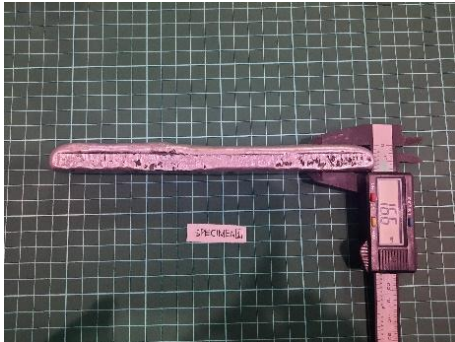
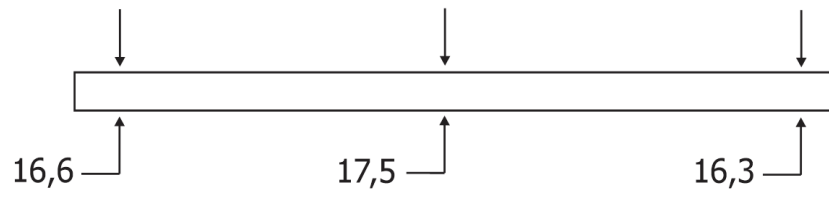


LAMPIRAN

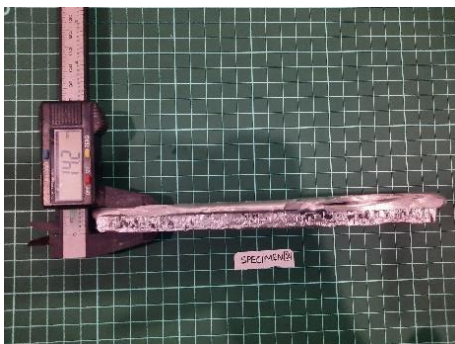
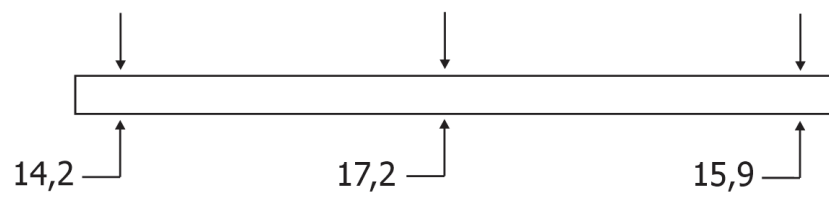
Lampiran 1. Dokumentasi Stir Casting



a) Pengukuran Hasil *Stir Casting* (Spesimen 1)

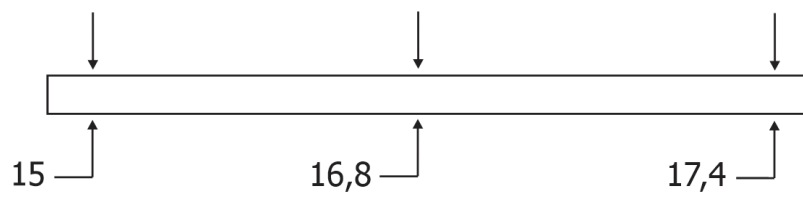


b) Pengukuran Hasil *Stir Casting* (Spesimen 2)





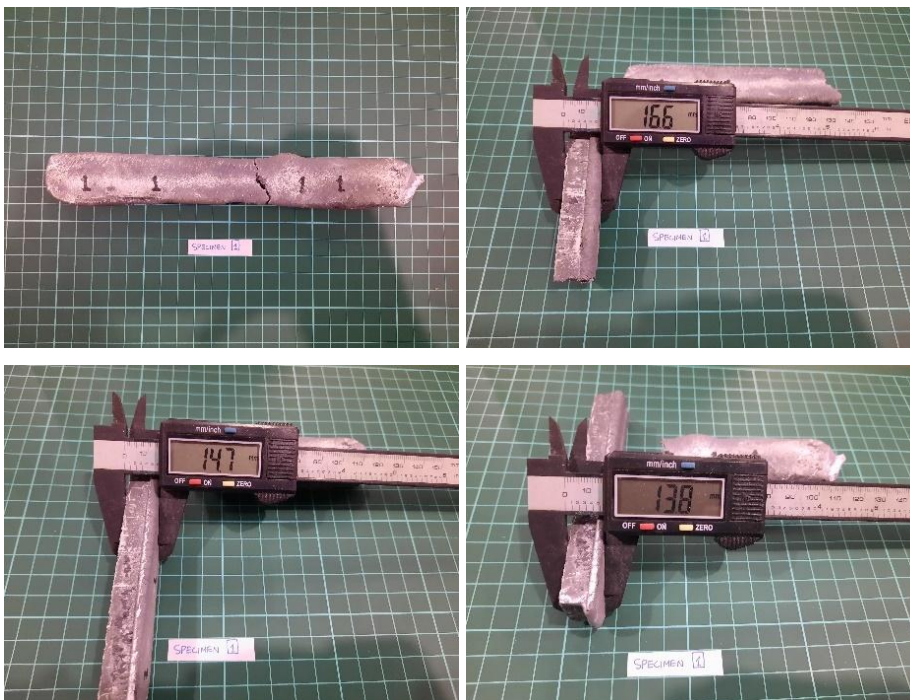
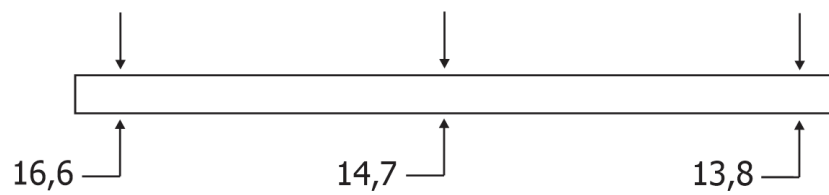
c) Pengukuran Hasil *Stir Casting* (Spesimen 3)



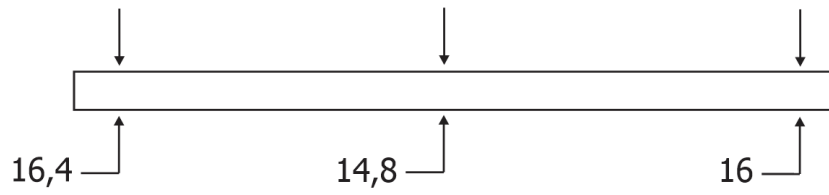
Lampiran 2. Dokumentasi Thixoforming



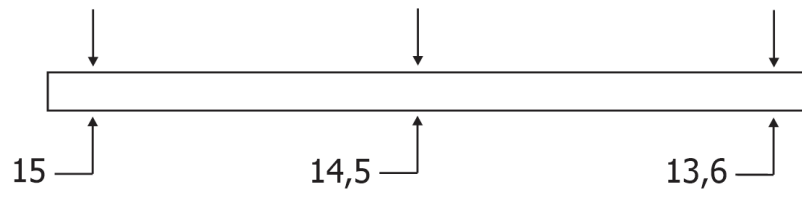
a) Pengukuran hasil thixoforming (Spesimen 1)



b) Pengukuran hasil thixoforming (Spesimen 2)



c) Pengukuran hasil thixoforming (Spesimen 3)



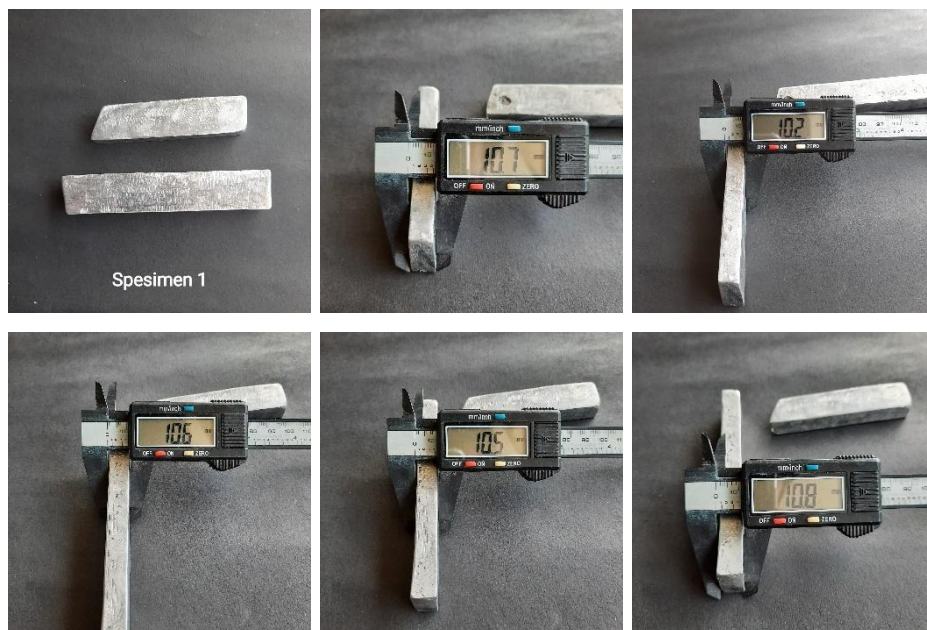
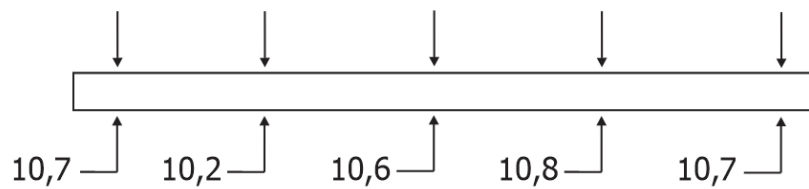
Lampiran 3. Dokumentasi *Rolling*

1. Dokumentasi alat dan identifikasi sampel

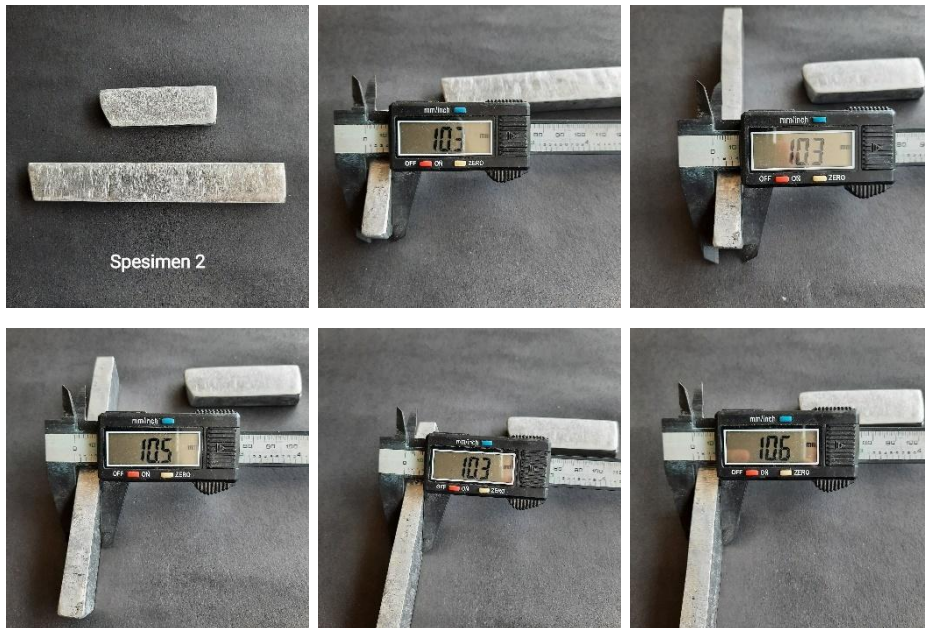
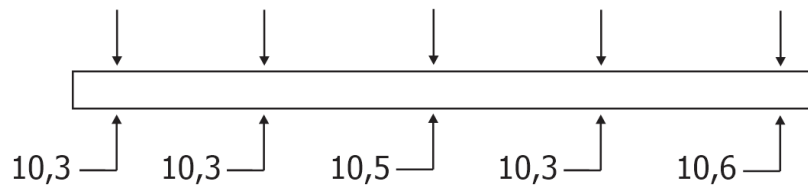


2. Ketebalan Sebelum *Rolling*

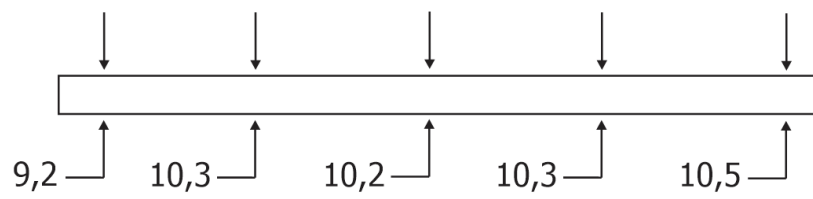
a) Spesimen 1



b) Spesimen 2



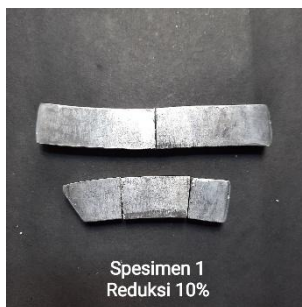
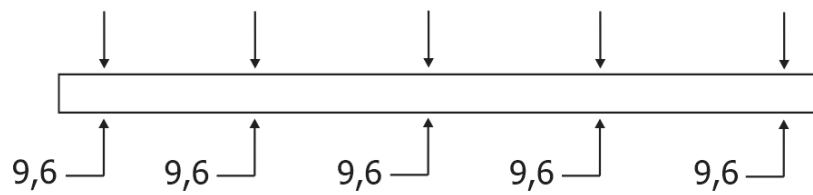
c) Spesimen 3



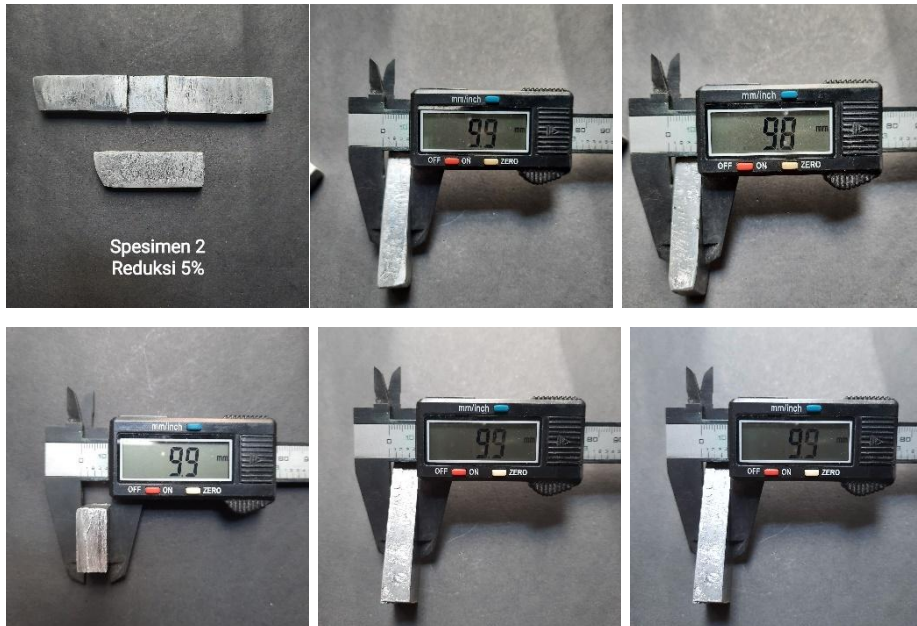
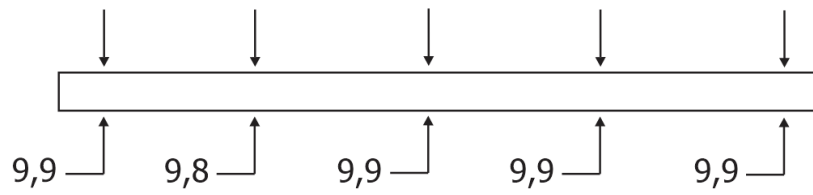


3. Ketebalan Sesudah *Rolling*

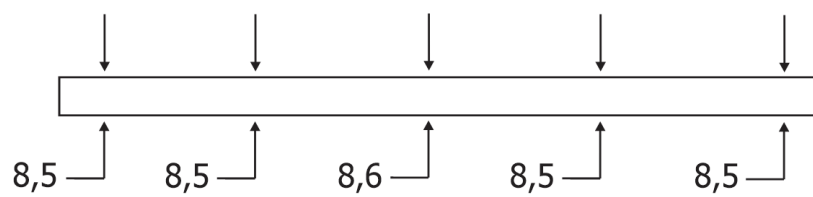
a) Spesimen 1



b) Spesimen 2



c) Spesimen 3



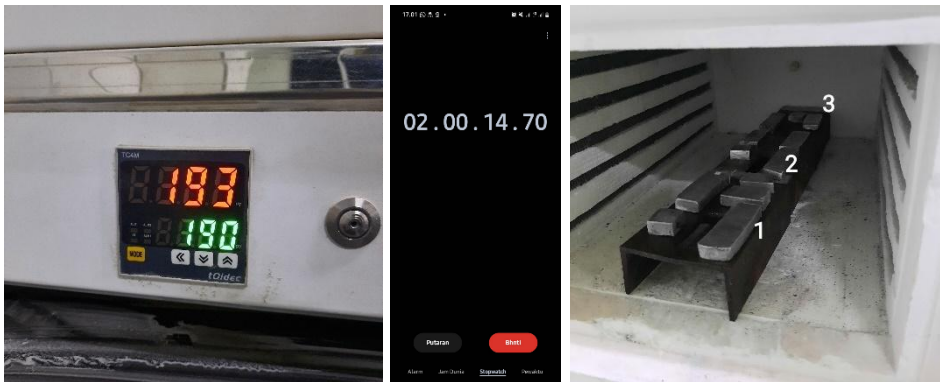


Lampiran 4. Dokumentasi Perlakuan Panas dan Artificial Aging

1. Proses Solutioning

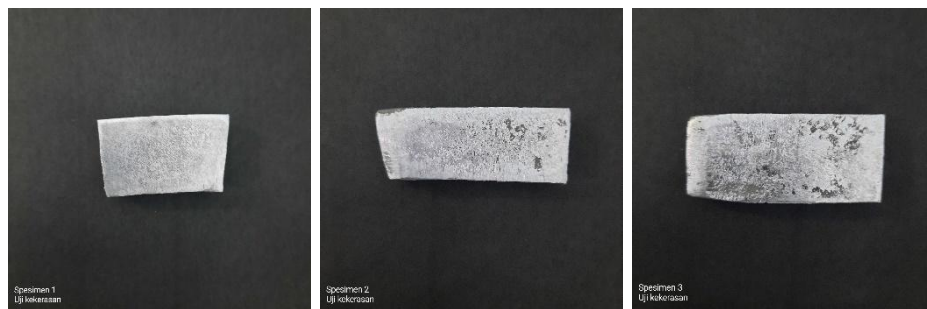


2. Proses Artificial Aging



Lampiran 5. Hasil Uji Kekerasan

1. Sampel yang diuji



2. Hasil Uji Kekerasan (Reduksi 10%)



3. Hasil Uji Kekerasan (Reduksi 5%)



4. Hasil Uji Kekerasan (Reduksi 15%)



5. Hasil Uji Kekerasan AA 6061 Cast



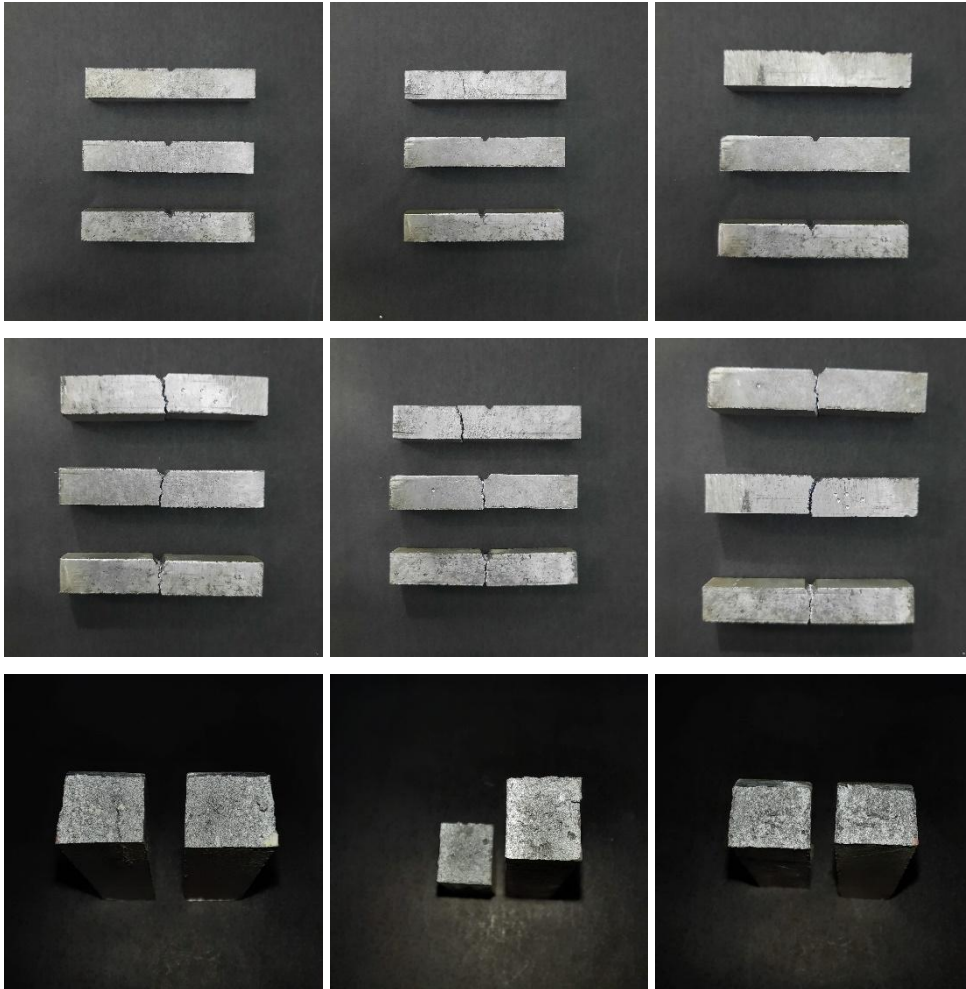
Lampiran 6. Hasil Uji Impak

1. Spesimen Uji Impak

5%

10%

15%



2. Hasil Uji Impak (Reduksi 5%)



3. Hasil Uji Impak (Reduksi 10%)



4. Hasil Uji Impak (Reduksi 15%)



5. Hasil Uji Impak AA 6061 Cast



Lampiran 7. Hasil Uji SEM & EDX

Test Report

ENERGY DISPERSIVE X-RAY (EDX) – SPECTRUM

Name of Sample	Komposit Aluminium Al 6061 + Alumina Al_2O_3
User Name	Ghifari Arifianto
Name of the Test	SEM-EDX
Test Date	September 03, 2024

Test Conditions

Parameters	Voltage 10kV
	Magnification 500, 1000, 2500, 5000
Preparation	No Coating, Alumina Polishing

Test Runs Image

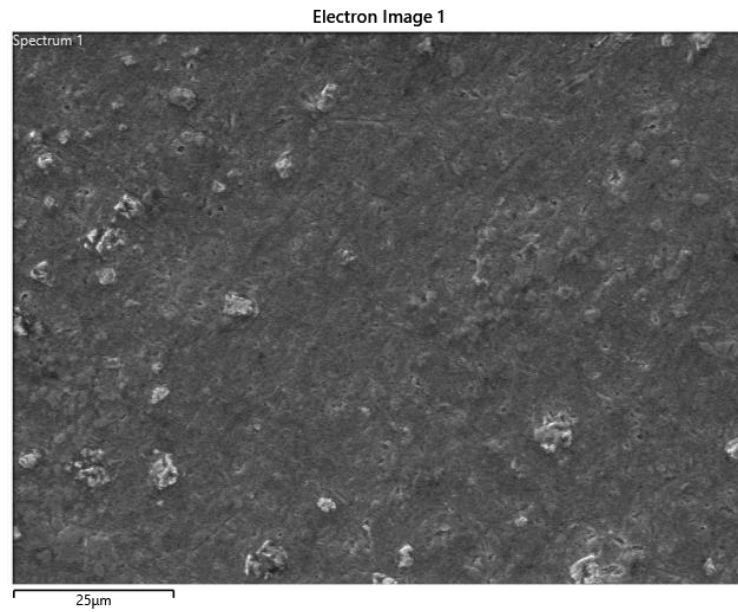
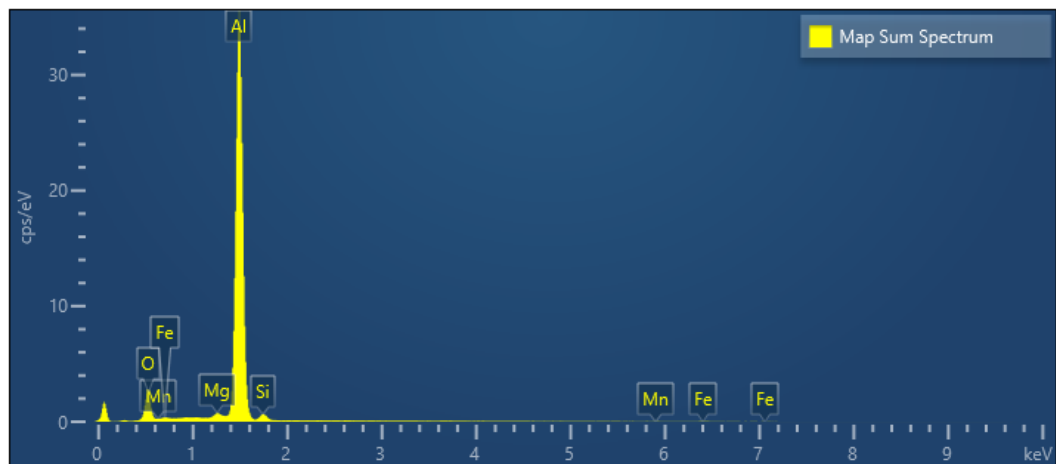
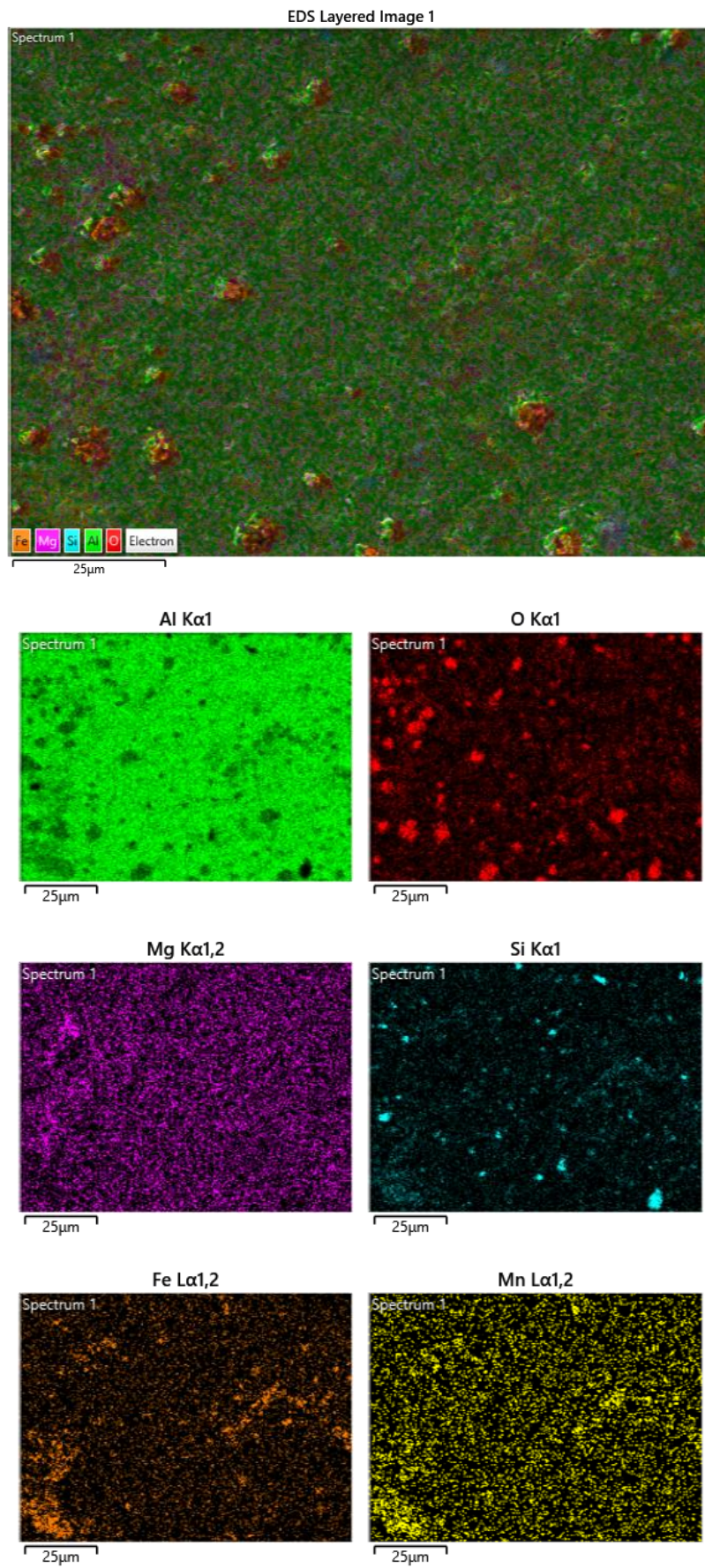


Figure 1. Al 6061 + Al₂O₃ 10%



Spectrum 1				
Element	Line Type	Weight %	Weight % Sigma	Atomic %
O	K series	10.39	0.08	16.50
Mg	K series	0.67	0.03	0.70
Al	K series	85.10	0.20	80.13
Si	K series	2.05	0.04	1.86
Mn	L series	0.00	0.36	0.00
Fe	L series	1.78	0.21	0.81
Total		100.00		100.00



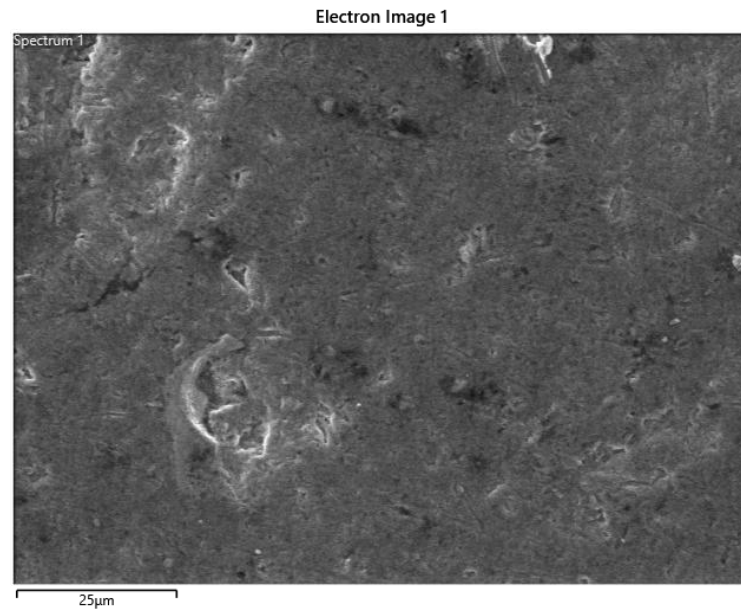
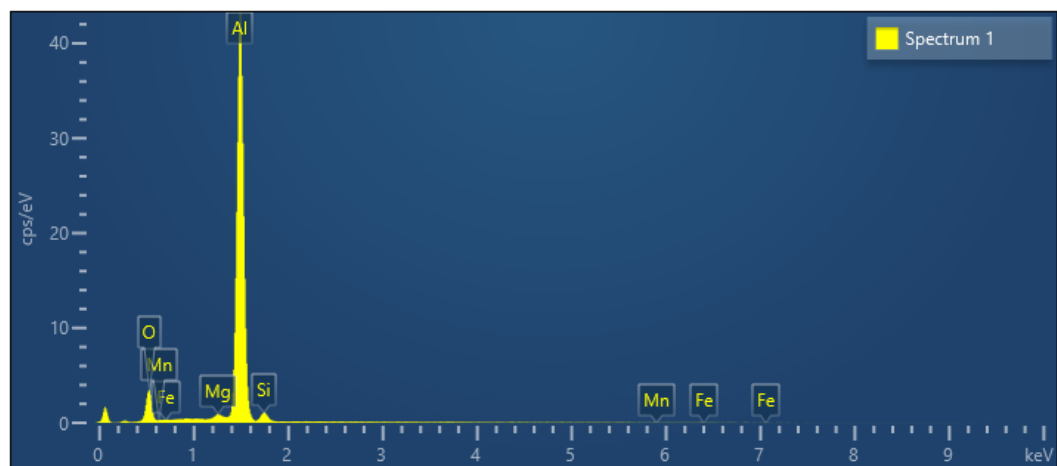
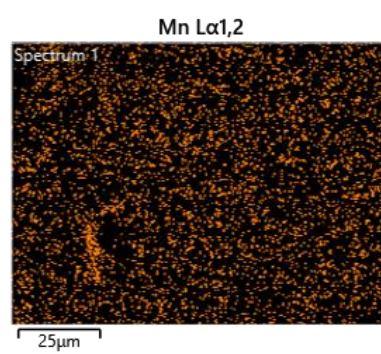
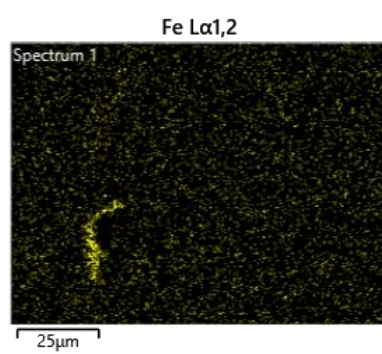
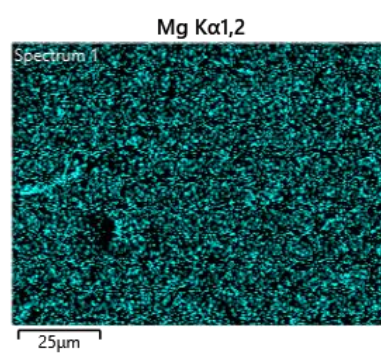
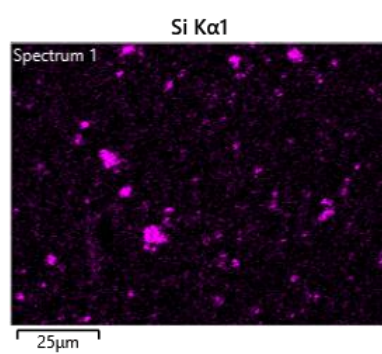
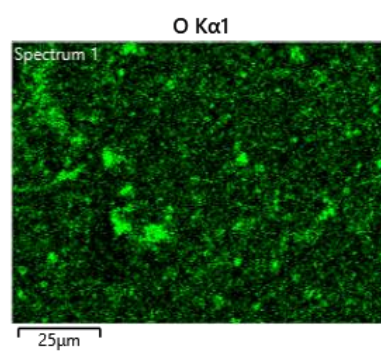
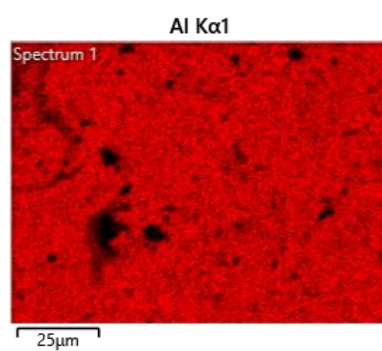
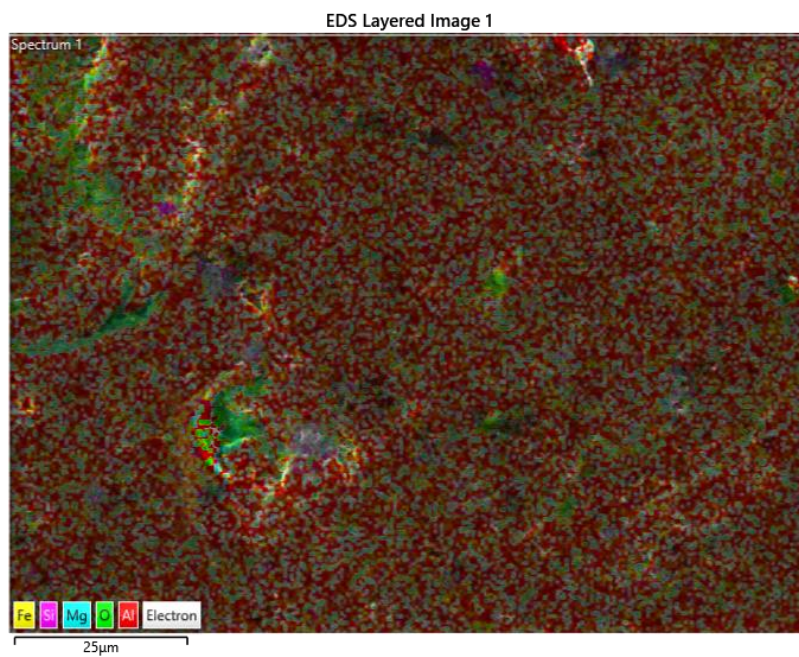


Figure 2. Al 6061 + Al₂O₃ 5%



Spectrum 1				
Element	Line Type	Weight %	Weight % Sigma	Atomic %
O	K series	11.23	0.17	17.68
Mg	K series	0.68	0.05	0.70
Al	K series	83.97	0.68	78.42
Si	K series	2.98	0.09	2.67
Mn	L series	0.66	0.67	0.30
Fe	L series	0.49	0.40	0.22
Total		100.00		100.00



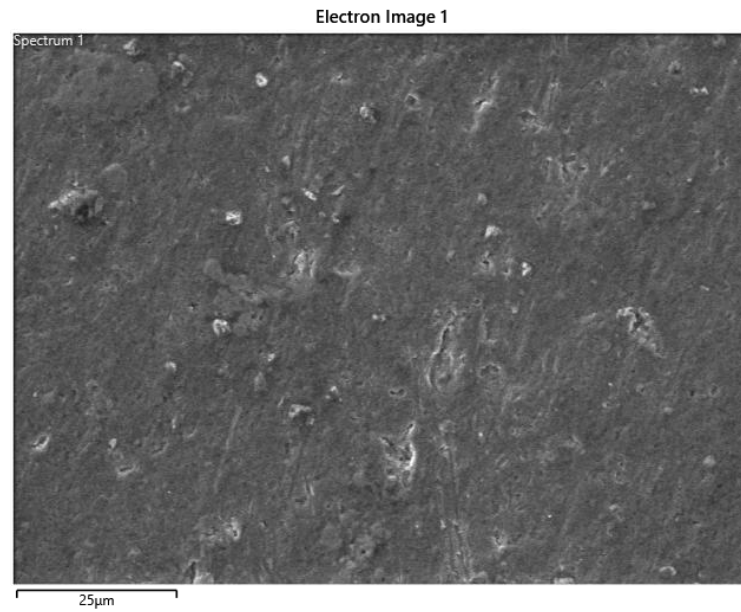
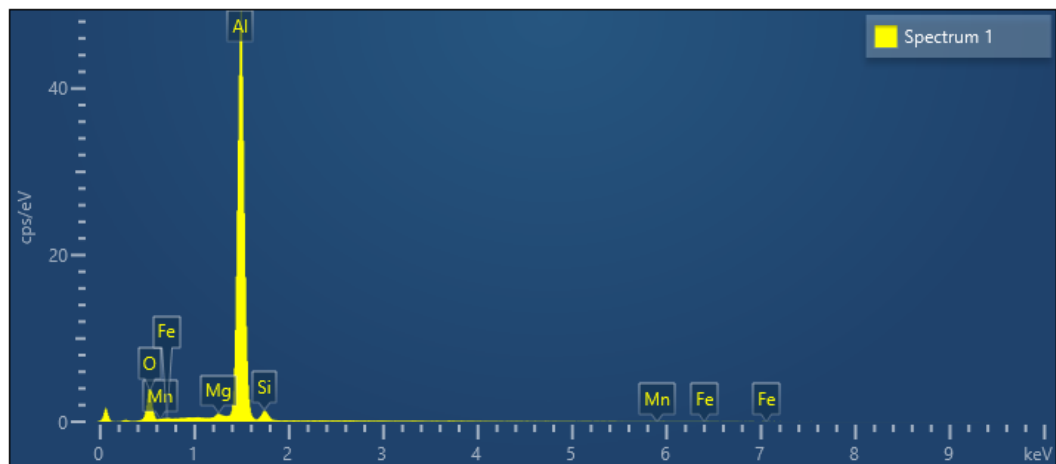
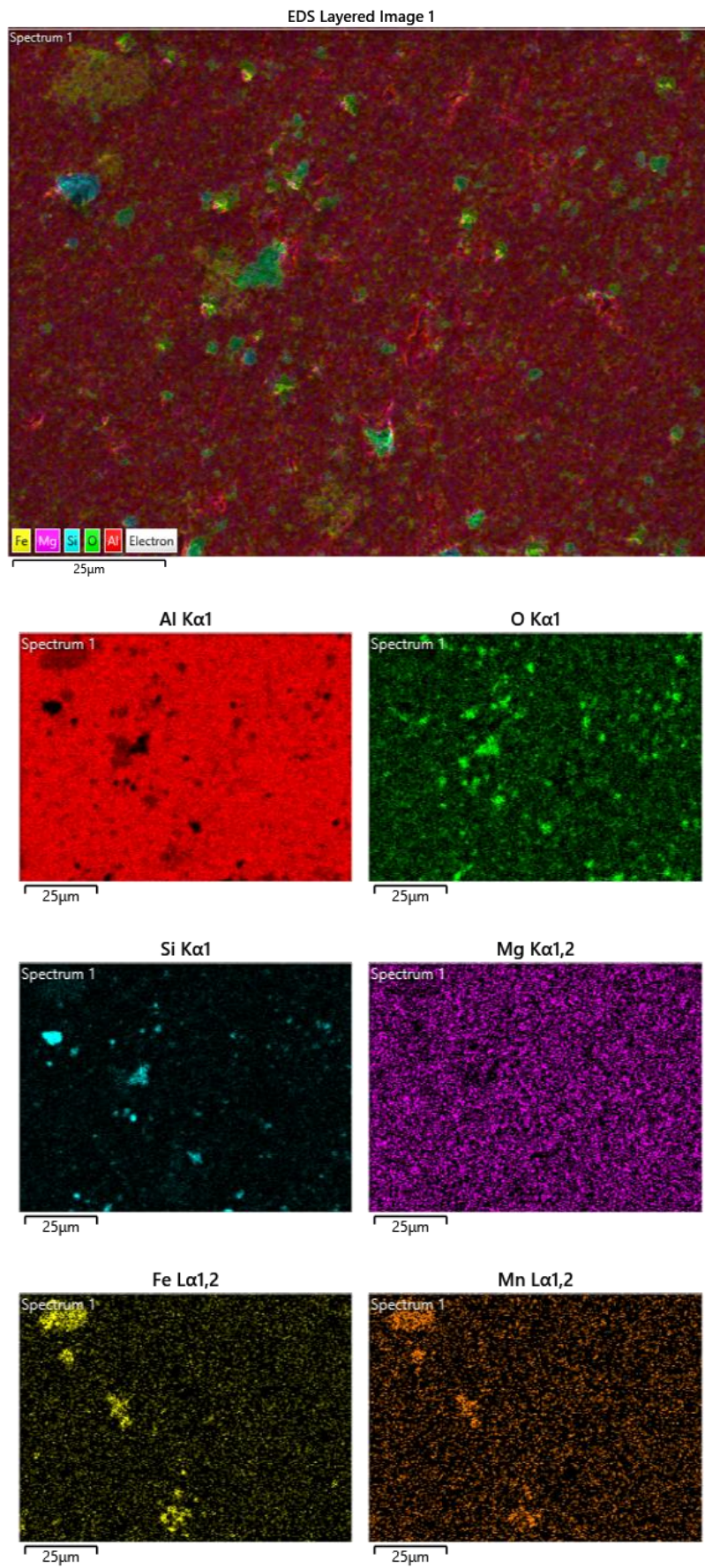


Figure 3. Al 6061 + Al₂O₃ 15%



Spectrum 1				
Element	Line Type	Weight %	Weight % Sigma	Atomic %
O	K series	10.62	0.15	16.83
Mg	K series	0.63	0.05	0.66
Al	K series	83.87	0.64	78.82
Si	K series	3.28	0.09	2.96
Mn	L series	0.34	0.64	0.16
Fe	L series	1.26	0.37	0.57
Total		100.00		100.00



Lampiran 8. Invoice Pembelian Bahan

1. Alumina



INVOICE
 INV/20240322/MPL/3807989326

DITERBITKAN ATAS NAMA
 Penjual : Kimiapedia

UNTUK
 Pembeli :
 Tanggal Pembelian : 22 Maret 2024
 Alamat Pengiriman :

INFO PRODUK	JUMLAH	HARGA SATUAN	TOTAL HARGA
Aluminium Oksida Putih / White Aluminium Oxide / Alumina 1Kg Berat: 1.10 kg	1	Rp50.000	Rp50.000
TOTAL HARGA (1 BARANG)			Rp50.000
Total Ongkos Kirim			Rp23.600
Diskon Ongkos Kirim			-Rp20.000
TOTAL BELANJA			Rp53.600
Biaya Layanan			Rp 1.000
Biaya Jasa Aplikasi			Rp1.000
TOTAL TAGIHAN			Rp55.600
Promo Tokopedia Bebas Ongkir hingga Rp30.000			Rp20.000*
*Promo yang didapat bisa berubah. Cek S&K			

Kurir:
 Kurir Rekomendasi - Regular 

Metode Pembayaran:
 BCA Virtual Account
 GoPay Coins

2. Aluminium Al 6061



INVOICE
 INV/20240702/MPL/4001456912

DITERBITKAN ATAS NAMA
 Penjual : Findustri

UNTUK
 Pembeli :
 Tanggal Pembelian : 02 Juli 2024
 Alamat Pengiriman :

INFO PRODUK	JUMLAH	HARGA SATUAN	TOTAL HARGA
Plat Aluminium 20mm Aluminium 6061 harga per 1 cm2 Berat: 6 gr 10cmx20cm	200	Rp820	Rp164.000
TOTAL HARGA (200 BARANG)			Rp164.000
Total Ongkos Kirim			Rp8.300
Total Diskon Barang			-Rp11.480
Biaya Asuransi Pengiriman			Rp1.100
TOTAL BELANJA			Rp161.920
Biaya Layanan			Rp 1.000
Biaya Jasa Aplikasi			Rp1.000
TOTAL TAGIHAN			Rp163.920
Promo Tokopedia Diskon 7% hingga Rp100.000			Rp11.480*
*Promo yang didapat bisa berubah. Cek S&K			

☒ Asuransi Pengiriman Tokopedia

Metode Pembayaran:
 BCA Virtual Account