LAMPIRAN

Lampiran 1, Hasil grafik pengujian tarik Raw material

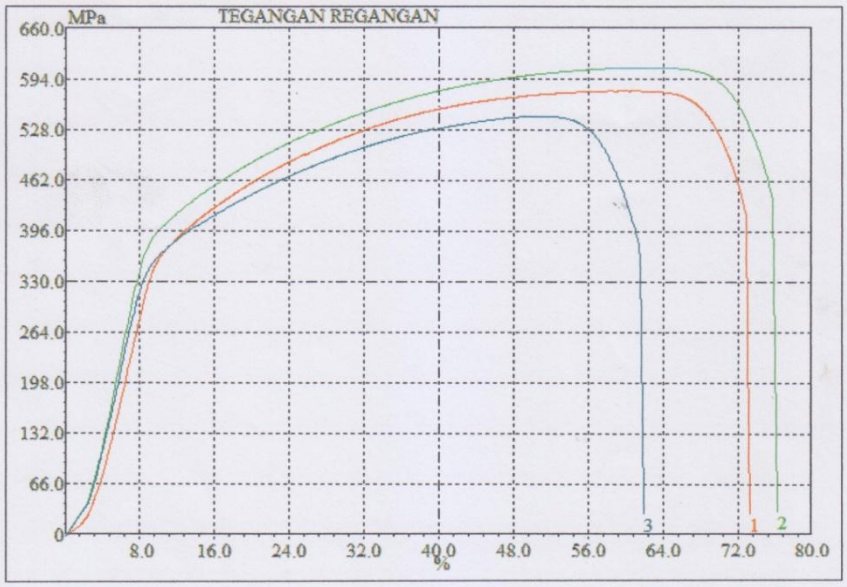
Laboratorium Material Teknik
JURUSAN TEKNIK MESIN FAKULTAS TEKNIK
UNIVERSITAS WAHID HASYIM

Nama : Harsono
Instansi : unwahas

Bahan : Stailess Stell
Standard : E8M-09

HASIL PENGUJIAN TARIK

No	Material	Area	Yield Point	Yield Stress	Max. Load	Max. Stress	Break	Break	Extension	Elongation
		mm²	N	MPa	N	MPa	N	MPa	mm	%
1	Raw	83.700	41523.625	496.101	48459.118	578.962	2319.349	27.710	30.025	73.232
2	Raw	79.200	41533.508	524.413	48257.781	609.315	2380.388	30.055	31.225	76.159
3	Raw	79.200	32140.294	405.812	43261.404	546.230	2139.616	27.015	25.363	61.860



Semarang, 11-11-2017
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, Hasil grafik pengujian tarik Arus 80 A

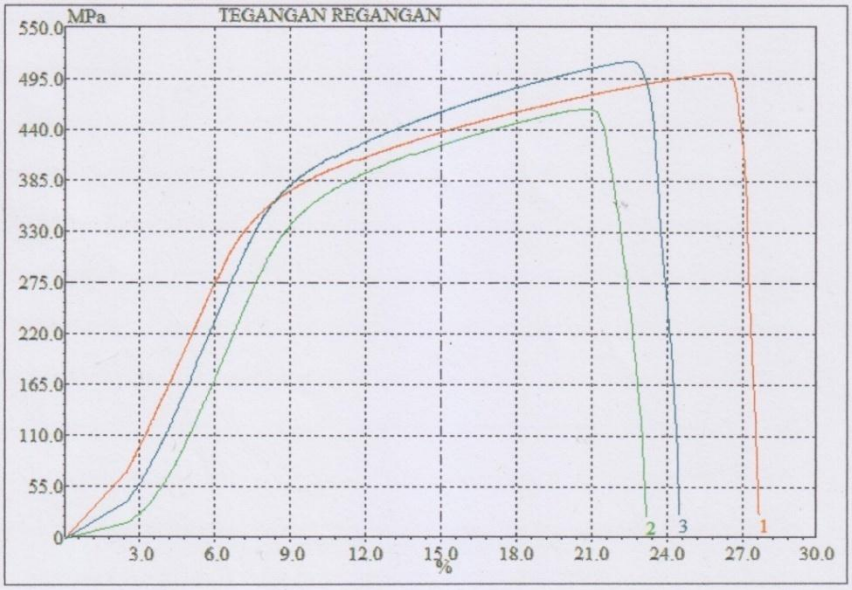
Laboratorium
Material Teknik
JURUSAN TEKNIK MESIN FAKULTAS TEKNIK
UNIVERSITAS WAHID HASYIM

Nama : Harsono
Instansi : unwahas

Bahan : Stailess Stell
Standard : E8M-09

HASIL PENGUJIAN TARIK

No	Material	Area	Yield Point	Yield Stress	Max. Load	Max. Stress	Break	Break	Extension	Elongation
		mm²	N	MPa	N	MPa	N	MPa	mm	%
1	80 A	76.800	31347.994	408.177	38448.306	500.629	1910.465	24.876	11.338	27.652
2	80 A	76.000	31483.062	414.251	35121.086	462.120	1754.542	23.086	9.488	23.140
3	80 A	76.800	31577.621	411.167	39428.757	513.395	1960.204	25.523	10.038	24.482



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Lampiran 3, Hasil grafik pengujian tarik Arus 100 A

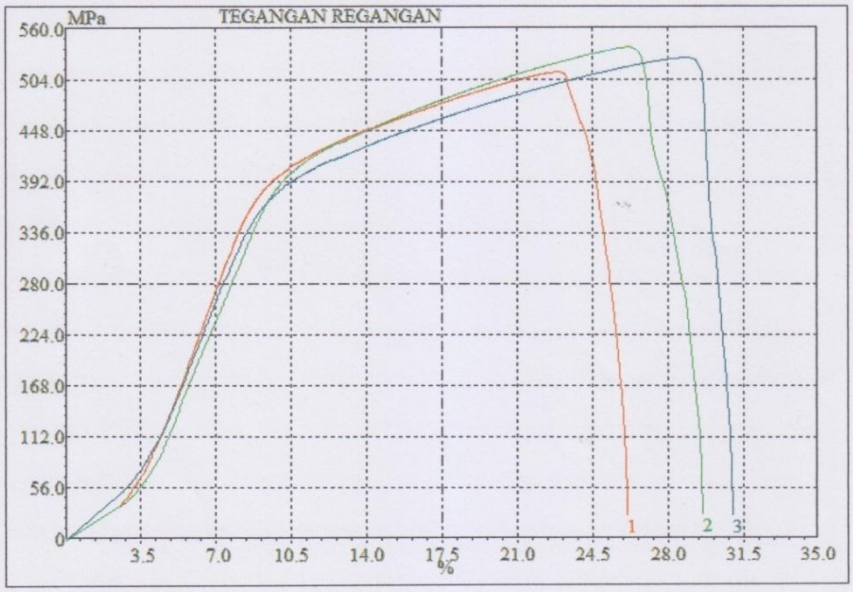
Laboratorium
Material Teknik
JURUSAN TEKNIK MESIN FAKULTAS TEKNIK
UNIVERSITAS WAHID HASYIM

Nama : Harsono
Instansi : unwahas

Bahan : Stailess Stell
Standard : E8M-09

HASIL PENGUJIAN TARIK

No	Material	Area mm²	Yield Point N	Yield Stress MPa	Max. Load N	Max. Stress MPa	Break N	Break MPa	Extension mm	Elongation %
1	100 A	68.800	31016.729	450.825	35235.234	512.140	1746.570	25.386	10.688	26.067
2	100 A	71.200	30961.388	434.851	38418.062	539.580	1919.471	26.959	12.125	29.573
3	100 A	74.400	31051.551	417.360	39261.856	527.713	1916.685	25.762	12.700	30.976



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Lampiran 4, Hasil grafik pengujian tarik Arus 120 A

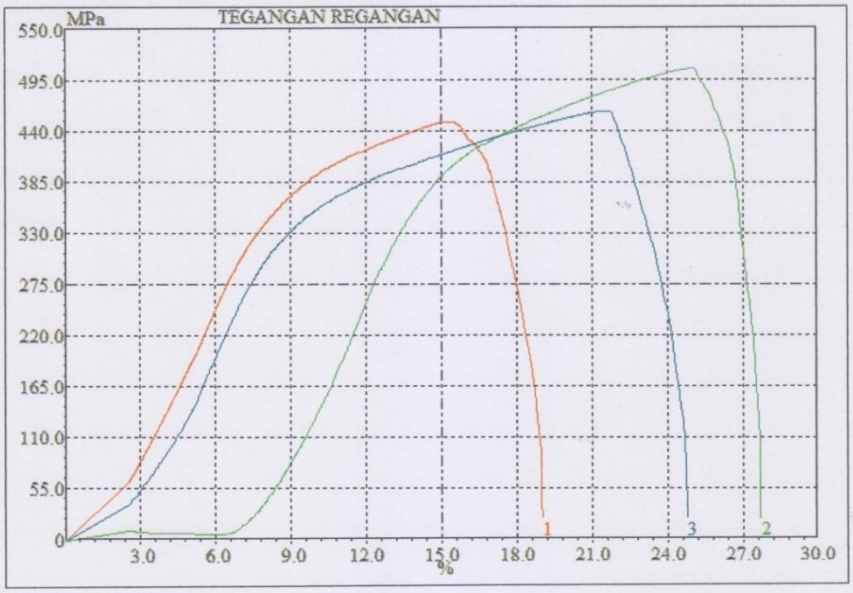
Laboratorium
Material Teknik
JURUSAN TEKNIK MESIN FAKULTAS TEKNIK
UNIVERSITAS WAHID HASYIM

Nama : Harsono
Instansi : unwahas

Bahan : Stainless Stell
Standard : E8M-09

HASIL PENGUJIAN TARIK

No	Material	Area mm²	Yield Point N	Yield Stress MPa	Max. Load N	Max. Stress MPa	Break N	Break MPa	Extension mm	Elongation %
1	120 A	74.400	30242.949	406.491	33486.839	450.092	1660.200	22.315	7.787	18.994
2	120 A	72.800	31026.579	426.189	36898.056	506.841	1651.059	22.679	11.363	27.713
3	120 A	77.600	31130.949	401.172	35812.918	461.507	1760.609	22.688	10.163	24.787



Semarang, 11-11-2017
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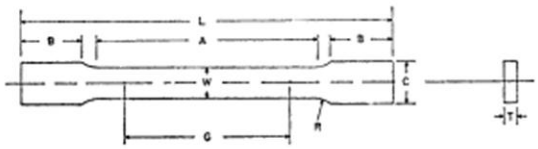
Lampiran **5,** Sertifikat ASTM E8/EM8 - 09



	Dimensions		
	Standard Specimens		Subsize Specimen
	Plate-Type, 40 mm [1.500 in.] Wide	Sheet-Type, 12.5 mm [0.500 in.] Wide	6 mm [0.250 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 ± 0.003]
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)		thickness of material	
R—Radius of fillet, min (Note 6)	25 [1]	12.5 [0.500]	6 [0.250]
L—Overall length, min (Note 2, Note 7, and Note 8)	450 [18]	200 [8]	100 [4]
A—Length of reduced section, min	225 [9]	57 [2.25]	32 [1.25]
B—Length of grip section, min (Note 9)	75 [3]	50 [2]	30 [1.25]
C—Width of grip section, approximate (Note 4 and Note 9)	50 [2]	20 [0.750]	10 [0.375]

NOTE 1—For the 40 mm [1.500 in.] wide specimen, punch marks for measuring elongation after fracture shall be made on the flat or on the edge of the specimen and within the reduced section. Either a set of nine or more punch marks 25 mm [1 in.] apart, or one or more pairs of punch marks 200 mm [8 in.] apart may be used.

NOTE 2—When elongation measurements of 40 mm [1.500 in.] wide specimens are not required, a minimum length of reduced section (*A*) of 75 mm [2.25 in.] may be used with all other dimensions similar to those of the plate-type specimen.

NOTE 3—For the three sizes of specimens, the ends of the reduced section shall not differ in width by more than 0.10, 0.05 or 0.02 mm [0.004, 0.002 or 0.001 in.], respectively. Also, there may be a gradual decrease in width from the ends to the center, but the width at each end shall not be more than 1 % larger than the width at the center.

NOTE 4—For each of the three sizes of specimens, narrower widths (*W* and *C*) may be used when necessary. In such cases the width of the reduced section should be as large as the width of the material being tested permits; however, unless stated specifically, the requirements for elongation in a product specification shall not apply when these narrower specimens are used.

NOTE 5—The dimension *T* is the thickness of the test specimen as provided for in the applicable material specifications. Minimum thickness of 40 mm [1.500 in.] wide specimens shall be 5 mm [0.188 in.]. Maximum thickness of 12.5 and 6 mm [0.500 and 0.250 in.] wide specimens shall be 19 and 6 mm [0.750 and 0.250 in.], respectively.

NOTE 6—For the 40 mm [1.500 in.] wide specimen, a 13 mm [0.500 in.] minimum radius at the ends of the reduced section is permitted for steel specimens under 690 MPa [100 000 psi] in tensile strength when a profile cutter is used to machine the reduced section.

NOTE 7—The dimension shown is suggested as a minimum. In determining the minimum length, the grips must not extend in to the transition section between Dimensions *A* and *B*, see Note 9.

NOTE 8—To aid in obtaining axial force application during testing of 6-mm [0.250-in.] wide specimens, the overall length should be as large as the material will permit, up to 200 mm [8.00 in.].

NOTE 9—It is desirable, if possible, to make the length of the grip section large enough to allow the specimen to extend into the grips a distance equal to two thirds or more of the length of the grips. If the thickness of 12.5 mm [0.500-in.] wide specimens is over 10 mm [0.375 in.], longer grips and correspondingly longer grip sections of the specimen may be necessary to prevent failure in the grip section.

NOTE 10—For the three sizes of specimens, the ends of the specimen shall be symmetrical in width with the center line of the reduced section within 2.5, 0.25 and 0.13 mm [0.10, 0.01 and 0.005 in.], respectively. However, for referee testing and when required by product specifications, the ends of the 12.5 mm [0.500 in.] wide specimen shall be symmetrical within 0.2 mm [0.01 in.].

NOTE 11—For each specimen type, the radii of all fillets shall be equal to each other within a tolerance of 1.25 mm [0.05 in.], and the centers of curvature of the two fillets at a particular end shall be located across from each other (on a line perpendicular to the centerline) within a tolerance of 0.2 mm [0.01 in.].

NOTE 12—Specimens with sides parallel throughout their length are permitted, except for referee testing, provided: *(a)* the above tolerances are used; *(b)* an adequate number of marks are provided for determination of elongation; and *(c)* when yield strength is determined, a suitable extensometer is used. If the fracture occurs at a distance of less than 2 W from the edge of the gripping device, the tensile properties determined may not be representative of the material. In acceptance testing, if the properties meet the minimum requirements specified, no further testing is required, but if they are less than the minimum requirements, discard the test and retest.

FIG. 1 Rectangular Tension Test Specimens