

LAMPIRAN

Persiapan alat pengelasan



Persiapan material aluminium 6061



Proses pengelasan



Hasil pengelasan



Pengujian penetran



Pembentukan spesimen uji tarik



Pengujian tarik



Hasil pengujian tarik





KEMENTERIAN PENDIDIKAN, KEBUDAYAAN,
RISET, DAN TEKNOLOGI
POLITEKNIK NEGERI MALANG
JURUSAN TEKNIK MESIN

J. Soekarno Hatta No.9 Jatinulyo, Lowokwaru, Malang, 65141
Telp: (0341) 404424 - 404425, Fax: (0341) 404420,
<http://www.polinema.ac.id>

SURAT KETERANGAN
NOMOR : 18/LAB.TM/2023

Yang bertanda tangan dibawah ini :

Nama : Rafik Djoenaidi,ST
N I P : 19780125 200112 1 002
Jabatan : Pranata Laboratorium Pendidikan
Politeknik Negeri Malang

Menerangkan dengan sesungguhnya bahwa mahasiswa :

Nama : Dhoni Waleyo
Nim/NPM : 1421900057
Prodi : S-1 Teknik Mesin
Instansi : Universitas 17 Agustus 1945 Surabaya

Bonar benar telah melaksanakan pengambilan data di Jurusan Teknik Mesin Politeknik Negeri Malang, guna keperluan penyusunan skripsi.

Demikian surat keterangan ini dibuat untuk dipergunakan sebagaimana mestinya.

Malang, 19 Mei 2023
Pranata Laboratorium Pendidikan
Politeknik Negeri Malang


Rafik Djoenaidi,ST
19780125 200112 1 002



KEMENTERIAN PENDIDIKAN, KEBUDAYAAN,
RISET, DAN TEKNOLOGI
POLITEKNIK NEGERI MALANG
JURUSAN TEKNIK MESIN

Jl. Soekarno Hatta No.9 Jitimuja, Lerewasari, Malang, 65141
Telp. (0341) 404424 - 404425, Fax (0341) 404420,
<http://www.polinema.ac.id>

SURAT KETERANGAN
NOMOR : 17/LAB.TM/2023

Yang bertanda tangan dibawah ini :

Nama : Rafik Djoenaidi,ST
N I P : 19780125 200112 1 002
Jabatan : Pranata Laboratorium Pendidikan
Politeknik Negeri Malang

Menerangkan dengan sesungguhnya bahwa mahasiswa:

Nama : Yobanes Sigit Setyana
Nim/NPM : 1421900023
Prodi : S-1 Teknik Mesin
Instansi : Universitas 17 Agustus 1945 Surabaya

Benar benar telah melaksanakan pengambilan data di Jurusan Teknik Mesin Politeknik Negeri Malang, guna keperluan penyusunan skripsi.

Demikian surat keterangan ini dibuat untuk dipergunakan sebagaimana mestinya.

Malang, 19 Mei 2023
Pranata Laboratorium Pendidikan
Politeknik Negeri Malang


Rafik Djoenaidi,ST
19780125 200112 1 002

DATA HASIL PENGUJIAN TARIK

Nama Peserta : Yohanes Sigit Setyann (1.42.1900023)
 Dhoni Waloyo (1.42.1900057)
 Material : Aluminium 6061
 Tanggal Pengujian : 15 Mei 2023
 Perlakuan : RAW Material

Dimensi Ukuran Spesimen ASTM-E8



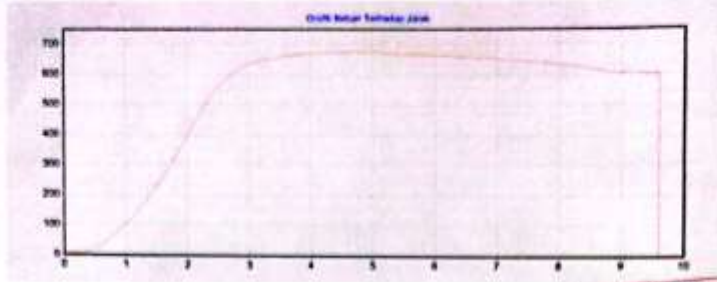
Dimensions	Standard Specimens		Subsize Specimen
	Plate Type: 43 mm (1.500 in.) Wide	Sheet Type: 12.5 mm (0.500 in.) Wide	8 mm (0.250 in.) Wide
	mm [in.]	mm [in.]	mm [in.]
D—Gage length (Note 1 and Note 3)	200.0 ± 0.2 (8.00 ± 0.01)	60.0 ± 0.1 (2.300 ± 0.005)	28.0 ± 0.1 (1.000 ± 0.005)
W—Width (Note 1 and Note 4)	40.0 ± 2.0 (1.500 ± 0.125) (-0.250)	12.5 ± 0.2 (0.500 ± 0.010)	8.0 ± 0.1 (0.250 ± 0.005)
T—Thickness (Note 1)		Thickness of material	
R—Radius of fillet, min (Note 1)	25 (1)	12.5 (0.500)	6 (0.250)
L—Overall length, min (Note 1, Note 2, and Note 3)	400 (16)	200 (8)	100 (4)
A—Length of reduced section, min	225 (9)	57 (2.25)	30 (1.25)
B—Length of grip section, min (Note 3)	75 (3)	50 (2)	30 (1.25)
C—Width of grip section, approximate (Note 4 and Note 5)	50 (2)	20 (0.750)	10 (0.375)

No.	Spesimen RAW	Keterangan
1	Lebar Bahan <i>t</i> (mm)	12,5
2	Tebal Bahan <i>t</i> (mm)	5
3	Panjang Awal <i>L₀</i> (mm)	200
4	Panjang Akhir <i>L_r</i> (mm)	209,60
5	Pertambahan Panjang ΔL (mm)	9,60
6	Beban Luluh (<i>Yield Point</i>) (Kg)	515
7	Beban Maksimum (<i>Ultimate Stength</i>) (Kg)	673,6
8	Beban Putus (<i>Fracture</i>) (Kg)	603,6



Dipindai dengan CamScanner

Grafik Uji Tarik



PENGUJIAN & PERLAKAAN
BAHAN
L.A. GUNAWAN DEWAN MESIN
POLITEKNIK NEGERI MALANG

DATA HASIL PENGUJIAN TARIK

Nama Peserta : Yohanes Sigit Setyana (1.42.1900023)
 Dhoni Waloyo (1.42.1900057)
 Material : Aluminium 6061
 Tanggal Pengujian : 15 Mei 2023
 Perlakuan : Elektroda 0,8-80A

Dimensi Ukuran Spesimen ASTM-E8



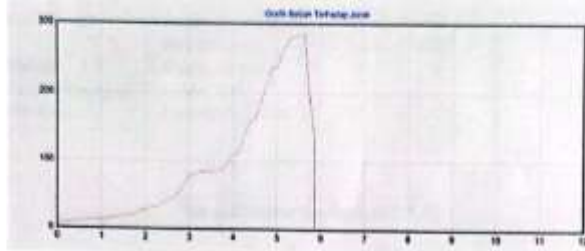
	Dimensions		
	Standard Specimens	Standard Specimens	Subsize Specimens
	Plate Type, 40 mm (1 5/8 in.) Wide	Sheet Type, 12.5 mm (1/2 in.) Wide	8 mm (5/16 in.) Wide
	mm [in.]	mm [in.]	mm [in.]
B —Gage length (Plate 1 and Note 2)	200 ± 0.2 (9 3/8 ± 0.01)	80.0 ± 0.1 (3 1/8 ± 0.005)	35.0 ± 0.1 (1 3/8 ± 0.005)
W —Width (Plate 1 and Note 3)	40.0 ± 0.8 (1 5/8 ± 0.025)	12.5 ± 0.2 (1/2 ± 0.010)	6.0 ± 0.1 (0.250 ± 0.005)
t —Thickness (Plate 1)	—	Thickness of material	6 (0.250)
H —Radius of head, min (Plate 1)	40 (1.6)	12.5 (0.500)	100 (4)
L —Overall length, min (Plate 2, Note 1 and Note 3)	400 (16)	200 (8)	100 (4)
A —Length of reduced section, min	225 (9)	57 (2 1/4)	30 (1 1/4)
P —Length of grip section, min (Plate 1)	75 (3)	30 (1 1/4)	30 (1 1/4)
C —Width of grip section, approximate (Plate 1 and Note 3)	50 (2)	20 (0.750)	10 (0.375)

No.	Keterangan	Spesimen 1	Spesimen 2	Spesimen 3
1	Lebar Beban <i>l</i> (mm)	12,5	12,5	12,5
2	Tebal Beban <i>t</i> (mm)	5	5	5
3	Panjang Awal <i>L</i> ₀ (mm)	200	200	200
4	Panjang Akhir <i>L</i> _e (mm)	205,85	200,37	200,23
5	Pertambahan Panjang ΔL (mm)	5,85	0,37	0,23
6	Beban Luluh (<i>Yield Point</i>) (Kg)	123,8	43,2	86,2
7	Beban Maksimum (<i>Ultimate Strength</i>) (Kg)	284,6	89,6	118,4
8	Beban Putus (<i>Fracture</i>) (Kg)	139,6	85,1	93,8

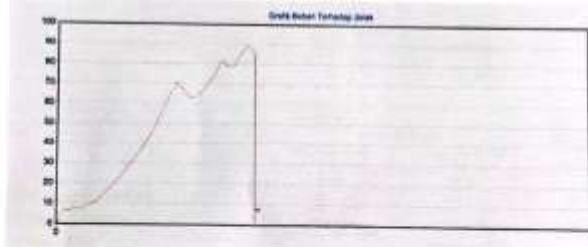


Graffk Uji Tarik

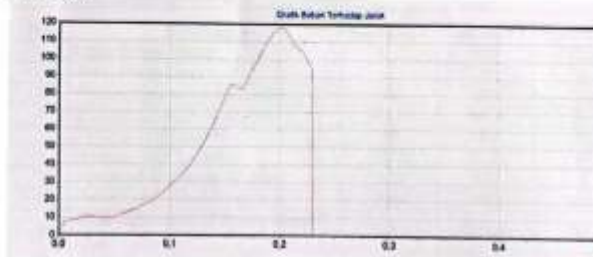
0,8/80A (1)



0,8/80A (2)



0,8/80A (3)



PENYOLIAN & PERALAKAN
BAHAN
L.P.S. BAHAN TEKNIK MESIN
POLITEKNIK NEGERI MALANG

Dipindai dengan CamScanner

DATA HASIL PENGUJIAN TARIK

Nama Peserta : Yohanes Sigit Setyana (1.42.1900023)
 Dhoni Waloyo (1.42.1900057)
Material : Aluminium 6061
Tanggal Pengujian : 15 Mei 2023
Perlakuan : Elektroda 0,8-100A

Dimensi Ukuran Spesimen ASTM-E8

E8/E8M - 09



	Dimensions		
	Standard Specimens	Subsize Specimens	
	Plate Type: 40 mm (1.500 in.) Wide	Sheet Type: 12.5 mm (0.500 in.) Wide	8 mm (0.250 in.) Wide
	mm [in.]	mm [in.]	mm [in.]
G —Gage length (Note 1 and Note 2)	200.0 ± 0.2 (9.00 ± 0.01)	80.0 ± 0.1 (3.000 ± 0.004)	25.0 ± 0.1 (1.000 ± 0.003)
W —Width (Note 1 and Note 4)	40.0 ± 0.0 (1.600 ± 0.125 - 0.250)	12.5 ± 0.2 (0.500 ± 0.010)	6.0 ± 0.1 (0.250 ± 0.008)
t —Thickness (Note 3)		Thickness of material	
R —Radius of fillet, min (Note 4)	25 (1)	12.5 (0.500)	6.0 (250)
l —Overall length, min (Note 7, Note 1, and Note 8)	450 (18)	200 (8)	100 (4)
A —Length of reduced section, min	225 (9)	57.2 (2)	32 (1.25)
B —Length of grip section, min (Note 1)	75 (3)	50 (2)	30 (1.25)
C —Width of grip section, approximate (Note 1 and Note 4)	50 (2)	25 (0.750)	10 (0.375)

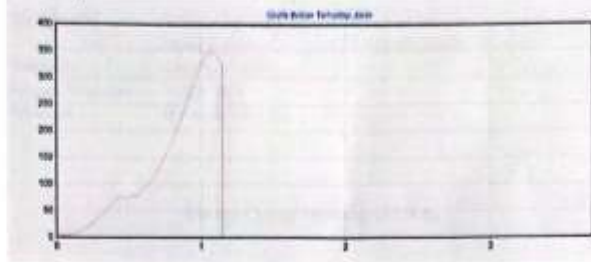
No.	Keterangan	Spesimen 1	Spesimen 2	Spesimen 3
1	Lebar Beban i (mm)	12,5	12,5	12,5
2	Tebal Beban t (mm)	5	5	4
3	Panjang Awal L_0 (mm)	200	200	200
4	Panjang Akhir L_f (mm)	201,15	206,37	201
5	Pertambahan Panjang ΔL (mm)	1,15	6,37	1
6	Bahan Luluh (<i>Yield Point</i>) (Kg)	98,6	106,5	220,2
7	Bahan Maksimum (<i>Ultimate Strength</i>) (Kg)	364,6	364,6	250,8
8	Bahan Putus (<i>Fracture</i>) (Kg)	348,8	254,8	215



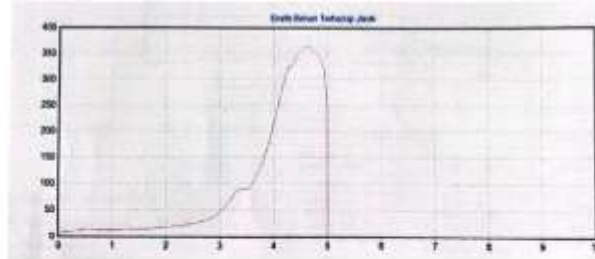
Dipindai dengan CamScanner

Gratik Uji Tarik

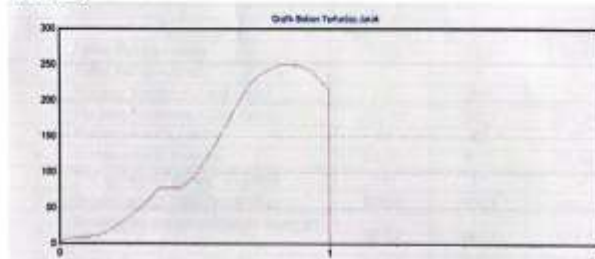
0,8/100A (1)



0,8/100A (2)



0,8/100A (3)



PENGUNJAN & PERLAKUKAN
BIMAH
R.S. BAHAN TEKNIK MESIN
POLITEKNIK NEGERI MALANG

Dipindai dengan CamScanner

DATA HASIL PENGUJIAN TARIK

Nama Peserta : Yohanes Sigit Setyana (1.42.1900023)
 Dhoni Waloyo (1.42.1900057)
 Material : Aluminium 6061
 Tanggal Pengujian : 15 Mei 2023
 Perlakuan : Elektroda 0,8-120A

Dimensi Ukuran Spesimen ASTM-E8



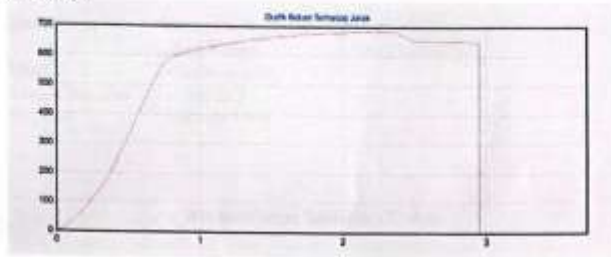
	Dimensions		
	Standard Specimens	Sheet Specimen	Subsize Specimen
	Plate Type: 43 mm (1 5/8 in.) Wide	Sheet Type: 12.5 mm (1/2 in.) Wide	6 mm (1/4 in.) Wide
	mm (in.)	mm (in.)	mm (in.)
G —Gage length (Note 1 and Note 2)	200.0 ± 0.2 (8.00 ± 0.01)	50.0 ± 0.1 (2.000 ± 0.005)	25.0 ± 0.1 (1.000 ± 0.005)
g —Width (Note 3 and Note 4)	40.0 ± 2.0 (1 5/8" ± 0.125, 0.250)	12.5 ± 0.2 (1/2" ± 0.010)	6.0 ± 0.1 (3/16" ± 0.005)
t —Thickness (Note 5)		Thickness of material	
g —Radius of head, min (Note 4)	25 (1)	12.5 (1/2)	6 (1/16)
L —Overall length, min (Note 2, Note 1, and Note 6)	400 (16)	200 (8)	100 (4)
L₀ —Length of reduced section, min	225 (9)	57 (2 1/4)	32 (1 1/4)
L₁ —Length of grip section, min (Note 3)	75 (3)	30 (1 1/4)	16 (1 1/2)
C —Width of grip section, approximate (Note 4 and Note 6)	50 (2)	20 (3/4)	10 (3/8)

No.	Keterangan	Spesimen 1	Spesimen 2	Spesimen 3
1	Lebar Beban <i>i</i> (mm)	12,5	12,5	12,5
2	Tebal Beban <i>t</i> (mm)	5	5	4
3	Panjang Awal <i>L₀</i> (mm)	200	200	200
4	Panjang Akhir <i>L₁</i> (mm)	202,95	205,5	205,94
5	Pertambahan Panjang ΔL (mm)	2,95	5,5	5,94
6	Beban Luluh (<i>Yield Point</i>) (Kg)	668,6	658,8	480,2
7	Beban Maksimum (<i>Ultimate Stenght</i>) (Kg)	687,2	687,2	623,4
8	Beban Putus (<i>Fracture</i>) (Kg)	649,2	655,8	356,8

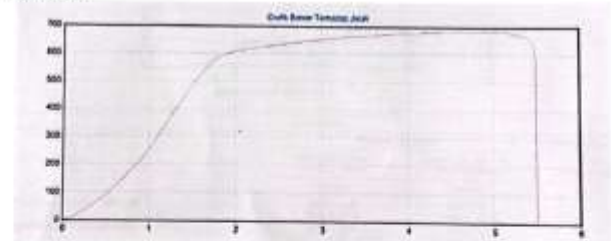


Grafik Uji Tarik

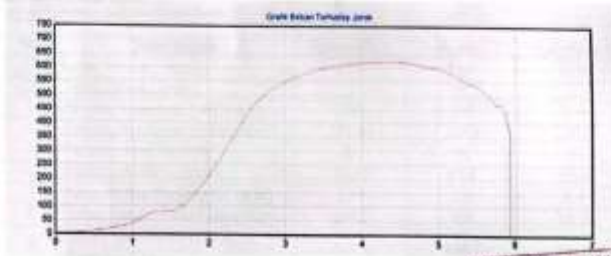
0,8/120A (1)



0,8/120A(2)



0,8/120A (3)



PENDUKUN & PERALAKAN
BIMAN
L.P. GUNAN TEKNIK MESIN
POLITEKNIK NEPTUNI MALANG

Dipindai dengan CamScanner

DATA HASIL PENGUJIAN TARIK

Nama Peserta : Yohanes Sigit Setyama (1.42.1900023)
 Dhoni Waloyo (1.42.1900057)
 Material : Aluminium 6061
 Tanggal Pengujian : 15 Mei 2023
 Perlakuan : Elektroda 1-80A

Dimensi Ukuran Spesimen ASTM-E8



	Dimensions		
	Plate Type, 40 mm (1.500 in.) Wide	Sheet Type, 12.5 mm (0.500 in.) Wide	Strip Type, 6 mm (0.250 in.) Wide
	mm [in.]	mm [in.]	mm [in.]
B —Gage length (Note 1 and Note 2)	200 ± 0.2 (9.82 ± 0.01)	80.0 ± 0.1 (3.150 ± 0.004)	28.0 ± 0.1 (1.100 ± 0.004)
W —Width (Note 3 and Note 4)	40.0 ± 0.0 (1.600 ± 0.125 - 0.250)	12.5 ± 0.0 (0.500 ± 0.010)	6.0 ± 0.1 (0.250 ± 0.008)
T —Thickness (Note 5)		Thickness of material	
R —Radius of fillet, min (Note 6)	25 [1]	12.5 [0.500]	4 [0.156]
L —Overall length, min (Note 7, Note 8, and Note 9)	400 [16]	200 [8]	100 [4]
A —Length of reduced section, min	225 [9]	57 [2.25]	30 [1.25]
W —Length of grip section, min (Note 10)	75 [3]	50 [2]	30 [1.25]
C —Width of grip section, approximate (Note 4 and Note 10)	50 [2]	20 [0.787]	10 [0.375]

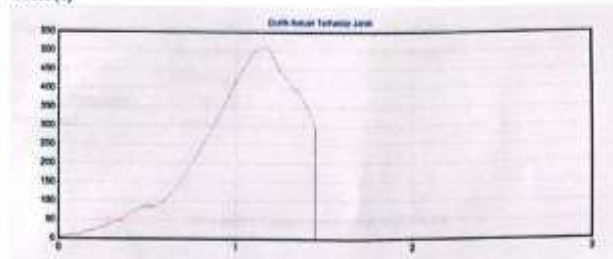
No.	Keterangan	Spesimen 1	Spesimen 2	Spesimen 3
1	Lebar Beban <i>i</i> (mm)	12,5	12,5	12,5
2	Tebal Beban <i>t</i> (mm)	5	5	5
3	Panjang Awal <i>L₀</i> (mm)	200	200	200
4	Panjang Akhir <i>L_f</i> (mm)	201,45	205,8	208,4
5	Pertambahan Panjang ΔL (mm)	1,45	5,8	8,4
6	Beban Luluh (<i>Yield Point</i>) (Kg)	264,2	420	122,8
7	Beban Maksimum (<i>Ultimate Strength</i>) (Kg)	513,2	636,2	423,6
8	Beban Putus (<i>Fracture</i>) (Kg)	297,6	486,4	286,8



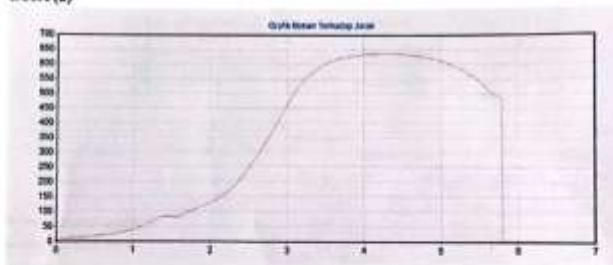
Dipindai dengan CamScanner

Grafik Uji Tarik

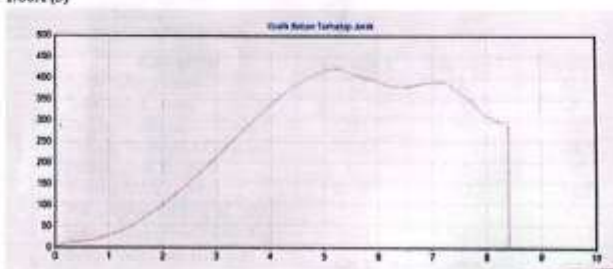
1/80A (1)



1/80A (2)



1/80A (3)



FENSIJIAN & PERALAKAJ
DIPN
L.P. BAHIN TEKNIK MESIN
POLYTEKNIK NETERI MALANG

Dipindai dengan CamScanner

DATA HASIL PENGUJIAN TARIK

Nama Peserta : Yohanes Sigit Setyama (1.42.1900023)
 Dhoni Waluyo (1.42.1900057)
 Material : Aluminium 6061
 Tanggal Pengujian : 15 Mei 2023
 Perlakuan : Elektroda 1-100A

Dimensi Ukuran Spesimen ASTM-E8



Dimensions	Standard Specimens		Subsize Specimen
	Plate Type, 40 mm (1 5/8 in.) Wide	Sheet Type, 12.5 mm (1/2 in.) Wide	8 mm (5/16 in.) Wide
G —Gage length (Note 1 and Note 2)	200 ± 0.2 (8.00 ± 0.01)	80.0 ± 0.1 (3.150 ± 0.005)	25.0 ± 0.1 (1.000 ± 0.005)
W —Width (Note 1 and Note 4)	40.0 ± 3.0 (1.500 ± 0.125, 0.219)	12.5 ± 0.2 (0.500 ± 0.010)	8.0 ± 0.4 (0.250 ± 0.010)
r —Radius (Note 3)	25 (1)	12.5 (0.500)	8 (0.250)
A —Length of reduced section, min	400 (16)	200 (8)	100 (4)
B —Length of grip section, min (Note 5)	224 (9)	57 (2.25)	30 (1.25)
C —Width of grip section, approximate (Note 3 and Note 6)	75 (3)	30 (1.2)	30 (1.25)
	50 (2)	20 (0.780)	10 (0.375)

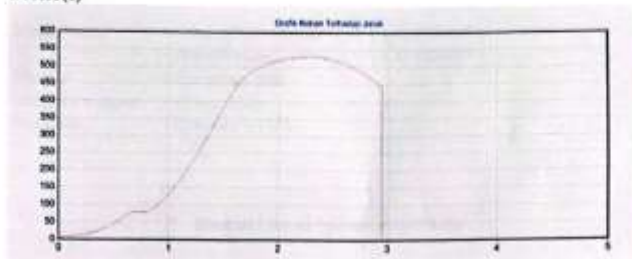
No.	Keterangan	Spesimen 1	Spesimen 2	Spesimen 3
1	Lebar Beban <i>i</i> (mm)	12,5	12,5	12,5
2	Tebal Beban <i>t</i> (mm)	5	5	5
3	Panjang Awal <i>L₀</i> (mm)	200	200	200
4	Panjang Akhir <i>L_f</i> (mm)	202,95	206,37	206,9
5	Pertambahan Panjang ΔL (mm)	2,95	6,37	6,9
6	Beban Luluh (<i>Yield Point</i>) (Kg)	450,4	560,2	552,4
7	Beban Maksimum (<i>Ultimate Strength</i>) (Kg)	532,2	681,8	653,8
8	Beban Putus (<i>Fracture</i>) (Kg)	447,6	638,6	572,6

PENGUJIAN & PERALAKAN
BAHAN
 L-1.1. BAGIAN TEKNIK MESIN
 POLITEKNIK NECFRI MALANG

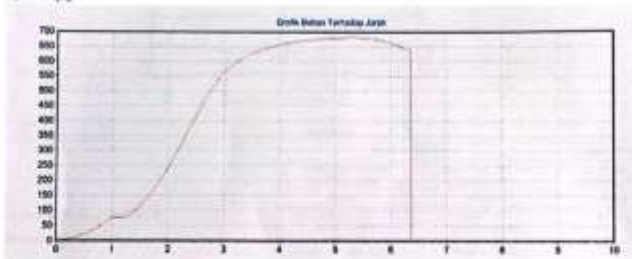
Dipindai dengan CamScanner

Grafik Uji Tarik

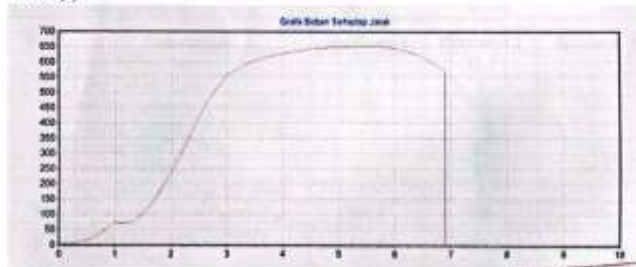
1/100A(1)



1/100A(2)



1/100A(3)



PENGUJIAN & PERALAKAN
BAHAN
L.P. SARIAN TEKNIK MESIN
POLITEKNIK NECEH MALANG

Dipindai dengan CamScanner

DATA HASIL PENGUJIAN TARIK

Nama Peserta : Yohanes Sigit Setyana (1.42.1900023)
 Dhoni Waloyo (1.42.1900057)
 Material : Aluminium 6061
 Tanggal Pengujian : 15 Mei 2023
 Perlakuan : Elektroda 1-120A

Dimensi Ukuran Spesimen ASTM-E8



	Dimensions		
	Plate Type - 40 mm (1 5/8 in.) Wide	Sheet Type - 12.5 mm (1/2 in.) Wide	Sheet Type - 6 mm (1/4 in.) Wide
G —Gage length (Note 1 and Note 2)	200.0 ± 0.2 (8.00 ± 0.01)	50.0 ± 0.1 (2.000 ± 0.005)	25.0 ± 0.1 (1.000 ± 0.005)
W —Width (Note 3 and Note 4)	40.2 ± 0.1 (1.580 ± 0.125 - 0.250)	12.5 ± 0.2 (0.500 ± 0.010)	6.0 ± 0.1 (0.250 ± 0.005)
T —Thickness (Note 3)		Thickness of material	
R —Radius of fillet, min (Note 5)	25 (1)	12.5 (0.500)	6 (0.250)
L —Overall length, min (Note 7, Note 8 and Note 9)	400 (16)	200 (8)	100 (4)
L_r —Length of reduced section, min	225 (9)	87.5 (3.5)	30 (1.2)
ΔL —Length of gage section, min (Note 10)	75 (3)	50 (2)	30 (1.2)
C —Width of grip section, approximate (Note 6 and Note 11)	50 (2)	30 (1.25)	10 (0.37)

No.	Keterangan	Spesimen 1	Spesimen 2	Spesimen 3
1	Lebar Beban <i>t</i> (mm)	12,5	12,5	12,5
2	Tebal Beban <i>t</i> (mm)	5	5	5
3	Panjang Awal <i>L₀</i> (mm)	200	200	200
4	Panjang Akhir <i>L_r</i> (mm)	202,7	206	207
5	Pertambahan Panjang ΔL (mm)	2,7	6	5,7
6	Beban Luluh (<i>Yield Point</i>) (Kg)	281,4	556	375
7	Beban Maksimum (<i>Ultimate Strength</i>) (Kg)	560,4	677,2	628
8	Beban Putus (<i>Fracture</i>) (Kg)	462,2	644,8	602,4

PENGUJIAN & PERLAKAAN
 DIMAS
 LAB. BAHAN TEKNIK MESIN
 POLITEKNIK NEGERI MALANG

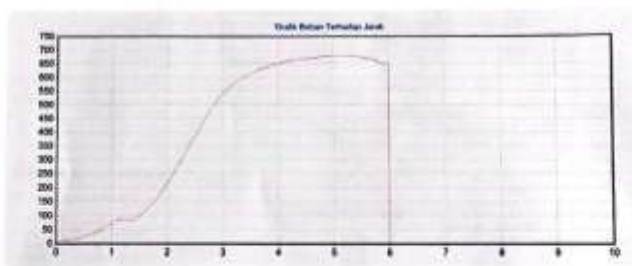
Dipindai dengan CamScanner

Grafik Uji Tarik

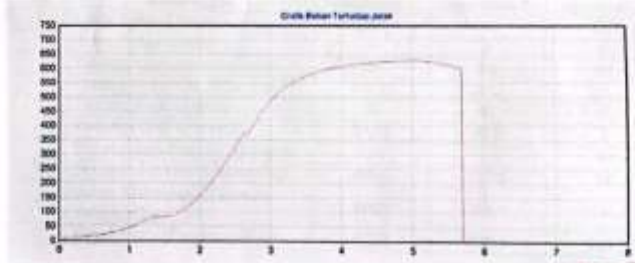
1/120A (1)



1/120A (2)



1/120A (1)



PENGUJIAN & PERLAKUAN
BAHAN
A.P. BAZIN TERNAK MESIN
POLITEKNIK NEGERI MALANG

Dipindai dengan CamScanner

DATA HASIL PENGUJIAN TARIK

Nama Peserta : Yohanes Sigit Setyana (1.42.1900023)
 Dhoni Waloyo (1.42.1900057)
 Material : Aluminium 6061
 Tanggal Pengujian : 15 Mei 2023
 Perinkuan : Elektroda 1,2-8A

Dimensi Ukuran Spesimen ASTM-E8

 E8/E8M - 09



Dimensions	Standard Specimens		Subsize Specimen
	Plate Type: 40 mm (1 500 in.) Wide mm (in.)	Sheet Type: 12.5 mm (0.500 in.) Wide mm (in.)	8 mm (0.250 in.) Wide mm (in.)
D —Gage length (Note 1 and Note 2)	200 ± 0.2 (8.00 ± 0.01)	40.0 ± 0.1 (1.500 ± 0.010)	25.0 ± 0.1 (1.000 ± 0.005)
W —Width (Note 3 and Note 4)	40.0 ± 2.0 (1 500 ± 0.125 - 0.250)	12.5 ± 0.2 (0.500 ± 0.010)	6.0 ± 0.1 (0.250 ± 0.005)
T —Thickness (Note 5)	25 (1)	12.5 (0.500)	6 (0.250)
R —Radius of fillet, min (Note 6)	450 (18)	200 (8)	100 (4)
L —Overall length, min (Note 7, Note 7a, and Note 8)	225 (9)	57 (2.25)	32 (1.25)
L₁ —Length of reduced section, min	75 (3)	30 (1.2)	30 (1.2)
L₂ —Length of grip section, min (Note 9)	50 (2)	20 (0.750)	10 (0.375)
L₃ —Width of grip section, approximate (Note 1 and Note 6)	50 (2)	20 (0.750)	10 (0.375)

No.	Keterangan	Spesimen 1	Spesimen 2	Spesimen 3
1	Lebar Beban l (mm)	12,5	12,5	12,5
2	Tebal Beban t (mm)	5	5	5
3	Panjang Awal L_0 (mm)	200	200	200
4	Panjang Akhir L_f (mm)	201,35	201,5	208,4
5	Pertambahan Panjang ΔL (mm)	1,35	1,5	8,4
6	Beban Luluh (<i>Yield Point</i>) (Kg)	408,6	397,6	733
7	Beban Maksimum (<i>Ultimate Strength</i>) (Kg)	999,8	995,4	1334,4
8	Beban Putus (<i>Fracture</i>) (Kg)	935,2	976,2	910,4

PENGUJIAN & PERALAKAN
BUMI
 L-11 BANGUNAN TEKNIK MESIN
 POLITEKNIK NEGERI MALANG

Dipindai dengan CamScanner

Grafik Uji Tarik

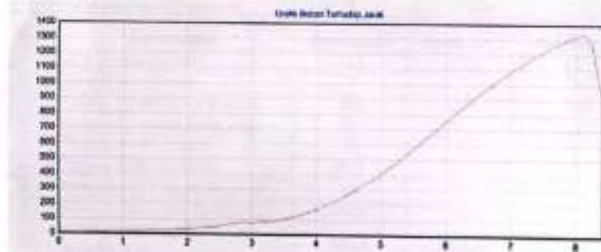
1,2/80A (1)



1,2/80A (2)



1,2/80A (3)



PENGUJIAN & PERLAKUAN
BAHAN
L. J. BAHUJIN TEKNIK MESIN
POLITEKNIK NEGERI MALANG

Dipindai dengan CamScanner

DATA HASIL PENGUJIAN TARIK

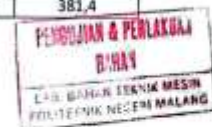
Nama Peserta : Yohanes Sigit Setyana (1.42.1900023)
 Dhoni Waluyo (1.42.1900057)
 Material : Aluminium 6061
 Tanggal Pengujian : 15 Mei 2023
 Perlakuan : Elektroda 1,2-100A

Dimensi Ukuran Spesimen ASTM-E8



	Dimensions		
	Standard Specimens	Subsize Specimens	
	Plate Type, 40 mm (1 5/8 in.) Wide	Sheet Type, 12.5 mm (0 500 in.) Wide	4 mm (0 250 in.) Wide
	mm [in.]	mm [in.]	mm [in.]
l —Gage length (Note 1 and Note 2)	200.0 ± 0.2 (8 00 ± 0.01)	80.0 ± 0.1 (3 000 ± 0 005)	25.0 ± 0.1 (1 000 ± 0 005)
W —Width (Note 1 and Note 4)	45.0 ± 2.0 (1 500 ± 0 125 - 0 250)	12.5 ± 0.2 (0 500 ± 0 010)	6.0 ± 0.1 (0 250 ± 0 005)
t —Thickness (Note 5)		Thickness of material	
R —Radius of fillet, min (Note 6)	75 (3)	12.5 (0 500)	6 (0 250)
L —Overall length, min (Note 7, Note 1, and Note 8)	450 (18)	200 (8)	100 (4)
A —Length of reduced section, min	225 (9)	87 (3 4)	50 (1 9)
B —Length of grip section, min (Note 9)	75 (3)	50 (2)	32 (1 2)
C —Width of grip section, approximate (Note 4 and Note 10)	50 (2)	25 (0 9)	10 (0 37)

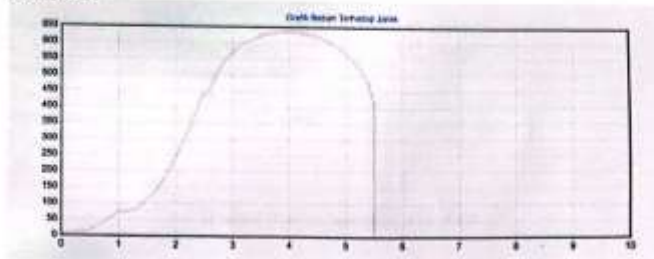
No.	Keterangan	Spesimen 1	Spesimen 2	Spesimen 3
1	Lebar Beban <i>i</i> (mm)	12,5	12,5	12,5
2	Tebal Beban <i>i</i> (mm)	5	5	5
3	Panjang Awal <i>L</i> ₀ (mm)	200	200	200
4	Panjang Akhir <i>L</i> _f (mm)	205,5	207,1	206,7
5	Pertambahan Panjang ΔL (mm)	5,5	7,1	6,7
6	Beban Luluh (<i>Yield Point</i>) (Kg)	493,4	502,4	332,6
7	Beban Maksimum (<i>Ultimate Strength</i>) (Kg)	636,8	631,4	525
8	Beban Putus (<i>Fracture</i>) (Kg)	418,8	451,4	381,4



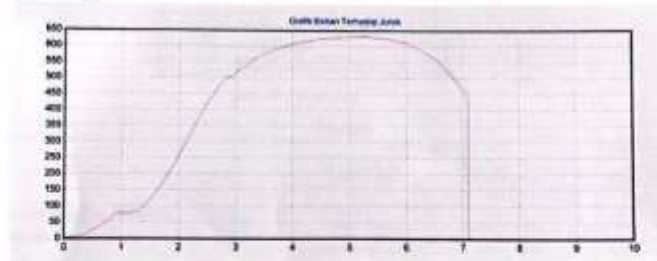
Dipindai dengan CamScanner

Grafik Uji Tarik

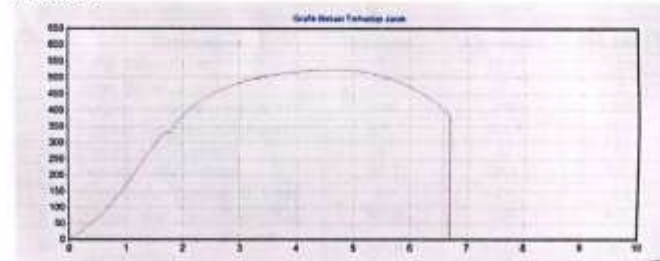
1,2/100A (1)



1,2/100A (2)



1,2/100A (3)



PENGUJIAN & PERLAKAAN
BAHAN
L.P. BAHAN TEKNIK MESIN
POLITEKNIK NECEMI MALANG

Dipindai dengan CamScanner

DATA HASIL PENGUJIAN TARIK

Nama Peserta : Yohanes Sigit Setyana (1.42.1900023)
 Dhoni Waloyo (1.42.1900057)
 Material : Aluminium 6061
 Tanggal Pengujian : 15 Mei 2023
 Perlakuan : Elektroda 1,2-100A

Dimensi Ukuran Spesimen ASTM-E8



	Dimensions		
	Plate Type 40 mm (1 5/8 in.) Wide	Sheet Type 12.5 mm (1/2 in.) Wide	8 mm (5/16 in.) Wide
G —Gage length (Note 1 and Note 2)	200 ± 0.2 (8.00 ± 0.01)	80.0 ± 0.1 (3.150 ± 0.008)	25.8 ± 0.1 (1.016 ± 0.008)
W —Width (Note 3 and Note 4)	40.0 ± 2.0 (1.600 ± 0.125 - 0.250)	12.5 ± 0.2 (0.500 ± 0.010)	6.0 ± 0.1 (0.250 ± 0.008)
T —Thickness (Note 5)		Thickness of material	
R —Radius of fillet, min. (Note 6)	25 (1)	12.5 (0.500)	6 (0.250)
L —Overall length, min. (Note 7, Note 1, and Note 2)	400 (16)	250 (8)	100 (4)
A —Length of reduced section, min.	225 (9)	57 (2.25)	30 (1.25)
B —Length of grip section, min. (Note 8)	75 (3)	50 (2)	30 (1.25)
C —Width of grip section, approximate (Note 4 and Note 9)	50 (2)	25 (0.750)	10 (0.375)

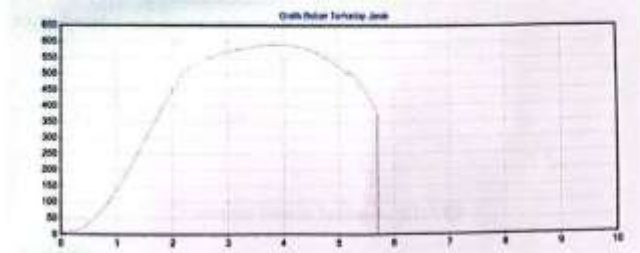
No.	Keterangan	Spesimen 1	Spesimen 2	Spesimen 3
1	Lebar Beban <i>i</i> (mm)	12,5	12,5	12,5
2	Tebal Beban <i>t</i> (mm)	5	5	5
3	Panjang Awal <i>L</i> ₀ (mm)	200	200	200
4	Panjang Akhir <i>L</i> _f (mm)	205,7	204,4	206,5
5	Pertambahan Panjang ΔL (mm)	5,7	4,4	6,5
6	Beban Luluh (<i>Yield Point</i>) (Kg)	501,6	562	452,2
7	Beban Maksimum (<i>Ultimate Strength</i>) (Kg)	591,4	673,4	657
8	Beban Putus (<i>Fracture</i>) (Kg)	377,8	352,8	453,4



Dipindai dengan CamScanner

Grafik Uji Tarik

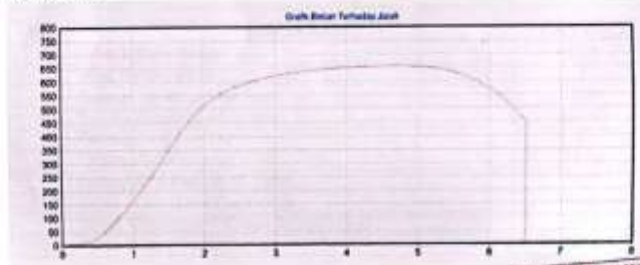
1,2/120A (1)



1,2/120A (2)



1,2/120A (3)



PERBUJARAN & PERLAKUAN
BIMAH
L.P. BANGUN TERBUK MESIN
POLITEKNIK NEGERI MALANG

Dipindai dengan CamScanner

