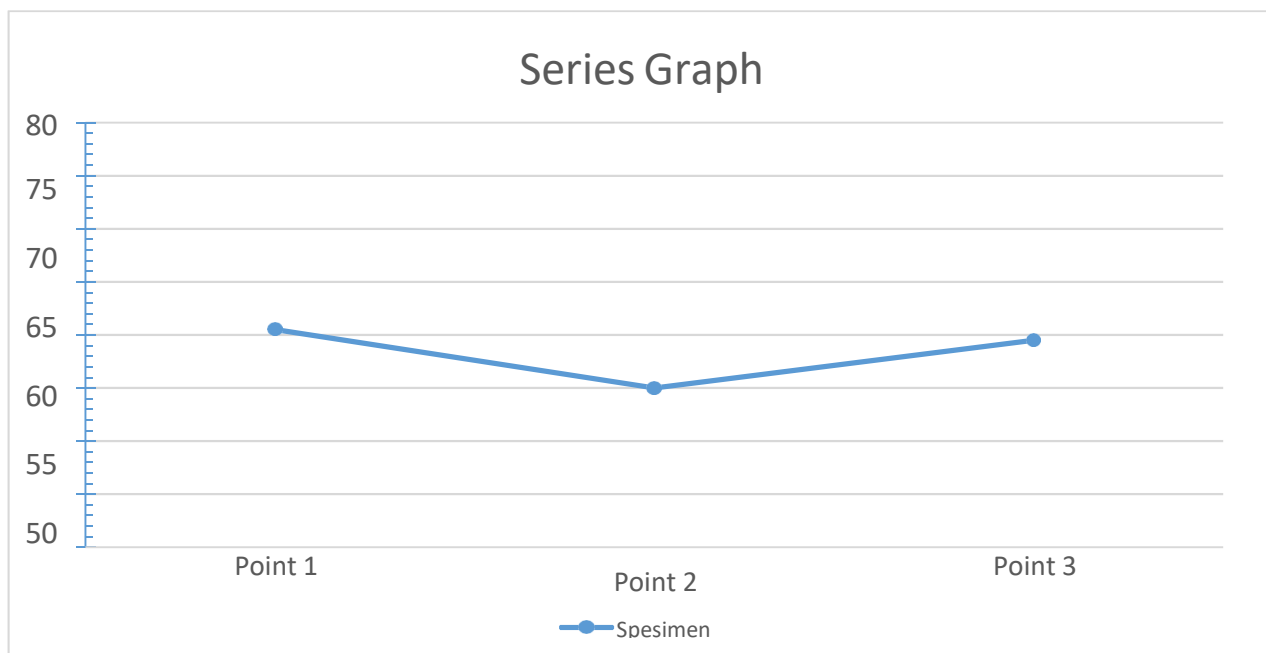
Material : Polypropylene

Note : n = 977 RPM

Standart : Shore D

Result

	Point 1	Point 2	Point 3
Spesimen 1	60,5	55	59,5



Statistics:

Series	Shore D
x	58,33
s	5
v [%]	8,57

Lampiran 13 Hasil Uji Kekerasan spesimen variasi kecepatan putar 1562 RPM

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E-mail: politeknik@atmi.ac.id • Website: [http:// www.atmi.ac.id](http://www.atmi.ac.id)

Jawa Tengah, Indonesia



Hardness Test Report

Customer : Geriko Manabel Muhammad

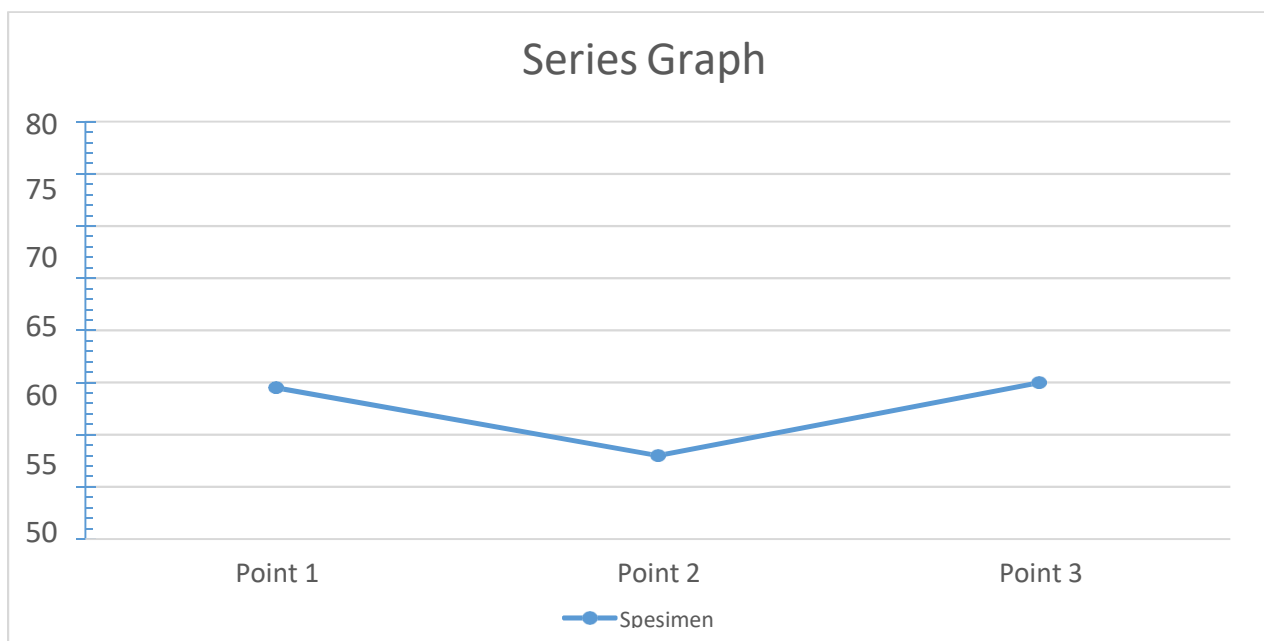
Material : Polypropylene

Note : n = 1562 RPM

Standart : Shore D

Result

	Point 1	Point 2	Point 3
Spesimen 1	54,5	48	55



Statistics:

Series	Shore D
x	52,50
s	6,75
v [%]	12,86

Lampiran 14 Hasil Uji Kekerasan spesimen variasi kecepatan putar 2371 RPM

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E-mail: politeknik@atmi.ac.id • Website: [http:// www.atmi.ac.id](http://www.atmi.ac.id)

Jawa Tengah, Indonesia



Hardness Test Report

Customer : Geriko Manabel Muhammad

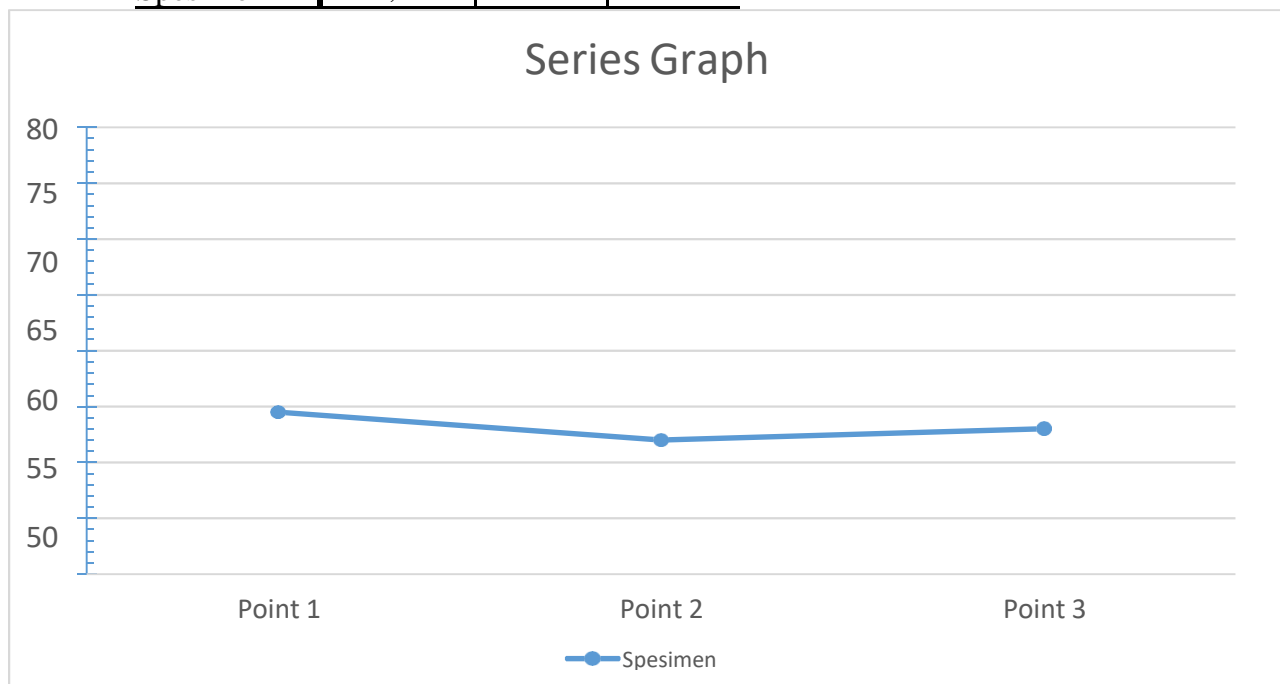
Material : Polypropylene

Note : n = 2371 RPM

Standart : Shore D

Result

	Point 1	Point 2	Point 3
Spesimen 1	54,5	52	53



Statistics:

Series	Shore D
x	53,17
s	1,75
v [%]	3,29

Lampiran 15 Hasil Uji Kekerasan spesimen Raw Material

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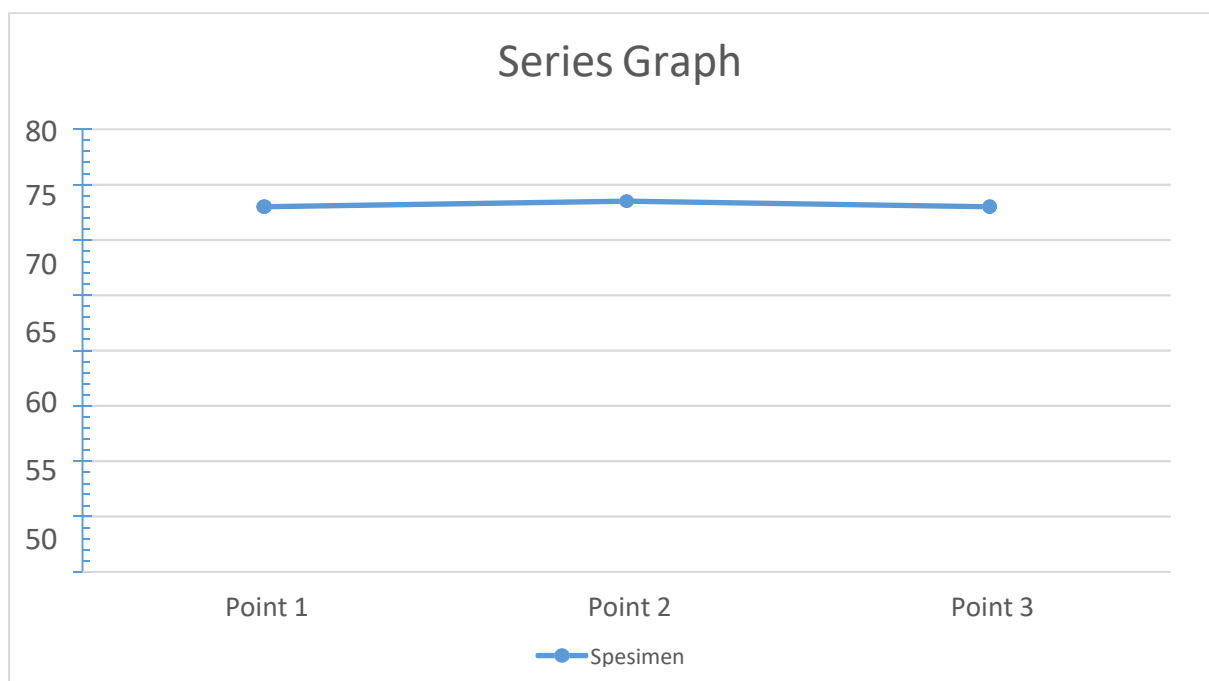


Hardness Test Report

Customer : Geriko Manabel Muhammad
 Material : Polypropylene
 Note : n = Raw Material
 Standart : Shore D

Result

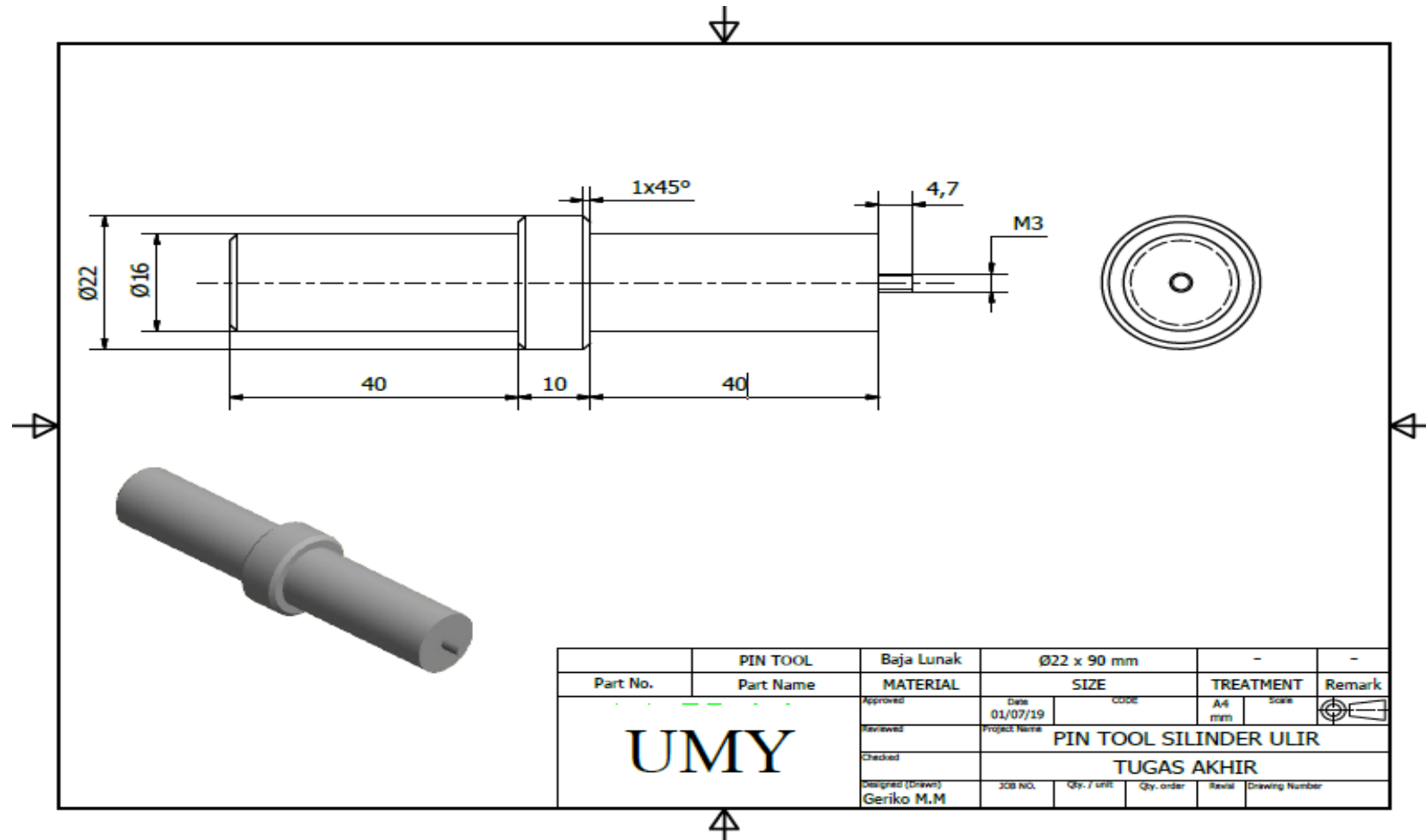
	Point 1	Point 2	Point 3
Spesimen 1	73	73,5	73



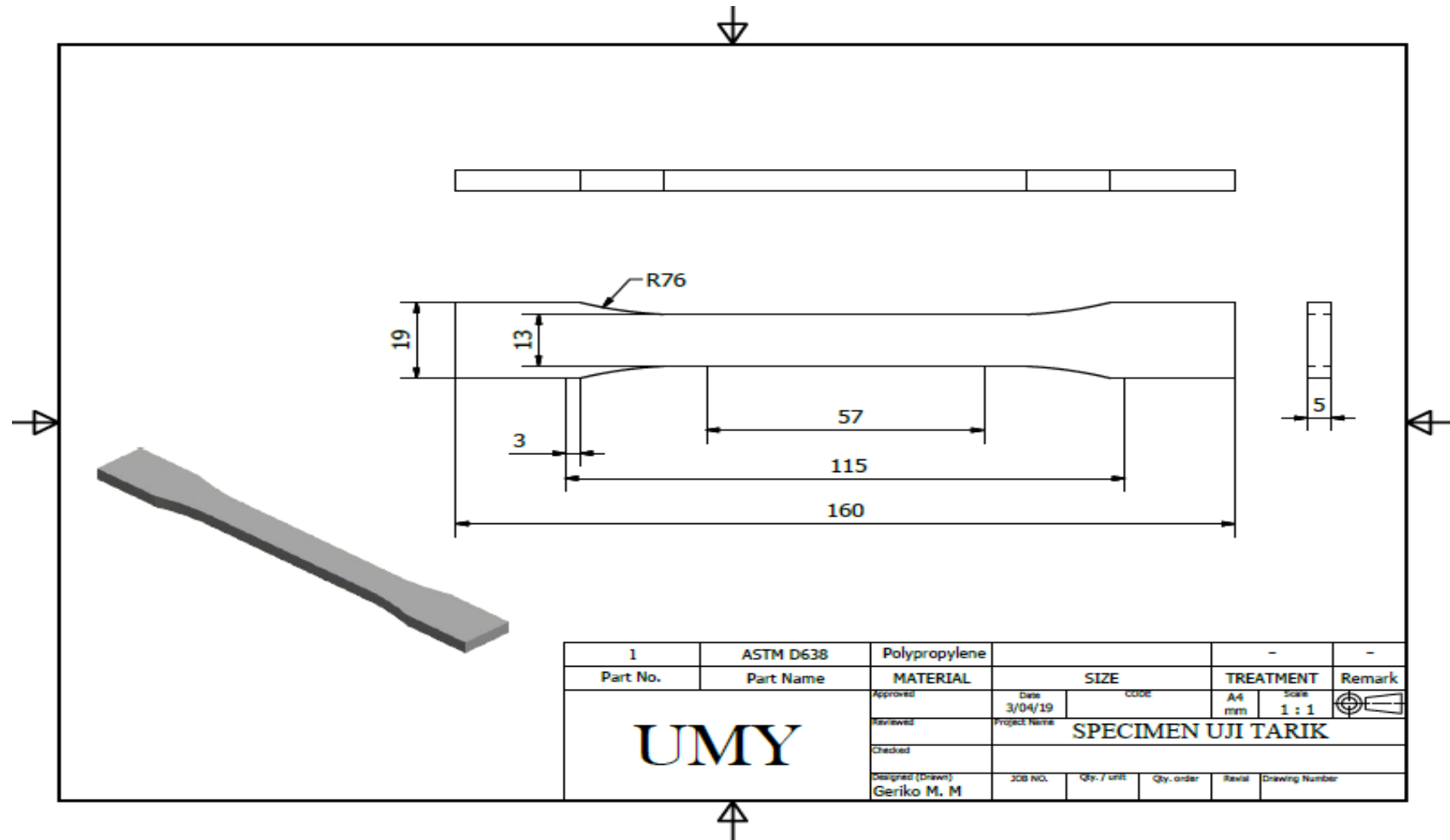
Statistics:

Series	Shore D
x	73,17
s	0,5
v [%]	0,68

Lampiran 16 Gambar teknik *pin tool* silinder ulir



Lampiran 17 Gambar teknik spesimen dipotong sesuai standard ASTM D638



Lampiran 18 Hasil cek plagiasi naskah tugas akhir

PENGARUH KECEPATAN PUTAR PIN TOOL TERHADAP SIFAT MEKANIK PADA PENGELASAN FRICTION STIR WELDING POLYPROPYLENE (PP)

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Judul Naskah Publikasi: Pengaruh Kecepatan Putar *Pin Tool* Terhadap Sifat Mekanik Pada Pengelasan *Friction Stir Welding Polypropylene (PP)*

Nama Mahasiswa: Geriko Manabel Muhammad

NIM: 20150130096

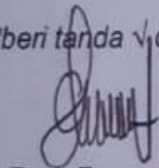
Pembimbing 1: Ir. Aris Widyo Nugroho, M.T., Ph.D.

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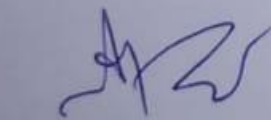
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Disetujui



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Tanggal 27 Juli 2019

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Tanggal 22 Juli 2019

