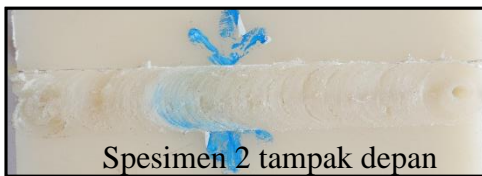
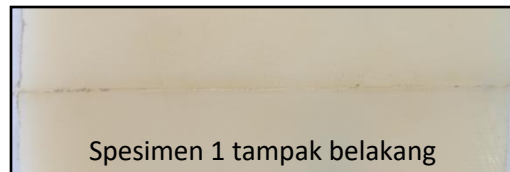
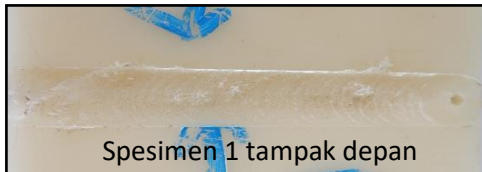


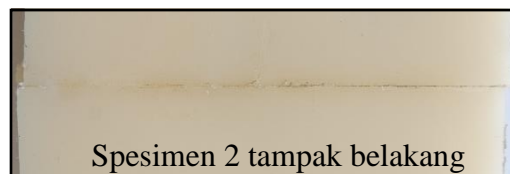
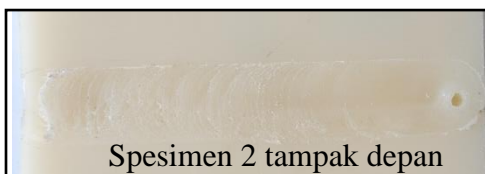
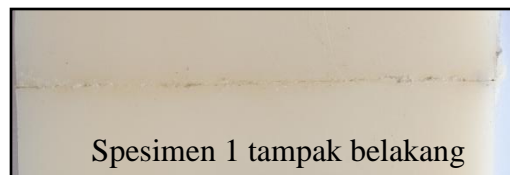
## **LAMPIRAN I**

## Hasil Pengelasan *Friction Stir Welding Similar Material Nylon 6*

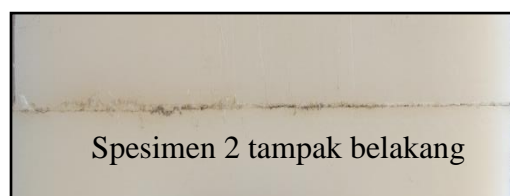
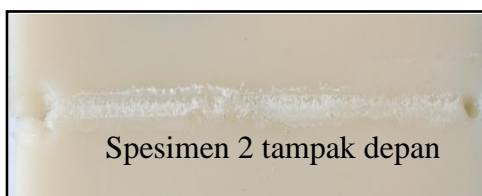
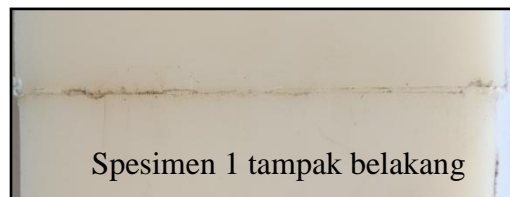
### Bentuk Pin Tool Silinder



### Bentuk Pin Tool Silinder Ulir



### Bentuk Pin Tool Tirus Ulir



**Bentuk Sambungan Lem Korea (G)**



Spesimen tampak depan



Spesimen tampak belakang

## **LAMPIRAN II**

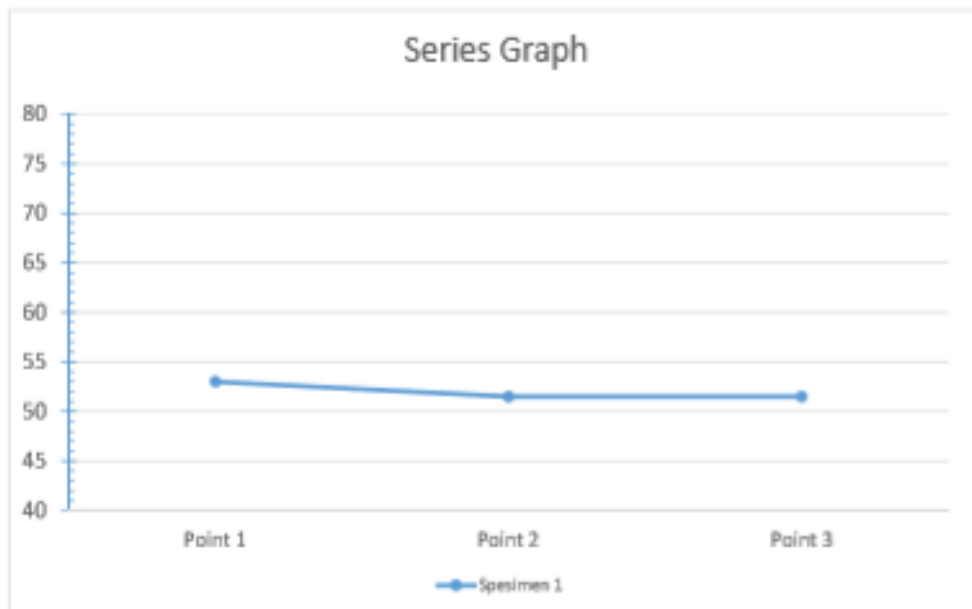


## Hardness Test Report

Customer : Ma'ruf Ramadhani  
Material : Nylon Polyamide  
Note : Silinder  
Standart : Shore D

### Result

	Point 1	Point 2	Point 3
Spesimen 1	53	51,5	51,5



### Statistics:

Series	Shore D
x	52,00
s	0,75
v [%]	1,44

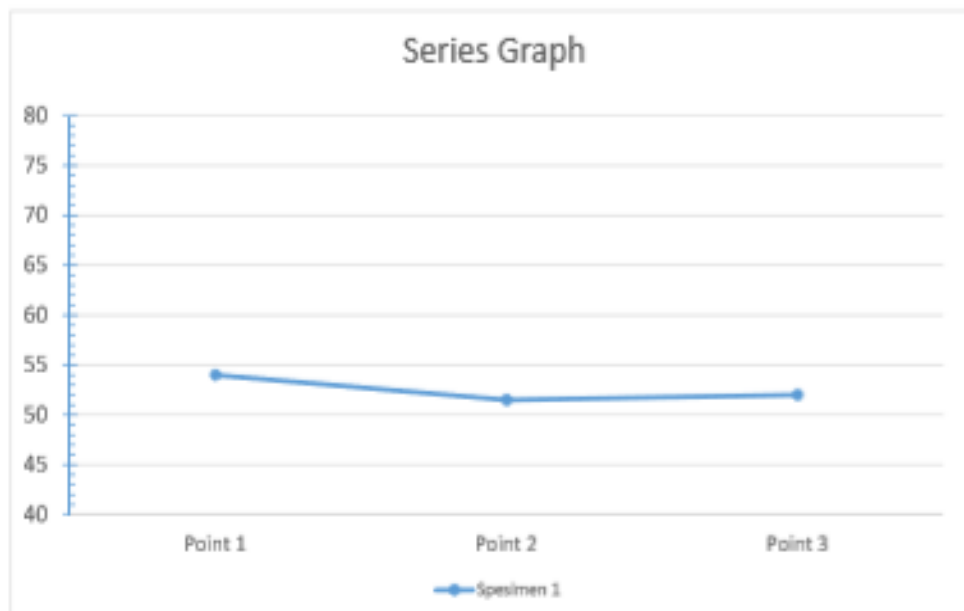


## Hardness Test Report

Customer : Ma'ruf Ramadhani  
Material : Nylon Polyamide  
Note : Silinder Ulir  
Standart : Shore D

### Result

	Point 1	Point 2	Point 3
Spesimen 1	54	51,5	52



### Statistics:

Series	Shore D
x	52,50
s	1,5
v [%]	2,88



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E-mail: [politeknik@atmi.ac.id](mailto:politeknik@atmi.ac.id) • Website: <http://www.atmi.ac.id>  
Jawa Tengah, Indonesia

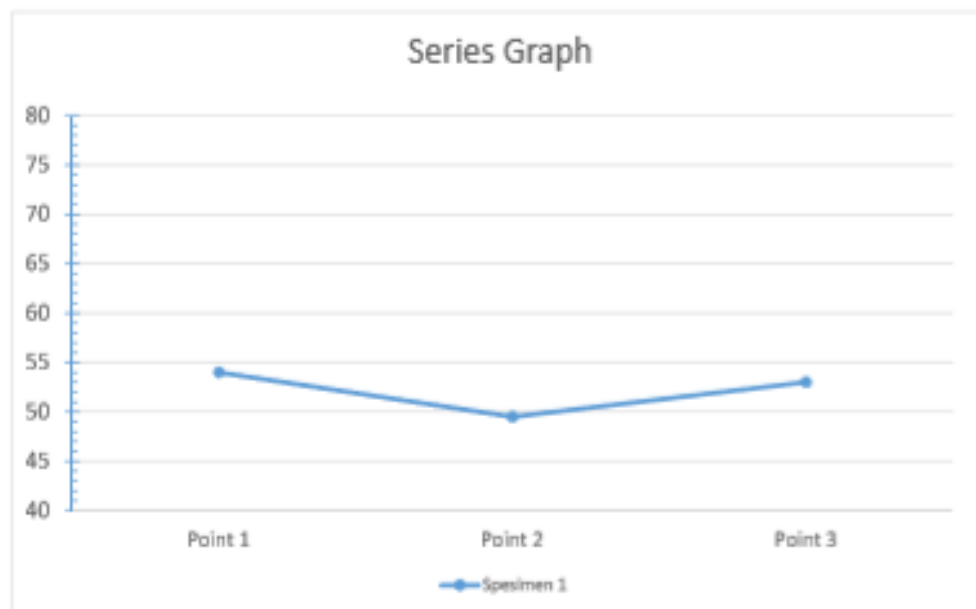


## Hardness Test Report

Customer : Ma'ruf Ramadhani  
Material : Nylon Polyamide  
Note : Tyrus Ulir  
Standart : Shore D

### Result

	Point 1	Point 2	Point 3
Spesimen 1	54	49,5	53



### Statistics:




Series	Shore D
x	52,17
s	4
v [%]	7,67

## KUAT TARIK (SILINDER )

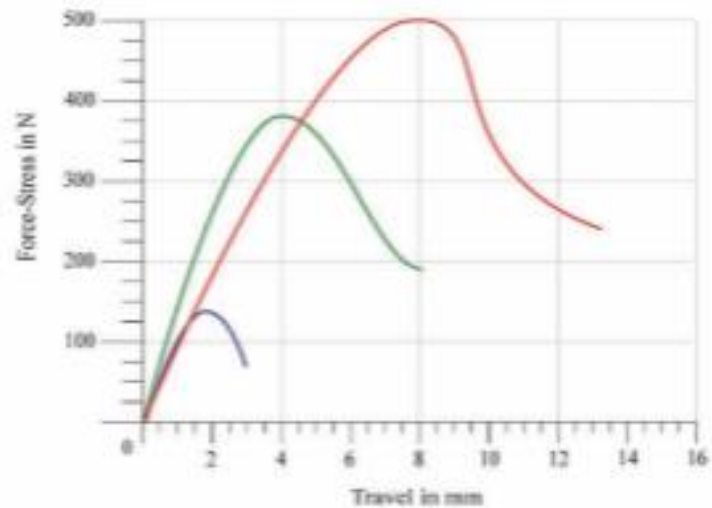
### Parameter table:

Headline	: KUAT TARIK (SILINDER )	Evaluat. method	: M (Automatic A, B or C)
Customer	: 933/LUP/KP-PLASTIK/IV/19	Specimen holders:	:
Tester	: L. TRIYONO	Extensometer	:
Material	: NYLON	Load cell	:
Test standard	: ASTM D 638		

### Results:

Legends	Nr	Fmax Lm kgf	Measurement travel end mm
	1	50,561	13,83
	2	38,840	7,21
	3	13,578	3,03

### Series graph:





**Statistics:**

Series	Fmax Lm	Measurement travel end
n = 3	kgf	mm
x	34,326	8,02
s	18,900	5,45
v	55,06	67,86

## KUAT TARIK (SILINDER ULIR )

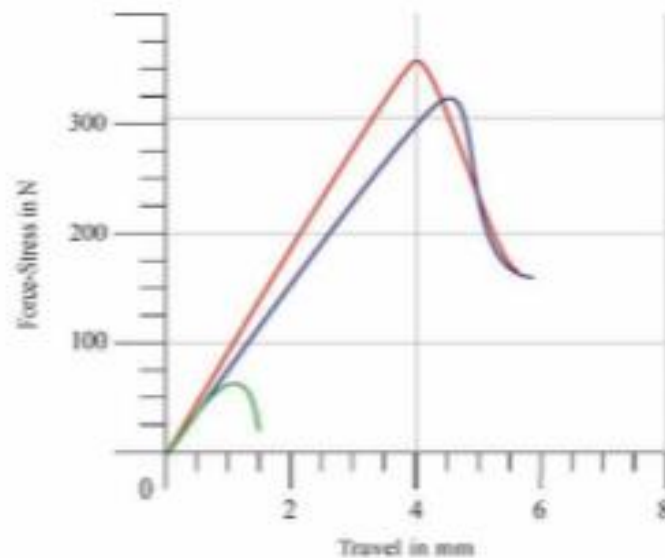
### Parameter table:

Headline	: KUAT TARIK (SILINDER ULIR )	Evaluat. method	: M (Automatic A, B or C)
Customer	: 933/LUPKOP-PLASTIK/VI19	Specimen holders:	
Tester	: L TRIYONO	Extensometer	:
Material	: NYLON	Load cell	:
Test standard	: ASTM D 638		

### Results:

Legends	Nr	Fmax Lm kgf	Measurement travel end mm
<span style="background-color: red; color: black;">■</span>	1	35,592	5,67
<span style="background-color: green; color: black;">■</span>	2	6,188	1,72
<span style="background-color: blue; color: black;">■</span>	3	32,890	5,81

### Series graph:



**Statistics:**

Series	Fmax Lm	Measurement travel end
n = 3	kgf	mm
$\bar{x}$	24,890	4,40
s	16,253	2,32
v	65,30	52,78

## KUAT TARIK (TIRUS ULIR )

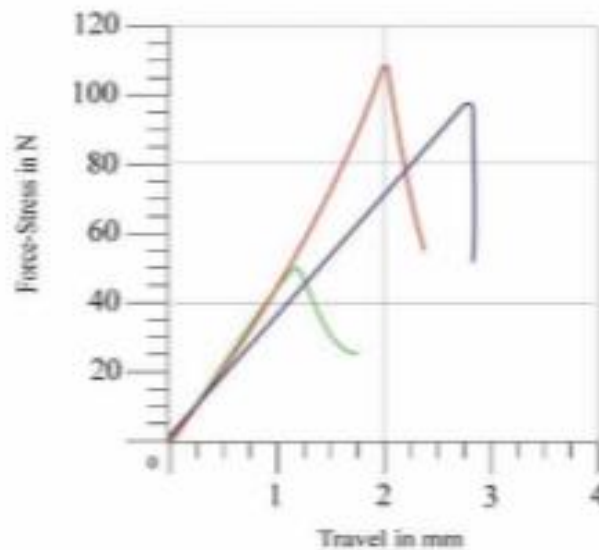
### Parameter table:

Headline	: KUAT TARIK (TIRUS ULIR)	Evaluat. method	: M (Automatic A, B or C)
Customer	: 932LUPKAP-PLASTIK/19	Specimen holders:	:
Tester	: L TRIYONO	Extensometer	:
Material	: NYLON	Load cell	:
Test standard	: ASTM D 638		

### Results:

Legends	Nr	Fmax Lm kgf	Measurement travel end mm
<span style="background-color: red; color: black;"> </span>	1	11,328	2,30
<span style="background-color: green; color: black;"> </span>	2	5,152	1,73
<span style="background-color: blue; color: black;"> </span>	3	10,624	2,81

### Series graph:



**Statistics:**

Series n = 3	Fmax Lm kgf	Measurement travel end mm
$\bar{x}$	9,035	2,28
s	3,381	0,54
v	37,42	23,56

## KUAT TARIK ( LEM )

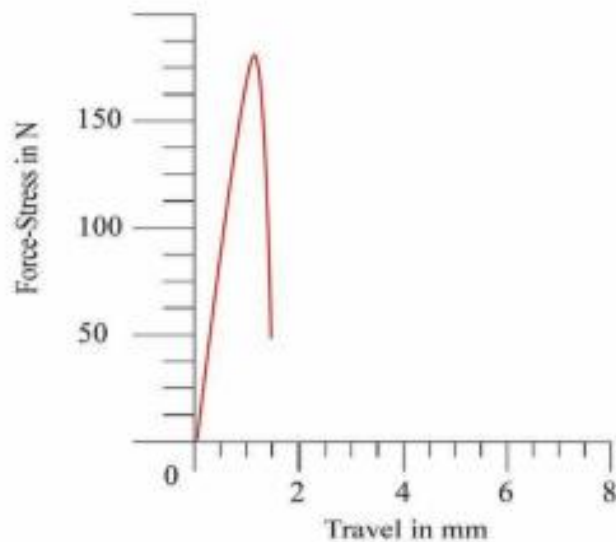
### Parameter table:

Headline	: KUAT TARIK ( LEM )	Evaluat. method	: M (Automatic A, B or C)
Customer	: 932/LUPKPP-PLASTIK/IV/19	Specimen holders	:
Tester	: L.TRIYONO	Extensometer	:
Material	: NYLON	Load cell	:
Test standard	: ASTM D 638		

### Results:

Legends	Nr	Fmax Lm kgf	Measurement travel end mm
	1	15,085	1,59

### Series graph:



### Statistics:

Series n = 1	Fmax Lm kgf	Measurement travel end mm
x	15,085	1,59
s	-	-
v	-	-



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 Kampus II : Jl. Adi Sucipto Km 9,5 Karanganyar 57174. Phone: +62 271 7686220  
 Kotak Pos 215 Surakarta 57182, Jawa Tengah, Indonesia.  
 E-mail: [politeknika@atmi.ac.id](mailto:politeknika@atmi.ac.id) • Website <http://www.atmi.ac.id>



### Tensile Test report

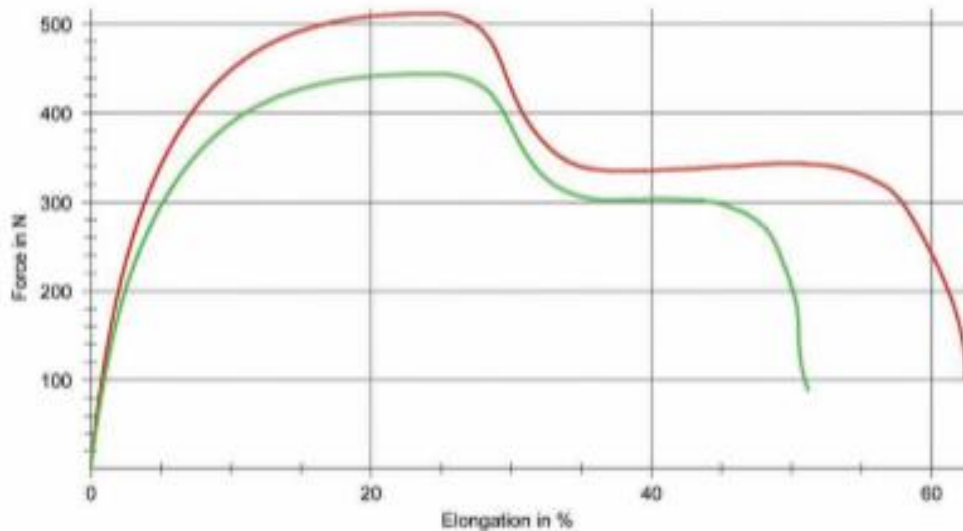
Customer : Ma'ruf Ramadhani Notes : Raw Material  
 Test standard : ASTM D 638 Tipe 4 Machine data : Zwick Z020  
 Material : Nylon Friction Stir Welding

Pre-load : 0,1 MPa  
 Speed, tensile modulus : 5 mm/min  
 Test speed : 5 mm/min  
 Grip to grip separation at the start position : 65,00 mm  
 Gage length, standard travel : 25 mm  
 Elongation preset, secant modulus : 1 %

#### Test results:

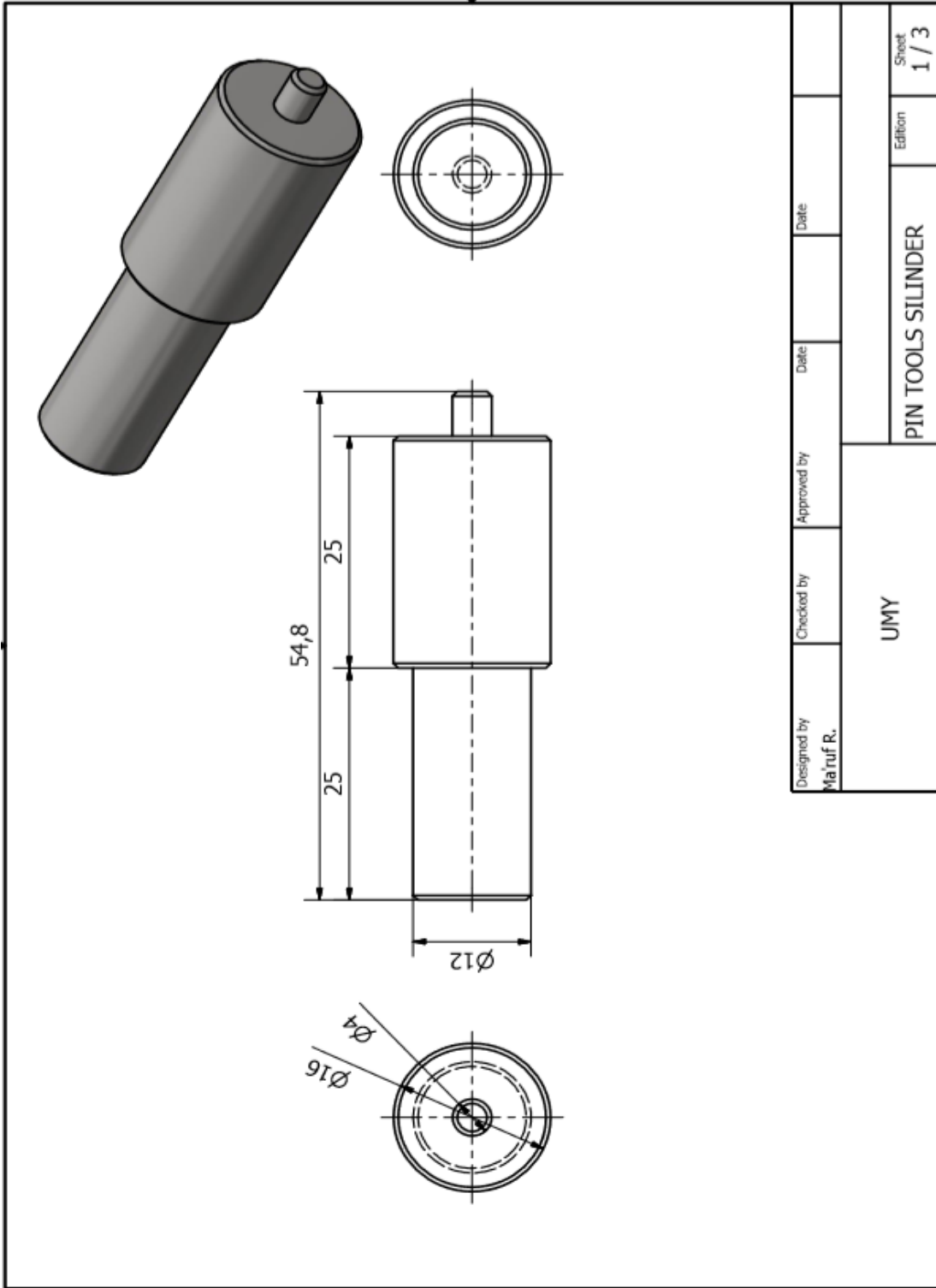
Legend	No.	Force N	E <sub>t</sub> MPa	σ <sub>u</sub> MPa	ε <sub>u</sub> %	σ <sub>b</sub> MPa	ε <sub>b</sub> %	h mm	b mm
	1	511,71	601	22,5	25	4,49	62	4,19	5,42
	2	443,89	517	20,0	25	4,00	51	4,19	5,3

#### Series graph:



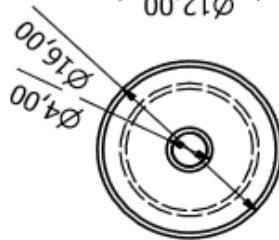
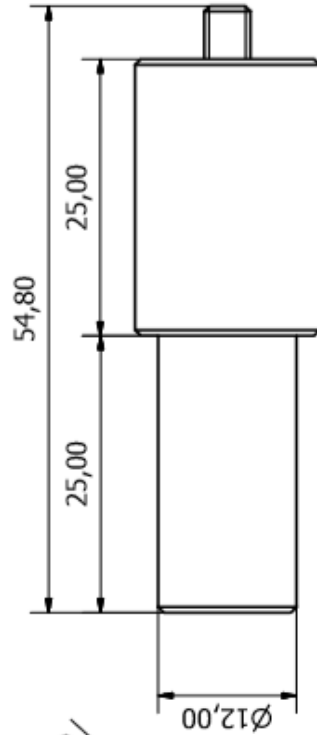
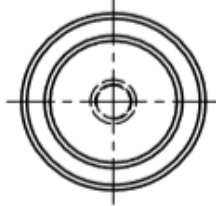
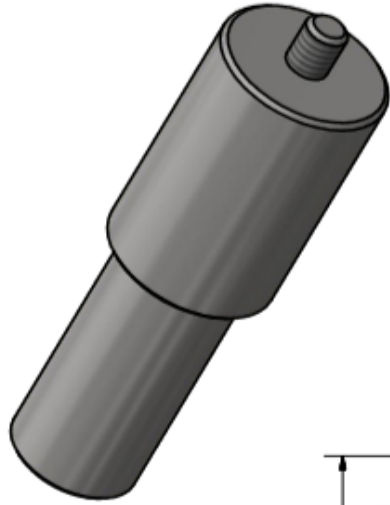
#### Statistics:

Series	Force N	E <sub>t</sub> MPa	σ <sub>u</sub> MPa	ε <sub>u</sub> %	σ <sub>b</sub> MPa	ε <sub>b</sub> %	h mm	b mm
n = 2								
x̄	477,80	559	21,3	25	4,24	57	4,19	5,36
s	47,96	59,6	1,80	0,089	0,346	7,9	0,000	0,08485
v [%]	10,04	10,66	8,48	0,36	8,17	13,97	0,00	1,58



Designed by Ma ruf R.	Checked by	Approved by	Date	Date	Date
UMY			PIN TOOLS SILINDER		
				Edition	Sheet
					1 / 3





Designed by <b>Ma'ruf R</b>	Checked by	Approved by	Date 08/08/2019	Date	Sheet 2/3
UMY				Edition	
				PIN TOOLS SILLINDER ULIR	

