LAMPIRAN

UNIVERSITAS MUHAMMADIYAH YOGYAKARTA
Fakultas Teknik Program Studi S-1 Teknik Sipil
Laboratorium Teknologi Bahan Kontruksi
Jl. Lingkar Selatan, Tamantirto, Kasihan, Bantul, D.I. Yogyakarta 55183
Telp.+ 62-274-387656, Fax. 0274-387646

HASIL PEMERIKSAAN GRADASI BUTIRAN AGREGAT HALUS

Jenis Pengujian : Pemeriksaan gradasi besar butiran agregat halus

Bahan : Pasir

Asal : Sungai Progo

Diperiksa : 16 Maret 2018

Ukuran	Lubang Ayakan (mm)	Berat Tertahan (gram)	Persen Berat Tertahan (%)	Persen berat Tertahan Komulatif (%)	Persen Berat Lolos Komulatif (%)
No.4	4,8	0	0,000	0,000	100,000
No.8	2,4	10,51	1,051	1,051	98,949
No.16	1,2	33	3,3	4,351	95,649
No.30	0,6	78,11	7,811	12,162	87,838
No.50	0,3	545,2	54,52	66,682	33,318
No.100	0,15	260,48	26,048	92,73	7,27
Pan		72,7	7,27		
Total		1000	100,000	176,976	

Analisis hitungan:

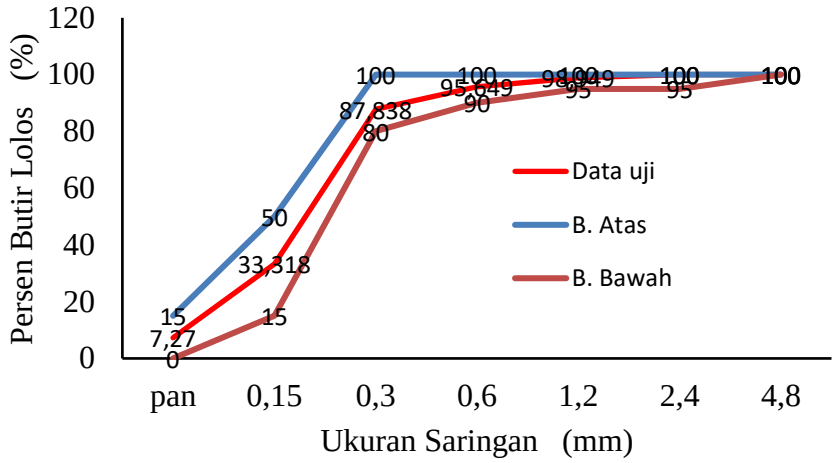
a. Contoh saringan no.30
   Persen berat teratahan:
   $= \frac{Berat\ Tertahan}{Total}$ x 100%
   $= \frac{78,11}{1000}$ x 100%
   = 7,8%

b. Contoh saringan no.30
   Persen berat tertahan komulatif:
   = Persen berat tertahan no.4 + Persen berat tertahan no.30
   = 0,00 + 7,8 = 7,8%

c. Komulatih contoh saringan no.30
   Persen berat lolos komulatif:
   = 100 – Persen berat tertahan
   = 100 – 7,8 = 92,2%

d. Modulus halus butir (MHB)
= jumlah berat tertahan komulatif / 100
= 176,976/100 = 1,769%

Berdasarkan dari hasil pengujian gradasi agregat halus (pasir) yang dilakukan di Laboratorium Teknik Sipil Universitas Muhammadiyah Yogyakarta didapatkan hasil berdasarkan tabel grafik kekasaran pasir masuk pada daerah 4 dengan nilai Modulus Halus Butir (MHB) adalah 1,769 %.



Grafik ASTM hubungan ukuran saringan dengan persen lolos saringan

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HASIL PEMERIKSAAN KADAR AIR AGREGAT HALUS

Jenis Pengujian : Pemeriksaan kadar air agregat halus

Bahan : Pasir

Asal : Sungai Progo

Diperiksa : 14 Maret 2018 s/d 15 Maret 2018

Uraian	Benda Uji			
	Satuan	C1	C2	C3
Agregat kasar jenuh kering muka (B1)	gram	1000	1000	1000
Agregat kasar setelah keluar oven (B2)	gram	984	990	987
Kadar air	gram	1,6	1	1,3
Rata-rata kadar air	%	1,3		

Analisis hitungan:

a. Kadar Air $= \frac{B1-B2}{B1}$ x 100%

Contoh benda uji 1 $= \frac{1000-984}{1000}$ x 100%

= 1,6 %

b. Kadar air rata-rata $= \frac{KA1+KA2+KA3}{3}$

$= \frac{1,6+1+1,3}{3}$

= 1,3 %

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HASIL PEMERIKSAAN BERAT JENIS DAN PENYERAPA AIR AGREGAT HALUS

Jenis Pengujian : Pemeriksaan berat jenis dan penyerapan air agregat halus

Bahan : Pasir

Asal : Sungai Progo

Diperiksa : 15 Maret 2018 s/d 17 Maret 2018

Uraian	Benda Uji		
	Satuan	C1	C2
Berat piknometer isi pasir dan air (Bt)	gram	1085	1075
Berat pasir setelah kering (Bk)	gram	475	480
Berat piknometer isi air (B)	gram	770	770
Berat pasir keadaan jenuh kering muka (ssd)	gram	500	500

Uraian	Benda Uji		
	Satuan	C1	C2
Berat jenis curah	gram	2,57	2,46
Berat jenis jenuh kering muka	gram	2,70	2,56
Berat jenis tampak	gram	2,97	2,47
Penyerapan air agregat halus	gram	5,26	4,17
Berat jenis kering muka rata-rata	gram	2,63	

Analisis hitungan:

a. Berat jenis curah $= \frac{Bk}{B+SSD-Bt}$

Contoh benda uji 1 $= \frac{475}{770+500-1085}$

$= 2,57$ gr

b. Berat jenis jenuh kering muka $= \frac{500}{B+SSD-Bt}$

Contoh benda uji 1 $= \frac{500}{770+500-1085}$

$= 2,70$ gr

c. Berat jenis tampak $= \frac{Bk}{B+Bk-Bt}$

Contoh benda uji 1 $= \frac{475}{770+475-1085}$

= 2,97 gr

d. Penyerapan air agregat halus $= \frac{SSD-Bk}{Bk}$ x 100%

Contoh benda uji 1 $= \frac{500-475}{475}$ x 100%

= 5,26 gr

e. Berat jenis jenuh kering muka rata-rata $= \frac{SSD_1 + SSD_2}{2}$

$= \frac{5,26+4,17}{2}$

= 2,63

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Lampiran 4

HASIL PEMERIKSAAN BERAT SATUAN AGREGAT HALUS

Jenis Pengujian : Pemeriksaan berat satuan agregat halus

Bahan : Pasir

Asal : Sungai Progo

Diperiksa : 17 Maret 2018

Uraian	Satuan	Benda Uji
		A
Berat bejana kosong (B1)	gr	10250
Berat bejana kosong + Pasir (B2)	gr	18750
Berat satuan (Bsat)	gr/cm^3	1,604

Analisis hitungan:

a. Bejana : d = 15 cm
h = 30 cm

b. Volume bejana kosong $= {}^{1}/_{4}\,\pi r^2 t$
$= {}^{1}/_{4}\,\pi x\ 15^2 x\ 30$
$= 5301\ cm^3$

c. Berat satuan (B_{sat}) $= \frac{\text{B2}-\text{B1}}{\text{Volume}}$
$= \frac{18750-10250}{5301}$
$= 1{,}604$ gr/m^3

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HASIL PEMERIKSAAN KADAR LUMPUR AGREGAT HALUS

Jenis Pengujian : Pemeriksaan kadar lumpur agregat halus

Bahan : Pasir

Asal : Sungai Progo

Diperiksa : 16 Maret 2018 s/d 17 Maret 2018

Uraian	Satuan	Benda Uji		
		D9	D2	D4
Pasir jenuh kering muka (B1)	Gr	500	500	500
Pasir setelah keluar oven (B2)	Gr	495	496	497
Kandungan air (B3 = B1-B2)	Gr	5	4	3
Kadar lumpur	%	1	0,8	0,6
Rata-rata	%	0,8		

Analisis hitungan:

a. Kandungan air = B1- B2

Contoh benda uji 1 = 500 – 495

= 5 gr

b. Kadar lumpur $= \frac{B1-B2}{B2}\ x\ 100\%$

Contoh benda uji 1 $= \frac{500-495}{5}\ x\ 100\%$

= 1 %

c. Rata-rata kadar lumpur $= \frac{KL1+KL2+KL3}{3}\ x\ 100\%$

$= \frac{1+0,8+0,6}{3}\ x\ 100\%$

= 0,8 %

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HASIL PEMERIKSAAN BERAT JENIS DAN PENYERAPAN AIR AGRAGAT KASAR

Jenis Pengujian : Pemeriksaan berat jenis dan penyerapan air agregat kasar
Bahan : Kerikil
Asal : Clereng
Diperiksa : 15 Maret 2018 s/d 16 Maret 2018

Uraian	Satuan	Benda Uji
		Bj1
Berat kerikil setelah dikeringkan (Bk)	gram	4987
Berat kerikil dibawah air (Ba)	gram	3099
Berat kerikil keadaan jenuh (Bj)	gram	5040

Uraian	Satuan	Benda Uji
		Bj1
Berat jenis curah	Gram	2,57
Berat jenis kering muka	Gram	2,60
Berat jenis tampak	Gram	2,64
Penyerapan air agregat kasar	%	2,06

Analisis hitungan:

a. Berat jenis curah $= \frac{Bk}{\text{Bj}-\text{Ba}}$

Benda uji 1 $= \frac{4987}{5040-3099}$

$= 2{,}57$ gr

b. Berat jenis jenuh kering muka $= \frac{Bj}{\text{Bj}-\text{Ba}}$

Benda uji 1 $= \frac{5040}{5040-3099}$

$= 2{,}60$ gr

c. Berat jenis tampak $= \frac{Bk}{\text{Bk}-\text{Ba}}$

Benda uji 1 $= \frac{4987}{4987-3099}$

$= 2{,}64$ gr

d. Penyerapan air agregat kasar $= \frac{Bj-Bk}{\text{Bk}}$ x 100%

Contoh benda uji 1 $= \frac{5040-4987}{4987}$ x 100%

$= 1{,}06$ %

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HASIL PEMERIKSAAN BERAT SATUAN AGREGAT KASAR

Jenis Pengujian : Pemeriksaan berat satuan agregat kasar

Bahan : Kerikil

Asal : Clereng

Diperiksa : 16 Maret 2018

Uraian	Satuan	Benda Uji
		A
Berat silinder kosong (B1)	gr	10850
Berat silinder kosong + Kerikil (B2)	gr	18550
Berat satuan	gr/cm^3	1,452

Analisis hitungan:

a. Bejana: d = 15 cm
h = 30 cm

b. Volume bejana kosong $= {}^{1}/_{4}\,\pi r^2 t$
$= {}^{1}/_{4}\,\pi x\ 15^2 x\ 30$
$= 5301\ cm^3$

c. Berat satuan (B_{sat}) $= \frac{B2-B1}{\text{Volume}}$

Benda uji 1 $= \frac{18550-10850}{5301}$
$= 1{,}452$ gr/m^3

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HASIL PEMERIKSAAN KADAR LUMPUR AGREGAT KASAR

Jenis Pengujian : Pemeriksaan kadar lumpur agregat kasar

Bahan : Kerikil

Asal : Clereng

Diperiksa : 12 Februari 2018 s/d 13 Februari 2018

Uraian	Satuan	Benda Uji		
		A1	A2	A3
Agregat kasar jenuh kering muka (B1)	Gram	500	500	500
Agregat kasar setelah keluar oven (B2)	Gram	485	481	486
Kandungan air (B3 = B1 – B2)	gram	15	19	14
Kadar lumpur	%	3,0	3,8	2,8
Rata-rata	%	3,2		

Analisis hitungan:

a. Kandungan air = B1 – B2

Benda uji 1 = 500 – 485

= 15 gr

b. Kadar lumpur $= \frac{B1-B2}{B1} \; x \; 100\%$

Benda uji 1 $= \frac{500-485}{500} \; x \; 100\%$

= 3,0 %

c. Rata-rata kadar lumpur $= \frac{KL1+KL2+KL3}{3}$

$= \frac{3,0+3,8+2,8}{3}$

= 3,2 %

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HASIL PEMERIKSAAN KADAR AIR AGREGAT KASAR

Jenis Pengujian : Pemeriksaan kadar air agregat kasar

Bahan : Kerikil

Asal : Clereng

Diperiksa : 15 Maret 2018 s/d 16 Maret 2018

Uraian	Satuan	Benda Uji		
		B1	B2	B3
Agregat kasar jenuh kering muka (B1)	gram	1000	1000	1000
Agregat kasar setelah keluar oven (B2)	gram	990	985	985
Kadar air	gram	1	1,5	1,5
Rata-rat kadar air	%	1,33		

Analisis hitungan:

a. Kadar air $= \frac{B1-B2}{B1}$ x 100%

Contoh benda uji 1 $= \frac{1000-990}{1000}$ x 100%

$= 3{,}11\%$

b. Kadar air rata-rata $= \frac{KA1+KA2+KA3}{3}$

$= \frac{1+1{,}5+1{,}5}{3}$

$= 1{,}33\ \%$

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HASIL PEMERIKSAAN KEAUSAN AGREGAT KASAR

Jenis Pengujian : Pemeriksaan keausan agregat kasar

Bahan : Kerikil

Asal : Clereng

Diperiksa : 17 mARTE 2018

Uraian	Satuan	Benda Uji
		A
Agregat kasar kering (B1)	gram	5000
Agregat kasar setelah uji (B2)	gram	4085
Keausan	%	18,3

Analisis hitungan:

a. Keausan $= \frac{B1-B2}{B1} \; x \; 100\%$

Benda uji 1 $= \frac{5000-4085}{5000} \; x \; 100\%$

$= 18{,}3\ \%$

Alat pemeriksaan bahan susun beton:

Gambar 1 Timbangan *Ohaus*

Gambar 2 Timbangan dalam air

Gambar 3 *Kaliper*

Gambar 4 *Elenmeyer*

Gambar 5 Saringan ASTM

Gambar 6 Mesin *Los Angeles*

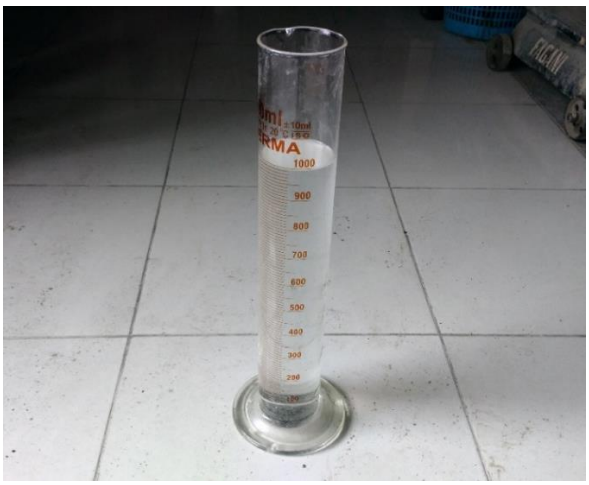
Alat pembuatan benda uji:

Gambar 7 *Mixer concrete*

Gambar 8 Silinder

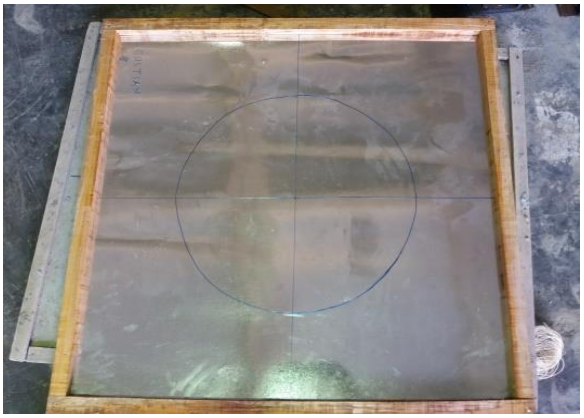
Gambar 9 Cetok dan mistar

Gambar 10 Nampan



Gambar 11 Gelas ukur 1000 ml

Gambar 12 Kerucut *Abrams*



Gambar 13 Alat Pengujian T50

Gambar 14 Alat pengujian *V-Funnel*

Gambar 15 Alat pengujian *L-Box*

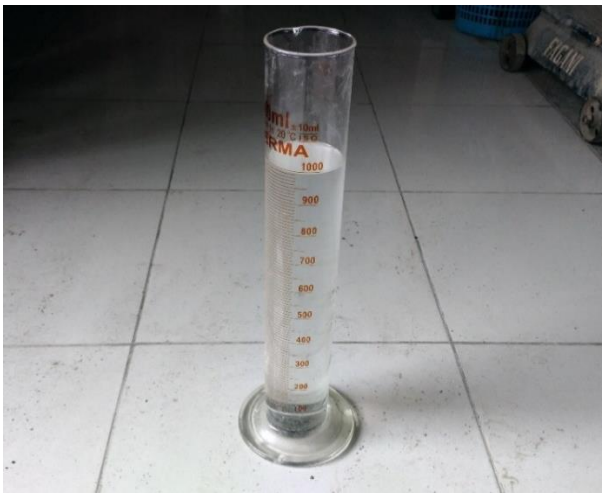
Gambar 17 *Compression Machine Test*

Bahan susun beton:

Gambar 18 Semen Gresik (PCC)

Gambar 19 Agregat halus (Pasir Progo)

Gambar 20 Agregat kasar (kerikil)



Gambar 21 Air

Gambar 22 *Silica Fume*

Gambar 23 *Superplasticizer (Viscocrete 1003)* merk Sika

Proses pengujian beton kondisi segar (*fresh properties*):

Gambar 24 Pengujian Meja Sebar (T50)

Gambar 25 Pengujian *L-Box*

Gambar 26 Pengujian *V-Funnel*

Proses pengujian kuat tekan :

Gambar 28 Pengukuran diameter benda uji silinder

Gambar 29 pengukuran tinggi benda uji silinder

Gambar 30 Pengujian kuat tekan

Gambar 31 beton setelah dilakukan uji tekan

Hasil uji kuat tekan :

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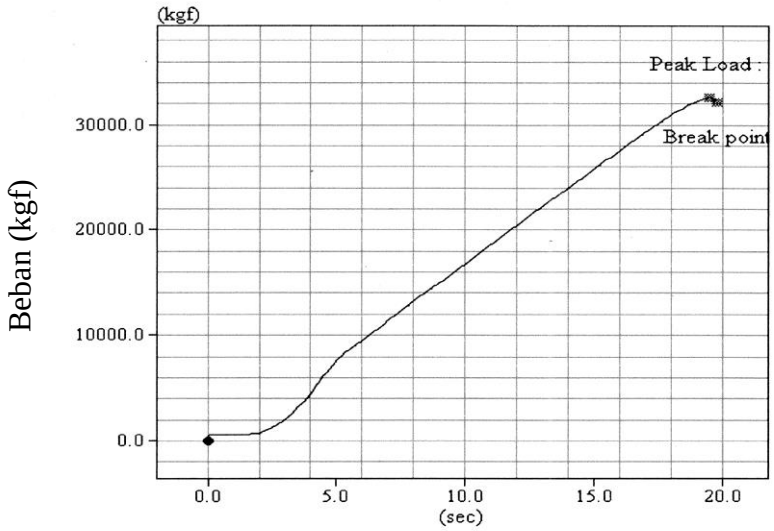
Universitas Muhammadiyah Yogyakarta

Concrete Testing

Construstion Name			**Silinder Beton**							
Manufacturer			**Hungta**							
Contractor			**UMY**							
Customer			**Lab. JTS. FT.UMY**							
Test Date			**06/04/2018**		**Report No.**		**A7SF**			
No.	Area (cm^2)	Peak Force (Kg)	Compression Stress (psi)	Adjust Stress (Kgf/cm^2)	H/D Ratio	Design Stress	Adjust Ratio	Life	Break Style	Remark
1	179.08	32570	2586.8	182.6	2.0	300.0	1.0	7		



Gambar 32 Hubungan antara beban terhadap waktu benda uji A7SF0.6%

Q.C. Department : _____ *Tester :* _____

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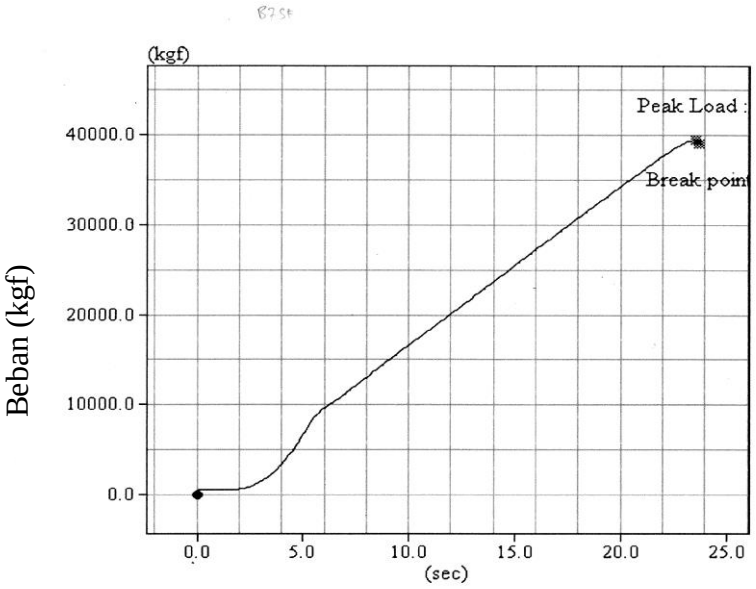
Concrete Testing

Construstion Name	**Silinder Beton**									
Manufacturer	**Hungta**									
Contractor	**UMY**									
Customer	**Lab. JTS. FT.UMY**									
Test Date	**6/4/2018**			**Report No.**		**B7SF**				
No.	Area (cm^2)	Peak Force (Kg)	Compression Stress (psi)	Adjust Stress (Kgf/cm^2)	H/D Ratio	Design Stress	Adjust Ratio	Life	Break Style	Remark
1	176.71	39420	3172.7	223.1	2.0	300.0	1.0	7		



Gambar 33 Hubungan antara beban terhadap waktu benda uji B7SF0.6%

Q.C. Department : _____ *Tester :* _____

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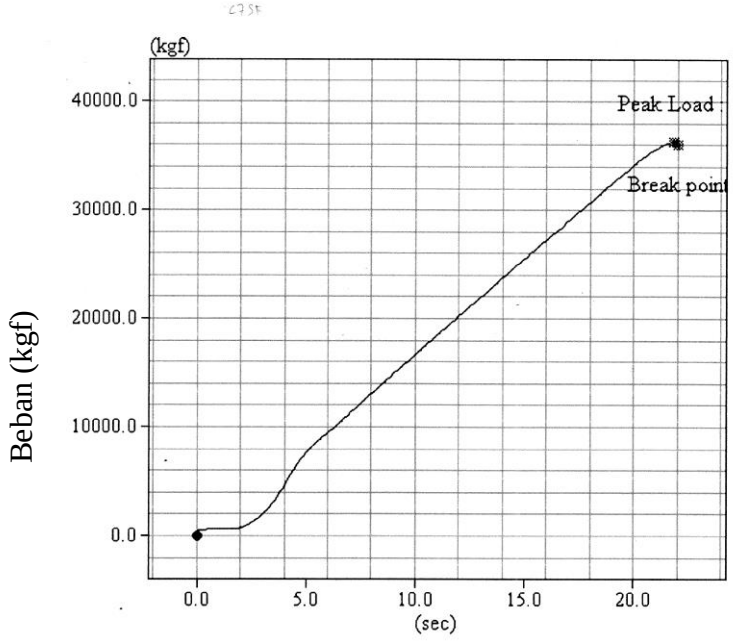
Universitas Muhammadiyah Yogyakarta

Concrete Testing

Construstion Name	**Silinder Beton**									
Manufacturer	**Hungta**									
Contractor	**UMY**									
Customer	**Lab. JTS. FT.UMY**									
Test Date	**6/4/2018**				**Report No.**		**C7SF**			
No.	Area (cm^2)	Peak Force (Kg)	Compression Stress (psi)	Adjust Stress (Kgf/cm^2)	H/D Ratio	Design Stress	Adjust Ratio	Life	Break Style	Remark
1	176.71	36260	2918.4	205.2	2.0	300.0	1.0	7		



Waktu

Gambar 34 Hubungan antara beban terhadap waktu benda uji C7SF0:6%

Q.C. Department : _____ *Tester :* _____

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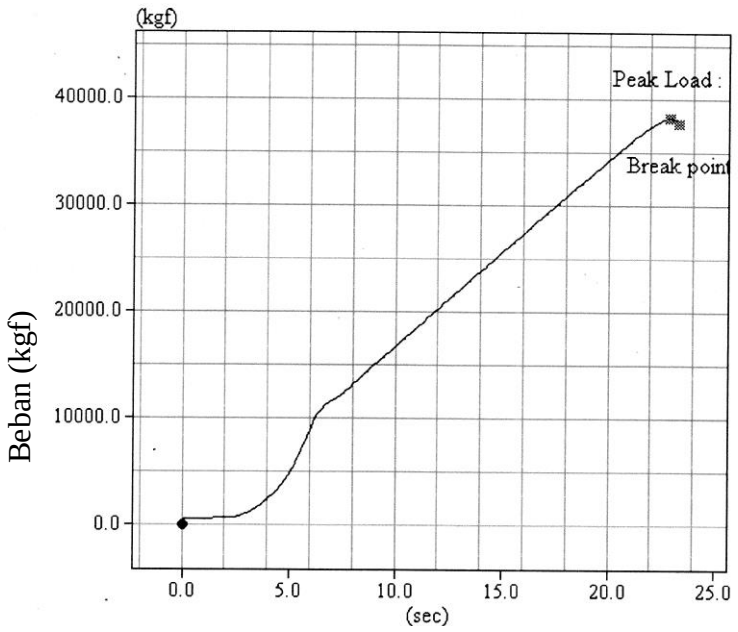
Universitas Muhammadiyah Yogyakarta

Concrete Testing

Construstion Name	**Silinder Beton**									
Manufacturer	**Hungta**									
Contractor	**UMY**									
Customer	**Lab. JTS. FT.UMY**									
Test Date	**6/4/2018**				**Report No.**		**A14SF**			
No.	Area (cm^2)	Peak Force (Kg)	Compression Stress (psi)	Adjust Stress (Kgf/cm^2)	H/D Ratio	Design Stress	Adjust Ratio	Life	Break Style	Remark
1	176.71	38150	3070.5	215.7	2.0	300.0	1.0	14		



Gambar 35 Hubungan antara beban terhadap waktu benda uji A14SF0.6%

Q.C. Department : _____ *Tester :* _____

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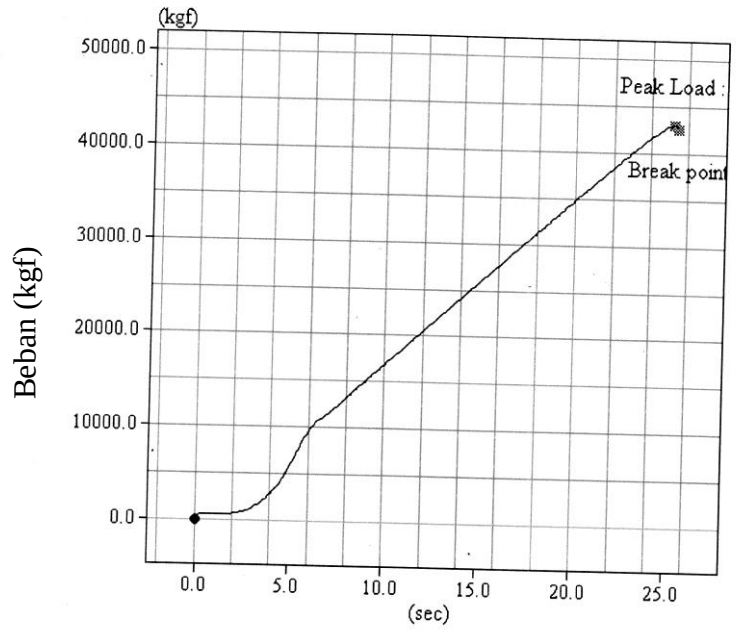
Universitas Muhammadiyah Yogyakarta

Concrete Testing

Construstion Name	**Silinder Beton**									
Manufacturer	**Hungta**									
Contractor	**UMY**									
Customer	**Lab. JTS. FT.UMY**									
Test Date	**6/4/2018**				**Report No.**		**B14SF**			
No.	Area (cm^2)	Peak Force (Kg)	Compression Stress (psi)	Adjust Stress (Kgf/cm^2)	H/D Ratio	Design Stress	Adjust Ratio	Life	Break Style	Remark
1	179.08	42980	3413.5	240.0	2.0	300.0	1.0	14		



Gambar 36 Hubungan antara beban terhadap waktu benda uji B14SF0.6%

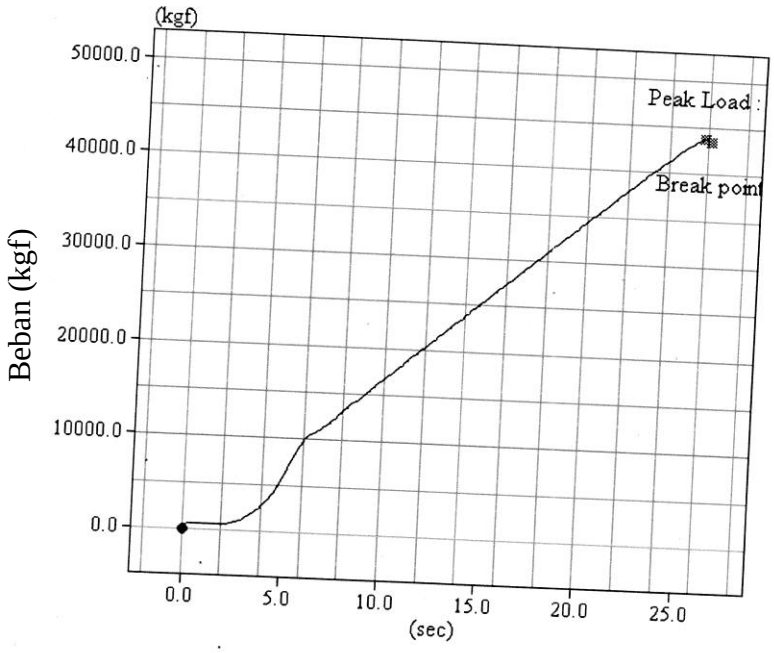
Q.C. Department : _____ *Tester :* _____

Laboratorium Jurusan Teknik Sipil
Universitas Muhammadiyah Yogyakarta

Concrete Testing

Construstion Name	**Silinder Beton**									
Manufacturer	**Hungta**									
Contractor	**UMY**									
Customer	**Lab. JTS. FT.UMY**									
Test Date	**6/4/2018**				**Report No.**		**C14SF**			
No.	Area (cm^2)	Peak Force (Kg)	Compression Stress (psi)	Adjust Stress (Kgf/cm^2)	H/D Ratio	Design Stress	Adjust Ratio	Life	Break Style	Remark
1	176.71	43720	3518.8	247.7	2.0	300.0	1.0	14		

C14SF



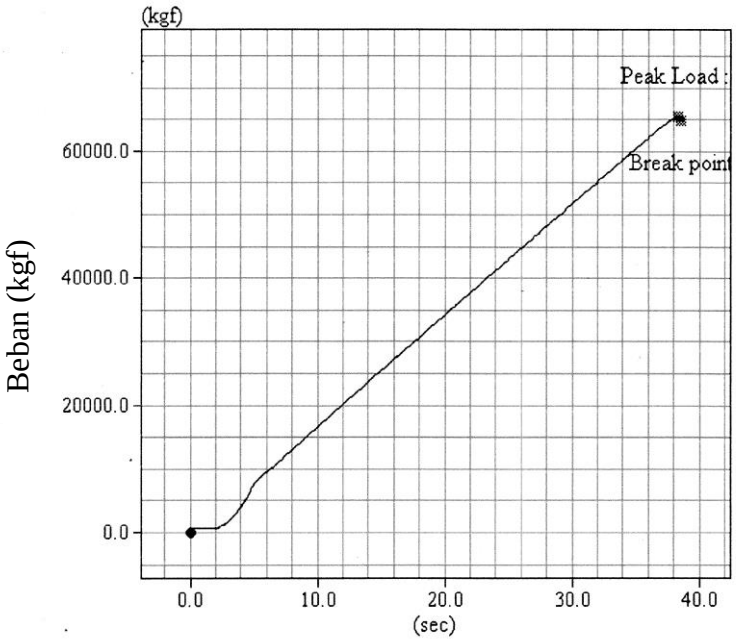
Gambar 37 Hubungan antara beban terhadap waktu benda uji C14SF0.6%

Q.C. Department : _____ *Tester :* _____

Laboratorium Jurusan Teknik Sipil
Universitas Muhammadiyah Yogyakarta

Concrete Testing

Construstion Name		**Silinder Beton**								
Manufacturer		**Hungta**								
Contractor		**UMY**								
Customer		**Lab. JTS. FT.UMY**								
Test Date		**07/11/2018**			**Report No.**		**7. 28SP**			
No.	Area (cm^2)	Peak Force (Kg)	Compression Stress (psi)	Adjust Stress (Kgf/cm^2)	H/D Ratio	Design Stress	Adjust Ratio	Life	Break Style	Remark
1	**175.54**	**65430**	**5301.4**	**373.1**	**2.0**	**300.0**	**1.0**	**28**		



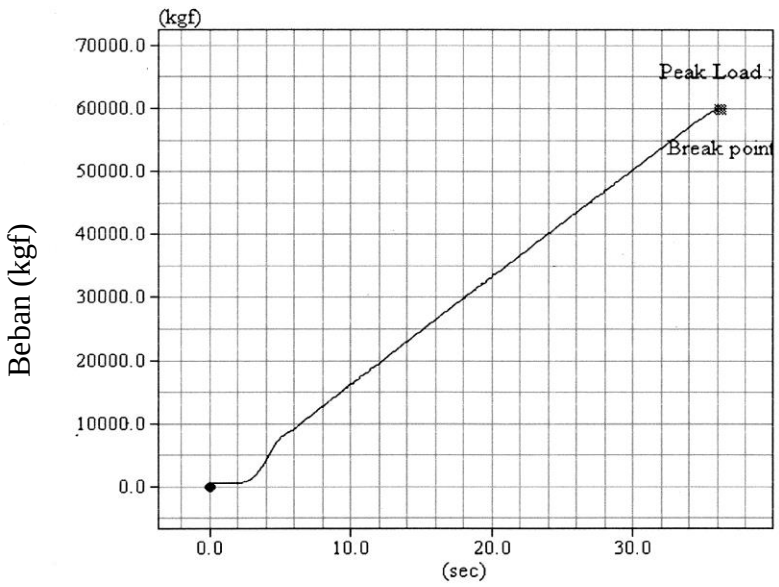
Gambar 38 Hubungan antara beban terhadap waktu benda uji A28SF0.6%

Q.C. Department : _____ *Tester :* _____

Laboratorium Jurusan Teknik Sipil
Universitas Muhammadiyah Yogyakarta

Concrete Testing

Construstion Name	**Silinder Beton**									
Manufacturer	**Hungta**									
Contractor	**UMY**									
Customer	**Lab. JTS. FT.UMY**									
Test Date	**07/11/2018**			**Report No.**		**8. 28SP**				
No.	Area (cm^2)	Peak Force (Kg)	Compression Stress (psi)	Adjust Stress (Kgf/cm^2)	H/D Ratio	Design Stress	Adjust Ratio	Life	Break Style	Remark
1	170.87	59920	4987.5	352.4	2.1	300.0	1.0	28		



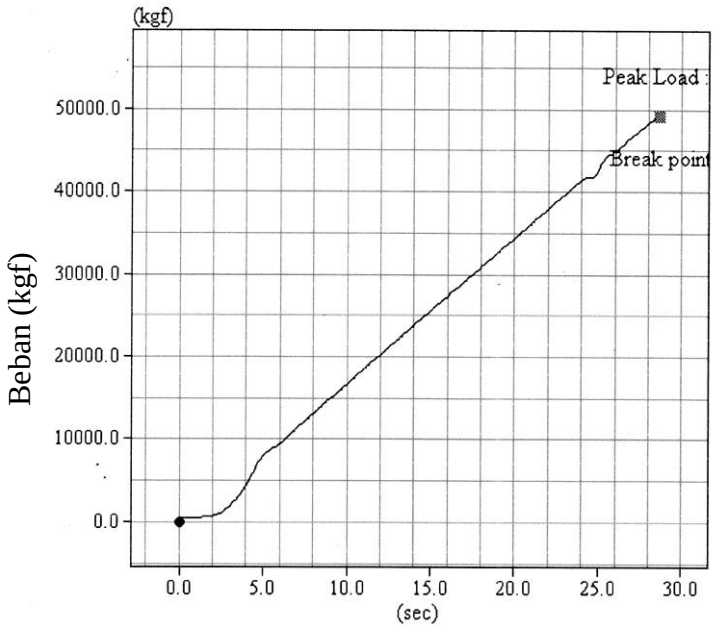
Gambar 39 Hubungan antara beban terhadap waktu benda uji B28SF0.6%

Q.C. Department : _____ *Tester :* _____

Laboratorium Jurusan Teknik Sipil
Universitas Muhammadiyah Yogyakarta

Concrete Testing

Construstion Name		**Silinder Beton**								
Manufacturer		**Hungta**								
Contractor		**UMY**								
Customer		**Lab. JTS. FT.UMY**								
Test Date		**07/11/2018**			**Report No.**		**9. 28SP**			
No.	Area (cm^2)	Peak Force (Kg)	Compression Stress (psi)	Adjust Stress (Kgf/cm^2)	H/D Ratio	Design Stress	Adjust Ratio	Life	Break Style	Remark
1	176.71	49170	3957.4	278.5	2.0	300.0	1.0	28		



Waktu

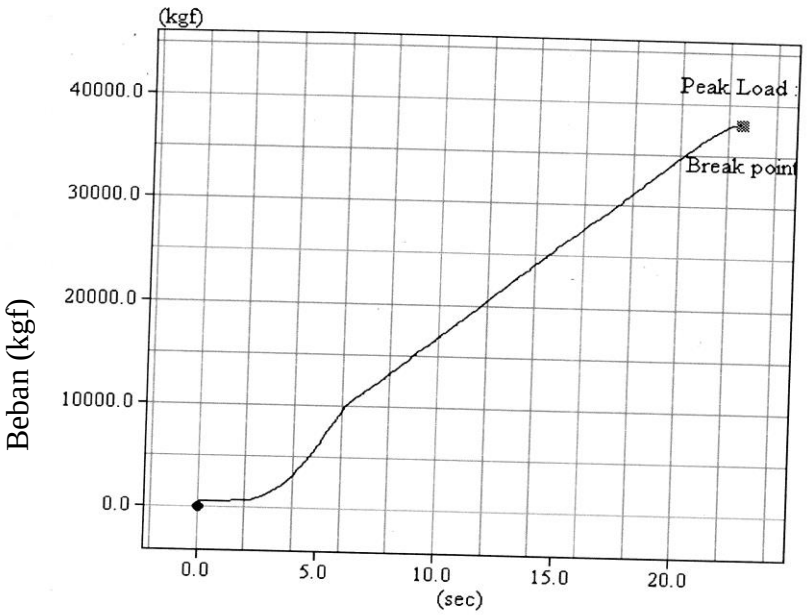
Gambar 40 Hubungan antara beban terhadap waktu benda uji C28SF0.6%

Q.C. Department : _____ *Tester :* _____

Laboratorium Jurusan Teknik Sipil
Universitas Muhammadiyah Yogyakarta

Concrete Testing

Construstion Name	**Silinder Beton**									
Manufacturer	**Hungta**									
Contractor	**UMY**									
Customer	**Lab. JTS. FT.UMY**									
Test Date	**6/4/2018**			**Report No.**		**D7SF**				
No.	Area (cm^2)	Peak Force (Kg)	Compression Stress (psi)	Adjust Stress (Kgf/cm^2)	H/D Ratio	Design Stress	Adjust Ratio	Life	Break Style	Remark
1	**179.08**	**38090**	**3025.2**	**212.5**	**2.0**	**300.0**	1.0	7		



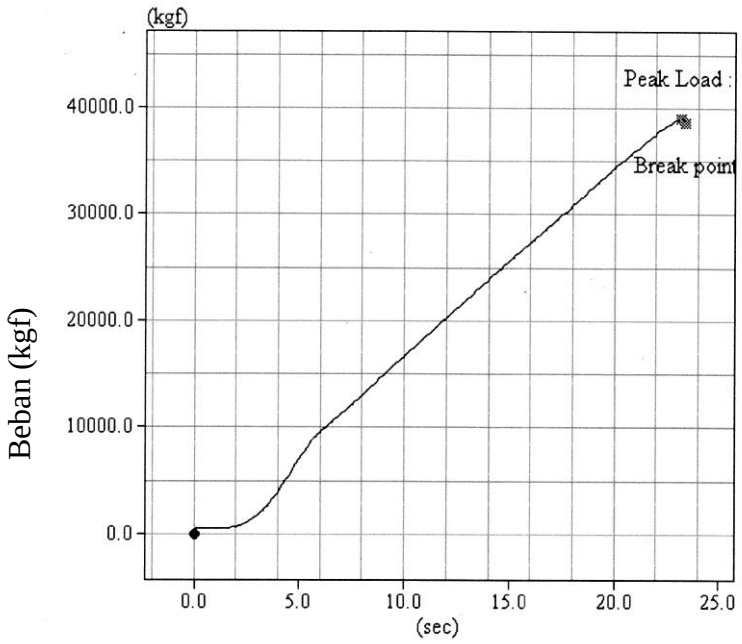
Gambar 41 Hubungan antara beban terhadap waktu benda uji D7SF1%

Q.C. Department : _____ *Tester :* _____

Laboratorium Jurusan Teknik Sipil
Universitas Muhammadiyah Yogyakarta

Concrete Testing

Construstion Name	**Silinder Beton**									
Manufacturer	**Hungta**									
Contractor	**UMY**									
Customer	**Lab. JTS. FT.UMY**									
Test Date	**6/4/2018**			**Report No.**		**E7SF**				
No.	Area (cm^2)	Peak Force (Kg)	Compression Stress (psi)	Adjust Stress (Kgf/cm^2)	H/D Ratio	Design Stress	Adjust Ratio	Life	Break Style	Remark
1	177.89	38990	3117.3	219.2	2.0	300.0	1.0	7		



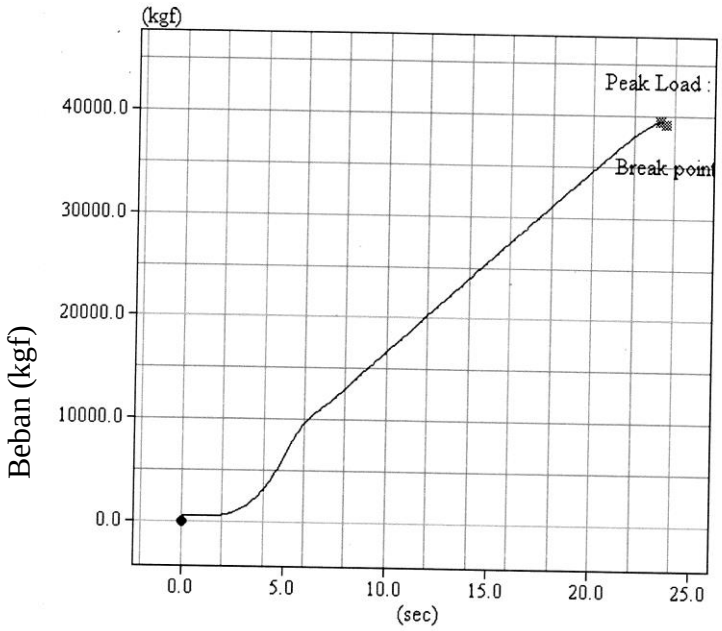
Gambar 42 Hubungan antara beban terhadap waktu benda uji E7SF1%

Q.C. Department : _____ *Tester :* _____

Laboratorium Jurusan Teknik Sipil
Universitas Muhammadiyah Yogyakarta

Concrete Testing

Construstion Name	**Silinder Beton**									
Manufacturer	**Hungta**									
Contractor	**UMY**									
Customer	**Lab. JTS. FT.UMY**									
Test Date	**6/4/2018**			**Report No.**			**F7SF**			
No.	Area (cm^2)	Peak Force (Kg)	Compression Stress (psi)	Adjust Stress (Kgf/cm^2)	H/D Ratio	Design Stress	Adjust Ratio	Life	Break Style	Remark
1	177.66	39380	3152.6	221.7	2.0	300.0	1.0	7		



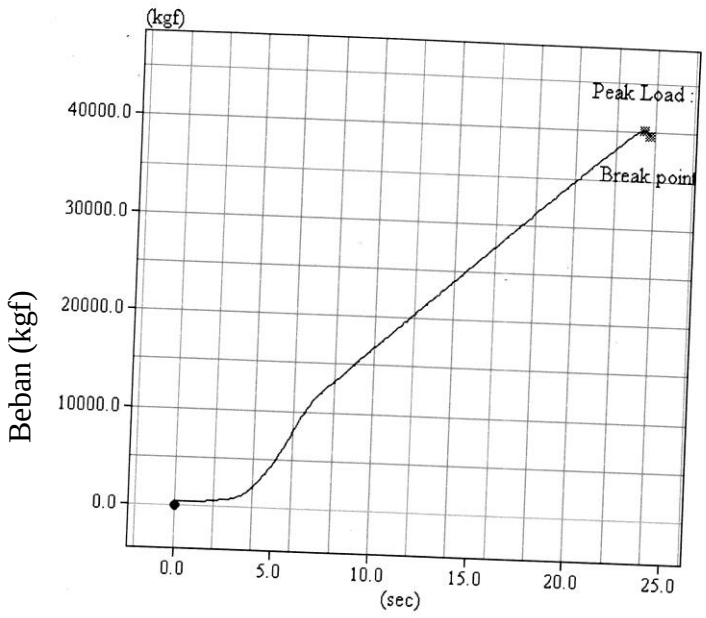
Gambar 43 Hubungan antara beban terhadap waktu benda uji F7SF1%

Q.C. Department : _____ *Tester :* _____

Laboratorium Jurusan Teknik Sipil
Universitas Muhammadiyah Yogyakarta

Concrete Testing

Construstion Name	**Silinder Beton**									
Manufacturer	**Hungta**									
Contractor	**UMY**									
Customer	**Lab. JTS. FT.UMY**									
Test Date	**6/4/2018**				**Report No.**		**D14SF**			
No.	Area (cm^2)	Peak Force (Kg)	Compression Stress (psi)	Adjust Stress (Kgf/cm^2)	H/D Ratio	Design Stress	Adjust Ratio	Life	Break Style	Remark
1	179.08	40160	3189.6	224.3	2.0	300.0	1.0	14		



Waktu

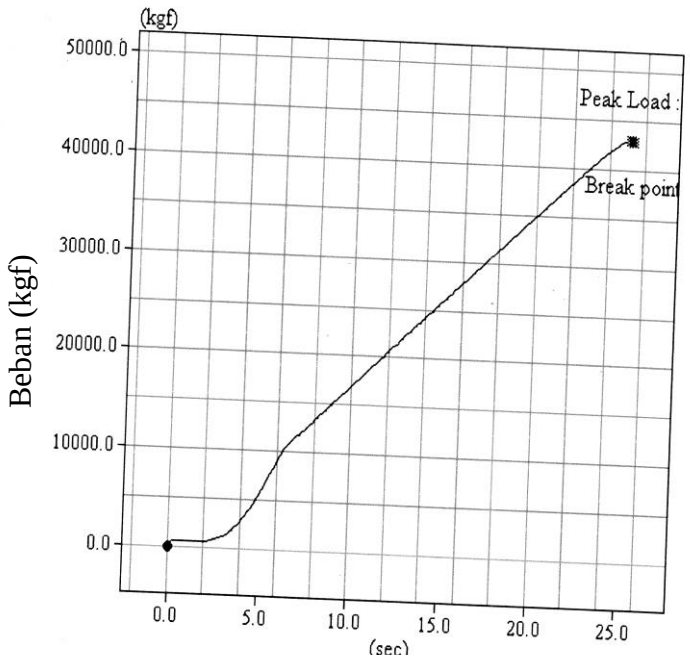
Gambar 44 Hubungan antara beban terhadap waktu benda uji D14SF1%

Q.C. Department : _____ *Tester :* _____

Laboratorium Jurusan Teknik Sipil
Universitas Muhammadiyah Yogyakarta

Concrete Testing

Construstion Name	**Silinder Beton**									
Manufacturer	**Hungta**									
Contractor	**UMY**									
Customer	**Lab. JTS. FT.UMY**									
Test Date	**6/4/2018**			**Report No.**			**E14SF**			
No.	Area (cm^2)	Peak Force (Kg)	Compression Stress (psi)	Adjust Stress (Kgf/cm^2)	H/D Ratio	Design Stress	Adjust Ratio	Life	Break Style	Remark
1	179.55	42970	3403.7	239.1	2.0	300.0	1.0	14		



Gambar 45 Hubungan antara beban terhadap waktu benda uji E14SF1%

Q.C. Department : _____ *Tester :* _____

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Laboratorium Teknologi Bahan Kontruksi
Jl. Lingkar Selatan, Tamantirto, Kasihan, Bantul, D.I. Yogyakarta 55183
Telp.+ 62-274-387656, Fax. 0274-387646

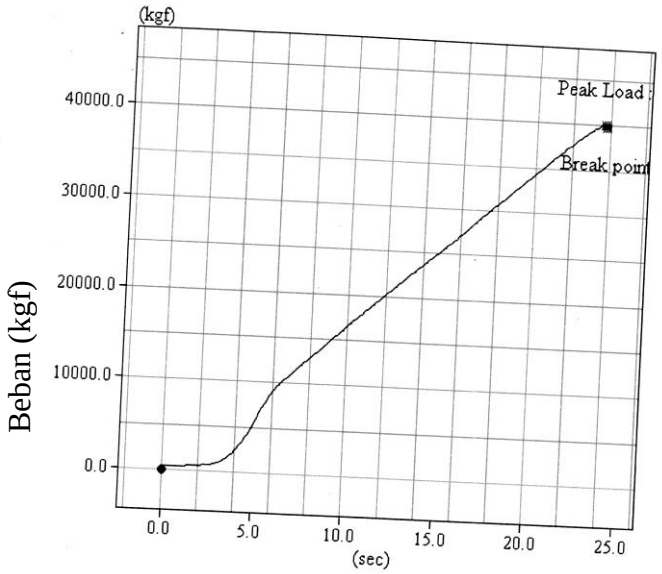
F14SF

Laboratorium Jurusan Teknik Sipil
Universitas Muhammadiyah Yogyakarta

Concrete Testing

Construstion Name	**Silinder Beton**									
Manufacturer	**Hungta**									
Contractor	**UMY**									
Customer	**Lab. JTS. FT.UMY**									
Test Date	**6/4/2018**			**Report No.**		**F14SF**				
No.	Area (cm^2)	Peak Force (Kg)	Compression Stress (psi)	Adjust Stress (Kgf/cm^2)	H/D Ratio	Design Stress	Adjust Ratio	Life	Break Style	Remark
1	176.71	40000	3219.4	226.6	2.0	300.0	1.0	14		

F14SF



Waktu

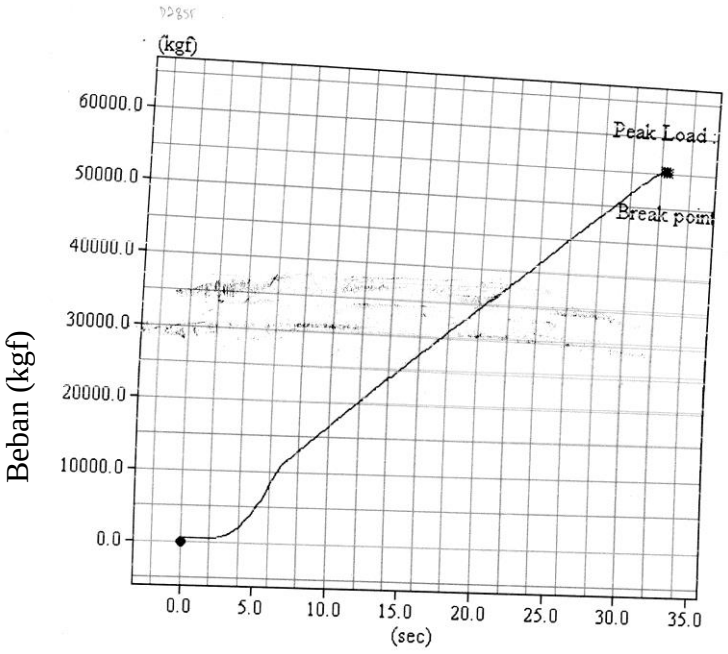
Gambar 46 Hubungan antara beban terhadap waktu benda uji F14SF1%

Q.C. Department : _____ *Tester :* _____

Laboratorium Jurusan Teknik Sipil
Universitas Muhammadiyah Yogyakarta

Concrete Testing

Construstion Name	**Silinder Beton**									
Manufacturer	**Hungta**									
Contractor	**UMY**									
Customer	**Lab. JTS. FT.UMY**									
Test Date	**07/11/2018**				**Report No.**		**1. 28SP 1%**			
No.	**Area (cm^2)**	**Peak Force (Kg)**	**Compression Stress (psi)**	**Adjust Stress (Kgf/cm^2)**	**H/D Ratio**	**Design Stress**	**Adjust Ratio**	**Life**	**Break Style**	**Remark**
1	**176.71**	**55290**	**4450.0**	**313.2**	**2.0**	**300.0**	**1.0**	**28**		



Waktu

Gambar 47 Hubungan antara beban terhadap waktu benda uji D28SF1%

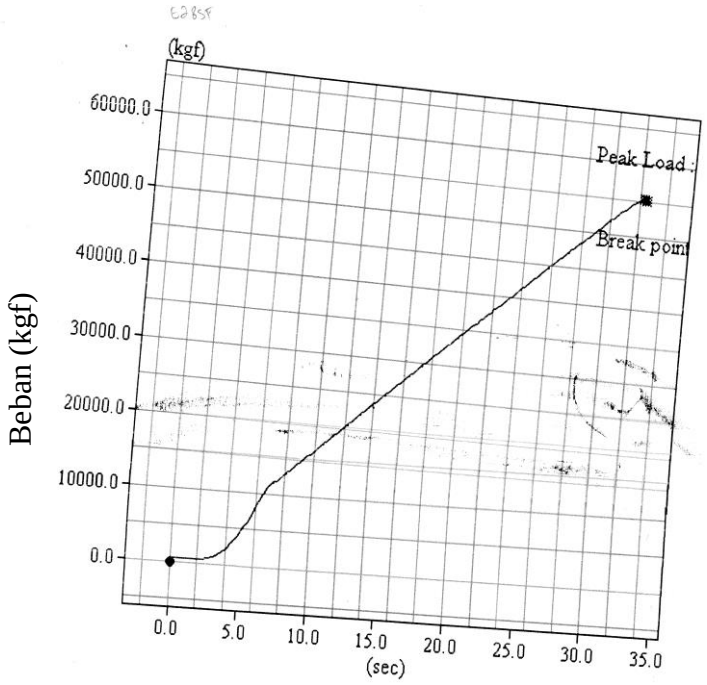
Q.C. Department : _____ *Tester :* _____

E

Laboratorium Jurusan Teknik Sipil
Universitas Muhammadiyah Yogyakarta

Concrete Testing

Construstion Name	**Silinder Beton**									
Manufacturer	**Hungta**									
Contractor	**UMY**									
Customer	**Lab. JTS. FT.UMY**									
Test Date	**07/11/2018**				**Report No.**		**1. 28SP 1%**			
No.	**Area (cm^2)**	**Peak Force (Kg)**	**Compression Stress (psi)**	**Adjust Stress (Kgf/cm^2)**	**H/D Ratio**	**Design Stress**	**Adjust Ratio**	**Life**	**Break Style**	**Remark**
1	176.71	55290	4450.0	313.2	2.0	300.0	1.0	28		
2	173.90	51610	4221.0	298.0	2.0	300.0	1.0	28		



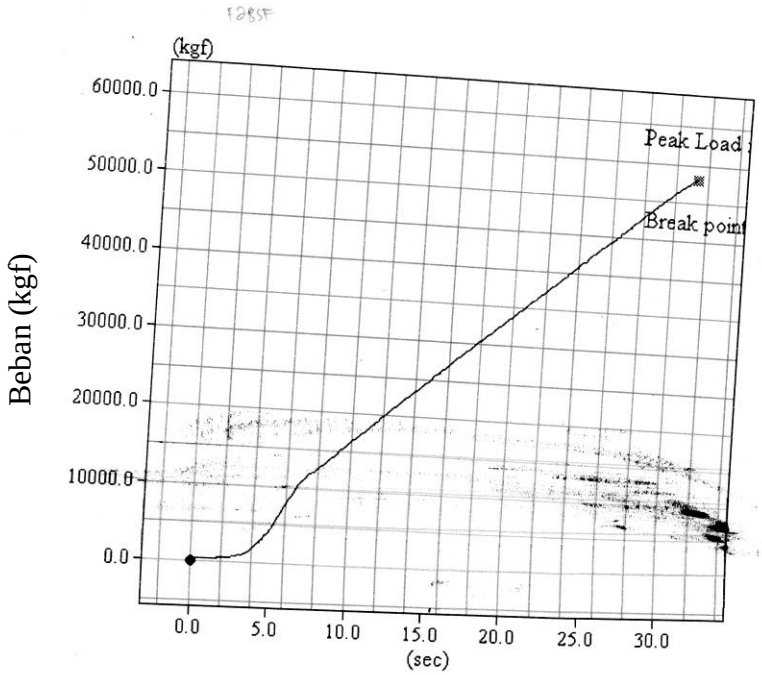
Gambar 48 Hubungan antara beban terhadap waktu benda uji E28SF1%

Q.C. Department : _____ *Tester :* _____

Laboratorium Jurusan Teknik Sipil
Universitas Muhammadiyah Yogyakarta

Concrete Testing

Construstion Name		**Silinder Beton**								
Manufacturer		**Hungta**								
Contractor		**UMY**								
Customer		**Lab. JTS. FT.UMY**								
Test Date		**07/11/2018**			**Report No.**		**3. 28SP 1%**			
No.	Area (cm^2)	Peak Force (Kg)	Compression Stress (psi)	Adjust Stress (Kgf/cm^2)	H/D Ratio	Design Stress	Adjust Ratio	Life	Break Style	Remark
1	174.13	53020	4330.5	305.1	2.0	300.0	1.0	28		



Waktu

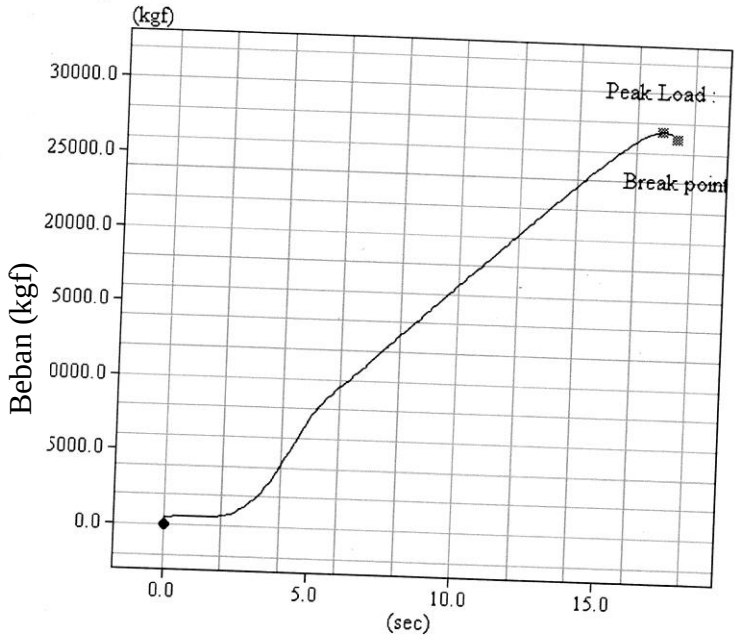
Gambar 49 Hubungan antara beban terhadap waktu benda uji F28SF1%

Q.C. Department : _____ *Tester :* _____

Laboratorium Jurusan Teknik Sipil
Universitas Muhammadiyah Yogyakarta

Concrete Testing

Construstion Name	**Silinder Beton**									
Manufacturer	**Hungta**									
Contractor	**UMY**									
Customer	**Lab. JTS. FT.UMY**									
Test Date	**6/4/2018**			**Report No.**			**G7SF**			
No.	Area (cm^2)	Peak Force (Kg)	Compression Stress (psi)	Adjust Stress (Kgf/cm^2)	H/D Ratio	Design Stress	Adjust Ratio	Life	Break Style	Remark
1	177.42	27390	2195.7	154.4	2.0	300.0	1.0	7		



Gambar 50 Hubungan antara beban terhadap waktu benda uji G7SF1,6%

Q.C. Department : _____ *Tester :* _____

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Laboratorium Teknologi Bahan Kontruksi
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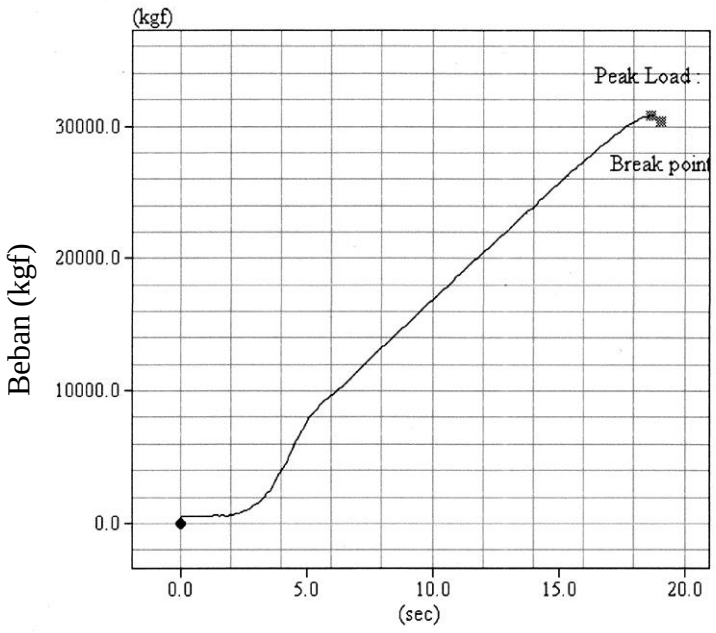
Telp.+ 62-274-387656, Fax. 0274-387646

H7SF

Laboratorium Jurusan Teknik Sipil
Universitas Muhammadiyah Yogyakarta

Concrete Testing

Construstion Name	**Silinder Beton**									
Manufacturer	**Hungta**									
Contractor	**UMY**									
Customer	**Lab. JTS. FT.UMY**									
Test Date	**6/4/2018**			**Report No.**		**H7SF**				
No.	Area (cm^2)	Peak Force (Kg)	Compression Stress (psi)	Adjust Stress (Kgf/cm^2)	H/D Ratio	Design Stress	Adjust Ratio	Life	Break Style	Remark
1	179.08	30780	2444.6	171.5	2.0	300.0	1.0	7		



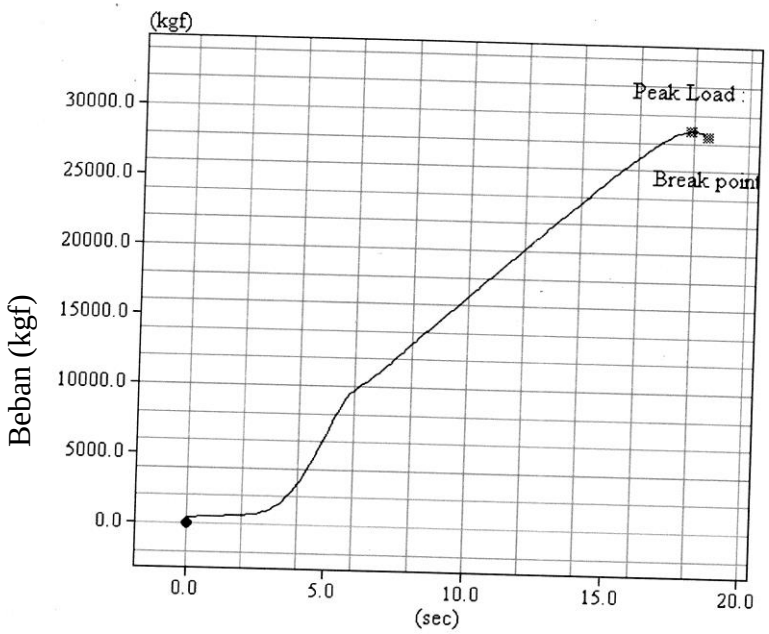
Gambar 51 Hubungan antara beban terhadap waktu benda uji H7SF1,6%

Q.C. Department : _____ *Tester :* _____

Laboratorium Jurusan Teknik Sipil
Universitas Muhammadiyah Yogyakarta

Concrete Testing

Construstion Name	**Silinder Beton**									
Manufacturer	**Hungta**									
Contractor	**UMY**									
Customer	**Lab. JTS. FT.UMY**									
Test Date	**6/4/2018**				**Report No.**		**I7SF**			
No.	Area (cm^2)	Peak Force (Kg)	Compression Stress (psi)	Adjust Stress (Kgf/cm^2)	H/D Ratio	Design Stress	Adjust Ratio	Life	Break Style	Remark
1	176.71	28850	2322.0	163.1	2.0	300.0	1.0	7		



Waktu

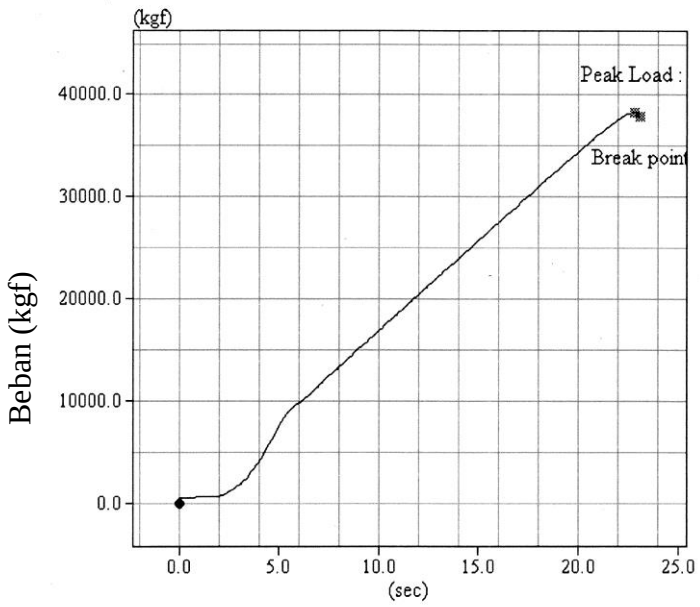
Gambar 52 Hubungan antara beban terhadap waktu benda uji I7SF1,6%

Q.C. Department : _____ *Tester :* _____

Laboratorium Jurusan Teknik Sipil
Universitas Muhammadiyah Yogyakarta

Concrete Testing

Construstion Name	**Silinder Beton**									
Manufacturer	**Hungta**									
Contractor	**UMY**									
Customer	**Lab. JTS. FT.UMY**									
Test Date	**05/30/2018**			**Report No.**		**G 14 SF**				
No.	Area (cm^2)	Peak Force (Kg)	Compression Stress (psi)	Adjust Stress (Kgf/cm^2)	H/D Ratio	Design Stress	Adjust Ratio	Life	Break Style	Remark
1	176.71	38260	3079.3	216.5	2.0	300.0	1.0	14		



Waktu

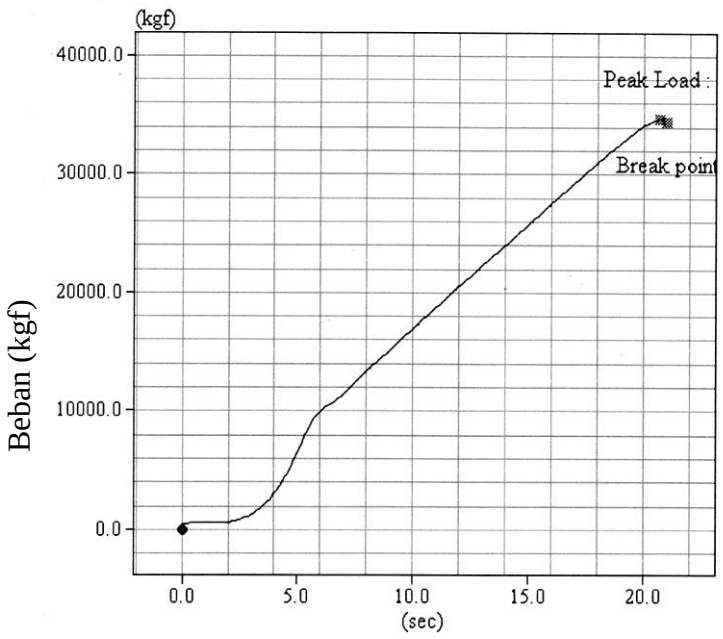
Gambar 53 Hubungan antara beban terhadap waktu benda uji G14SF1,6%

Q.C. Department : _____ *Tester :* _____

Laboratorium Jurusan Teknik Sipil
Universitas Muhammadiyah Yogyakarta

Concrete Testing

Construstion Name	**Silinder Beton**									
Manufacturer	**Hungta**									
Contractor	**UMY**									
Customer	**Lab. JTS. FT.UMY**									
Test Date	**05/30/2018**			**Report No.**			**H 14 SF**			
No.	Area (cm^2)	Peak Force (Kg)	Compression Stress (psi)	Adjust Stress (Kgf/cm^2)	H/D Ratio	Design Stress	Adjust Ratio	Life	Break Style	Remark
1	176.95	34650	2785.1	195.8	2.0	300.0	1.0	14		



Gambar 54 Hubungan antara beban terhadap waktu benda uji H14SF1,6%

Q.C. Department : _____ *Tester :* _____

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Telp.+ 62-274-387656, Fax. 0274-387646

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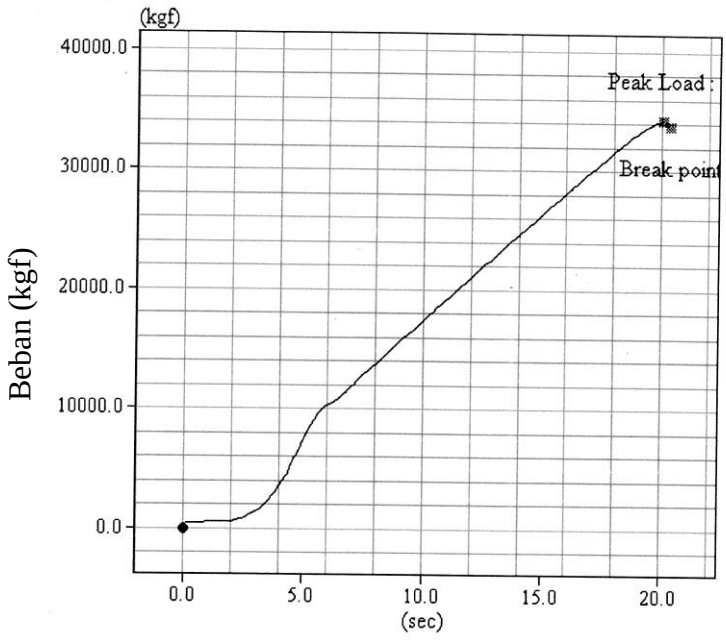
Universitas Muhammadiyah Yogyakarta

Concrete Testing

Construstion Name	**Silinder Beton**									
Manufacturer	**Hungta**									
Contractor	**UMY**									
Customer	**Lab. JTS. FT.UMY**									
Test Date	**5/30/2018**			**Report No.**			**I 14 SF**			
No.	Area (cm^2)	Peak Force (Kg)	Compression Stress (psi)	Adjust Stress (Kgf/cm^2)	H/D Ratio	Design Stress	Adjust Ratio	Life	Break Style	Remark
1	181.46	34210	2681.4	188.2	2.0	300.0	1.0	14		



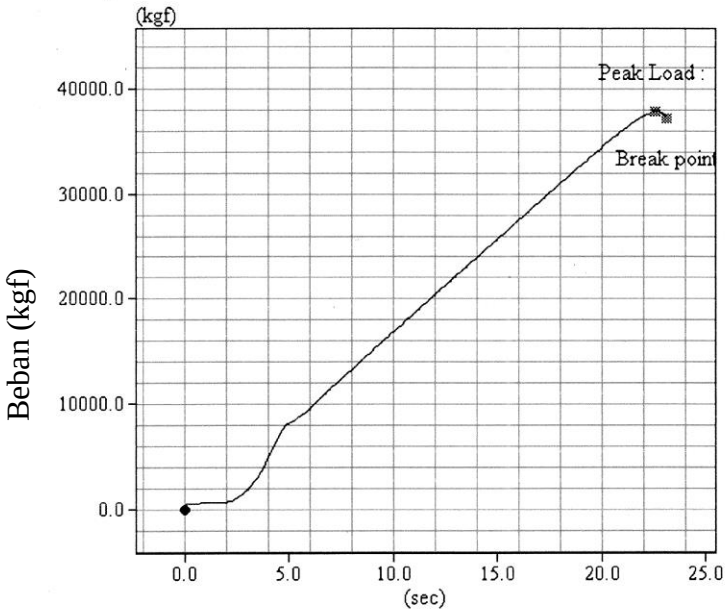
Gambar 55 Hubungan antara beban terhadap waktu benda uji I14SF1,6%

Q.C. Department : _____ *Tester :* _____

Laboratorium Jurusan Teknik Sipil
Universitas Muhammadiyah Yogyakarta

Concrete Testing

Construstion Name	**Silinder Beton**									
Manufacturer	**Hungta**									
Contractor	**UMY**									
Customer	**Lab. JTS. FT.UMY**									
Test Date	**07/11/2018**			**Report No.**		**4. 28SP 16%**				
No.	Area (cm^2)	Peak Force (Kg)	Compression Stress (psi)	Adjust Stress (Kgf/cm^2)	H/D Ratio	Design Stress	Adjust Ratio	Life	Break Style	Remark
1	**177.42**	**37790**	**3029.4**	**212.8**	**2.0**	**300.0**	**1.0**	**28**		



Waktu

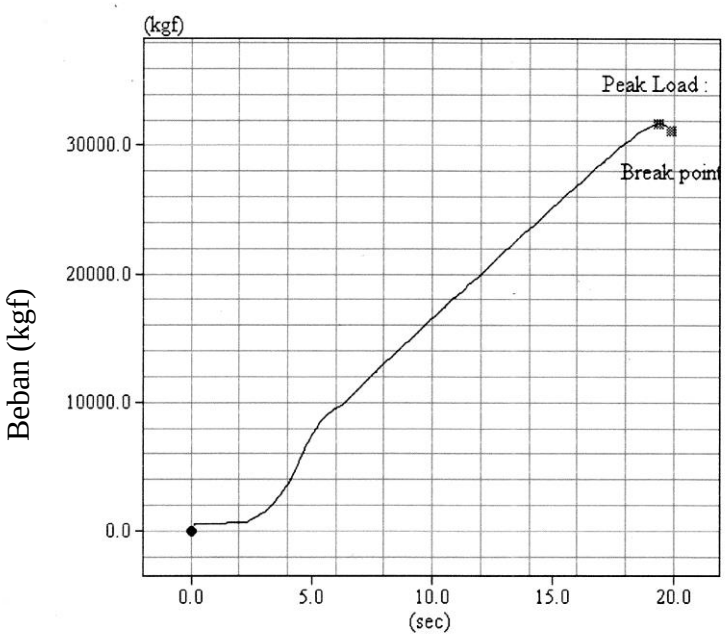
Gambar 56 Hubungan antara beban terhadap waktu benda uji G28SF1,6%

Q.C. Department : _____ *Tester :* _____

Laboratorium Jurusan Teknik Sipil
Universitas Muhammadiyah Yogyakarta

Concrete Testing

Construstion Name	**Silinder Beton**									
Manufacturer	**Hungta**									
Contractor	**UMY**									
Customer	**Lab. JTS. FT.UMY**									
Test Date	**07/11/2018**			**Report No.**			**5. 28SP 16%**			
No.	Area (cm^2)	Peak Force (Kg)	Compression Stress (psi)	Adjust Stress (Kgf/cm^2)	H/D Ratio	Design Stress	Adjust Ratio	Life	Break Style	Remark
1	175.30	31700	2571.9	181.2	2.0	300.0	1.0	28		



Waktu

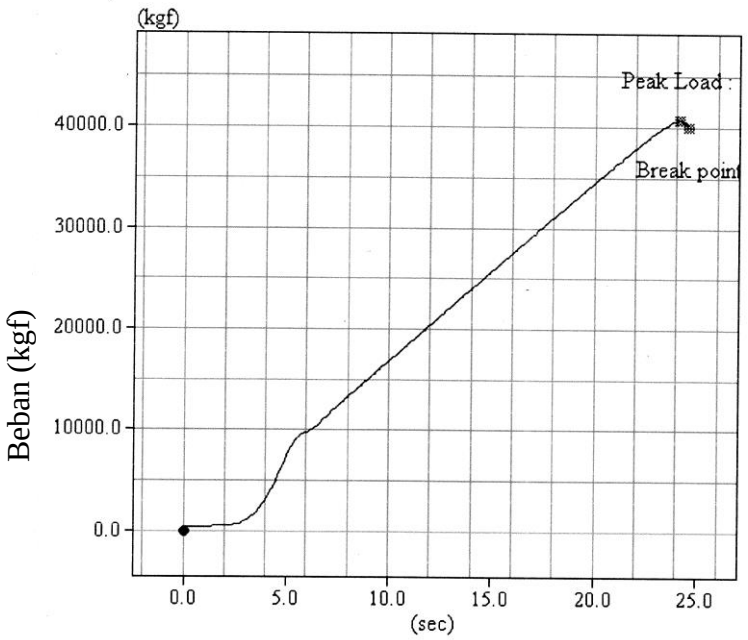
Gambar 57 Hubungan antara beban terhadap waktu benda uji H28SF1,6%

Q.C. Department : _____ *Tester :* _____

Laboratorium Jurusan Teknik Sipil
Universitas Muhammadiyah Yogyakarta

Concrete Testing

Construstion Name	**Silinder Beton**									
Manufacturer	**Hungta**									
Contractor	**UMY**									
Customer	**Lab. JTS. FT.UMY**									
Test Date	**07/11/2018**			**Report No.**			**6. 28SP 16%**			
No.	Area (cm^2)	Peak Force (Kg)	Compression Stress (psi)	Adjust Stress (Kgf/cm^2)	H/D Ratio	Design Stress	Adjust Ratio	Life	Break Style	Remark
1	177.66	40700	3258.3	228.9	2.0	300.0	1.0	28		



Waktu

Gambar 58 Hubungan antara beban terhadap waktu benda uji I28SF1,6%

Q.C. Department : _____ *Tester :* _____