Program Studi Teknik Mesin

Lembar Persetujuan Naskah Publikasi dan Abstrak Tugas Akhir (TA)

Judul TA:	**Analisis Pengaruh Parameter Proses 3D-Printing Material Nylon 6 Terhadap Respon Akurasi Dimensi dan Kekuatan Tarik Menggunakan Metode Taguchi**
Judul Naskah Publikasi:	**Analisis Pengaruh Parameter Proses 3D-Printing Material Nylon 6 Terhadap Respon Akurasi Dimensi dan Kekuatan Tarik Menggunakan Metode Taguchi**
Nama Mahasiswa:	**Safwan Noor**
NIM:	**20130130022**
Pembimbing 1:	**Aris Widyo Nugroho, S.T., M.T., Ph.D**
Pembimbing 2:	**Cahyo Budiyantoro, S.T., M.Sc., IPM**

Hal yang dimintakan pesetujuan *:

☐ Abstrak berbahasa Indonesia	☐ Naskah Publikasi	☐ …….	☐ …….
☐ Abstrak berbahasa Inggris	☐ …….	☐ …….	☐ …….

**beri tanda √ di kotak yang sesuai*

Tanda Tangan

Nama Mahasiswa *Tanggal*

Persetujuan Dosen Pembimbing dan Program Studi

☐ Disetujui

Tanda Tangan

Dosen Pembimbing *Tanggal*

Tanda Tangan

Ketua/Sekretaris Program Studi *Tanggal*

Formulir persetujuan ini mohon diletakkan pada lampiran terakhir pada naskah TA.

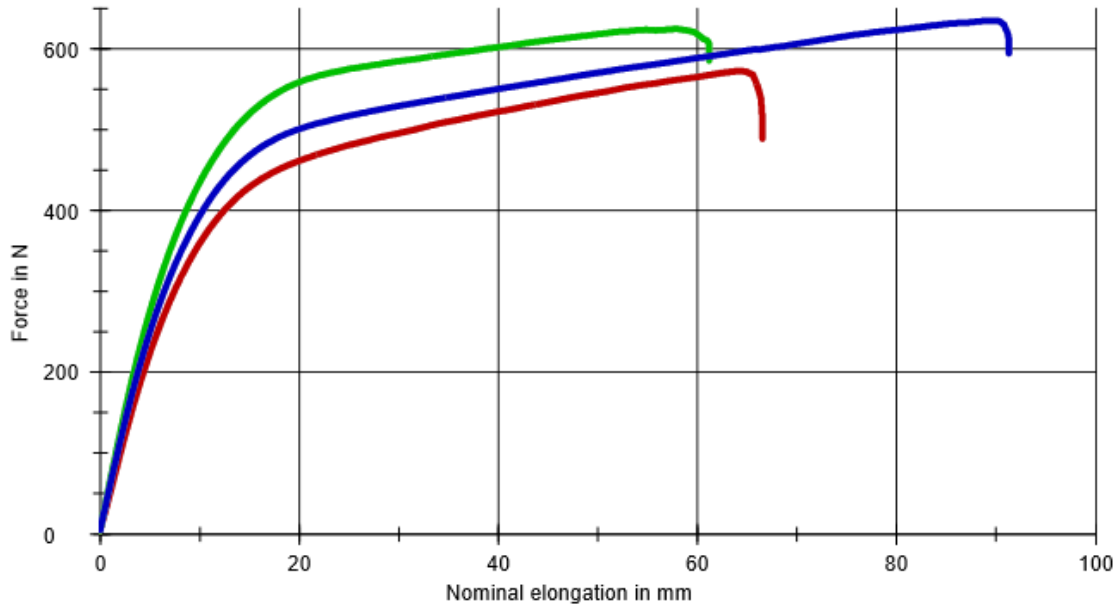
Test report

Customer	:	Sarwan Noor	Pre-load	:	0,1	MPa
Test standard	:	ASTM D 638	Speed, tensile modulus	:	50	mm/min
Material	:	Nylon	Test speed	:	50	mm/min
Notes	:	3D Printing Tipe 1	Grip to grip separation at the start position	:	115,00	mm
Machine data	:	Zwick Z020	Gage length, standard travel	:	50	mm

Test results:

Legend	No.	Force N	Elongation mm	E_t MPa	σ_M MPa	ε_M %	σ_B MPa	ε_B %	h mm	b mm
	1	572,44	66,55	86,1	11,0	68	9,37	70	4,04	12,9
	2	624,49	61,19	111	12,0	62	11,3	65	4,06	12,8
	3	634,56	91,27	91,8	11,4	90	10,7	91	4,31	12,9

Series graph:



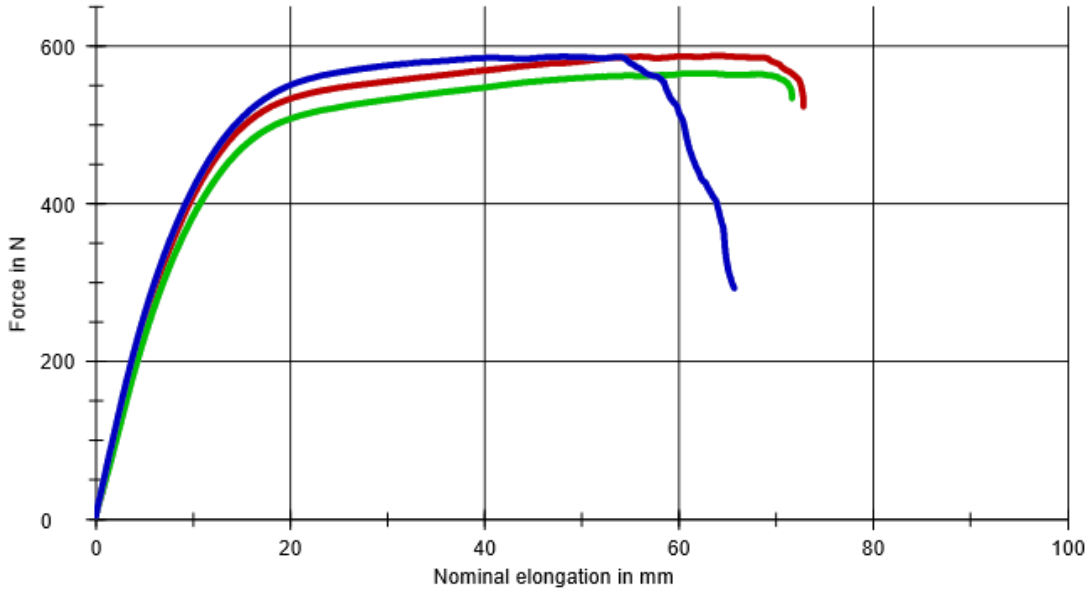
Test report

Customer	:	Sarwan Noor	Pre-load	:	0,1	MPa
Test standard	:	ASTM D 638	Speed, tensile modulus	:	50	mm/min
Material	:	Nylon	Test speed	:	50	mm/min
Notes	:	3D Printing Tipe 2	Grip to grip separation at the start position	:	115,00	mm
Machine data	:	Zwick Z020	Gage length, standard travel	:	50	mm

Test results:

Legend	No.	Force	Elongation	E_t	σ_M	ε_M	σ_B	ε_B	h	b
		N	mm	MPa	MPa	%	MPa	%	mm	mm
	1	587,61	72,81	84,7	10,4	68	9,22	75	4,33	13,11
	2	565,40	71,60	89,1	10,1	65	9,53	73	4,3	13,02
	3	586,55	65,66	102	11,4	53	5,70	69	3,97	12,96

Series graph:



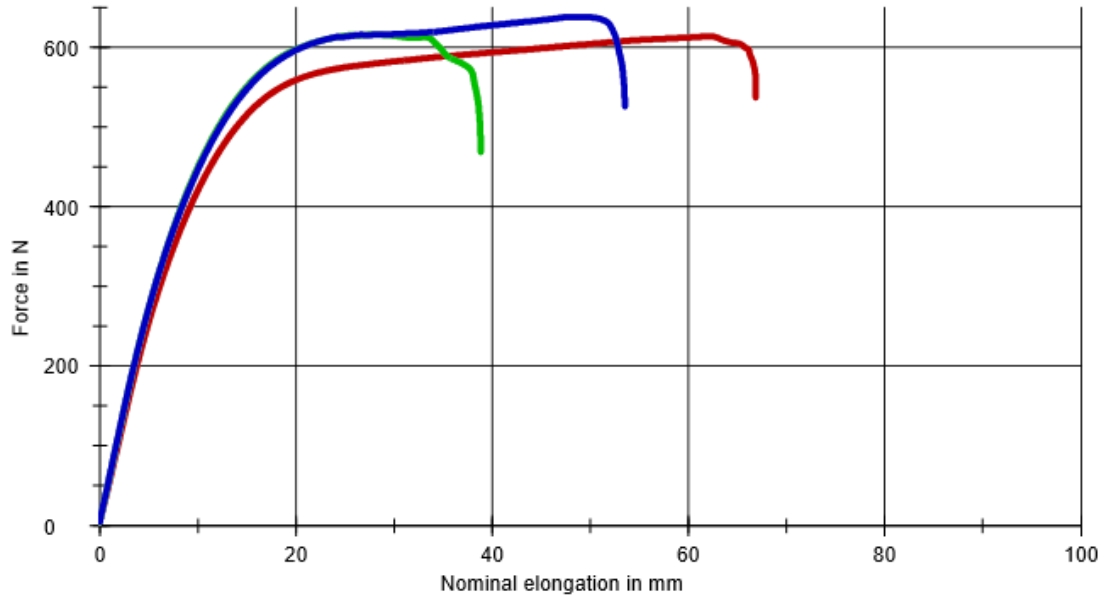
Test report

Customer	:	Sarwan Noor	Pre-load	:	0,1	MPa
Test standard	:	ASTM D 638	Speed, tensile modulus	:	50	mm/min
Material	:	Nylon	Test speed	:	50	mm/min
Notes	:	3D Printing Tipe 3	Grip to grip separation at the start position	:	115,00	mm
Machine data	:	Zwick Z020	Gage length, standard travel	:	50	mm

Test results:

Legend	No.	Force	Elongation	E_t	σ_M	ε_M	σ_B	ε_B	h	b
		N	mm	MPa	MPa	%	MPa	%	mm	mm
	1	613,33	66,88	99,4	11,5	65	10,1	69	4,05	13,14
	2	616,11	38,82	104	11,1	36	8,42	45	4,25	13,08
	3	637,79	53,53	105	12,0	54	9,90	58	4,06	13,08

Series graph:



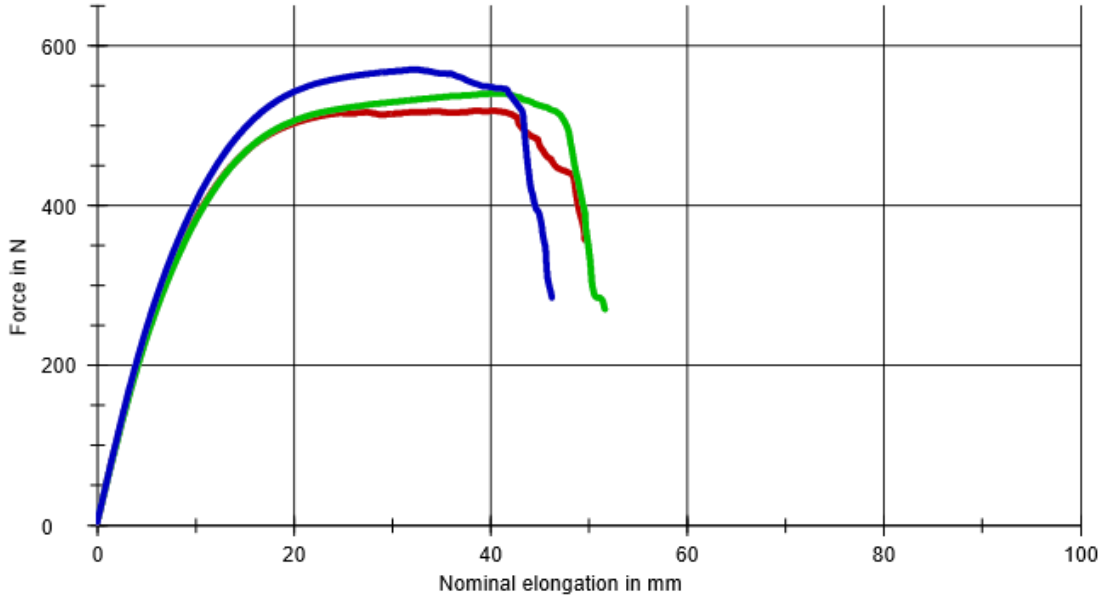
Test report

Customer	:	Sarwan Noor	Pre-load	:	0,1	MPa
Test standard	:	ASTM D 638	Speed, tensile modulus	:	50	mm/min
Material	:	Nylon	Test speed	:	50	mm/min
Notes	:	3D Printing Tipe 4	Grip to grip separation at the start position	:	115,00	mm
Machine data	:	Zwick Z020	Gage length, standard travel	:	50	mm

Test results:

Legend	No.	Force N	Elongation mm	E_t MPa	σ_M MPa	ε_M %	σ_B MPa	ε_B %	h mm	b mm
	1	518,56	49,52	87,8	9,60	45	6,61	54	4,17	12,96
	2	540,18	51,64	85,3	9,54	46	4,77	56	4,35	13,02
	3	569,84	46,23	98,2	10,6	39	5,29	51	4,14	12,99

Series graph:



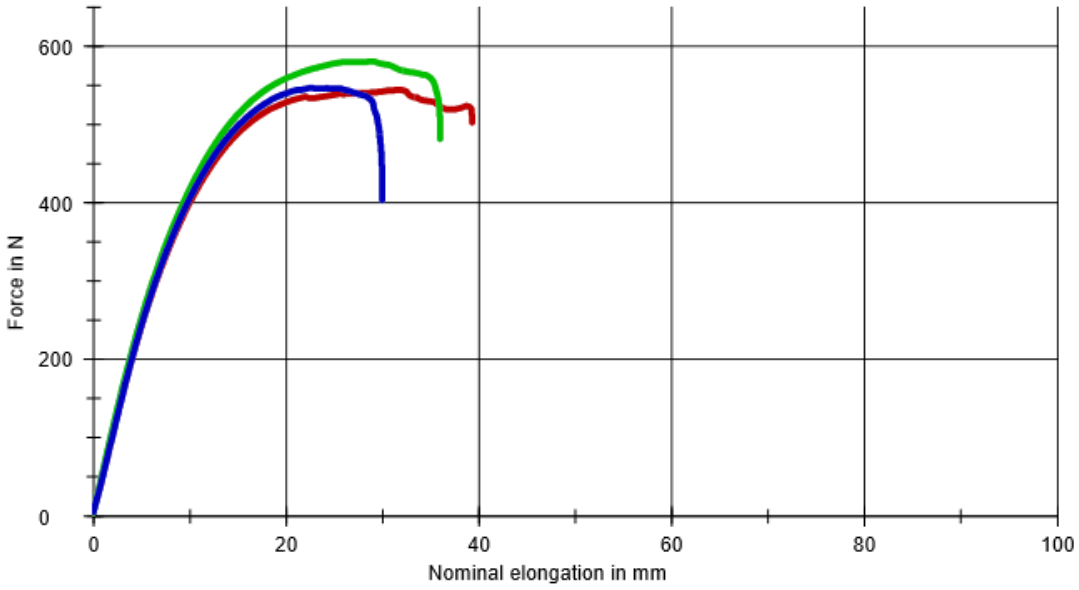
Test report

Customer	:	Sarwan Noor	Pre-load	:	0,1	MPa
Test standard	:	ASTM D 638	Speed, tensile modulus	:	50	mm/min
Material	:	Nylon	Test speed	:	50	mm/min
Notes	:	3D Printing Tipe 5	Grip to grip separation at the start position	:	115,00	mm
Machine data	:	Zwick Z020	Gage length, standard travel	:	50	mm

Test results:

Legend	No.	Force N	Elongation mm	E_t MPa	σ_M MPa	ε_M %	σ_B MPa	ε_B %	h mm	b mm
	1	544,19	39,29	93,9	9,98	39	9,20	46	4,19	13,02
	2	580,42	35,99	94,5	10,4	37	8,60	43	4,29	13,05
	3	546,78	29,97	94,7	9,97	31	7,35	37	4,22	13

Series graph:



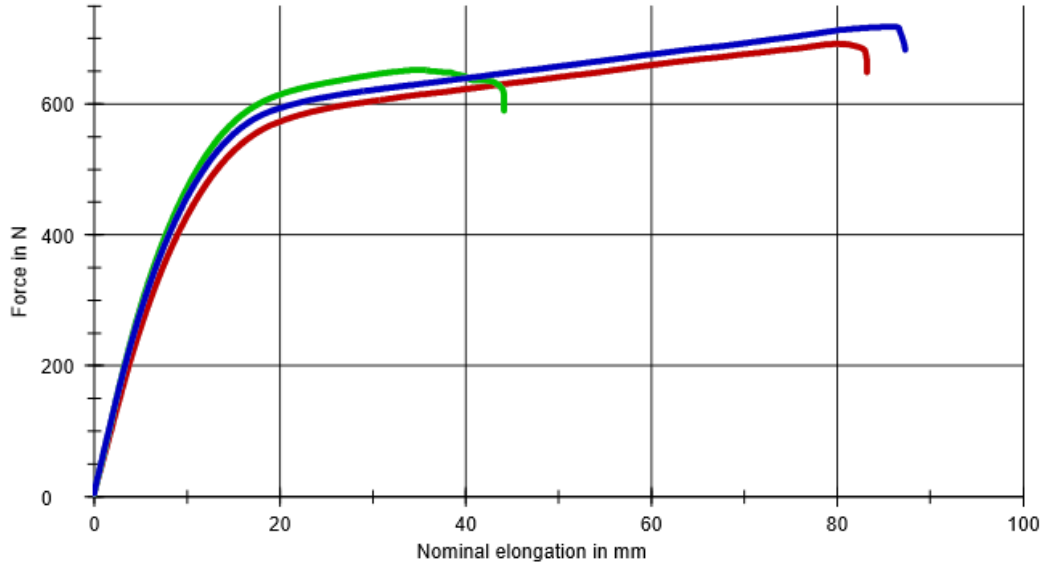
Test report

Customer	:	Sarwan Noor	Pre-load	:	0,1	MPa
Test standard	:	ASTM D 638	Speed, tensile modulus	:	50	mm/min
Material	:	Nylon	Test speed	:	50	mm/min
Notes	:	3D Printing Tipe 6	Grip to grip separation at the start position	:	115,00	mm
Machine data	:	Zwick Z020	Gage length, standard travel	:	50	mm

Test results:

Legend	No.	Force N	Elongation mm	E_t MPa	σ_M MPa	ε_M %	σ_B MPa	ε_B %	h mm	b mm
	1	691,89	83,16	97,4	12,6	81	11,8	83	4,27	12,9
	2	652,22	44,11	114	12,2	42	11,0	50	4,15	12,9
	3	718,40	87,27	109	13,2	85	12,5	87	4,2	12,97

Series graph:



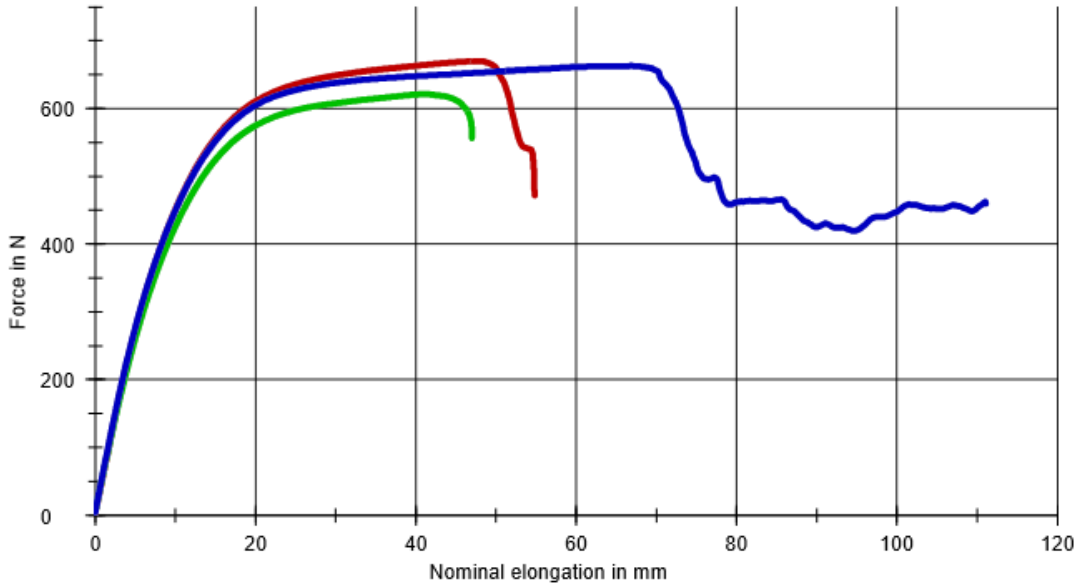
Test report

Customer	:	Sarwan Noor	Pre-load	:	0,1	MPa
Test standard	:	ASTM D 638	Speed, tensile modulus	:	50	mm/min
Material	:	Nylon	Test speed	:	50	mm/min
Notes	:	3D Printing Tipe 7	Grip to grip separation at the start position	:	115,00	mm
Machine data	:	Zwick Z020	Gage length, standard travel	:	50	mm

Test results:

Legend	No.	Force N	Elongation mm	E_t MPa	σ_M MPa	ε_M %	σ_B MPa	ε_B %	h mm	b mm
	1	669,67	54,80	112	12,7	52	8,93	59	4,05	13,04
	2	621,23	47,00	107	11,8	46	10,5	52	4,02	13,12
	3	662,75	111,07	116	13,2	69	9,14	110	3,86	13,04

Series graph:



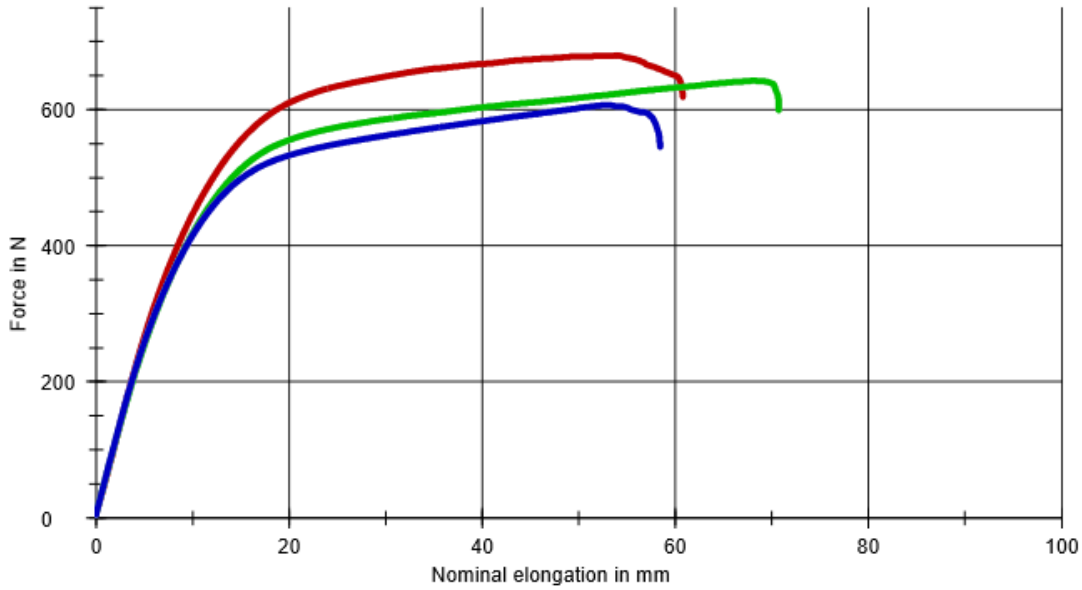
Test report

Customer	:	Sarwan Noor	Pre-load	:	0,1	MPa
Test standard	:	ASTM D 638	Speed, tensile modulus	:	50	mm/min
Material	:	Nylon	Test speed	:	50	mm/min
Notes	:	3D Printing Tipe 8	Grip to grip separation at the start position	:	115,00	mm
Machine data	:	Zwick Z020	Gage length, standard travel	:	50	mm

Test results:

Legend	No.	Force N	Elongation mm	E_t MPa	σ_M MPa	ε_M %	σ_B MPa	ε_B %	h mm	b mm
	1	679,37	60,78	107	12,0	57	10,9	63	4,39	12,9
	2	642,26	70,72	98,1	11,3	70	10,6	72	4,38	12,96
	3	606,63	58,40	101	11,8	58	10,6	63	3,97	12,92

Series graph:



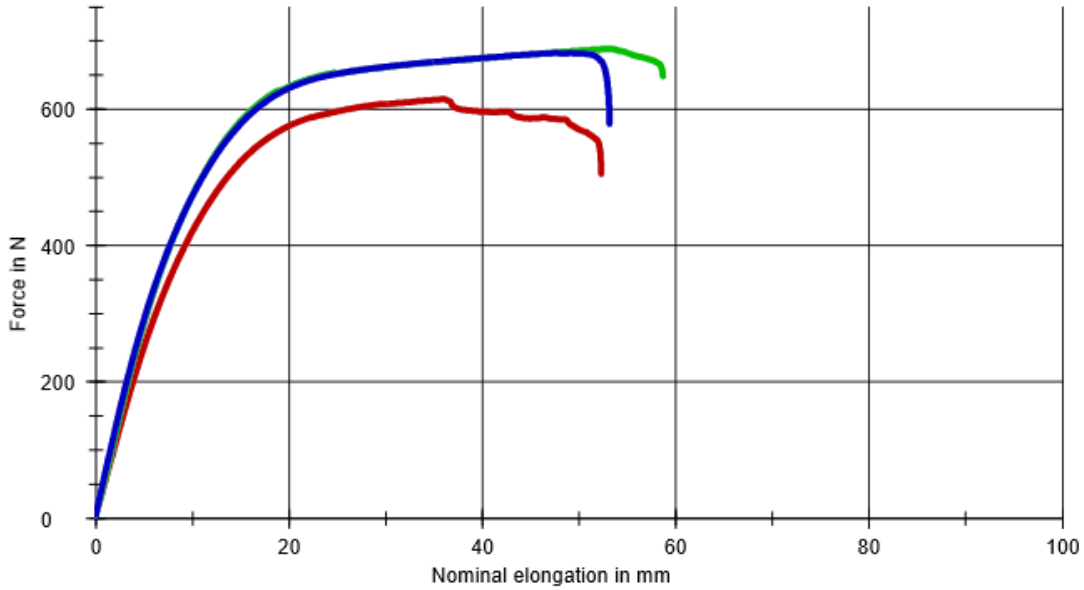
Test report

Customer	:	Sarwan Noor	Pre-load	:	0,1	MPa
Test standard	:	ASTM D 638	Speed, tensile modulus	:	50	mm/min
Material	:	Nylon	Test speed	:	50	mm/min
Notes	:	3D Printing Tipe 9	Grip to grip separation at the start position	:	115,00	mm
Machine data	:	Zwick Z020	Gage length, standard travel	:	50	mm

Test results:

Legend	No.	Force N	Elongation mm	E_t MPa	σ_M MPa	ε_M %	σ_B MPa	ε_B %	h mm	b mm
	1	614,65	52,27	90,9	10,6	42	8,67	56	4,48	12,99
	2	688,61	58,66	115	12,7	58	12,0	62	4,15	13,06
	3	682,50	53,15	111	12,5	53	10,6	58	4,18	13,05

Series graph:



Test report

Customer	:	Sapwan Noor	Pre-load	:	0,1	MPa
Test standard	:	ASTM D 638	Speed, tensile modulus	:	50	mm/min
Material	:	Nylon	Test speed	:	50	mm/min
Notes	:	3D Printing	Grip to grip separation at the start position	:	115,00	mm
Machine data	:	Zwick Z020	Gage length, standard travel	:	50	mm

Test results:

Legend	No.	Force N	Elongation mm	E_t MPa	σ_M MPa	ε_M %	σ_B MPa	ε_B %	h mm	b mm
	1	662,11	77,25	87,4	11,7	78	11,7	78	4,35	12,98
	2	600,88	52,13	104	11,0	55	10,7	56	4,23	12,9
	3	581,73	51,35	88,9	10,7	53	10,1	56	4,2	12,94
	4	683,05	90,01	92,4	12,1	84	11,1	89	4,35	12,98
	5	641,91	68,94	108	12,0	62	11,0	71	4,12	12,94

Series graph: