

LAMPIRAN

Lampiran 1, Hasil Uji Komposisi *Stainless Steel Hollow 304*.



PT. ITOKOH CEPERINDO
Stainless Steel & Alloy Steel Casting



COMPANY : PT. ITOKOH CEPERINDO
 SAMPLE NAME : PLAT SUS 304
 CUSTOMER : MUH. LASNO-UNW AHAS
 FURNACE : WH1667B01/28
 OPERATOR : AJI
 DATE / TIME : 16-AUG-2018 09:42:33
 TASK : Conc_Fei METHOD : FEGLFE

	Fe%	S	Al	C	Ni	Nb	Si	Cr	V
1	70.4849	0.0048	0.0079	0.0574	8.9618	0.0219	0.5904	17.9448	0.124
2	70.4926	0.0038	0.0075	0.0524	8.9377	0.0219	0.5847	17.9791	0.123
AVG	70.4888	0.0043	0.0077	0.0549	8.9498	0.0219	0.5875	17.9620	0.123
SD	0.00549	0.00073	0.00026	0.00355	0.01701	0.00001	0.00405	0.02426	0.006
SD%	0.01	16.92	3.45	6.47	0.19	0.03	0.69	0.14	0.54

	Mn	Mo	W	P	Cu	Ti	N	B	Pb
1	0.9191	0.0488	0.0088	0.0332	0.3660	0.0015	0.0978	0.0016	0.004
2	0.9294	0.0477	0.0087	0.0310	0.3663	0.0015	0.0869	0.0017	0.004
AVG	0.9243	0.0480	0.0085	0.0321	0.3662	0.0015	0.0924	0.0017	0.004
SD	0.00730	0.00043	0.00029	0.00158	0.00023	0.00001	0.00773	0.00009	0.006
SD%	0.79	0.89	3.37	4.90	0.06	0.81	8.37	5.68	11.67

	Sb	Ca	Mg	Zn	Co
1	0.0077	0.0017	0.0157	-0.0069	0.2304
2	0.0078	0.0010	0.0156	-0.0069	0.2300
AVG	0.0078	0.0013	0.0157	-0.0069	0.2302
SD	0.00010	0.00052	0.00011	0.00003	0.00028
SD%	1.35	38.89	0.68	0.42	0.12

Q.C. PASSED
 By: 77 Date: 16-8-18

PT. ITOKOH CEPERINDO

INDONESIA OFFICE & FACTORY : Jl. KH. Hasyim As'ari By Pass Selatan Klaten 57417, Jateng - Indonesia
 Phone : (0272) 324208, 324038, Fax. (324213), E-mail : itokohci@indosat.net.id
 JAPAN OFFICE : 3-22-2 Motogo, Kawaguchi City, Saitama, Japan
 Phone : 81 482 248 401, Fax : 81 482 242070

Lampiran 2, Hasil Pengujian Tarik

Lampiran 2.a Hasil pengujian tarik raw material



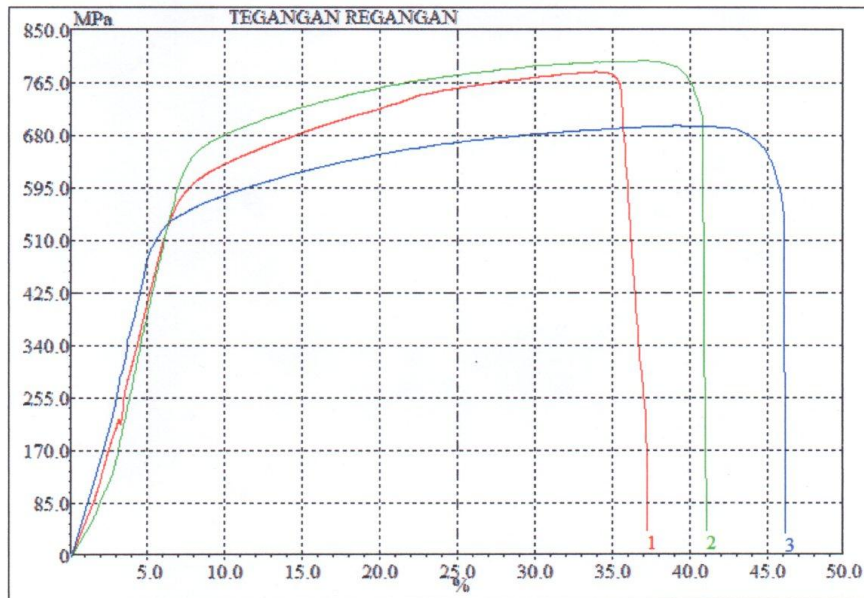
Laboratorium
Material Teknik
JURUSAN TEKNIK MESIN FAKULTAS TEKNIK
UNIVERSITAS WAHID HASYIM

Nama : LASNO
Instansi : UNWAHAS

Bahan : RAW SS 304
Standard : ASTM

HASIL PENGUJIAN TARIK

No	Material	Area mm ²	Yield Point N	Yield Stress MPa	Max. Load N	Max. Stress MPa	Break N	Break MPa	Extension mm	Elongation %
1	raw SS	9.000	6349.965	705.552	7046.204	782.912	345.308	38.368	11.900	37.188
2	RAW S	9.000	6495.216	721.691	7211.869	801.319	347.080	38.564	13.125	41.016
3	RAW S	9.000	5646.271	627.363	6265.250	696.139	307.500	34.167	14.762	46.133



Semarang, 27-09-2018
Kepala Laboratorium

Helmy Purwanto, ST., MT
NPP. 05.01.1.0060

Tested By : Nur Kholis, ST
NPP. 02.14.0.0303

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Lampiran 2.b Hasil pengujian tarik 60 Ampere



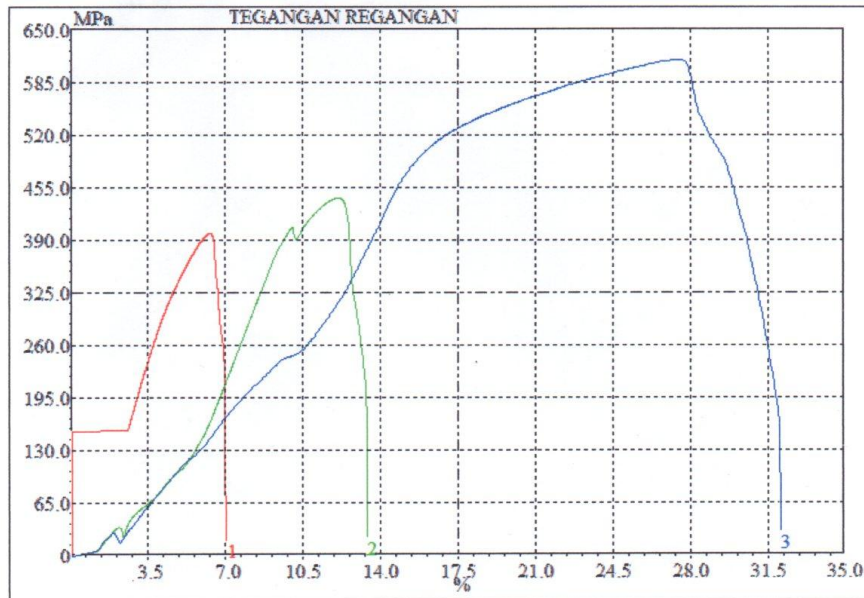
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UNIVERSITAS WAHID HASYIM

Nama : LASNO
Instansi : UNWAHAS

Bahan : SS 304 60 A
Standard : ASTM

HASIL PENGUJIAN TARIK

No	Material	Area mm ²	Yield Point N	Yield Stress MPa	Max. Load N	Max. Stress MPa	Break N	Break MPa	Extension mm	Elongation %
1	SS 304	9.000	3287.571	365.286	3585.840	398.427	174.507	19.390	2.250	7.031
2	SS304	9.000	3590.303	398.923	3980.496	442.277	194.564	21.618	4.275	13.359
3	SS 304	9.000	4974.304	552.700	5521.989	613.554	273.387	30.376	10.262	32.070



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Lampiran 2.c Hasil pengujian tarik 70 Ampere



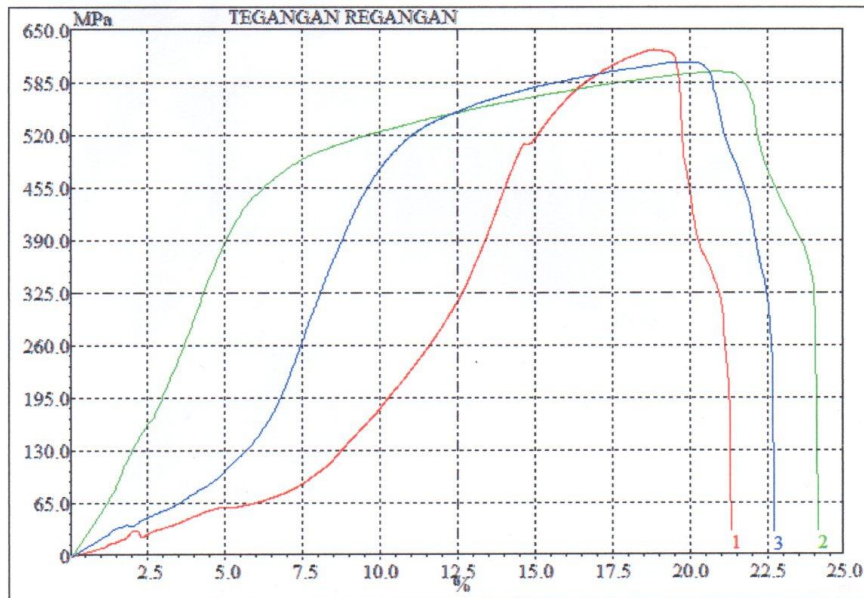
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Instansi : UNWAHAS

Bahan : SS 304 70 A
Standard : ASTM

HASIL PENGUJIAN TARIK

No	Material	Area mm ²	Yield Point N	Yield Stress MPa	Max. Load N	Max. Stress MPa	Break N	Break MPa	Extension mm	Elongation %
1	SS 304	9.000	4585.400	509.489	5632.683	625.854	266.823	29.647	6.813	21.289
2	SS304	9.000	4776.231	530.692	5391.357	599.040	262.979	29.220	7.713	24.102
3	SS 304	9.000	4954.178	550.464	5495.997	610.666	251.869	27.985	7.263	22.695



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Lampiran 2.d Hasil pengujian tarik 80 Ampere



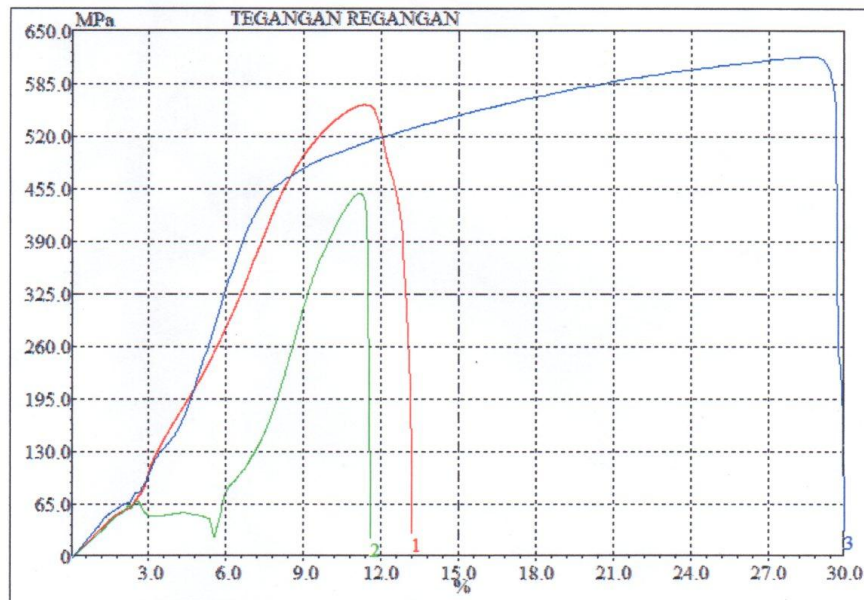
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UNIVERSITAS WAHID HASYIM

Nama : LASNO
Instansi : UNWAHAS

Bahan : SS 304 80 A
Standard : ASTM

HASIL PENGUJIAN TARIK

No	Material	Area mm ²	Yield Point N	Yield Stress MPa	Max. Load N	Max. Stress MPa	Break N	Break MPa	Extension mm	Elongation %
1	SS 304	9.000	4541.615	504.624	5035.342	559.482	249.361	27.707	4.200	13.125
2	SS304	9.000	3674.494	408.277	4049.296	449.922	194.420	21.602	3.700	11.563
3	SS 304	9.000	5017.718	557.524	5568.932	618.770	275.192	30.577	9.575	29.922



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Lampiran 2.e Hasil pengujian tarik 90 Ampere



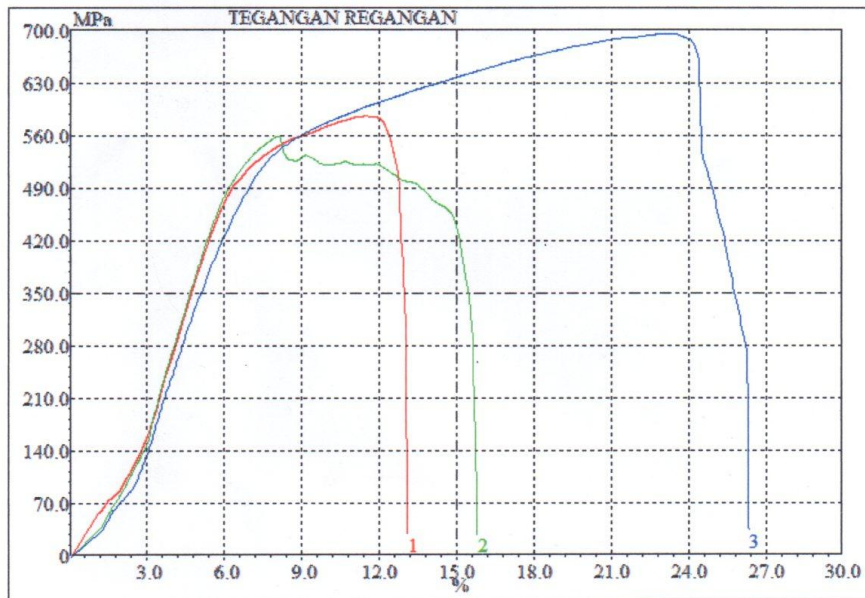
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Bahan : SS 304 90 A
Standard : ASTM

HASIL PENGUJIAN TARIK

No	Material	Area mm ²	Yield Point N	Yield Stress MPa	Max. Load N	Max. Stress MPa	Break N	Break MPa	Extension mm	Elongation %
1	SS 304	9.000	4761.213	529.024	5275.319	586.147	250.838	27.871	4.188	13.086
2	SS304	9.000	4554.544	506.060	5038.019	559.780	251.579	27.953	5.050	15.781
3	SS 304	9.000	5646.831	627.426	6266.786	696.309	307.762	34.196	8.425	26.328



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Lampiran 2.f Hasil pengujian tarik 100 Ampere



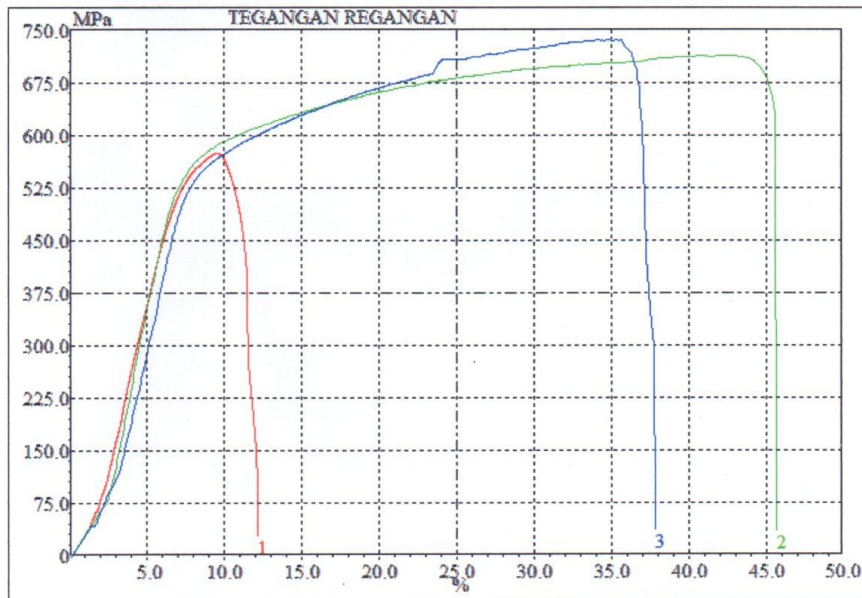
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UNIVERSITAS WAHID HASYIM

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Instansi : UNWAHAS

Bahan : SS 304 100 A
Standard : ASTM

HASIL PENGUJIAN TARIK

No	Material	Area mm ²	Yield Point N	Yield Stress MPa	Max. Load N	Max. Stress MPa	Break N	Break MPa	Extension mm	Elongation %
1	SS 304	9.000	4681.838	520.204	5179.460	575.496	249.984	27.776	3.850	12.031
2	SS304	9.000	5787.398	643.044	6427.522	714.169	306.025	34.003	14.600	45.625
3	SS 304	9.000	5972.398	663.600	6633.642	737.071	329.499	36.611	12.088	37.773



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Lampiran 3, Foto-foto Saat Melakukan Penelitian



Proses pemotongan material stainless steel hollow 304



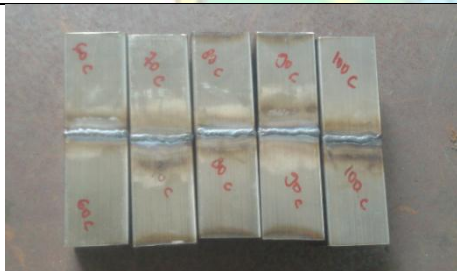
Spesimen penelitian



Penandaan spesimen penelitian



Pemotongan/pembuatan kampuh



Hasil pengelasan TIG



Pemotongan spesimen hasil penelitian



Pembuatan cetakan spesimen uji tarik



Spesimen uji tarik



Pembuatan spesimen uji tarik



Pengujian Kekerasan Rockwell



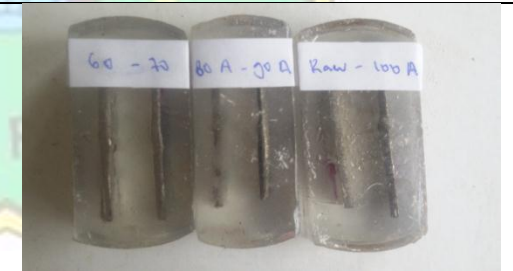
Pengujian uji tarik



Hasil patahan uji tarik



Material hasil uji komposisi



Spesimen uji struktur mikro

