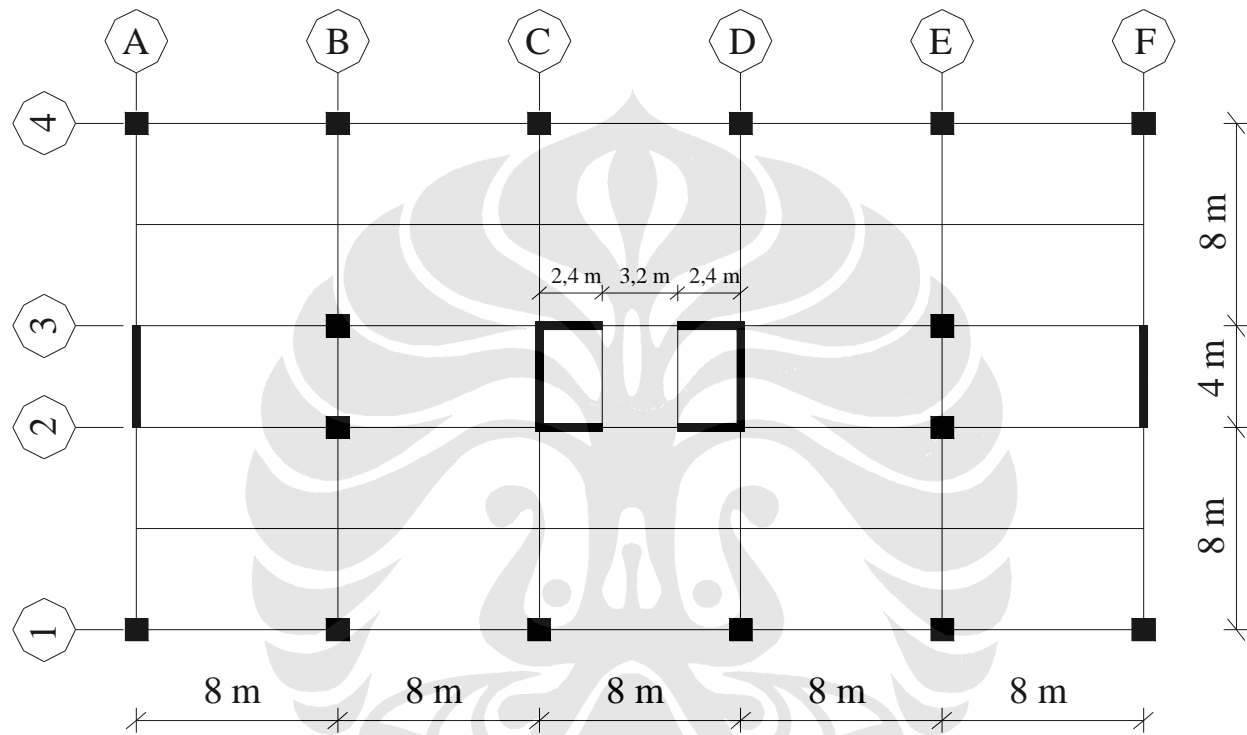
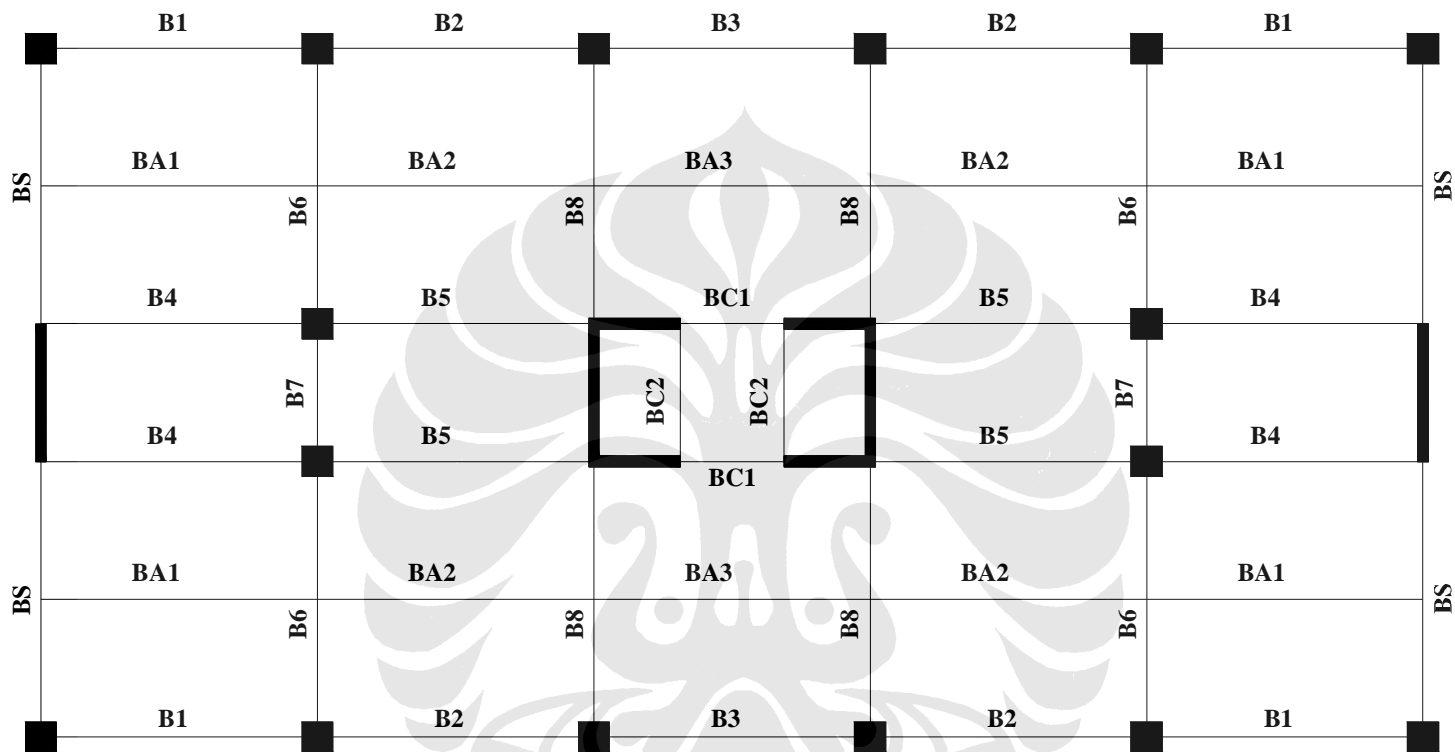


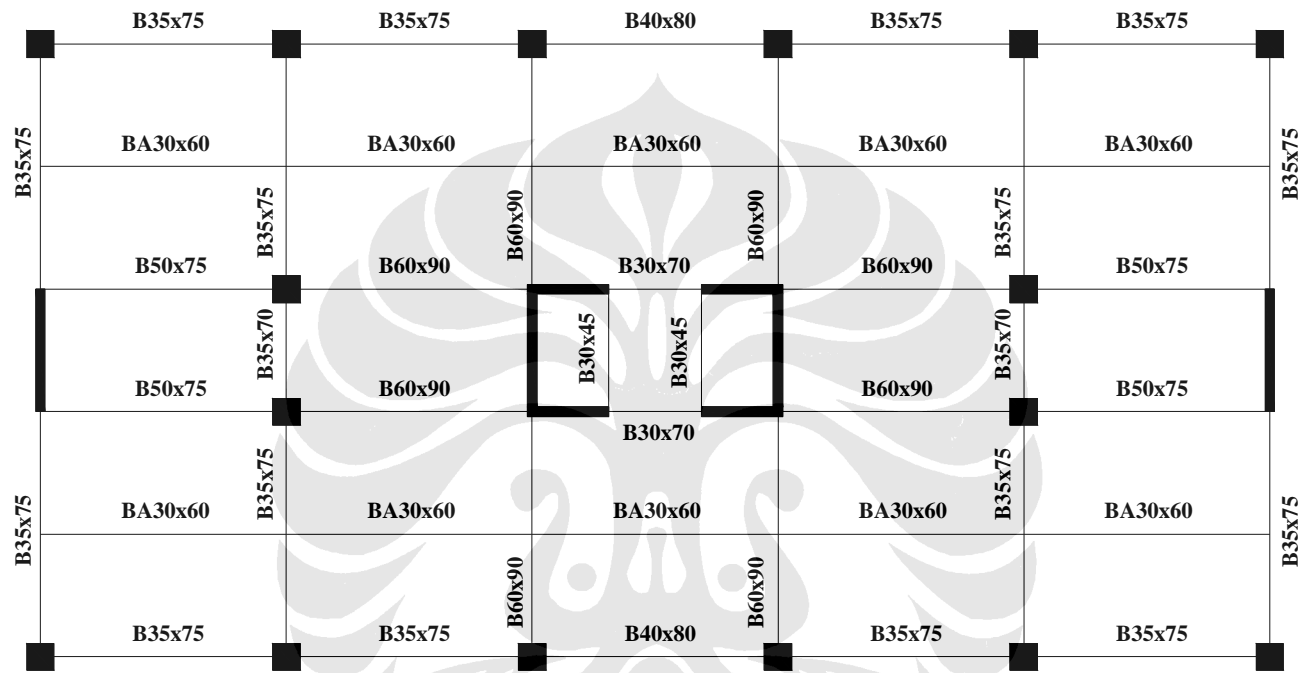
Variasi model struktur berdasarkan ketinggian



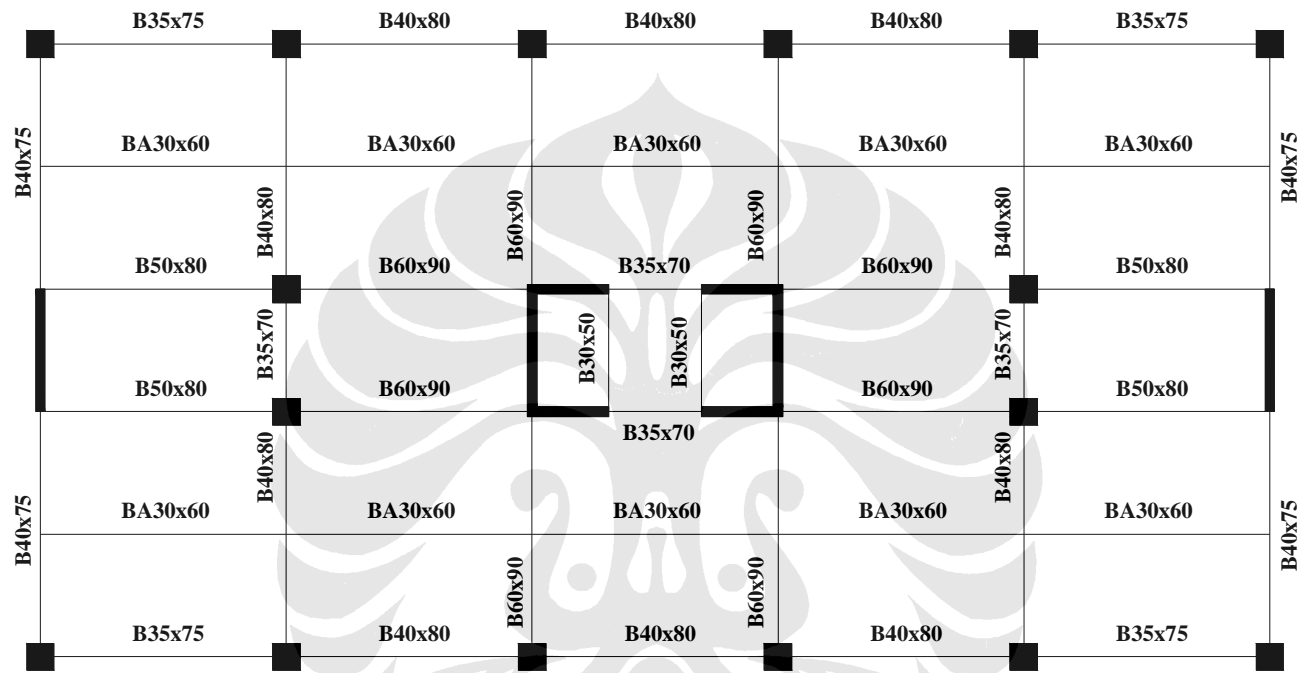
Denah model struktur



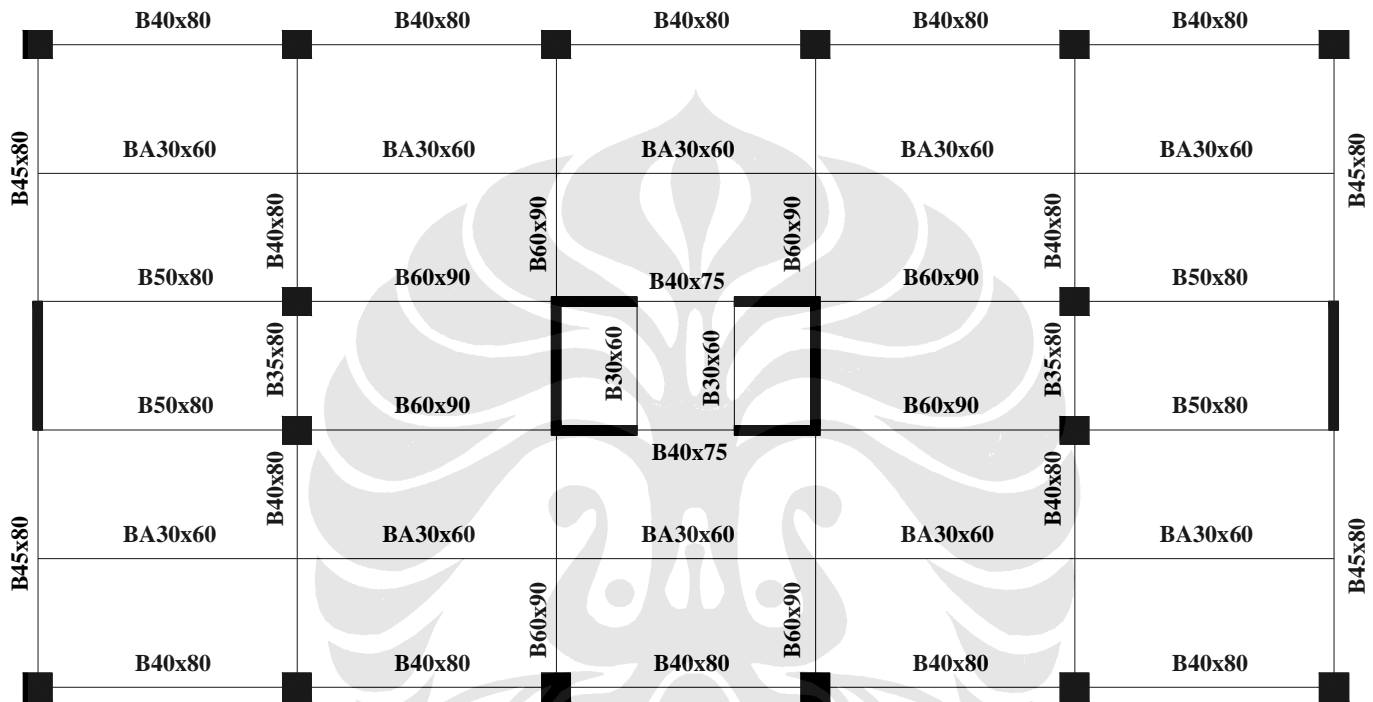
Tipe Dimensi balok yang digunakan dalam model struktur



Dimensi Balok Model 8 Lantai

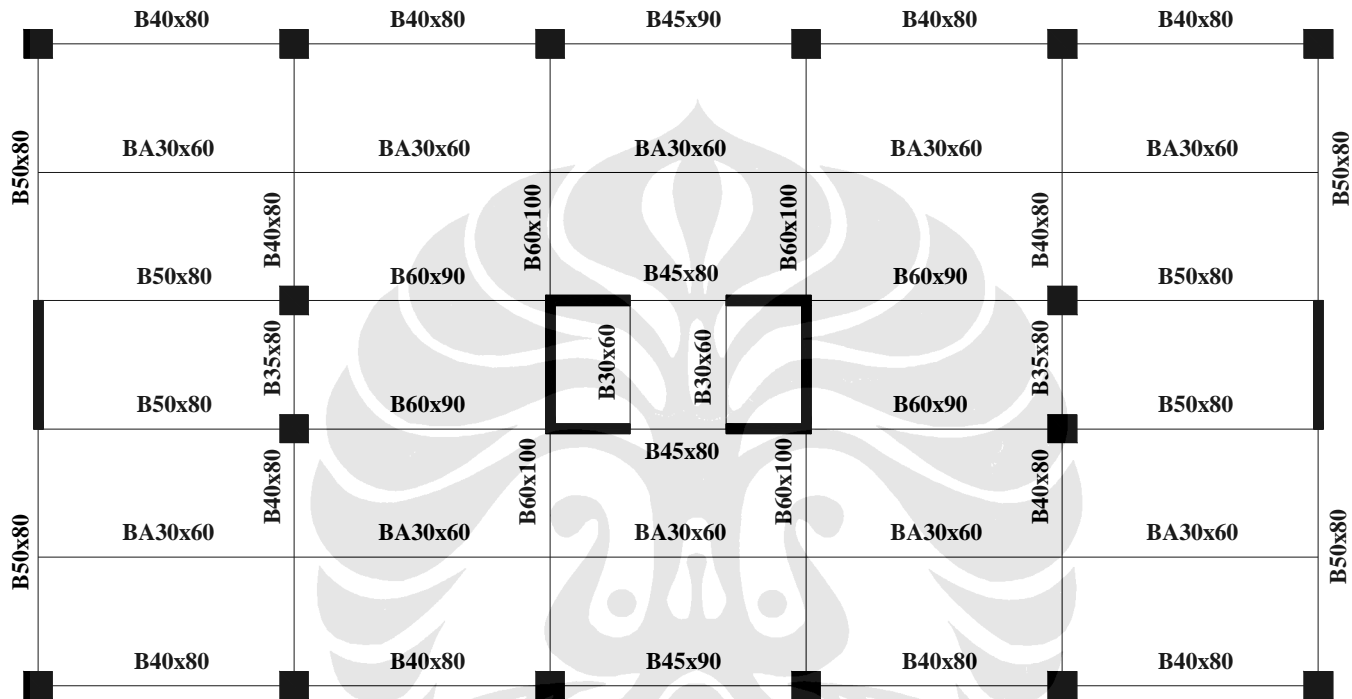


Dimensi Balok Model 12 Lantai

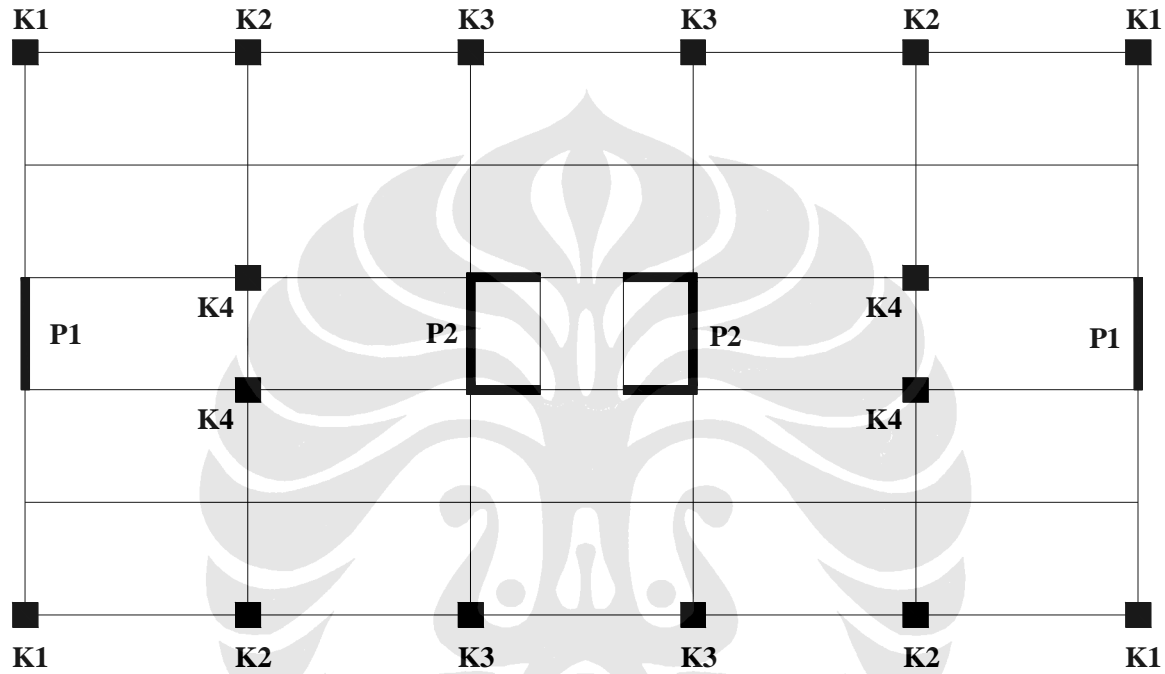


Dimensi Balok Model 16 Lantai





Dimensi Balok Model 20 Lantai



Denah Kolom (K1-K4) dan Dinding Geser (P1-P2)

## Dimensi Kolom

Jumlah Lantai	Lantai	Tipe Kolom	Dimensi (cm)	
8 lantai	1 s/d 8	K1	70 x 70	
	1 s/d 8	K2	75 x 75	
	1 s/d 8	K3	85 x 85	
	1 s/d 8	K4	80 x 80	
Jumlah Lantai	Lantai	Tipe Kolom	Dimensi (cm)	
12 lantai	1 s/d 12	K1	75 x 70	
	1 s/d 12	K2	80 x 80	
	1 s/d 12	K3	85 x 95	
	1 s/d 12	K4	85 x 85	
Jumlah Lantai	Lantai	Tipe Kolom	Dimensi (cm)	
16 lantai	1 s/d 16	K1	75 x 80	
	1 s/d 16	K2	85 x 85	
	1 s/d 16	K3	90 x 90	
	1 s/d 4	K4	95 x 95	
	5 s/d 16	K4	85 x 85	
Jumlah Lantai	Lantai	Tipe Kolom	Dimensi (cm)	
20 lantai	1 s/d 20	K1	80 x 80	
	1 s/d 20	K2	90 x 85	
	1 s/d 20	K3	95 x 95	
	1 s/d 4	K4	100 x 100	
		5 s/d 20	K4	90 x 90

## Dimensi Dinding Geser

Jumlah Lantai	Lantai	Tipe Dinding Geser	Tebal Dinding (cm)
8 lantai	1 s/d 8	P1	30
	1 s/d 8	P2	30
Jumlah Lantai	Lantai	Tipe Dinding Geser	Tebal Dinding (cm)
12 lantai	1 s/d 12	P1	35
	1 s/d 12	P2	35
Jumlah Lantai	Lantai	Tipe Dinding Geser	Tebal Dinding (cm)
16 lantai	1 s/d 16	P1	40
	1 s/d 16	P2	40
Jumlah Lantai	Lantai	Tipe Dinding Geser	Tebal Dinding (cm)
20 lantai	1 s/d 20	P1	45
	1 s/d 20	P2	45

**PUSAT MASSA & KEKAKUAN**

**Gedung 8 Lantai**

<b>Story</b>	<b>Diaphragm</b>	<b>MassX</b>	<b>MassY</b>	<b>XCM</b>	<b>YCM</b>	<b>CumMassX</b>	<b>CumMassY</b>	<b>XCCM</b>	<b>YCCM</b>	<b>XCR</b>	<b>YCR</b>
STORY8	D1	732.397	732.397	20	10	732.397	732.397	20	10	20	10
STORY7	D1	851.458	851.458	20	10	1583.856	1583.856	20	10	20	10
STORY6	D1	851.458	851.458	20	10	2435.314	2435.314	20	10	20	10
STORY5	D1	851.458	851.458	20	10	3286.772	3286.772	20	10	20	10
STORY4	D1	851.458	851.458	20	10	4138.231	4138.231	20	10	20	10
STORY3	D1	851.458	851.458	20	10	4989.689	4989.689	20	10	20	10
STORY2	D1	851.458	851.458	20	10	5841.147	5841.147	20	10	20	10
STORY1	D1	851.458	851.458	20	10	6692.606	6692.606	20	10	20	10

**PUSAT MASSA & KEKAKUAN**

**Gedung 12 Lantai**

Story	Diaphragm	MassX	MassY	XCM	YCM	CumMassX	CumMassY	XCCM	YCCM	XCR	YCR
STORY12	D1	756.7978	756.7978	20	10	756.7978	756.7978	20	10	20	10
STORY11	D1	887.3787	887.3787	20	10	1644.1766	1644.1766	20	10	20	10
STORY10	D1	887.3787	887.3787	20	10	2531.5553	2531.5553	20	10	20	10
STORY9	D1	887.3787	887.3787	20	10	3418.934	3418.934	20	10	20	10
STORY8	D1	887.379	887.379	20	10	4306.313	4306.313	20	10	20	10
STORY7	D1	887.379	887.379	20	10	5193.692	5193.692	20	10	20	10
STORY6	D1	887.379	887.379	20	10	6081.070	6081.070	20	10	20	10
STORY5	D1	887.379	887.379	20	10	6968.449	6968.449	20	10	20	10
STORY4	D1	887.379	887.379	20	10	7855.828	7855.828	20	10	20	10
STORY3	D1	887.379	887.379	20	10	8743.206	8743.206	20	10	20	10
STORY2	D1	887.379	887.379	20	10	9630.585	9630.585	20	10	20	10
STORY1	D1	887.379	887.379	20	10	10517.964	10517.964	20	10	20	10

**PUSAT MASSA & KEKAKUAN**

**Gedung 16 Lantai**

Story	Diaphragm	MassX	MassY	XCM	YCM	CumMassX	CumMassY	XCCM	YCCM	XCR	YCR
STORY16	D1	775.5281	775.5281	20	10	775.5281	775.5281	20	10	20	10
STORY15	D1	915.325	915.325	20	10	1690.8531	1690.8531	20	10	20	10
STORY14	D1	915.325	915.325	20	10	2606.1781	2606.1781	20	10	20	10
STORY13	D1	915.325	915.325	20	10	3521.5032	3521.5032	20	10	20	10
STORY12	D1	915.325	915.325	20	10	4436.8282	4436.8282	20	10	20	10
STORY11	D1	915.325	915.325	20	10	5352.1532	5352.1532	20	10	20	10
STORY10	D1	915.325	915.325	20	10	6267.4782	6267.4782	20	10	20	10
STORY9	D1	915.325	915.325	20	10	7182.8033	7182.8033	20	10	20	10
STORY8	D1	915.325	915.325	20	10	8098.128	8098.128	20	10	20	10
STORY7	D1	915.325	915.325	20	10	9013.453	9013.453	20	10	20	10
STORY6	D1	915.325	915.325	20	10	9928.778	9928.778	20	10	20	10
STORY5	D1	915.325	915.325	20	10	10844.103	10844.103	20	10	20	10
STORY4	D1	918.042	918.042	20	10	11762.145	11762.145	20	10	20	10
STORY3	D1	921.498	921.498	20	10	12683.643	12683.643	20	10	20	10
STORY2	D1	921.498	921.498	20	10	13605.141	13605.141	20	10	20	10

STORY1	D1	921.498	921.498	20	10	14526.638	14526.638	20	10	20	10
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**PUSAT MASSA & KEKAKUAN**

**Gedung 20 Lantai**

Story	Diaphragm	MassX	MassY	XCM	YCM	CumMassX	CumMassY	XCCM	YCCM	XCR	YCR
STORY20	D1	796.9221	796.9221	20	10	796.9221	796.9221	20	10	20	10
STORY19	D1	947.903	947.903	20	10	1744.8251	1744.8251	20	10	20	10
STORY18	D1	947.903	947.903	20	10	2692.7281	2692.7281	20	10	20	10
STORY17	D1	947.903	947.903	20	10	3640.6311	3640.6311	20	10	20	10
STORY16	D1	947.903	947.903	20	10	4588.5341	4588.5341	20	10	20	10



STORY15	D1	947.903	947.903	20	10	5536.4371	5536.4371	20	10	20	10
STORY14	D1	947.903	947.903	20	10	6484.3401	6484.3401	20	10	20	10
STORY13	D1	947.903	947.903	20	10	7432.2431	7432.2431	20	10	20	10
STORY12	D1	947.903	947.903	20	10	8380.1461	8380.1461	20	10	20	10
STORY11	D1	947.903	947.903	20	10	9328.0491	9328.0491	20	10	20	10
STORY10	D1	947.903	947.903	20	10	10275.9521	10275.9521	20	10	20	10
STORY9	D1	947.903	947.903	20	10	11223.8551	11223.8551	20	10	20	10
STORY8	D1	947.903	947.903	20	10	12171.758	12171.758	20	10	20	10
STORY7	D1	947.903	947.903	20	10	13119.661	13119.661	20	10	20	10
STORY6	D1	947.903	947.903	20	10	14067.564	14067.564	20	10	20	10
STORY5	D1	947.903	947.903	20	10	15015.467	15015.467	20	10	20	10
STORY4	D1	950.812	950.812	20	10	15966.279	15966.279	20	10	20	10
STORY3	D1	954.460	954.460	20	10	16920.739	16920.739	20	10	20	10
STORY2	D1	954.460	954.460	20	10	17875.198	17875.198	20	10	20	10
STORY1	D1	954.460	954.460	20	10	18829.658	18829.658	20	10	20	10

Eksentrisitas Struktur pada Arah Sumbu-X

No	Lantai	Xm	Xk	$ecx = X_m - X_k$	ecx	Bx	0.3Bx	$ed1 = 1.5ecx + 0.05Bx$	$ed2 = ecx - 0.05Bx$
1	20	20	20	0	0	40	12	0.6	-2
2	19	20	20	0	0	40	12	0.6	-2
3	18	20	20	0	0	40	12	0.6	-2
4	17	20	20	0	0	40	12	0.6	-2
5	16	20	20	0	0	40	12	0.6	-2
6	15	20	20	0	0	40	12	0.6	-2
7	14	20	20	0	0	40	12	0.6	-2
8	13	20	20	0	0	40	12	0.6	-2
9	12	20	20	0	0	40	12	0.6	-2
10	11	20	20	0	0	40	12	0.6	-2
11	10	20	20	0	0	40	12	0.6	-2
12	9	20	20	0	0	40	12	0.6	-2
13	8	20	20	0	0	40	12	0.6	-2

14	7	20	20	0	0	40	12	0.6	-2
15	6	20	20	0	0	40	12	0.6	-2
16	5	20	20	0	0	40	12	0.6	-2
17	4	20	20	0	0	40	12	0.6	-2
18	3	20	20	0	0	40	12	0.6	-2
19	2	20	20	0	0	40	12	0.6	-2
20	1	20	20	0	0	40	12	0.6	-2

**Eksentrisitas Struktur pada Arah Sumbu-Y**

No	Lantai	Ym	Yk	$ecy = Ym - Yk$	ecy	By	0.3By	$ed1 = 1.5ecy + 0.05By$	$ed2 = ecy - 0.05By$
1	20	10	10	0	0	20	6	0.3	-1
2	19	10	10	0	0	20	6	0.3	-1

3	18	10	10	0	0	20	6	0.3	-1
4	17	10	10	0	0	20	6	0.3	-1
5	16	10	10	0	0	20	6	0.3	-1
6	15	10	10	0	0	20	6	0.3	-1
7	14	10	10	0	0	20	6	0.3	-1
8	13	10	10	0	0	20	6	0.3	-1
9	12	10	10	0	0	20	6	0.3	-1
10	11	10	10	0	0	20	6	0.3	-1
11	10	10	10	0	0	20	6	0.3	-1
12	9	10	10	0	0	20	6	0.3	-1
13	8	10	10	0	0	20	6	0.3	-1
14	7	10	10	0	0	20	6	0.3	-1
15	6	10	10	0	0	20	6	0.3	-1
16	5	10	10	0	0	20	6	0.3	-1
17	4	10	10	0	0	20	6	0.3	-1
18	3	10	10	0	0	20	6	0.3	-1
19	2	10	10	0	0	20	6	0.3	-1
20	1	10	10	0	0	20	6	0.3	-1

## SIMPANGAN STRUKTUR

Bangunan 8 Lantai (SRPMK) - Metoda Langsung

### KINERJA BATAS LAYAN

### KINERJA BATAS ULTIMIT

Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y		
	Rasio Drift-X Maksimum	KBL $\Delta s$ (mm)	Cek	Rasio Drift-Y Maksimum	KBL $\Delta s$ (mm)	Cek
8	0.000745	2.980	OK	0.000875	3.500	OK
7	0.000979	3.916	OK	0.000941	3.764	OK
6	0.001241	4.964	OK	0.000990	3.960	OK
5	0.001437	5.748	OK	0.001003	4.012	OK
4	0.001526	6.104	OK	0.000962	3.848	OK
3	0.001458	5.832	OK	0.000847	3.388	OK
2	0.001161	4.644	OK	0.000637	2.548	OK
1	0.000521	2.084	OK	0.000287	1.148	OK

0.001526      6.104                      0.001003      4.012

Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y		
	KBL $\Delta s$ (mm)	KBU $\Delta m$ (mm)	Cek	KBL $\Delta s$ (mm)	KBU $\Delta m$ (mm)	Cek
8	2.980	17.731	OK	3.500	20.825	OK
7	3.916	23.300	OK	3.764	22.396	OK
6	4.964	29.536	OK	3.960	23.562	OK
5	5.748	34.201	OK	4.012	23.871	OK
4	6.104	36.319	OK	3.848	22.896	OK
3	5.832	34.700	OK	3.388	20.159	OK
2	4.644	27.632	OK	2.548	15.161	OK
1	2.084	12.400	OK	1.148	6.831	OK

36.319                      23.871

Catatan:

Drift  $\Delta M = 0.7 \times R \times \text{Drift } \Delta s$

R = 8.50



KINERJA BATAS LAYAN

KINERJA BATAS ULTIMIT

Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y			Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y		
	Rasio Drift-X	KBL	Cek	Rasio Drift-Y	KBL	Cek		KBL	KBU	Cek	KBL	KBU	Cek

	Maksimum	$\Delta s$ (mm)		Maksimum	$\Delta s$ (mm)			$\Delta s$ (mm)	$\Delta m$ (mm)		$\Delta s$ (mm)	$\Delta m$ (mm)	
12	0.000783	3.132	OK	0.001031	4.124	OK	12	3.132	18.635	OK	4.124	24.538	OK
11	0.000919	3.676	OK	0.001104	4.416	OK	11	3.676	21.872	OK	4.416	26.275	OK
10	0.001084	4.336	OK	0.001178	4.712	OK	10	4.336	25.799	OK	4.712	28.036	OK
9	0.001255	5.020	OK	0.001251	5.004	OK	9	5.020	29.869	OK	5.004	29.774	OK
8	0.001413	5.652	OK	0.001308	5.232	OK	8	5.652	33.629	OK	5.232	31.130	OK
7	0.001547	6.188	OK	0.001340	5.360	OK	7	6.188	36.819	OK	5.360	31.892	OK
6	0.001644	6.576	OK	0.001337	5.348	OK	6	6.576	39.127	OK	5.348	31.821	OK
5	0.001684	6.736	OK	0.001288	5.152	OK	5	6.736	40.079	OK	5.152	30.654	OK
4	0.001643	6.572	OK	0.001180	4.720	OK	4	6.572	39.103	OK	4.720	28.084	OK
3	0.001479	5.916	OK	0.000999	3.996	OK	3	5.916	35.200	OK	3.996	23.776	OK
2	0.001127	4.508	OK	0.000724	2.896	OK	2	4.508	26.823	OK	2.896	17.231	OK
1	0.000489	1.956	OK	0.000314	1.256	OK	1	1.956	11.638	OK	1.256	7.473	OK
	0.001684	6.736		0.001340	5.360				40.079			31.892	

Catatan:

Drift  $\Delta M = 0.7 \times R \times \text{Drift } \Delta s$

R = 8.50

### SIMPANGAN STRUKTUR

Bangunan 16 Lantai (SRPMK) - Cara Langsung

#### KINERJA BATAS LAYAN

Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y		
	Rasio Drift-X Maksimum	KBL $\Delta s$ (mm)	Cek	Rasio Drift-Y Maksimum	KBL $\Delta s$ (mm)	Cek
16	0.000726	2.904	OK	0.001000	4.000	OK
15	0.000838	3.352	OK	0.001064	4.256	OK

#### KINERJA BATAS ULTIMIT

Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y	
	KBL $\Delta s$ (mm)	KBU $\Delta m$ (mm)	Cek	KBL $\Delta s$ (mm)	KBU $\Delta m$ (mm)
16	2.904	17.279	OK	4.000	23.800
15	3.352	19.944	OK	4.256	25.323



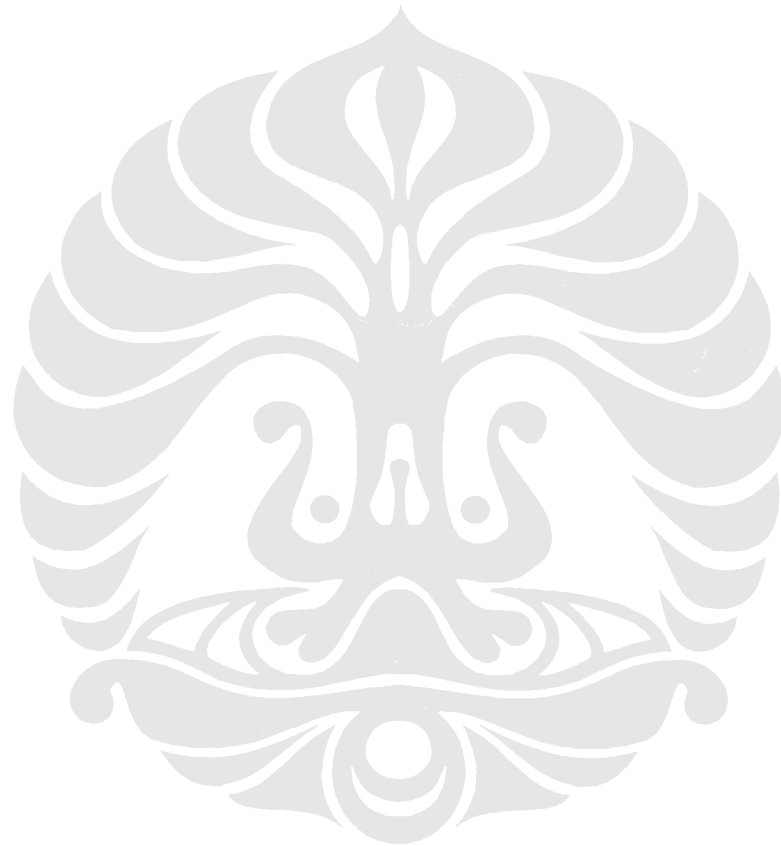
14	0.000977	3.908	OK	0.001135	4.540	OK
13	0.001122	4.488	OK	0.001211	4.844	OK
12	0.001263	5.052	OK	0.001284	5.136	OK
11	0.001395	5.580	OK	0.001350	5.400	OK
10	0.001514	6.056	OK	0.001405	5.620	OK
9	0.001620	6.480	OK	0.001444	5.776	OK
8	0.001709	6.836	OK	0.001463	5.852	OK
7	0.001775	7.100	OK	0.001455	5.820	OK
6	0.001809	7.236	OK	0.001414	5.656	OK
5	0.001792	7.168	OK	0.001332	5.328	OK
4	0.001695	6.780	OK	0.001195	4.780	OK
3	0.001493	5.972	OK	0.000995	3.980	OK
2	0.001117	4.468	OK	0.000711	2.844	OK
1	0.000478	1.912	OK	0.000303	1.212	OK

14	3.908	23.253	OK	4.540	27.013
13	4.488	26.704	OK	4.844	28.822
12	5.052	30.059	OK	5.136	30.559
11	5.580	33.201	OK	5.400	32.130
10	6.056	36.033	OK	5.620	33.439
9	6.480	38.556	OK	5.776	34.367
8	6.836	40.674	OK	5.852	34.819
7	7.100	42.245	OK	5.820	34.629
6	7.236	43.054	OK	5.656	33.653
5	7.168	42.650	OK	5.328	31.702
4	6.780	40.341	OK	4.780	28.441
3	5.972	35.533	OK	3.980	23.681
2	4.468	26.585	OK	2.844	16.922
1	1.912	11.376	OK	1.212	7.211

Catatan:

Drift  $\Delta M = 0.7 \times R \times \text{Drift } \Delta s$

R = 8.50



## SIMPANGAN STRUKTUR

Bangunan 20 Lantai (SRPMK) - Metoda Langsung

### KINERJA BATAS LAYAN

### KINERJA BATAS ULTIMIT

Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y		
	Rasio Drift-X Maksimum	KBL $\Delta s$ (mm)	Cek	Rasio Drift-Y Maksimum	KBL $\Delta s$ (mm)	Cek
20	0.000730	2.920	OK	0.000977	3.908	OK
19	0.000834	3.336	OK	0.001033	4.132	OK
18	0.000962	3.848	OK	0.001096	4.384	OK
17	0.001098	4.392	OK	0.001165	4.660	OK
16	0.001230	4.920	OK	0.001235	4.940	OK
15	0.001354	5.416	OK	0.001302	5.208	OK
14	0.001467	5.868	OK	0.001364	5.456	OK
13	0.001570	6.280	OK	0.001419	5.676	OK
12	0.001664	6.656	OK	0.001467	5.868	OK

Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y		
	KBL $\Delta s$ (mm)	KBU $\Delta m$ (mm)	Cek	KBL $\Delta s$ (mm)	KBU $\Delta m$ (mm)	Cek
20	2.920	17.374	OK	3.908	23.253	OK
19	3.336	19.849	OK	4.132	24.585	OK
18	3.848	22.896	OK	4.384	26.085	OK
17	4.392	26.132	OK	4.660	27.727	OK
16	4.920	29.274	OK	4.940	29.393	OK
15	5.416	32.225	OK	5.208	30.988	OK
14	5.868	34.915	OK	5.456	32.463	OK
13	6.280	37.366	OK	5.676	33.772	OK
12	6.656	39.603	OK	5.868	34.915	OK

11	0.001750	7.000	OK	0.001505	6.020	OK	11	7.000	41.650	OK	6.020	35.819	OK
10	0.001829	7.316	OK	0.001532	6.128	OK	10	7.316	43.530	OK	6.128	36.462	OK
9	0.001898	7.592	OK	0.001544	6.176	OK	9	7.592	45.172	OK	6.176	36.747	OK
8	0.001954	7.816	OK	0.001538	6.152	OK	8	7.816	46.505	OK	6.152	36.604	OK
7	0.001990	7.960	OK	0.001509	6.036	OK	7	7.960	47.362	OK	6.036	35.914	OK
6	0.001994	7.976	OK	0.001449	5.796	OK	6	7.976	47.457	OK	5.796	34.486	OK
5	0.001948	7.792	OK	0.001351	5.404	OK	5	7.792	46.362	OK	5.404	32.154	OK
4	0.001821	7.284	OK	0.001203	4.812	OK	4	7.284	43.340	OK	4.812	28.631	OK
3	0.001585	6.340	OK	0.000995	3.980	OK	3	6.340	37.723	OK	3.980	23.681	OK
2	0.001174	4.696	OK	0.000707	2.828	OK	2	4.696	27.941	OK	2.828	16.827	OK
1	0.000496	1.984	OK	0.000299	1.196	OK	1	1.984	11.805	OK	1.196	7.116	OK

## SIMPANGAN STRUKTUR

Bangunan 8 Lantai (SRPMK) - Metoda Langsung

### KINERJA BATAS LAYAN

### KINERJA BATAS ULTIMIT

Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y		
	Rasio Drift-X Maksimum	KBL $\Delta s$ (mm)	Cek	Rasio Drift-Y Maksimum	KBL $\Delta s$ (mm)	Cek
8	0.000745	2.980	OK	0.000875	3.500	OK
7	0.000979	3.916	OK	0.000941	3.764	OK
6	0.001241	4.964	OK	0.000990	3.960	OK
5	0.001437	5.748	OK	0.001003	4.012	OK
4	0.001526	6.104	OK	0.000962	3.848	OK
3	0.001458	5.832	OK	0.000847	3.388	OK
2	0.001161	4.644	OK	0.000637	2.548	OK
1	0.000521	2.084	OK	0.000287	1.148	OK

0.001526      6.104                      0.001003      4.012

Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y		
	KBL $\Delta s$ (mm)	KBU $\Delta m$ (mm)	Cek	KBL $\Delta s$ (mm)	KBU $\Delta m$ (mm)	Cek
8	2.980	17.731	OK	3.500	20.825	OK
7	3.916	23.300	OK	3.764	22.396	OK
6	4.964	29.536	OK	3.960	23.562	OK
5	5.748	34.201	OK	4.012	23.871	OK
4	6.104	36.319	OK	3.848	22.896	OK
3	5.832	34.700	OK	3.388	20.159	OK
2	4.644	27.632	OK	2.548	15.161	OK
1	2.084	12.400	OK	1.148	6.831	OK

36.319                      23.871

Catatan:

Drift  $\Delta M = 0.7 \times R \times \text{Drift } \Delta s$

R = 8.50



KINERJA BATAS LAYAN

KINERJA BATAS ULTIMIT

Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y			Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y		
	Rasio Drift-X	KBL	Cek	Rasio Drift-Y	KBL	Cek		KBL	KBU	Cek	KBL	KBU	Cek

	Maksimum	$\Delta s$ (mm)		Maksimum	$\Delta s$ (mm)			$\Delta s$ (mm)	$\Delta m$ (mm)		$\Delta s$ (mm)	$\Delta m$ (mm)	
12	0.000783	3.132	OK	0.001031	4.124	OK	12	3.132	18.635	OK	4.124	24.538	OK
11	0.000919	3.676	OK	0.001104	4.416	OK	11	3.676	21.872	OK	4.416	26.275	OK
10	0.001084	4.336	OK	0.001178	4.712	OK	10	4.336	25.799	OK	4.712	28.036	OK
9	0.001255	5.020	OK	0.001251	5.004	OK	9	5.020	29.869	OK	5.004	29.774	OK
8	0.001413	5.652	OK	0.001308	5.232	OK	8	5.652	33.629	OK	5.232	31.130	OK
7	0.001547	6.188	OK	0.001340	5.360	OK	7	6.188	36.819	OK	5.360	31.892	OK
6	0.001644	6.576	OK	0.001337	5.348	OK	6	6.576	39.127	OK	5.348	31.821	OK
5	0.001684	6.736	OK	0.001288	5.152	OK	5	6.736	40.079	OK	5.152	30.654	OK
4	0.001643	6.572	OK	0.001180	4.720	OK	4	6.572	39.103	OK	4.720	28.084	OK
3	0.001479	5.916	OK	0.000999	3.996	OK	3	5.916	35.200	OK	3.996	23.776	OK
2	0.001127	4.508	OK	0.000724	2.896	OK	2	4.508	26.823	OK	2.896	17.231	OK
1	0.000489	1.956	OK	0.000314	1.256	OK	1	1.956	11.638	OK	1.256	7.473	OK
	0.001684	6.736		0.001340	5.360				40.079			31.892	

Catatan:

Drift  $\Delta M = 0.7 \times R \times \text{Drift } \Delta s$

R = 8.50

### SIMPANGAN STRUKTUR

Bangunan 16 Lantai (SRPMK) - Cara Langsung

#### KINERJA BATAS LAYAN

Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y		
	Rasio Drift-X Maksimum	KBL $\Delta s$ (mm)	Cek	Rasio Drift-Y Maksimum	KBL $\Delta s$ (mm)	Cek
16	0.000726	2.904	OK	0.001000	4.000	OK
15	0.000838	3.352	OK	0.001064	4.256	OK

#### KINERJA BATAS ULTIMIT

Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y	
	KBL $\Delta s$ (mm)	KBU $\Delta m$ (mm)	Cek	KBL $\Delta s$ (mm)	KBU $\Delta m$ (mm)
16	2.904	17.279	OK	4.000	23.800
15	3.352	19.944	OK	4.256	25.323



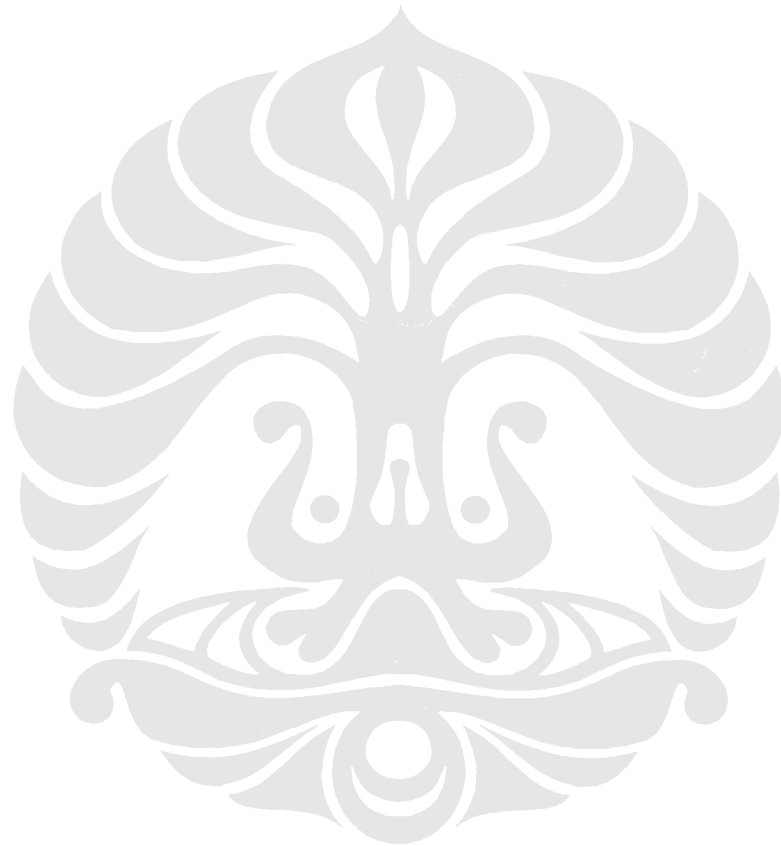
14	0.000977	3.908	OK	0.001135	4.540	OK
13	0.001122	4.488	OK	0.001211	4.844	OK
12	0.001263	5.052	OK	0.001284	5.136	OK
11	0.001395	5.580	OK	0.001350	5.400	OK
10	0.001514	6.056	OK	0.001405	5.620	OK
9	0.001620	6.480	OK	0.001444	5.776	OK
8	0.001709	6.836	OK	0.001463	5.852	OK
7	0.001775	7.100	OK	0.001455	5.820	OK
6	0.001809	7.236	OK	0.001414	5.656	OK
5	0.001792	7.168	OK	0.001332	5.328	OK
4	0.001695	6.780	OK	0.001195	4.780	OK
3	0.001493	5.972	OK	0.000995	3.980	OK
2	0.001117	4.468	OK	0.000711	2.844	OK
1	0.000478	1.912	OK	0.000303	1.212	OK

14	3.908	23.253	OK	4.540	27.013
13	4.488	26.704	OK	4.844	28.822
12	5.052	30.059	OK	5.136	30.559
11	5.580	33.201	OK	5.400	32.130
10	6.056	36.033	OK	5.620	33.439
9	6.480	38.556	OK	5.776	34.367
8	6.836	40.674	OK	5.852	34.819
7	7.100	42.245	OK	5.820	34.629
6	7.236	43.054	OK	5.656	33.653
5	7.168	42.650	OK	5.328	31.702
4	6.780	40.341	OK	4.780	28.441
3	5.972	35.533	OK	3.980	23.681
2	4.468	26.585	OK	2.844	16.922
1	1.912	11.376	OK	1.212	7.211

Catatan:

Drift  $\Delta M = 0.7 \times R \times \text{Drift } \Delta s$

R = 8.50



## SIMPANGAN STRUKTUR

Bangunan 20 Lantai (SRPMK) - Metoda Langsung

### KINERJA BATAS LAYAN

### KINERJA BATAS ULTIMIT

Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y		
	Rasio Drift-X Maksimum	KBL $\Delta s$ (mm)	Cek	Rasio Drift-Y Maksimum	KBL $\Delta s$ (mm)	Cek
20	0.000730	2.920	OK	0.000977	3.908	OK
19	0.000834	3.336	OK	0.001033	4.132	OK
18	0.000962	3.848	OK	0.001096	4.384	OK
17	0.001098	4.392	OK	0.001165	4.660	OK
16	0.001230	4.920	OK	0.001235	4.940	OK
15	0.001354	5.416	OK	0.001302	5.208	OK
14	0.001467	5.868	OK	0.001364	5.456	OK
13	0.001570	6.280	OK	0.001419	5.676	OK
12	0.001664	6.656	OK	0.001467	5.868	OK

Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y		
	KBL $\Delta s$ (mm)	KBU $\Delta m$ (mm)	Cek	KBL $\Delta s$ (mm)	KBU $\Delta m$ (mm)	Cek
20	2.920	17.374	OK	3.908	23.253	OK
19	3.336	19.849	OK	4.132	24.585	OK
18	3.848	22.896	OK	4.384	26.085	OK
17	4.392	26.132	OK	4.660	27.727	OK
16	4.920	29.274	OK	4.940	29.393	OK
15	5.416	32.225	OK	5.208	30.988	OK
14	5.868	34.915	OK	5.456	32.463	OK
13	6.280	37.366	OK	5.676	33.772	OK
12	6.656	39.603	OK	5.868	34.915	OK

11	0.001750	7.000	OK	0.001505	6.020	OK	11	7.000	41.650	OK	6.020	35.819	OK
10	0.001829	7.316	OK	0.001532	6.128	OK	10	7.316	43.530	OK	6.128	36.462	OK
9	0.001898	7.592	OK	0.001544	6.176	OK	9	7.592	45.172	OK	6.176	36.747	OK
8	0.001954	7.816	OK	0.001538	6.152	OK	8	7.816	46.505	OK	6.152	36.604	OK
7	0.001990	7.960	OK	0.001509	6.036	OK	7	7.960	47.362	OK	6.036	35.914	OK
6	0.001994	7.976	OK	0.001449	5.796	OK	6	7.976	47.457	OK	5.796	34.486	OK
5	0.001948	7.792	OK	0.001351	5.404	OK	5	7.792	46.362	OK	5.404	32.154	OK
4	0.001821	7.284	OK	0.001203	4.812	OK	4	7.284	43.340	OK	4.812	28.631	OK
3	0.001585	6.340	OK	0.000995	3.980	OK	3	6.340	37.723	OK	3.980	23.681	OK
2	0.001174	4.696	OK	0.000707	2.828	OK	2	4.696	27.941	OK	2.828	16.827	OK
1	0.000496	1.984	OK	0.000299	1.196	OK	1	1.984	11.805	OK	1.196	7.116	OK

## SIMPANGAN STRUKTUR

Bangunan 8 Lantai (SRPMK) - Metoda Langsung

### KINERJA BATAS LAYAN

Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y		
	Rasio Drift-X Maksimum	KBL $\Delta s$ (mm)	Cek	Rasio Drift-Y Maksimum	KBL $\Delta s$ (mm)	Cek
8	0.000745	2.980	OK	0.000875	3.500	OK
7	0.000979	3.916	OK	0.000941	3.764	OK
6	0.001241	4.964	OK	0.000990	3.960	OK
5	0.001437	5.748	OK	0.001003	4.012	OK
4	0.001526	6.104	OK	0.000962	3.848	OK
3	0.001458	5.832	OK	0.000847	3.388	OK
2	0.001161	4.644	OK	0.000637	2.548	OK
1	0.000521	2.084	OK	0.000287	1.148	OK
	0.001526	6.104		0.001003	4.012	

### KINERJA BATAS ULTIMIT

Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y		
	KBL $\Delta s$ (mm)	KBU $\Delta m$ (mm)	Cek	KBL $\Delta s$ (mm)	KBU $\Delta m$ (mm)	Cek
8	2.980	17.731	OK	3.500	20.825	OK
7	3.916	23.300	OK	3.764	22.396	OK
6	4.964	29.536	OK	3.960	23.562	OK
5	5.748	34.201	OK	4.012	23.871	OK
4	6.104	36.319	OK	3.848	22.896	OK
3	5.832	34.700	OK	3.388	20.159	OK
2	4.644	27.632	OK	2.548	15.161	OK
1	2.084	12.400	OK	1.148	6.831	OK
		36.319			23.871	

Catatan:

Drift  $\Delta M = 0.7 \times R \times \text{Drift } \Delta s$

R = 8.50



KINERJA BATAS LAYAN

KINERJA BATAS ULTIMIT

Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y			Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y		
	Rasio Drift-X	KBL	Cek	Rasio Drift-Y	KBL	Cek		KBL	KBU	Cek	KBL	KBU	Cek

	Maksimum	$\Delta s$ (mm)		Maksimum	$\Delta s$ (mm)			$\Delta s$ (mm)	$\Delta m$ (mm)		$\Delta s$ (mm)	$\Delta m$ (mm)	
12	0.000783	3.132	OK	0.001031	4.124	OK	12	3.132	18.635	OK	4.124	24.538	OK
11	0.000919	3.676	OK	0.001104	4.416	OK	11	3.676	21.872	OK	4.416	26.275	OK
10	0.001084	4.336	OK	0.001178	4.712	OK	10	4.336	25.799	OK	4.712	28.036	OK
9	0.001255	5.020	OK	0.001251	5.004	OK	9	5.020	29.869	OK	5.004	29.774	OK
8	0.001413	5.652	OK	0.001308	5.232	OK	8	5.652	33.629	OK	5.232	31.130	OK
7	0.001547	6.188	OK	0.001340	5.360	OK	7	6.188	36.819	OK	5.360	31.892	OK
6	0.001644	6.576	OK	0.001337	5.348	OK	6	6.576	39.127	OK	5.348	31.821	OK
5	0.001684	6.736	OK	0.001288	5.152	OK	5	6.736	40.079	OK	5.152	30.654	OK
4	0.001643	6.572	OK	0.001180	4.720	OK	4	6.572	39.103	OK	4.720	28.084	OK
3	0.001479	5.916	OK	0.000999	3.996	OK	3	5.916	35.200	OK	3.996	23.776	OK
2	0.001127	4.508	OK	0.000724	2.896	OK	2	4.508	26.823	OK	2.896	17.231	OK
1	0.000489	1.956	OK	0.000314	1.256	OK	1	1.956	11.638	OK	1.256	7.473	OK
	0.001684	6.736		0.001340	5.360				40.079			31.892	

Catatan:

Drift  $\Delta M = 0.7 \times R \times \text{Drift } \Delta s$

R = 8.50

### SIMPANGAN STRUKTUR

Bangunan 16 Lantai (SRPMK) - Cara Langsung

#### KINERJA BATAS LAYAN

Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y		
	Rasio Drift-X Maksimum	KBL $\Delta s$ (mm)	Cek	Rasio Drift-Y Maksimum	KBL $\Delta s$ (mm)	Cek
16	0.000726	2.904	OK	0.001000	4.000	OK
15	0.000838	3.352	OK	0.001064	4.256	OK

#### KINERJA BATAS ULTIMIT

Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y	
	KBL $\Delta s$ (mm)	KBU $\Delta m$ (mm)	Cek	KBL $\Delta s$ (mm)	KBU $\Delta m$ (mm)
16	2.904	17.279	OK	4.000	23.800
15	3.352	19.944	OK	4.256	25.323



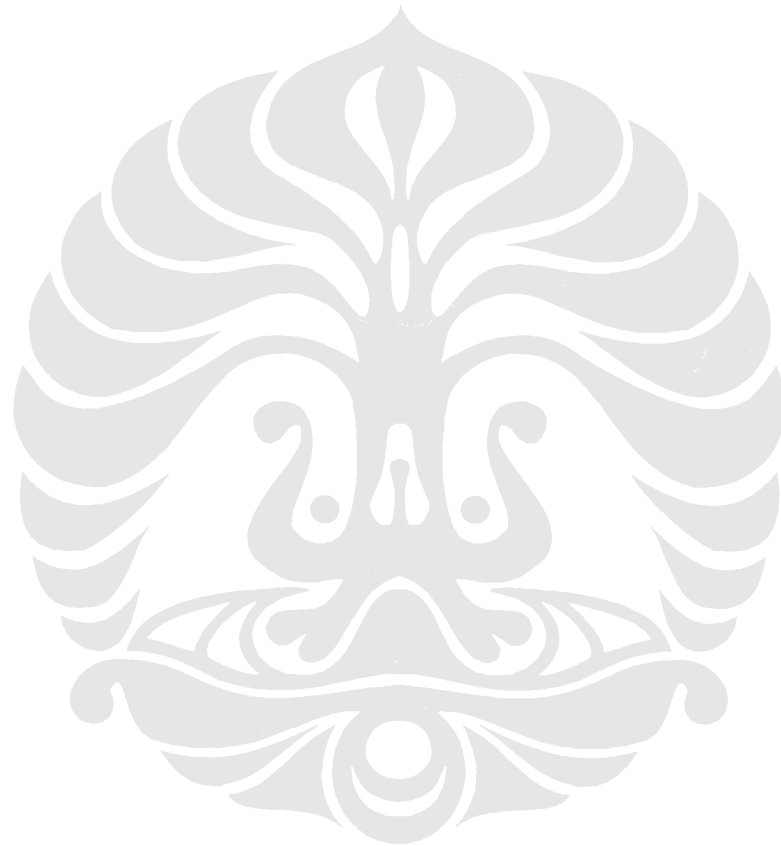
14	0.000977	3.908	OK	0.001135	4.540	OK
13	0.001122	4.488	OK	0.001211	4.844	OK
12	0.001263	5.052	OK	0.001284	5.136	OK
11	0.001395	5.580	OK	0.001350	5.400	OK
10	0.001514	6.056	OK	0.001405	5.620	OK
9	0.001620	6.480	OK	0.001444	5.776	OK
8	0.001709	6.836	OK	0.001463	5.852	OK
7	0.001775	7.100	OK	0.001455	5.820	OK
6	0.001809	7.236	OK	0.001414	5.656	OK
5	0.001792	7.168	OK	0.001332	5.328	OK
4	0.001695	6.780	OK	0.001195	4.780	OK
3	0.001493	5.972	OK	0.000995	3.980	OK
2	0.001117	4.468	OK	0.000711	2.844	OK
1	0.000478	1.912	OK	0.000303	1.212	OK

14	3.908	23.253	OK	4.540	27.013
13	4.488	26.704	OK	4.844	28.822
12	5.052	30.059	OK	5.136	30.559
11	5.580	33.201	OK	5.400	32.130
10	6.056	36.033	OK	5.620	33.439
9	6.480	38.556	OK	5.776	34.367
8	6.836	40.674	OK	5.852	34.819
7	7.100	42.245	OK	5.820	34.629
6	7.236	43.054	OK	5.656	33.653
5	7.168	42.650	OK	5.328	31.702
4	6.780	40.341	OK	4.780	28.441
3	5.972	35.533	OK	3.980	23.681
2	4.468	26.585	OK	2.844	16.922
1	1.912	11.376	OK	1.212	7.211

Catatan:

Drift  $\Delta M = 0.7 \times R \times \text{Drift } \Delta s$

R = 8.50



## SIMPANGAN STRUKTUR

Bangunan 20 Lantai (SRPMK) - Metoda Langsung

### KINERJA BATAS LAYAN

### KINERJA BATAS ULTIMIT

Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y		
	Rasio Drift-X Maksimum	KBL $\Delta s$ (mm)	Cek	Rasio Drift-Y Maksimum	KBL $\Delta s$ (mm)	Cek
20	0.000730	2.920	OK	0.000977	3.908	OK
19	0.000834	3.336	OK	0.001033	4.132	OK
18	0.000962	3.848	OK	0.001096	4.384	OK
17	0.001098	4.392	OK	0.001165	4.660	OK
16	0.001230	4.920	OK	0.001235	4.940	OK
15	0.001354	5.416	OK	0.001302	5.208	OK
14	0.001467	5.868	OK	0.001364	5.456	OK
13	0.001570	6.280	OK	0.001419	5.676	OK
12	0.001664	6.656	OK	0.001467	5.868	OK

Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y		
	KBL $\Delta s$ (mm)	KBU $\Delta m$ (mm)	Cek	KBL $\Delta s$ (mm)	KBU $\Delta m$ (mm)	Cek
20	2.920	17.374	OK	3.908	23.253	OK
19	3.336	19.849	OK	4.132	24.585	OK
18	3.848	22.896	OK	4.384	26.085	OK
17	4.392	26.132	OK	4.660	27.727	OK
16	4.920	29.274	OK	4.940	29.393	OK
15	5.416	32.225	OK	5.208	30.988	OK
14	5.868	34.915	OK	5.456	32.463	OK
13	6.280	37.366	OK	5.676	33.772	OK
12	6.656	39.603	OK	5.868	34.915	OK

11	0.001750	7.000	OK	0.001505	6.020	OK	11	7.000	41.650	OK	6.020	35.819	OK
10	0.001829	7.316	OK	0.001532	6.128	OK	10	7.316	43.530	OK	6.128	36.462	OK
9	0.001898	7.592	OK	0.001544	6.176	OK	9	7.592	45.172	OK	6.176	36.747	OK
8	0.001954	7.816	OK	0.001538	6.152	OK	8	7.816	46.505	OK	6.152	36.604	OK
7	0.001990	7.960	OK	0.001509	6.036	OK	7	7.960	47.362	OK	6.036	35.914	OK
6	0.001994	7.976	OK	0.001449	5.796	OK	6	7.976	47.457	OK	5.796	34.486	OK
5	0.001948	7.792	OK	0.001351	5.404	OK	5	7.792	46.362	OK	5.404	32.154	OK
4	0.001821	7.284	OK	0.001203	4.812	OK	4	7.284	43.340	OK	4.812	28.631	OK
3	0.001585	6.340	OK	0.000995	3.980	OK	3	6.340	37.723	OK	3.980	23.681	OK
2	0.001174	4.696	OK	0.000707	2.828	OK	2	4.696	27.941	OK	2.828	16.827	OK
1	0.000496	1.984	OK	0.000299	1.196	OK	1	1.984	11.805	OK	1.196	7.116	OK

## SIMPANGAN STRUKTUR

Bangunan 8 Lantai (SRPMK) - Metoda Langsung

### KINERJA BATAS LAYAN

### KINERJA BATAS ULTIMIT

Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y		
	Rasio Drift-X Maksimum	KBL $\Delta s$ (mm)	Cek	Rasio Drift-Y Maksimum	KBL $\Delta s$ (mm)	Cek
8	0.000745	2.980	OK	0.000875	3.500	OK
7	0.000979	3.916	OK	0.000941	3.764	OK
6	0.001241	4.964	OK	0.000990	3.960	OK
5	0.001437	5.748	OK	0.001003	4.012	OK
4	0.001526	6.104	OK	0.000962	3.848	OK
3	0.001458	5.832	OK	0.000847	3.388	OK
2	0.001161	4.644	OK	0.000637	2.548	OK
1	0.000521	2.084	OK	0.000287	1.148	OK

0.001526      6.104                      0.001003      4.012

Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y		
	KBL $\Delta s$ (mm)	KBU $\Delta m$ (mm)	Cek	KBL $\Delta s$ (mm)	KBU $\Delta m$ (mm)	Cek
8	2.980	17.731	OK	3.500	20.825	OK
7	3.916	23.300	OK	3.764	22.396	OK
6	4.964	29.536	OK	3.960	23.562	OK
5	5.748	34.201	OK	4.012	23.871	OK
4	6.104	36.319	OK	3.848	22.896	OK
3	5.832	34.700	OK	3.388	20.159	OK
2	4.644	27.632	OK	2.548	15.161	OK
1	2.084	12.400	OK	1.148	6.831	OK

36.319                      23.871

Catatan:

Drift  $\Delta M = 0.7 \times R \times \text{Drift } \Delta s$

R = 8.50



KINERJA BATAS LAYAN

KINERJA BATAS ULTIMIT

Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y			Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y		
	Rasio Drift-X	KBL	Cek	Rasio Drift-Y	KBL	Cek		KBL	KBU	Cek	KBL	KBU	Cek

	Maksimum	$\Delta s$ (mm)		Maksimum	$\Delta s$ (mm)			$\Delta s$ (mm)	$\Delta m$ (mm)		$\Delta s$ (mm)	$\Delta m$ (mm)	
12	0.000783	3.132	OK	0.001031	4.124	OK	12	3.132	18.635	OK	4.124	24.538	OK
11	0.000919	3.676	OK	0.001104	4.416	OK	11	3.676	21.872	OK	4.416	26.275	OK
10	0.001084	4.336	OK	0.001178	4.712	OK	10	4.336	25.799	OK	4.712	28.036	OK
9	0.001255	5.020	OK	0.001251	5.004	OK	9	5.020	29.869	OK	5.004	29.774	OK
8	0.001413	5.652	OK	0.001308	5.232	OK	8	5.652	33.629	OK	5.232	31.130	OK
7	0.001547	6.188	OK	0.001340	5.360	OK	7	6.188	36.819	OK	5.360	31.892	OK
6	0.001644	6.576	OK	0.001337	5.348	OK	6	6.576	39.127	OK	5.348	31.821	OK
5	0.001684	6.736	OK	0.001288	5.152	OK	5	6.736	40.079	OK	5.152	30.654	OK
4	0.001643	6.572	OK	0.001180	4.720	OK	4	6.572	39.103	OK	4.720	28.084	OK
3	0.001479	5.916	OK	0.000999	3.996	OK	3	5.916	35.200	OK	3.996	23.776	OK
2	0.001127	4.508	OK	0.000724	2.896	OK	2	4.508	26.823	OK	2.896	17.231	OK
1	0.000489	1.956	OK	0.000314	1.256	OK	1	1.956	11.638	OK	1.256	7.473	OK
	0.001684	6.736		0.001340	5.360				40.079			31.892	

Catatan:

Drift  $\Delta M = 0.7 \times R \times \text{Drift } \Delta s$

R = 8.50

### SIMPANGAN STRUKTUR

Bangunan 16 Lantai (SRPMK) - Cara Langsung

#### KINERJA BATAS LAYAN

Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y		
	Rasio Drift-X Maksimum	KBL $\Delta s$ (mm)	Cek	Rasio Drift-Y Maksimum	KBL $\Delta s$ (mm)	Cek
16	0.000726	2.904	OK	0.001000	4.000	OK
15	0.000838	3.352	OK	0.001064	4.256	OK

#### KINERJA BATAS ULTIMIT

Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y	
	KBL $\Delta s$ (mm)	KBU $\Delta m$ (mm)	Cek	KBL $\Delta s$ (mm)	KBU $\Delta m$ (mm)
16	2.904	17.279	OK	4.000	23.800
15	3.352	19.944	OK	4.256	25.323



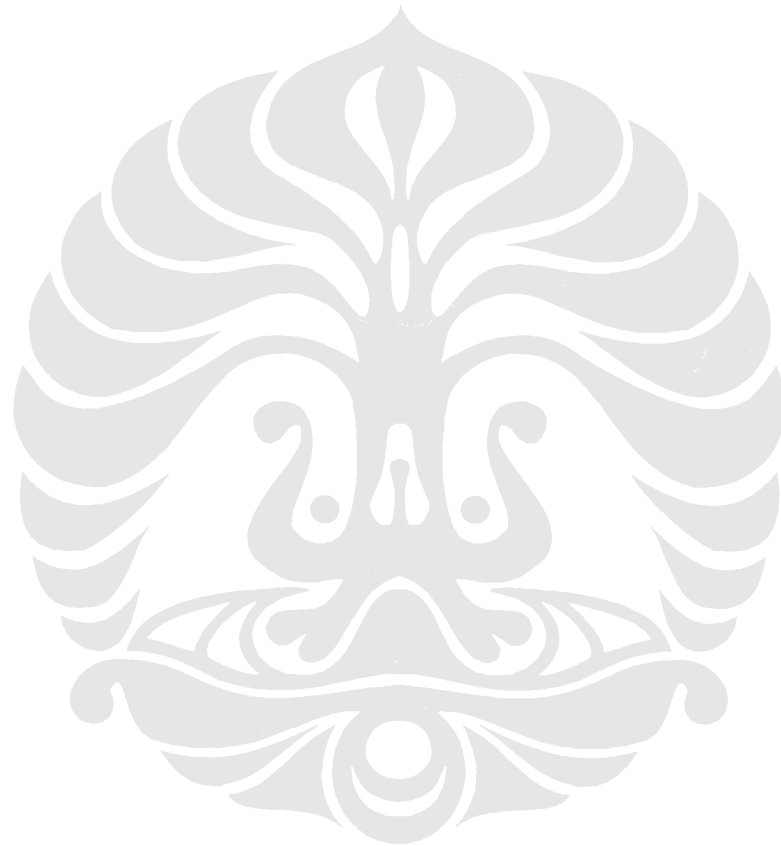
14	0.000977	3.908	OK	0.001135	4.540	OK
13	0.001122	4.488	OK	0.001211	4.844	OK
12	0.001263	5.052	OK	0.001284	5.136	OK
11	0.001395	5.580	OK	0.001350	5.400	OK
10	0.001514	6.056	OK	0.001405	5.620	OK
9	0.001620	6.480	OK	0.001444	5.776	OK
8	0.001709	6.836	OK	0.001463	5.852	OK
7	0.001775	7.100	OK	0.001455	5.820	OK
6	0.001809	7.236	OK	0.001414	5.656	OK
5	0.001792	7.168	OK	0.001332	5.328	OK
4	0.001695	6.780	OK	0.001195	4.780	OK
3	0.001493	5.972	OK	0.000995	3.980	OK
2	0.001117	4.468	OK	0.000711	2.844	OK
1	0.000478	1.912	OK	0.000303	1.212	OK

14	3.908	23.253	OK	4.540	27.013
13	4.488	26.704	OK	4.844	28.822
12	5.052	30.059	OK	5.136	30.559
11	5.580	33.201	OK	5.400	32.130
10	6.056	36.033	OK	5.620	33.439
9	6.480	38.556	OK	5.776	34.367
8	6.836	40.674	OK	5.852	34.819
7	7.100	42.245	OK	5.820	34.629
6	7.236	43.054	OK	5.656	33.653
5	7.168	42.650	OK	5.328	31.702
4	6.780	40.341	OK	4.780	28.441
3	5.972	35.533	OK	3.980	23.681
2	4.468	26.585	OK	2.844	16.922
1	1.912	11.376	OK	1.212	7.211

Catatan:

Drift  $\Delta M = 0.7 \times R \times \text{Drift } \Delta s$

R = 8.50



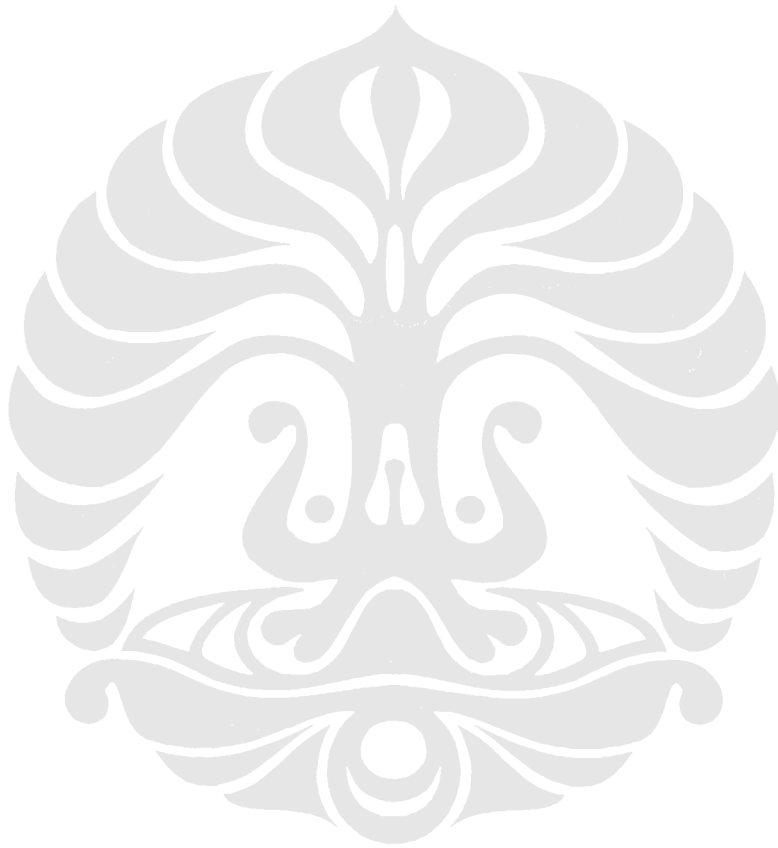
## SIMPANGAN STRUKTUR

Bangunan 20 Lantai (SRPMK) - Metoda Langsung

### KINERJA BATAS LAYAN

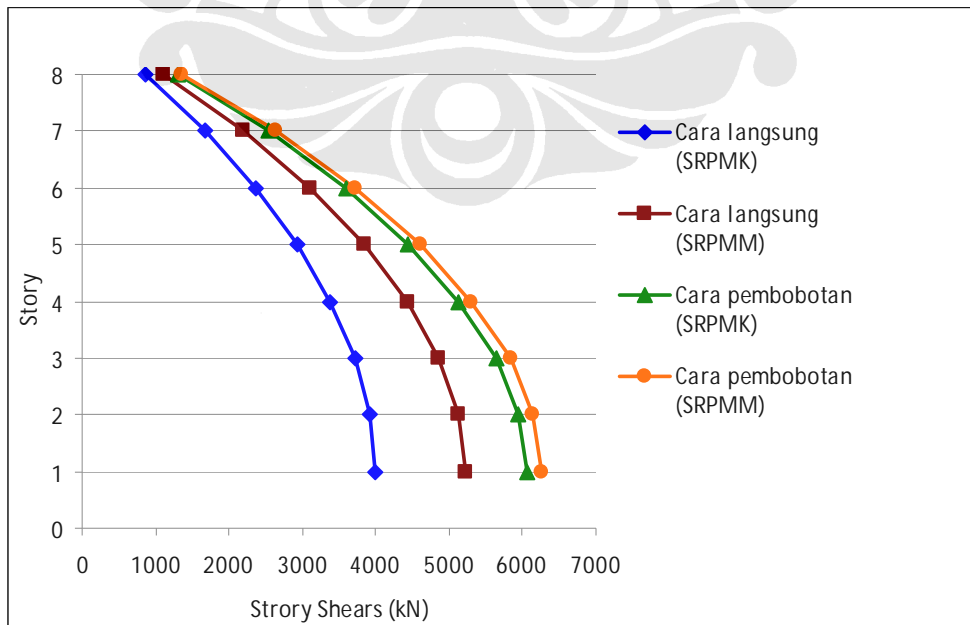
Tingkat	Beban Gempa Arah X			Beban Gempa Arah Y			Tingkat	Beb:	
	Rasio Drift-X Maksimum	KBL $\Delta s$ (mm)	Cek	Rasio Drift-Y Maksimum	KBL $\Delta s$ (mm)	Cek		KBL $\Delta s$ (mm)	
20	0.000730	2.920	OK	0.000977	3.908	OK	20	2.920	
19	0.000834	3.336	OK	0.001033	4.132	OK	19	3.336	
18	0.000962	3.848	OK	0.001096	4.384	OK	18	3.848	
17	0.001098	4.392	OK	0.001165	4.660	OK	17	4.392	
16	0.001230	4.920	OK	0.001235	4.940	OK	16	4.920	
15	0.001354	5.416	OK	0.001302	5.208	OK	15	5.416	
14	0.001467	5.868	OK	0.001364	5.456	OK	14	5.868	
13	0.001570	6.280	OK	0.001419	5.676	OK	13	6.280	
12	0.001664	6.656	OK	0.001467	5.868	OK	12	6.656	
11	0.001750	7.000	OK	0.001505	6.020	OK	11	7.000	
10	0.001829	7.316	OK	0.001532	6.128	OK	10	7.316	
9	0.001898	7.592	OK	0.001544	6.176	OK	9	7.592	
8	0.001954	7.816	OK	0.001538	6.152	OK	8	7.816	
7	0.001990	7.960	OK	0.001509	6.036	OK	7	7.960	
6	0.001994	7.976	OK	0.001449	5.796	OK	6	7.976	
5	0.001948	7.792	OK	0.001351	5.404	OK	5	7.792	
4	0.001821	7.284	OK	0.001203	4.812	OK	4	7.284	
3	0.001585	6.340	OK	0.000995	3.980	OK	3	6.340	
2	0.001174	4.696	OK	0.000707	2.828	OK	2	4.696	

1	0.000496	1.984	OK	0.000299	1.196	OK	1	1.984
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Gaya Geser Struktur Gedung 8 Lantai Arah Sb-X

Gaya Geser Struktur Gedung 8 Lantai (kN)				
Jumlah Lantai	Metoda Langsung SB-X		Metoda Pembobotan SB-X	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8397	R = 5.6431
8	857.49	1121.32	1298.96	1344.21
7	1680.26	2197.22	2545.32	2633.98
6	2368.62	3097.36	3588.07	3713.05
5	2936.37	3839.79	4448.13	4603.07
4	3387.61	4429.86	5131.67	5310.43
3	3718.7	4862.82	5633.23	5829.45
2	3921.53	5128.04	5940.47	6147.40
1	3996.47	5226.05	6054.00	6264.89

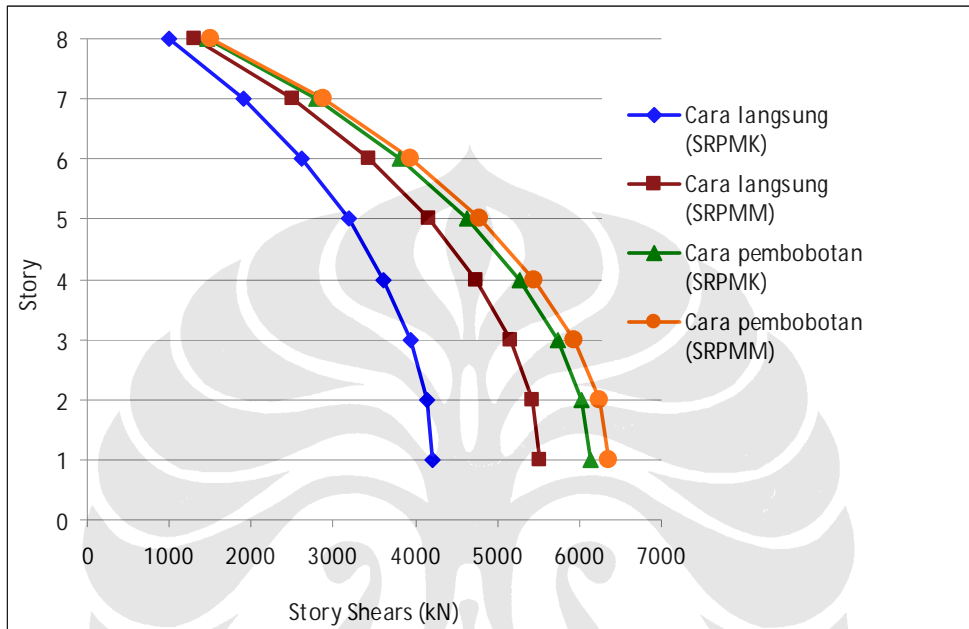




Gaya Geser Struktur Gedung 8 Lantai Arah Sb-Y

Gaya Geser Struktur Gedung 8 Lantai (kN)				
Jumlah Lantai	Metoda Langsung SB-Y		Metoda Pembobotan SB-Y	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8397	R = 5.6431
8	1001.11	1309.11	1457.18	1507.93
7	1910.75	2498.62	2781.23	2878.09
6	2621.97	3428.66	3816.46	3949.37
5	3182.33	4161.42	4632.10	4793.41
4	3620.53	4734.44	5269.94	5453.46
3	3942.90	5156.00	5739.17	5939.03

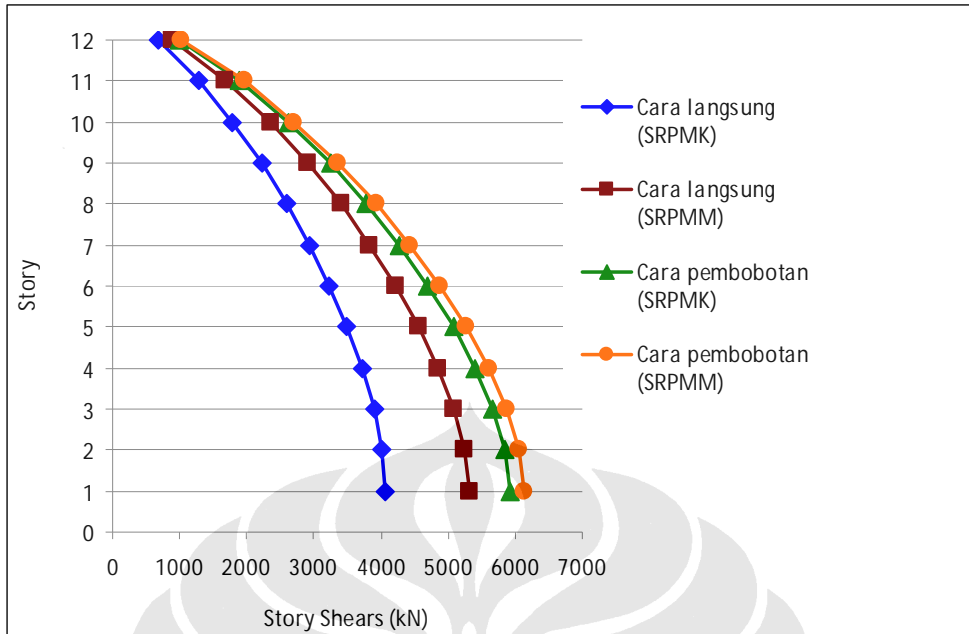
2	4142.18	5416.58	6029.23	6239.19
1	4218.46	5516.33	6140.27	6354.09



Gaya Geser Struktur Gedung 12 Lantai Arah Sb-X

Gaya Geser Struktur Gedung 12 Lantai (kN)				
Jumlah Lantai	Metoda Langsung SB-X		Metoda Pembobotan SB-X	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8597	R = 5.6505
12	675.70	883.62	987.25	1023.49
11	1291.63	1689.08	1884.86	1954.04
10	1794.53	2346.73	2617.05	2713.11
9	2223.11	2907.18	3240.65	3359.60
8	2598.48	3398.07	3786.67	3925.65
7	2931.71	3833.83	4271.4	4428.18
6	3228.57	4222.04	4703.47	4876.11
5	3490.62	4564.73	5085.24	5271.90
4	3715.13	4858.32	5412.65	5611.32
3	3894.04	5092.28	5673.86	5882.12
2	4013.21	5248.13	5848.08	6062.74
1	4061.58	5311.38	5918.89	6136.15

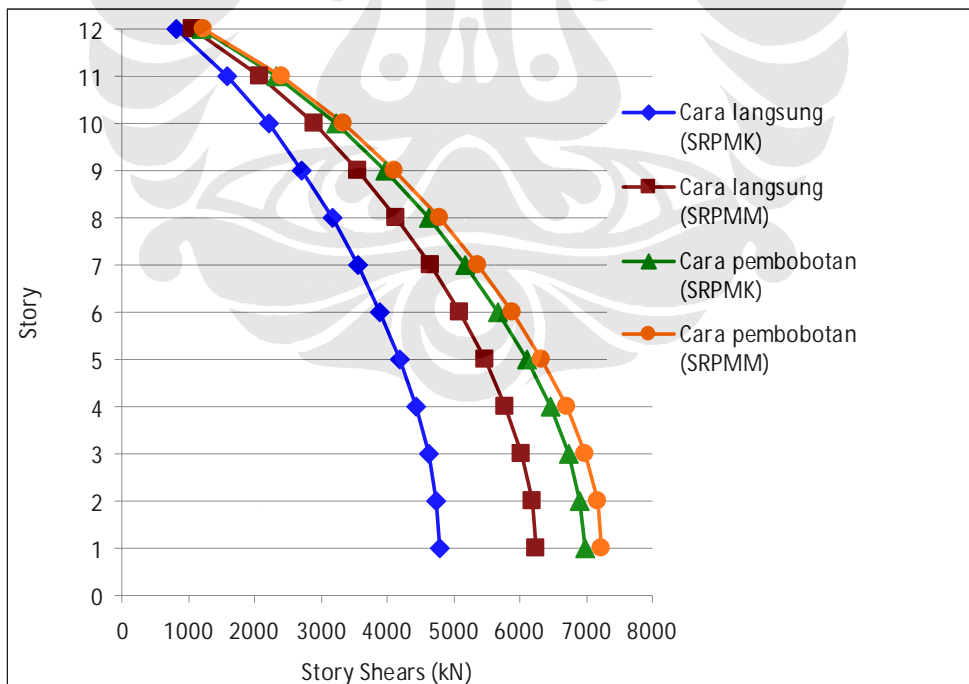




Gaya Geser Struktur Gedung 12 Lantai Arah Sb-Y

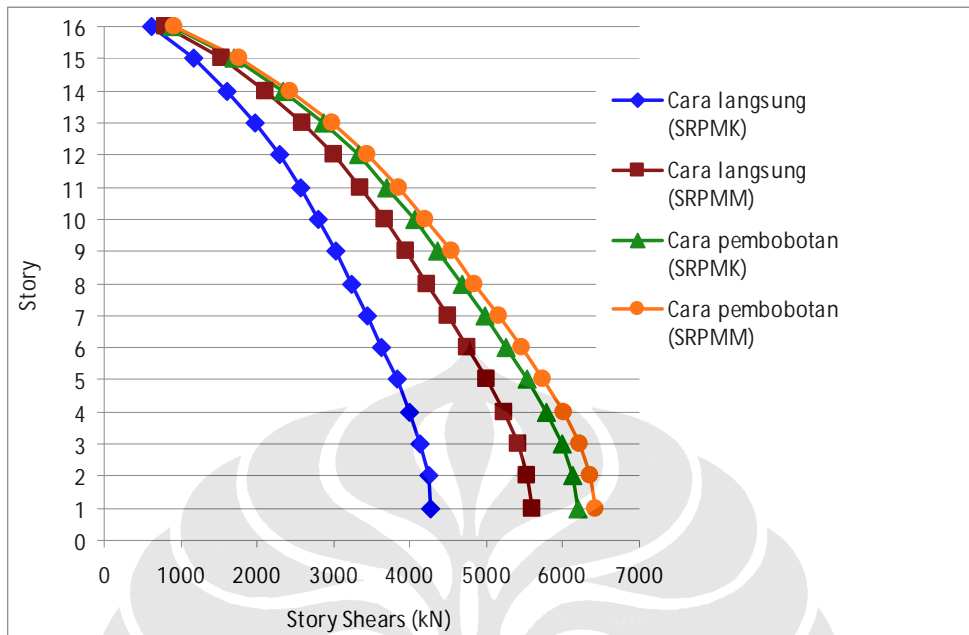
Gaya Geser Struktur Gedung 12 Lantai (kN)				
Jumlah Lantai	Metoda Langsung SB-Y		Metoda Pembobotan SB-Y	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8597	R = 5.6505
12	823.43	1076.81	1202.37	1246.46

11	1591.41	2081.10	2322.72	2407.88
10	2210.49	2890.69	3226.34	3344.63
9	2724.84	3563.31	3977.18	4123.00
8	3165.79	4139.94	4620.92	4790.33
7	3551.53	4644.38	5184.08	5374.15
6	3890.38	5087.50	5678.85	5887.06
5	4184.15	5471.67	6107.90	6331.83
4	4429.28	5792.22	6466.05	6703.12
3	4617.04	6037.76	6740.57	6987.70
2	4736.56	6194.06	6915.44	7168.99
1	4784.13	6256.26	6985.11	7241.20



Gaya Geser Struktur Gedung 16 Lantai Arah Sb-X

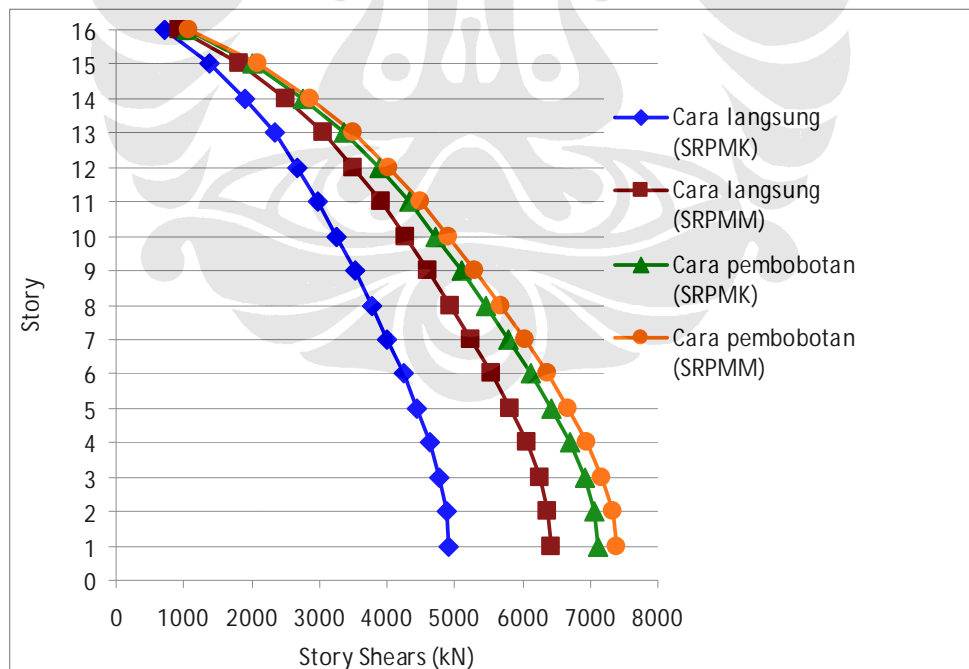
Gaya Geser Struktur Gedung 16 Lantai (kN)				
Jumlah Lantai	Metoda Langsung SB-X		Metoda Pembobotan SB-X	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8741	R = 5.6570
16	613.41	802.15	887.67	921.73
15	1170.00	1530.00	1693.11	1758.10
14	1614.22	2110.89	2335.94	2425.59
13	1981.43	2591.09	2867.33	2977.38
12	2292.60	2998.00	3317.63	3444.96
11	2561.32	3349.41	3706.50	3848.75
10	2799.73	3661.17	4051.49	4206.99
9	3019.62	3948.72	4369.70	4537.42
8	3230.33	4224.26	4674.62	4854.04
7	3436.35	4493.66	4972.75	5163.61
6	3636.65	4755.59	5262.60	5464.58
5	3825.97	5003.16	5536.56	5749.06
4	3996.95	5226.76	5784.00	6005.99
3	4138.78	5412.22	5989.23	6219.10
2	4235.53	5538.74	6129.24	6364.49
1	4275.61	5591.16	6187.25	6424.72



Gaya Geser Struktur Gedung 16 Lantai Arah Sb-Y

Gaya Geser Struktur Gedung 16 Lantai (kN)				
Jumlah Lantai	Metoda Langsung SB-Y		Metoda Pembobotan SB-Y	
	SRPMK R = 8.5	SRPMM R = 6.5	SRPMK R = 5.8741	SRPMM R = 5.6570
16	724.37	947.24	1048.23	1088.46
15	1391.04	1819.05	2012.98	2090.24
14	1912.61	2501.09	2767.74	2873.97
13	2331.35	3048.68	3373.71	3503.19
12	2681.71	3506.84	3880.71	4029.66

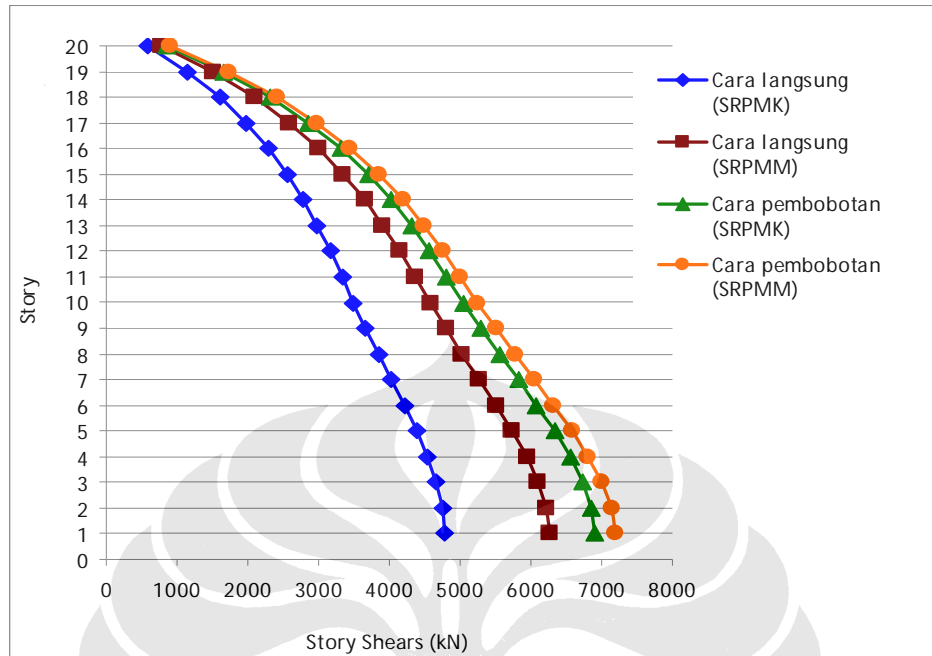
11	2988.25	3907.69	4324.30	4490.28
10	3266.85	4272.01	4727.46	4908.91
9	3527.19	4612.46	5104.20	5300.11
8	3774.74	4936.18	5462.44	5672.09
7	4011.68	5246.02	5805.31	6028.13
6	4237.02	5540.69	6131.40	6366.73
5	4446.12	5814.13	6433.99	6680.93
4	4630.74	6055.55	6701.15	6958.34
3	4778.22	6248.41	6914.57	7179.96
2	4874.51	6374.32	7053.90	7324.64
1	4913.68	6425.55	7110.60	7383.51



Gaya Geser Struktur Gedung 20 Lantai Arah Sb-X

Gaya Geser Struktur Gedung 20 Lantai (kN)				
Jumlah Lantai	Metoda Langsung SB-X		Metoda Pembobotan SB-X	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8871	R = 5.6623
20	596.55	780.39	861.32	895.56
19	1154.90	1510.75	1667.49	1733.78
18	1607.07	2102.22	2320.35	2412.59
17	1982.42	2593.22	2862.30	2976.08
16	2297.62	3005.52	3317.39	3449.26
15	2562.83	3352.44	3700.31	3847.40
14	2787.67	3646.56	4024.95	4184.95
13	2983.25	3902.41	4307.34	4478.56
12	3160.75	4134.59	4563.61	4745.02
11	3329.67	4355.57	4807.51	4998.62
10	3497.36	4574.93	5049.63	5250.36
9	3669.04	4799.50	5297.50	5508.08
8	3847.14	5032.48	5554.65	5775.46
7	4030.13	5271.85	5818.86	6050.17
6	4212.29	5510.13	6081.86	6323.63
5	4385.34	5736.51	6331.73	6583.42
4	4540.69	5939.71	6556.02	6816.64
3	4667.97	6106.21	6739.80	7007.71
2	4753.66	6218.31	6863.52	7136.36

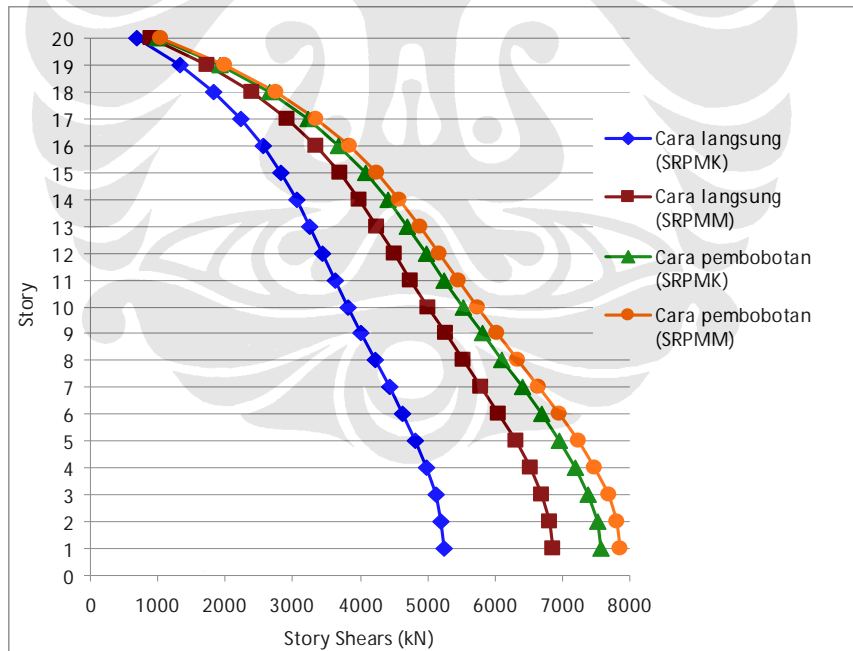
1	4788.98	6264.51	6914.52	7189.38
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Gaya Geser Struktur Gedung 20 Lantai Arah Sb-Y

Gaya Geser Struktur Gedung 20 Lantai (kN)				
Jumlah Lantai	Metoda Langsung SB-Y		Metoda Pembobotan SB-Y	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8885	R = 5.6629
20	689.30	901.67	995.23	1034.80
19	1333.69	1744.52	1925.63	2002.18
18	1837.02	2402.84	2652.35	2757.79
17	2234.65	2922.9	3226.47	3354.73
16	2556.10	3343.29	3690.59	3837.30
15	2823.38	3692.84	4076.50	4238.55
14	3052.51	3992.48	4407.33	4582.53
13	3256.34	4259.03	4701.63	4888.53

12	3446.57	4507.79	4976.28	5174.10
11	3633.61	4752.39	5246.34	5454.89
10	3824.95	5002.62	5522.60	5742.14
9	4023.60	5262.45	5809.42	6040.37
8	4228.06	5529.87	6104.63	6347.31
7	4433.65	5798.79	6401.47	6655.94
6	4634.02	6060.88	6690.77	6956.74
5	4821.48	6306.09	6961.43	7238.16
4	4986.89	6522.47	7200.26	7486.49
3	5118.43	6694.55	7390.18	7683.96
2	5203.87	6806.32	7513.54	7812.22
1	5238.65	6851.83	7563.76	7864.44

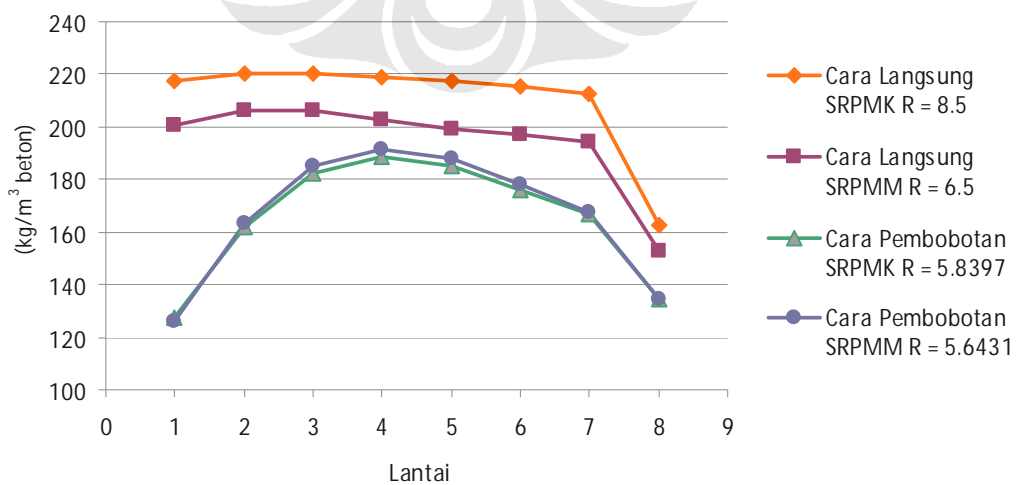




## RASIO BERAT TULANGAN LONGITUDINAL BALOK

### GEDUNG 8 LANTAI

Lantai	Rasio berat tulangan Longitudinal Balok (kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8397	R = 5.6431
8	162.40	152.50	134.71	134.57
7	212.91	194.25	166.63	167.88
6	215.41	196.88	176.04	177.87
5	217.26	199.39	185.27	188.24
4	218.65	202.99	188.83	191.42
3	220.28	206.41	182.29	185.21
2	220.30	206.28	161.69	163.33
1	217.73	200.45	127.27	125.78



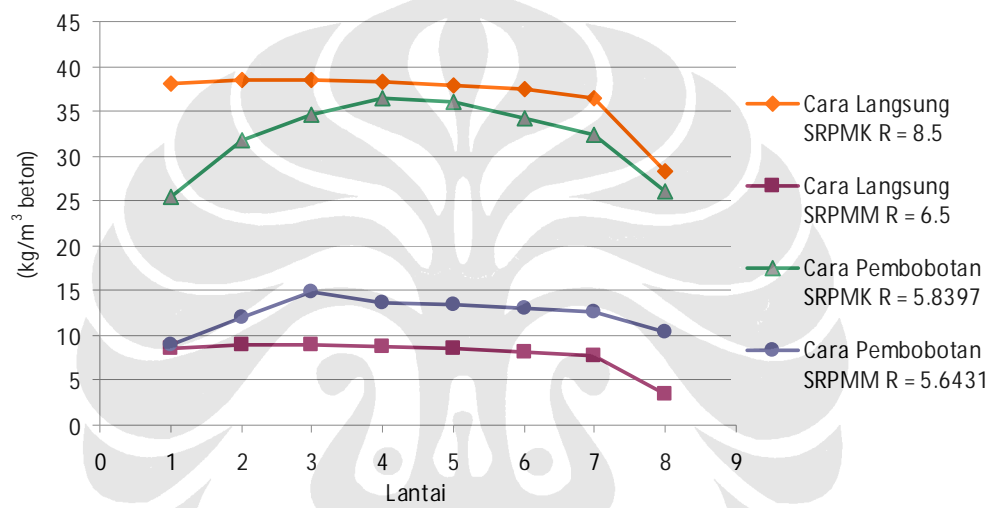


RASIO BERAT TULANGAN GESER BALOK

GEDUNG 8 LANTAI

Lantai	Rasio berat tulangan Geser Balok (kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8397	R = 5.6431
8	28.30	3.45	26.04	10.31
7	36.48	7.70	32.45	12.69

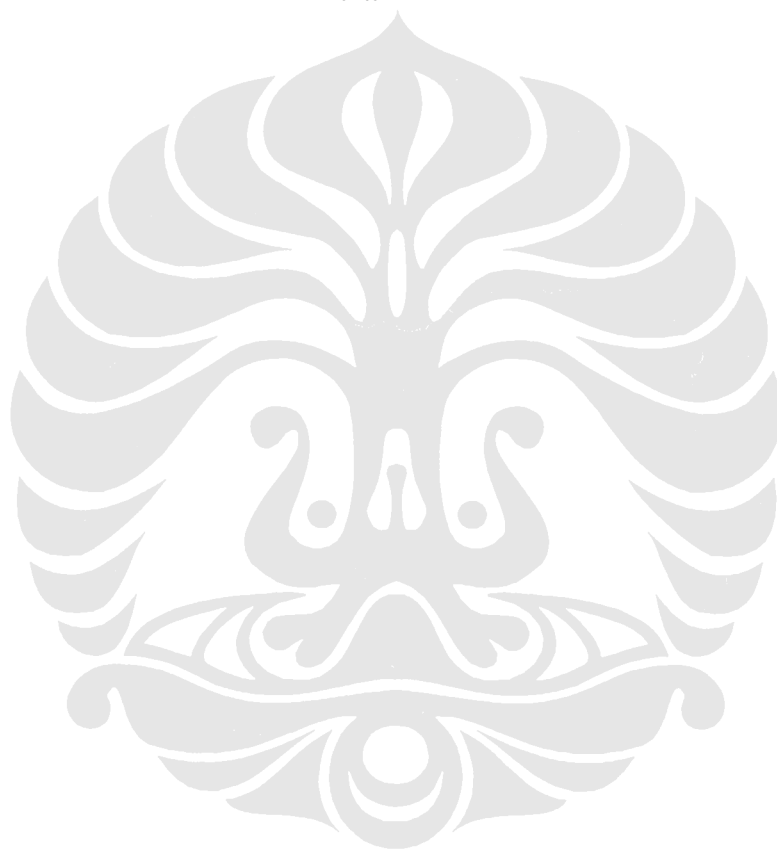
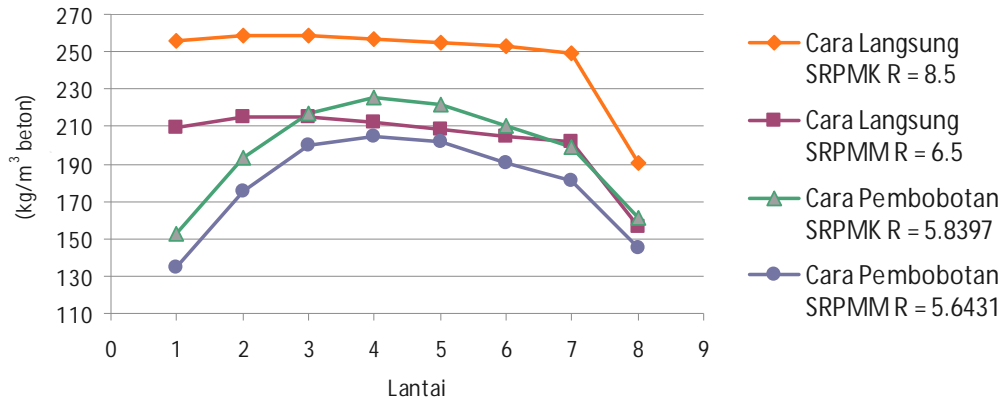
6	37.55	8.06	34.12	13.05
5	37.92	8.64	36.01	13.39
4	38.23	8.83	36.42	13.66
3	38.39	8.99	34.63	14.78
2	38.39	8.99	31.85	12.03
1	38.02	8.63	25.47	8.91



RASIO BERAT TULANGAN BALOK

GEDUNG 8 LANTAI

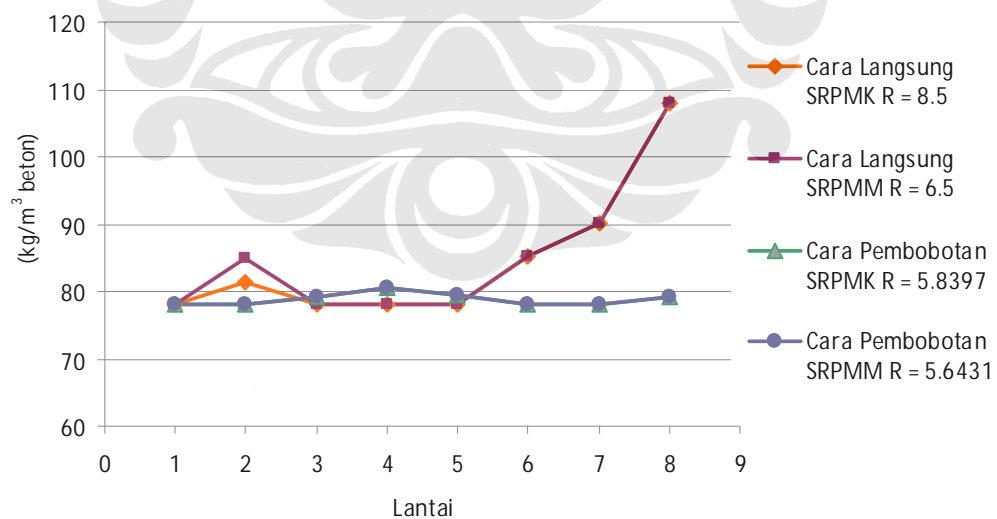
Lantai	Rasio berat tulangan Balok (kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK R = 8.5	SRPMM R = 6.5	SRPMK R = 5.8397	SRPMM R = 5.6431
8	190.70	155.95	160.75	144.88
7	249.39	201.95	199.08	180.57
6	252.96	204.94	210.16	190.92
5	255.18	208.03	221.28	201.63
4	256.88	211.82	225.25	205.08
3	258.67	215.40	216.92	199.99
2	258.69	215.27	193.54	175.36
1	255.75	209.08	152.74	134.69



RASIO BERAT TULANGAN LONGITUDINAL KOLOM

GEDUNG 8 LANTAI

Lantai	Rasio berat tulangan Longitudinal Kolom (kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8397	R = 5.6431
8	108.00	108.00	79.20	79.20
7	90.10	90.10	78.00	78.00
6	85.20	85.20	78.00	78.00
5	78.00	78.00	79.40	79.40
4	78.00	78.00	80.60	80.60
3	78.00	78.00	79.20	79.20
2	81.50	85.00	78.00	78.00
1	78.00	78.00	78.00	78.00

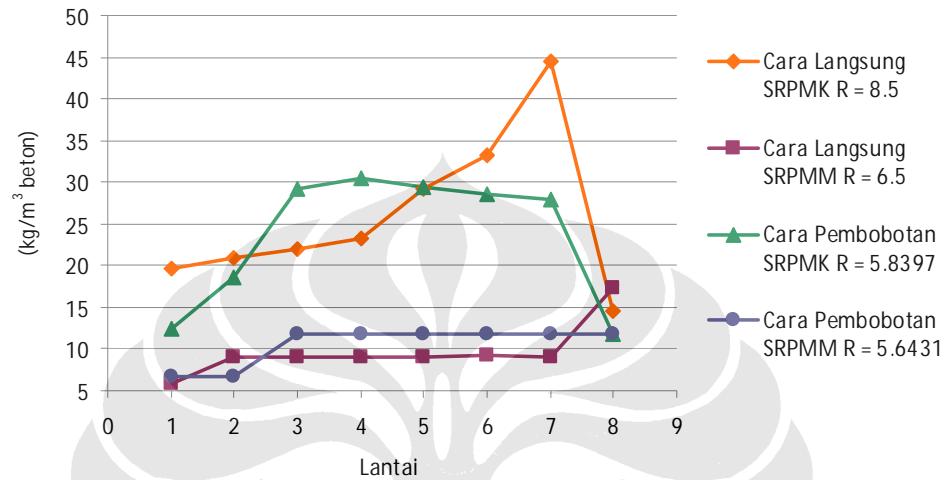


RASIO BERAT TULANGAN GESER KOLOM

GEDUNG 8 LANTAI

Rasio berat tulangan geser Kolom (kg/m <sup>3</sup> beton)				
Lantai	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8397	R = 5.6431
8	14.61	17.33	11.71	11.71
7	44.44	8.98	27.91	11.71
6	33.17	9.18	28.58	11.71
5	29.23	8.98	29.47	11.71
4	23.22	8.98	30.47	11.71

3	22.05	8.98	29.27	11.71
2	20.84	8.98	18.53	6.66
1	19.66	5.86	12.34	6.66

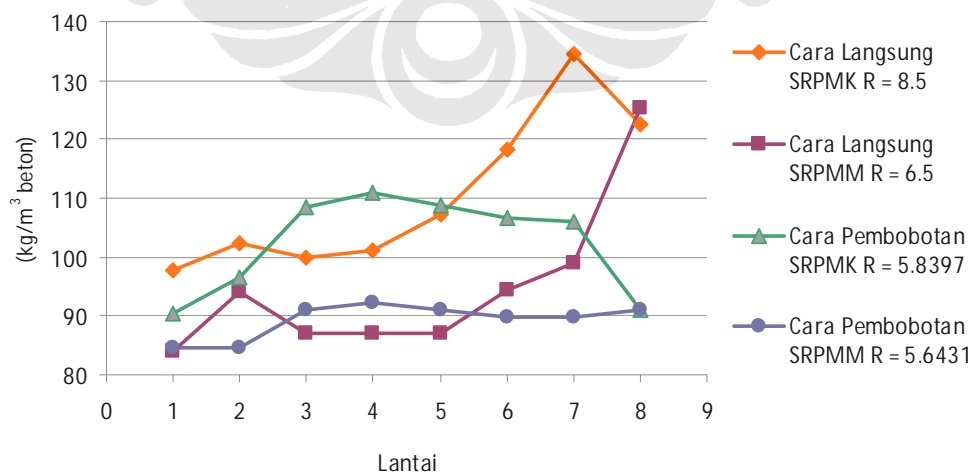




## RASIO BERAT TULANGAN KOLOM

### GEDUNG 8 LANTAI

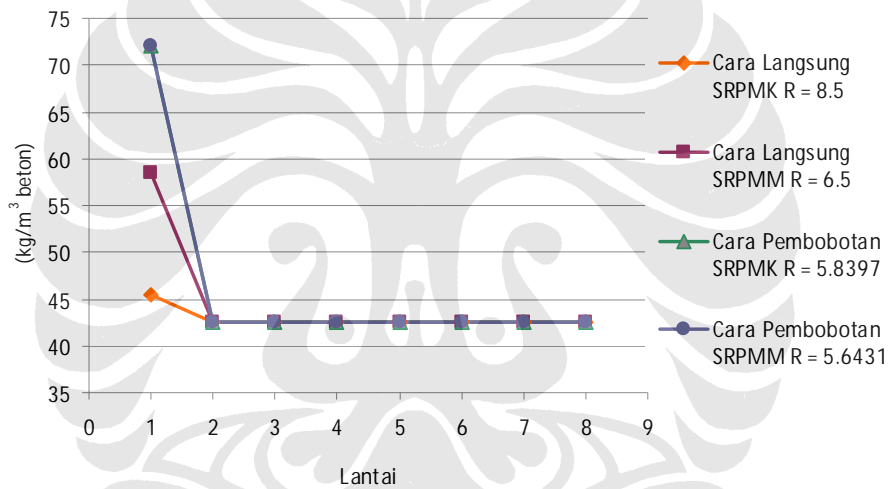
Lantai	Rasio berat tulangan Kolom (kg/m <sup>3</sup> beton)				Gaya geser frame (kN)			
	Cara Langsung		Cara Pembobotan		Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8397	R = 5.6431	R = 8.5	R = 6.5	R = 5.8579	R = 5.6431
8	122.61	125.33	90.91	90.91	489.48	640.16	1894.84	1900.23
7	134.54	99.08	105.91	89.71	889.67	1163.54	2582.37	2588.04
6	118.37	94.38	106.58	89.71	1199.49	1568.73	3454.25	3415.55
5	107.23	86.98	108.87	91.11	1449.77	1896.06	3857.24	3755.99
4	101.22	86.98	111.07	92.31	1663.39	2175.44	4042.94	3870.78
3	100.05	86.98	108.47	90.91	1847.33	2416.00	3873.25	3619.19
2	102.34	93.98	96.53	84.66	1989.08	2601.38	3194.25	2851.48
1	97.66	83.86	90.34	84.66	2060.49	2694.78	2166.85	1787.58





Lantai	Rasio berat tulangan Longitudinal Shearwall (kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8397	R = 5.6431

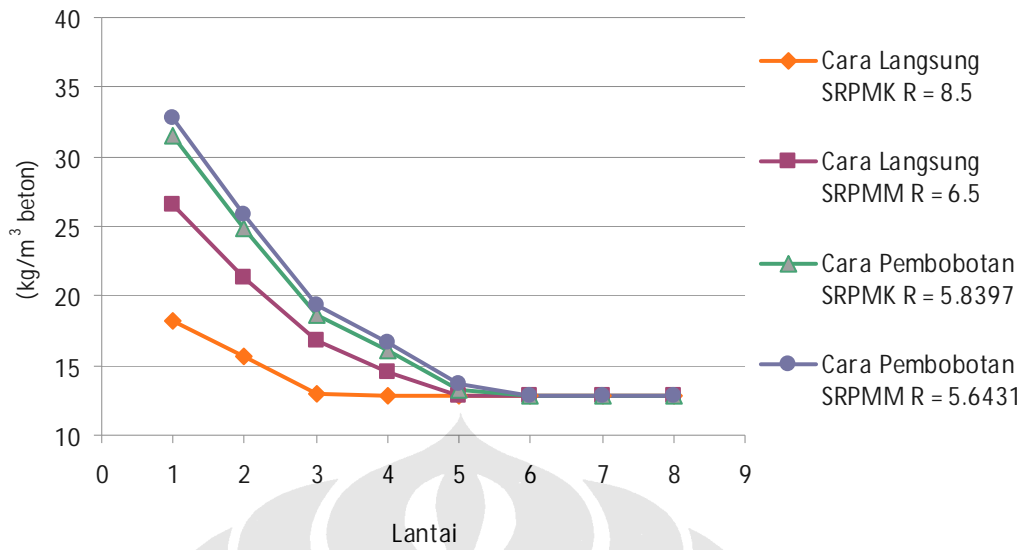
8	42.49	42.49	42.49	42.49
7	42.49	42.49	42.49	42.49
6	42.49	42.49	42.49	42.49
5	42.49	42.49	42.49	42.49
4	42.49	42.49	42.49	42.49
3	42.49	42.49	42.49	42.49
2	42.49	42.49	42.49	42.49
1	45.51	58.43	72.12	72.12



RASIO BERAT TULANGAN GESER SHEARWALL

GEDUNG 8 LANTAI

Lantai	Rasio berat tulangan Geser Shearwall (kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8397	R = 5.6431
8	12.80	12.80	12.80	12.80
7	12.80	12.80	12.80	12.80
6	12.80	12.80	12.80	12.80
5	12.80	12.80	13.29	13.73
4	12.80	14.53	16.12	16.66
3	12.99	16.79	18.64	19.27
2	15.70	21.31	24.88	25.82
1	18.17	26.54	31.49	32.78

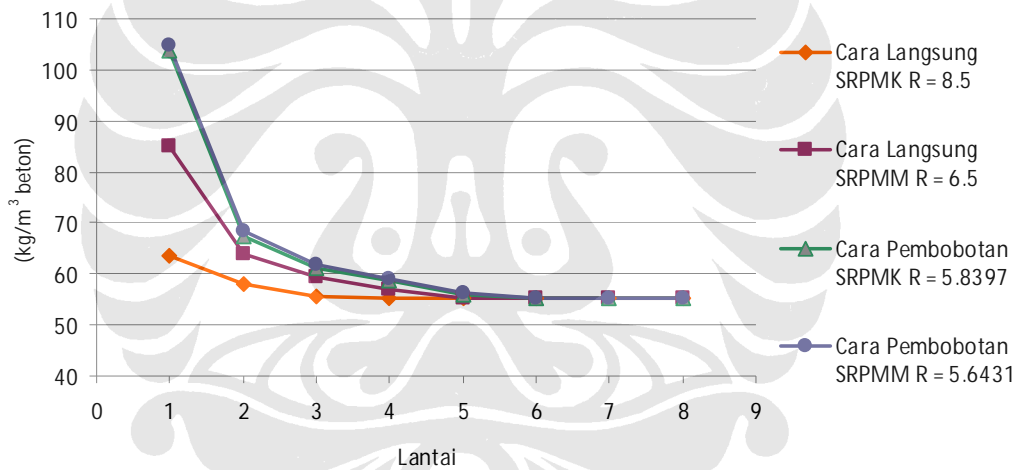


RASIO BERAT TULANGAN SHEARWALL

GEDUNG 8 LANTAI

Lantai	Rasio berat tulangan Shearwall (kg/m <sup>3</sup> beton)		Gaya geser shearwall (kN)	
	Cara Langsung	Cara Pembobotan	Cara Langsung	Cara Pembobotan
1	18.5	31.5		
2	15.5	25.5		
3	13.0	19.0		
4	13.0	16.5		
5	13.0	13.5		
6	13.0	13.0		
7	13.0	13.0		
8	13.0	13.0		

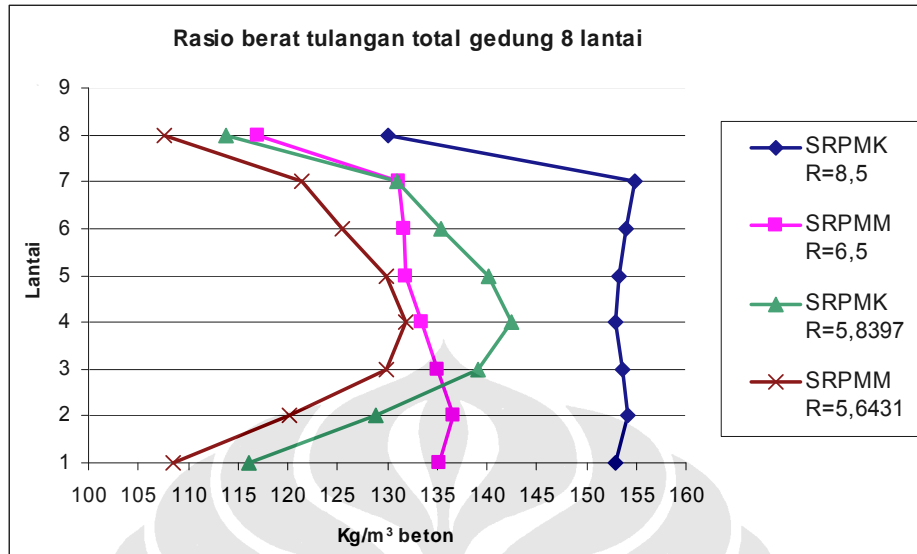
	SRPMK	SRPMM	SRPMK	SRPMM	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8397	R = 5.6431	R = 8.5	R = 6.5	R = 5.8579	R = 5.6431
8	55.29	55.29	55.29	55.29	664.00	868.26	985.26	1076.22
7	55.29	55.29	55.29	55.29	1969.50	2575.42	2913.12	3093.34
6	55.29	55.29	55.29	55.29	2825.88	3695.32	4176.26	4470.32
5	55.29	55.29	55.78	56.22	3704.84	4844.70	5475.33	5886.21
4	55.29	57.02	58.61	59.15	4480.70	5859.26	6623.16	7146.34
3	55.48	59.28	61.13	61.76	5242.34	6855.22	7752.54	8386.06
2	58.19	63.8	67.37	68.31	6070.22	7937.80	8984.42	9721.66
1	63.68	84.97	103.61	104.9	6860.82	8971.68	10169.18	10948.34



RASIO BERAT TULANGAN TOTAL

GEDUNG 8 LANTAI

Lantai	Rasio berat tulangan struktur setiap lantai (kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8397	R = 5.6431
8	130.17	116.95	113.82	107.60
7	154.90	131.15	131.02	121.41
6	153.95	131.64	135.46	125.47
5	153.20	131.78	140.21	129.98
4	152.99	133.46	142.41	131.84
3	153.54	135.13	139.06	129.95
2	154.20	136.62	128.89	120.14
1	153.00	135.17	116.19	108.44

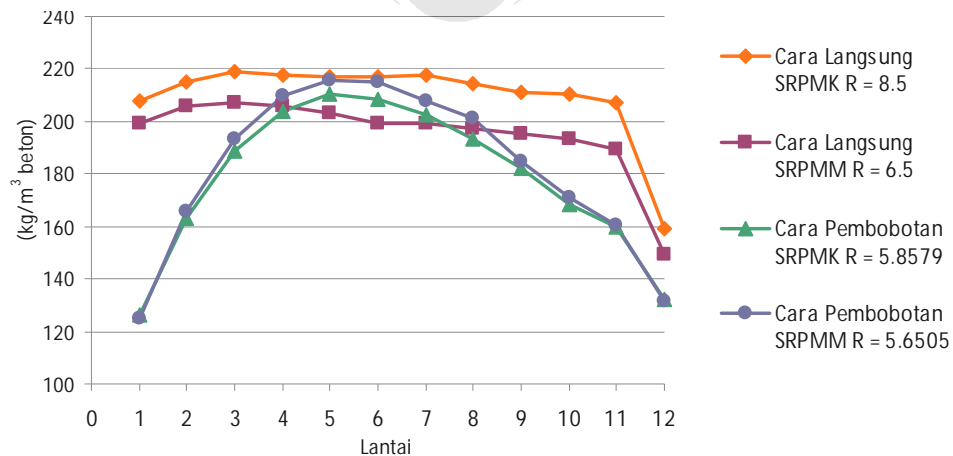


RASIO BERAT TULANGAN LONGITUDINAL BALOK

GEDUNG 12 LANTAI



Lantai	Rasio berat tulangan Longitudinal Balok (kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8579	R = 5.6505
12	159.41	149.05	132.12	131.49
11	207.29	189.55	160.14	160.57
10	210.56	193.44	168.26	170.99
9	211.21	195.56	182.22	185.11
8	214.16	197.47	193.29	201.45
7	217.34	199.03	202.25	207.76
6	217.26	199.19	208.75	214.75
5	217.15	203.49	210.10	215.99
4	217.98	205.70	204.14	209.65
3	218.78	206.91	188.57	193.49
2	215.05	205.62	163.14	165.47
1	207.85	199.16	126.26	125.16

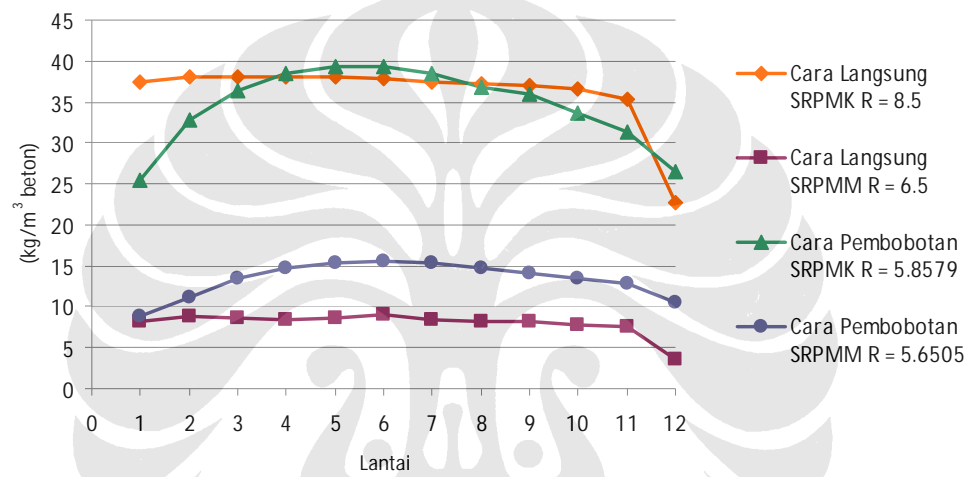


RASIO BERAT TULANGAN GESER BALOK

GEDUNG 12 LANTAI

Lantai	Rasio berat tulangan Geser Balok (kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8579	R = 5.6505
12	22.81	3.49	26.45	10.44
11	35.25	7.56	31.28	12.87
10	36.64	7.82	33.69	13.39
9	37.00	8.15	35.89	14.13
8	37.29	8.24	36.79	14.81
7	37.44	8.37	38.56	15.30

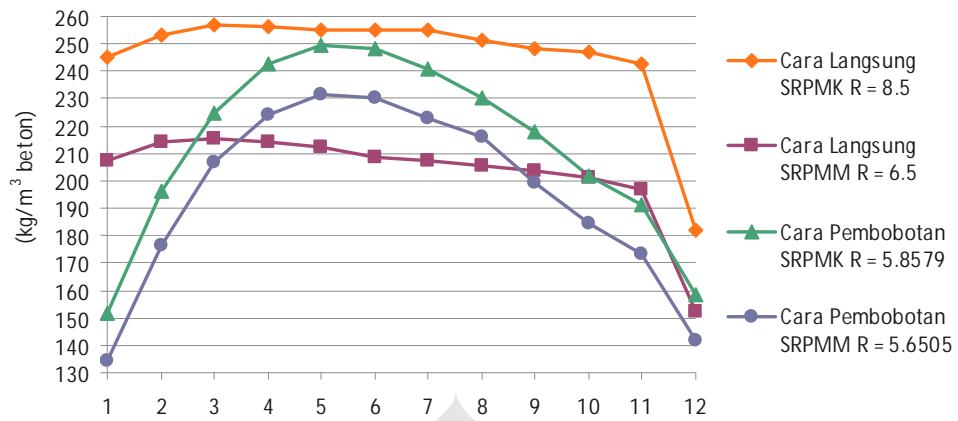
6	37.88	9.13	39.34	15.55
5	37.99	8.67	39.39	15.38
4	38.04	8.43	38.51	14.66
3	38.09	8.55	36.34	13.36
2	38.09	8.75	32.79	11.25
1	37.48	8.26	25.35	8.88



RASIO BERAT TULANGAN BALOK

GEDUNG 12 LANTAI

Lantai	Rasio berat tulangan Balok (kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8579	R = 5.6505
12	182.22	152.54	158.57	141.93
11	242.54	197.11	191.42	173.44
10	247.20	201.26	201.95	184.38
9	248.21	203.71	218.11	199.24
8	251.45	205.71	230.08	216.26
7	254.78	207.40	240.81	223.06
6	255.14	208.32	248.09	230.30
5	255.14	212.16	249.49	231.37
4	256.02	214.13	242.65	224.31
3	256.87	215.46	224.91	206.85
2	253.14	214.37	195.93	176.72
1	245.33	207.42	151.61	134.04



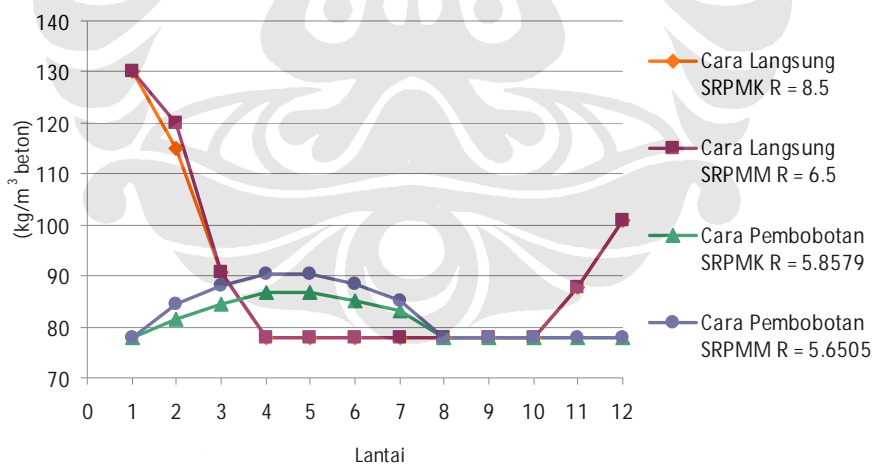
Lantai

RASIO BERAT TULANGAN LONGITUDINAL KOLOM

GEDUNG 12 LANTAI

Lantai	Rasio berat tulangan Longitudinal Kolom (kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM

	R = 8.5	R = 6.5	R = 5.8579	R = 5.6505
12	101.00	101.00	78.00	78.00
11	87.60	87.60	78.00	78.00
10	78.00	78.00	78.00	78.00
9	78.00	78.00	78.00	78.00
8	78.00	78.00	78.00	78.00
7	78.00	78.00	83.10	85.00
6	78.00	78.00	85.20	88.50
5	78.00	78.00	86.80	90.50
4	78.00	78.00	86.80	90.48
3	90.80	90.80	84.30	88.10
2	115.00	120.00	81.40	84.30
1	130.00	130.00	78.00	78.00

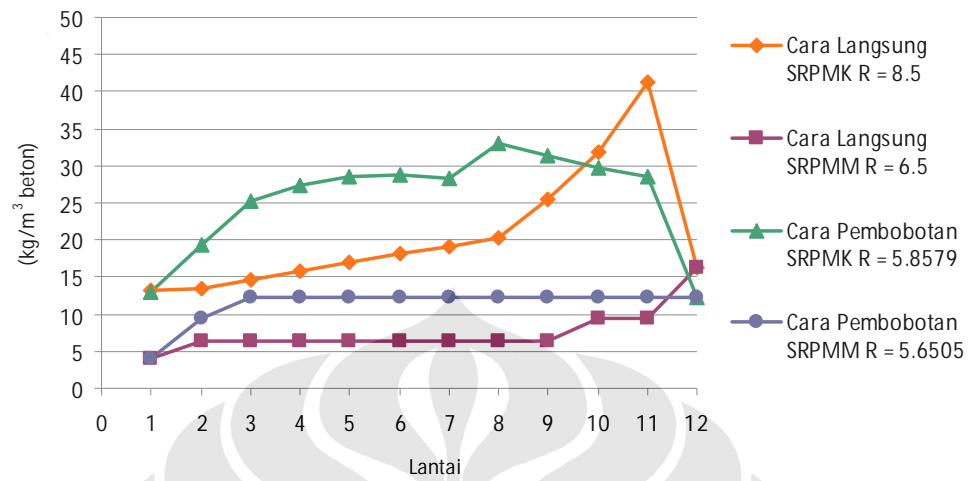


RASIO BERAT TULANGAN GESER KOLOM

GEDUNG 12 LANTAI

Lantai	Rasio berat tulangan Geser Kolom (kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8579	R = 5.6505
12	16.39	16.38	12.28	12.28
11	41.24	9.39	28.63	12.28
10	31.87	9.39	29.62	12.28
9	25.49	6.34	31.46	12.28
8	20.22	6.34	33.01	12.28
7	19.12	6.34	28.40	12.28
6	18.14	6.34	28.75	12.28
5	16.98	6.34	28.45	12.28
4	15.82	6.34	27.45	12.28
3	14.66	6.34	25.33	12.28
2	13.54	6.34	19.35	9.39

1	13.11	3.92	13.04	3.92
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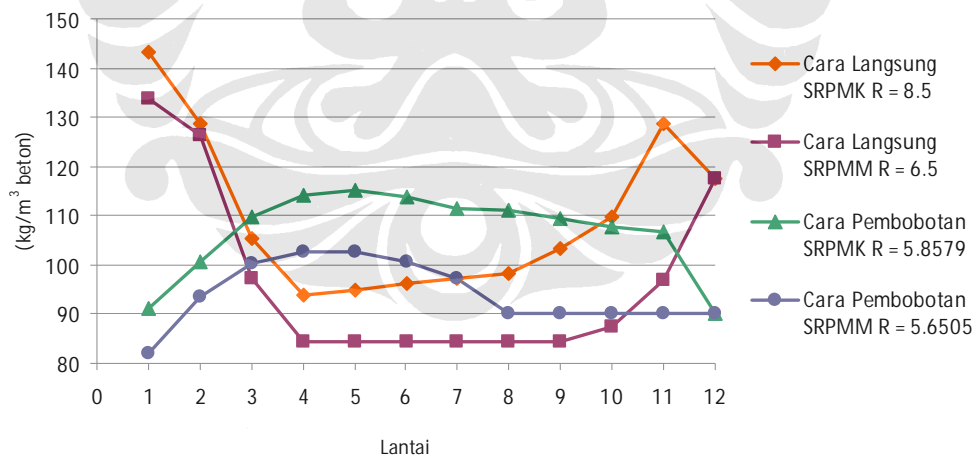
RASIO BERAT TULANGAN KOLOM

GEDUNG 12 LANTAI

Lantai	Rasio berat tulangan Kolom (kg/m <sup>3</sup> beton)		Gaya geser frame (kN)	
	Cara Langsung	Cara Pembobotan	Cara Langsung	Cara Pembobotan



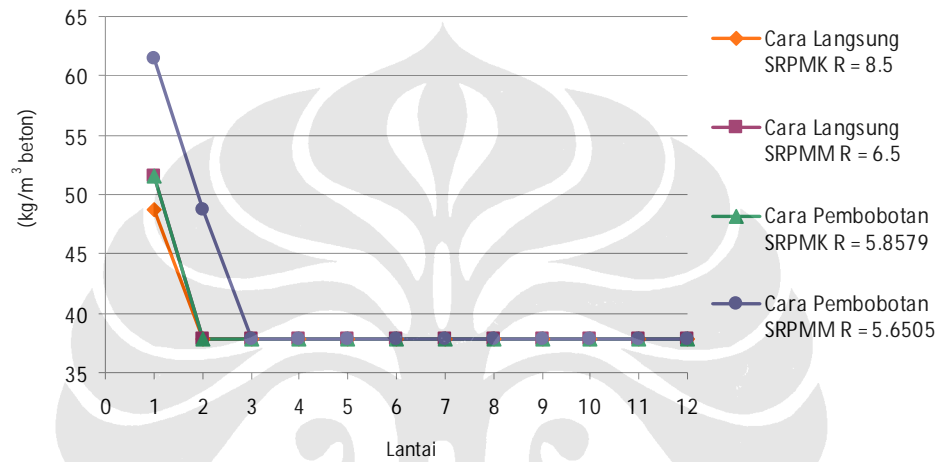
	SRPMK	SRPMM	SRPMK	SRPMM	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8579	R = 5.6505	R = 8.5	R = 6.5	R = 5.8579	R = 5.6505
12	117.39	117.38	90.28	90.28	392.95	513.90	738.32	899.82
11	128.84	96.99	106.63	90.28	731.96	957.26	2365.34	2452.09
10	109.87	87.39	107.62	90.28	996.29	1302.94	3224.54	3342.84
9	103.49	84.34	109.46	90.28	1202.71	1572.89	3668.50	3803.10
8	98.22	84.34	111.01	90.28	1372.18	1794.53	4069.62	4218.92
7	97.12	84.34	111.5	97.28	1519.43	1987.10	4359.54	4519.48
6	96.14	84.34	113.95	100.78	1658.12	2168.49	4524.45	4690.47
5	94.98	84.34	115.25	102.78	1796.48	2349.43	4523.63	4689.60
4	93.82	84.34	114.25	102.76	1934.90	2530.45	4304.03	4461.95
3	105.46	97.14	109.63	100.38	2064.02	2699.32	3788.35	3927.38
2	128.54	126.34	100.75	93.69	2166.69	2833.59	2891.85	2998.01
1	143.11	133.92	91.04	81.92	2220.01	2903.33	1791.59	1857.38



RASIO BERAT TULANGAN LONGITUDINAL SHEARWALL  
 GEDUNG 12 LANTAI

Lantai	Rasio tulangan Longitudinal Shearwall (kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8579	R = 5.6505
12	37.82	37.82	37.82	37.82
11	37.82	37.82	37.82	37.82
10	37.82	37.82	37.82	37.82
9	37.82	37.82	37.82	37.82
8	37.82	37.82	37.82	37.82
7	37.82	37.82	37.82	37.82
6	37.82	37.82	37.82	37.82

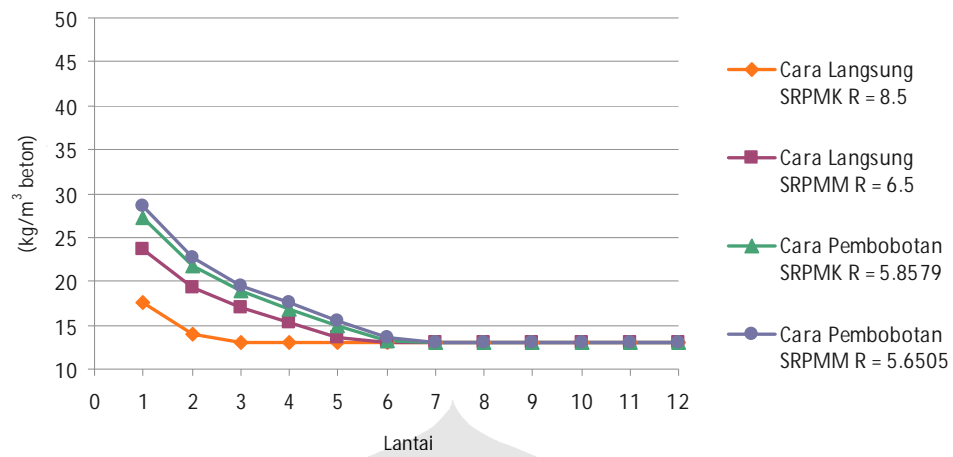
5	37.82	37.82	37.82	37.82
4	37.82	37.82	37.82	37.82
3	37.82	37.82	37.82	37.82
2	37.82	37.82	37.82	48.74
1	48.74	51.57	51.57	61.53



### RASIO BERAT TULANGAN GESER SHEARWALL

#### GEDUNG 12 LANTAI

Lantai	Rasio tulangan Geser Shearwall (kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8579	R = 5.6505
12	13.03	13.03	13.03	13.03
11	13.03	13.03	13.03	13.03
10	13.03	13.03	13.03	13.03
9	13.03	13.03	13.03	13.03
8	13.03	13.03	13.03	13.03
7	13.03	13.03	13.03	13.03
6	13.03	13.03	13.20	13.67
5	13.03	13.60	15.02	15.55
4	13.03	15.30	16.91	17.51
3	13.07	17.03	18.83	19.50
2	14.01	19.30	21.76	22.66
1	17.58	23.56	27.16	28.65

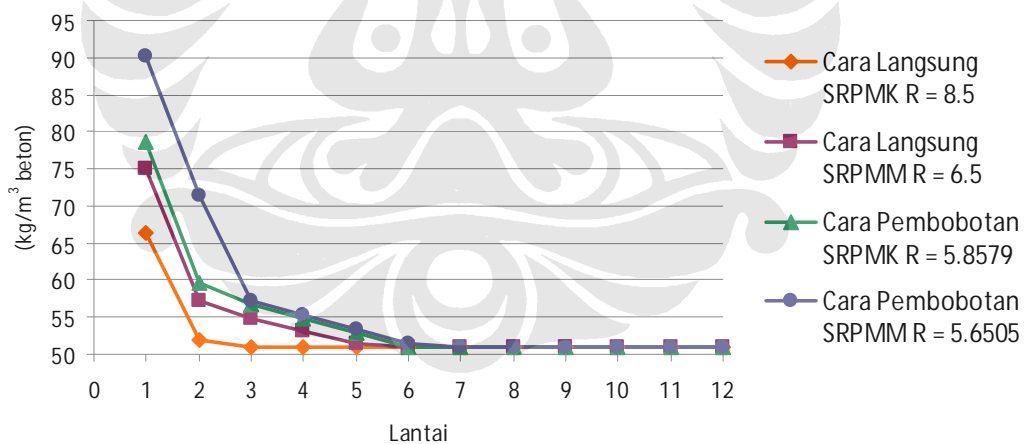


RASIO BERAT TULANGAN SHEARWALL

GEDUNG 12 LANTAI

Lantai	Rasio tulangan Shearwall (kg/m <sup>3</sup> beton)				Gaya geser shearwall (kN)			
	Cara Langsung		Cara Pembobotan		Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM	SRPMK	SRPMM	SRPMK	SRPMM

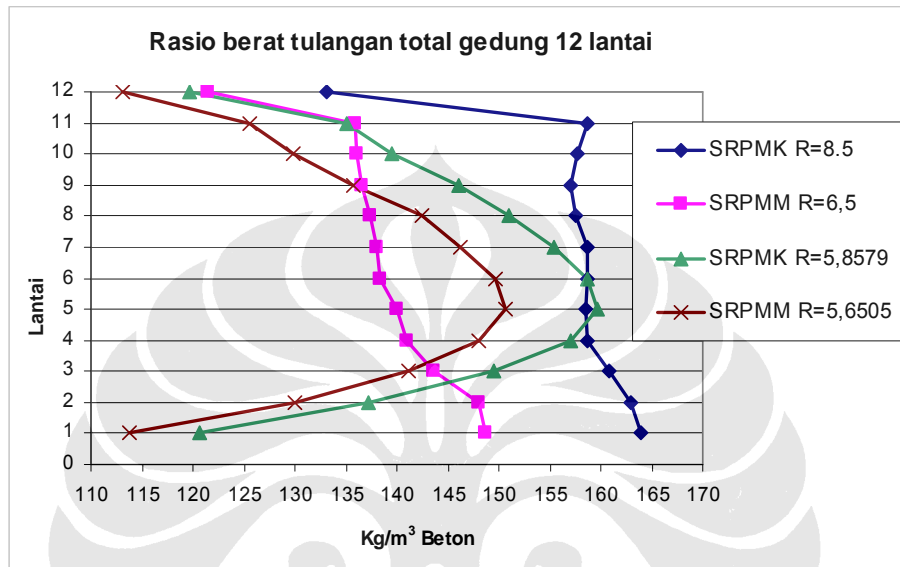
	R = 8.5	R = 6.5	R = 5.8579	R = 5.6505	R = 8.5	R = 6.5	R = 5.8579	R = 5.6505
12	50.85	50.85	50.85	50.85	1343.50	1756.92	2086.46	2162.98
11	50.85	50.85	50.85	50.85	1320.92	1727.38	1954.88	2026.60
10	50.85	50.85	50.85	50.85	1851.24	2420.92	2772.40	2874.08
9	50.85	50.85	50.85	50.85	2475.50	3237.24	3724.02	3860.60
8	50.85	50.85	50.85	50.85	2996.88	3919.08	4531.76	4697.96
7	50.85	50.85	50.85	50.85	3493.70	4568.76	5303.54	5498.06
6	50.85	50.85	51.02	51.49	3985.58	5211.98	6073.32	6296.06
5	50.85	51.42	52.84	53.37	4501.22	5886.32	6884.92	7137.44
4	50.85	53.12	54.73	55.33	5068.08	6627.58	7779.62	8064.96
3	50.89	54.85	56.65	57.32	5721.72	7482.36	8806.48	9129.46
2	51.83	57.12	59.58	71.4	6499.34	8499.26	10009.38	10376.48
1	66.32	75.13	78.73	90.18	7313.76	9564.26	11197.72	11608.42



RASIO BERAT TULANGAN TOTAL  
GEDUNG 12 LANTAI

Lantai	Rasio berat tulangan struktur setiap lantai (kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8579	R = 5.6505
12	133.17	121.46	119.68	113.12
11	158.71	135.91	135.14	125.55
10	157.63	136.07	139.45	129.86
9	157.05	136.57	146.10	135.72
8	157.52	137.36	151.06	142.43
7	158.67	138.03	155.37	146.19
6	158.66	138.39	158.63	149.66
5	158.48	139.98	159.62	150.63
4	158.65	140.97	157.01	148.09

3	160.78	143.68	149.55	141.09
2	162.96	148.01	137.13	129.98
1	163.97	148.73	120.61	113.74

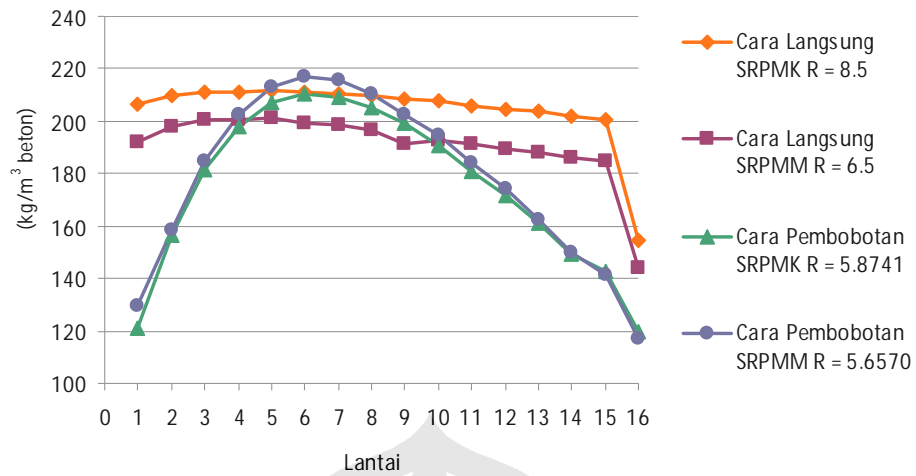


RASIO BERAT TULANGAN LONGITUDINAL BALOK

GEDUNG 16 LANTAI



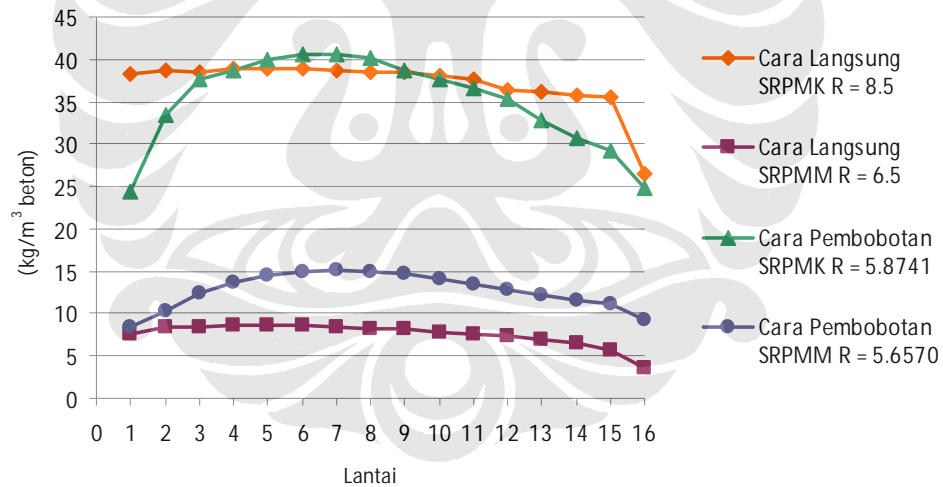
Lantai	Rasio berat tulangan Longitudinal Balok (kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8741	R = 5.6570
16	154.74	143.76	119.40	117.12
15	200.49	185.11	142.79	141.22
14	201.92	185.99	149.59	150.12
13	203.63	188.37	160.91	162.17
12	204.74	189.50	171.52	174.30
11	205.95	191.49	181.15	184.40
10	207.56	192.77	190.47	194.57
9	208.75	191.44	199.48	202.75
8	209.71	196.37	204.91	210.63
7	210.31	198.33	209.36	215.49
6	211.21	199.30	210.56	216.96
5	211.86	201.39	206.92	213.21
4	211.23	200.66	197.69	202.85
3	211.20	200.83	181.79	184.56
2	209.76	198.01	156.33	158.35
1	206.58	191.70	120.91	129.25



RASIO BERAT TULANGAN GESER BALOK  
GEDUNG 16 LANTAI

Lantai	Rasio berat tulangan Geser Balok (kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8741	R = 5.6570
16	26.43	3.66	24.71	9.15
15	35.62	5.66	29.28	11.09
14	35.82	6.61	30.62	11.50
13	36.09	7.01	32.75	12.19
12	36.33	7.41	35.35	12.87

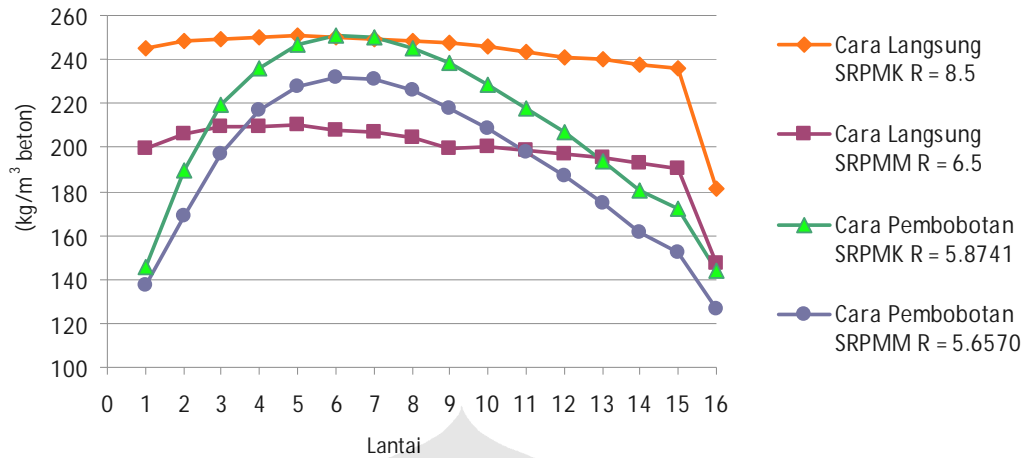
11	37.67	7.54	36.58	13.55
10	38.01	7.69	37.69	14.12
9	38.44	8.27	38.64	14.63
8	38.54	8.30	40.06	14.99
7	38.62	8.43	40.52	15.14
6	38.96	8.57	40.54	15.00
5	39.00	8.63	39.88	14.48
4	39.00	8.68	38.63	13.68
3	38.39	8.37	37.63	12.33
2	38.74	8.41	33.35	10.25
1	38.18	7.54	24.45	8.45



RASIO BERAT TULANGAN BALOK

GEDUNG 16 LANTAI

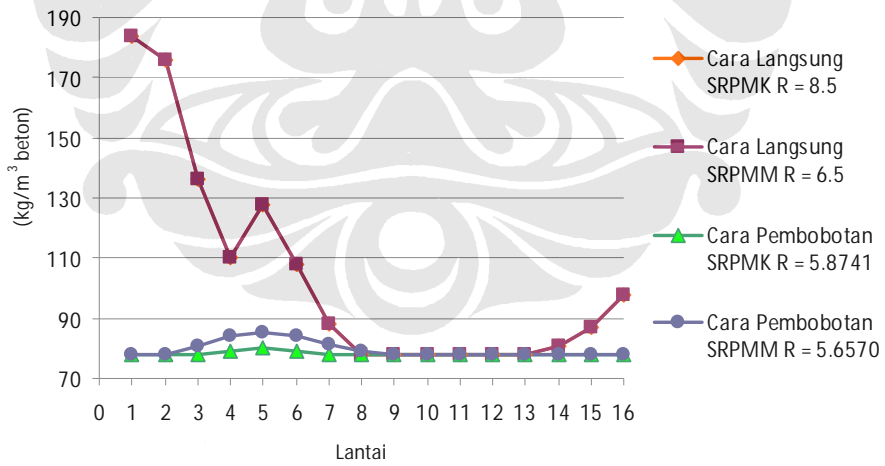
Lantai	Rasio berat tulangan Balok (kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8741	R = 5.6570
16	181.17	147.42	144.11	126.27
15	236.11	190.77	172.07	152.31
14	237.74	192.60	180.21	161.62
13	239.72	195.38	193.66	174.36
12	241.07	196.91	206.87	187.17
11	243.62	199.03	217.73	197.95
10	245.57	200.46	228.16	208.69
9	247.19	199.71	238.12	217.38
8	248.25	204.67	244.97	225.62
7	248.93	206.76	249.88	230.63
6	250.17	207.87	251.10	231.96
5	250.86	210.02	246.80	227.69
4	250.23	209.34	236.32	216.53
3	249.59	209.20	219.42	196.89
2	248.50	206.42	189.68	168.60
1	244.76	199.24	145.36	137.70



RASIO BERAT TULANGAN LONGITUDINAL KOLOM  
GEDUNG 16 LANTAI

Lantai	Rasio berat tulangan Longitudinal Kolom (kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8741	R = 5.6570
16	97.80	97.80	78.00	78.00
15	86.90	86.90	78.00	78.00
14	80.90	80.90	78.00	78.00

13	78.00	78.00	78.00	78.00
12	78.00	78.00	78.00	78.00
11	78.00	78.00	78.00	78.00
10	78.00	78.00	78.00	78.00
9	78.00	78.00	78.00	78.00
8	78.00	78.00	78.00	78.90
7	88.30	88.30	78.00	81.40
6	108.00	108.00	79.30	84.10
5	128.00	128.00	80.10	85.20
4	110.00	110.00	78.80	84.00
3	136.00	136.00	78.00	80.50
2	176.00	176.00	78.00	78.00
1	184.00	184.00	78.00	78.00

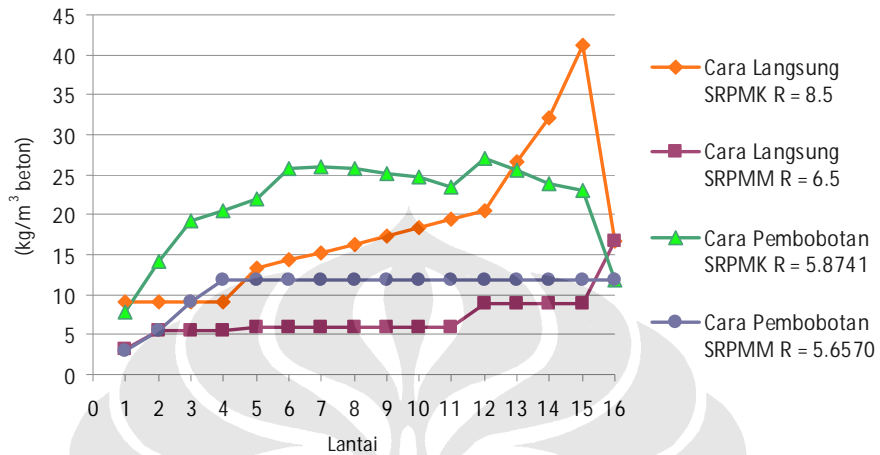


RASIO BERAT TULANGAN GESER KOLOM

GEDUNG 16 LANTAI

Lantai	Rasio berat tulangan Geser Kolom (kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8741	R = 5.6570
16	16.69	16.69	11.79	11.79
15	41.13	8.81	23.08	11.79
14	32.08	8.80	23.94	11.79
13	26.64	8.80	25.58	11.79
12	20.53	8.80	27.09	11.79
11	19.48	5.81	23.53	11.79
10	18.42	5.81	24.63	11.79
9	17.37	5.81	25.17	11.79
8	16.31	5.81	25.70	11.79
7	15.30	5.81	25.91	11.79
6	14.28	5.81	25.79	11.79
5	13.22	5.81	21.90	11.79
4	9.17	5.46	20.52	11.86
3	9.05	5.46	19.13	9.05

2	9.05	5.46	14.21	5.46
1	9.05	3.21	7.80	3.00

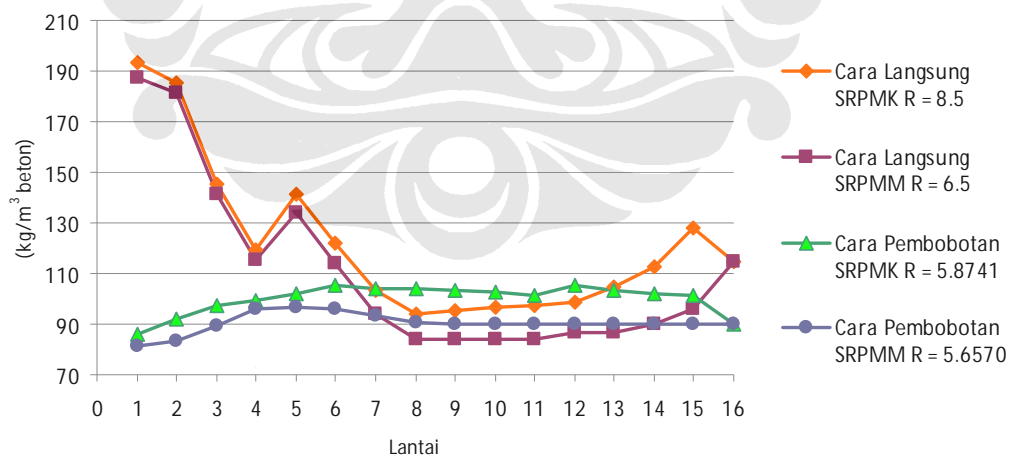


RASIO BERAT TULANGAN KOLOM  
GEDUNG 16 LANTAI

Lantai	Rasio berat tulangan Kolom (kg/m <sup>3</sup> beton)				Gaya geser frame (kN)			
	Cara Langsung		Cara Pembobotan		Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8741	R = 5.6570	R = 8.5	R = 6.5	R = 5.8741	R = 5.6570
16	114.49	114.49	89.79	89.79	285.95	373.93	654.15	798.18



15	128.03	95.71	101.08	89.79	551.27	720.90	1923.68	1997.50
14	112.98	89.7	101.94	89.79	774.33	1012.60	2789.88	2896.94
13	104.64	86.8	103.58	89.79	967.34	1265.01	3275.92	3401.63
12	98.53	86.8	105.09	89.79	1138.80	1489.23	3704.10	3846.25
11	97.48	83.81	101.53	89.79	1295.30	1693.89	3733.01	4224.67
10	96.42	83.81	102.63	89.79	1440.45	1883.70	4382.78	4551.01
9	95.37	83.81	103.17	89.79	1576.15	2061.15	4511.65	4818.94
8	94.31	83.81	103.7	90.69	1702.93	2226.94	4833.83	5019.37
7	103.6	94.11	103.91	93.19	1821.13	2381.53	4939.69	5129.31
6	122.28	113.81	105.09	95.89	1931.20	2525.46	4962.18	5152.65
5	141.22	133.81	102	96.99	2033.17	2658.81	4692.46	4872.58
4	119.17	115.46	99.32	95.86	2126.37	2780.68	4706.98	4887.63
3	145.05	141.46	97.13	89.55	2207.12	2886.30	3914.58	4064.81
2	185.05	181.46	92.21	83.46	2268.36	2966.39	2954.38	3067.76
1	193.05	187.21	85.8	81	2299.88	3007.60	1830.81	1901.06

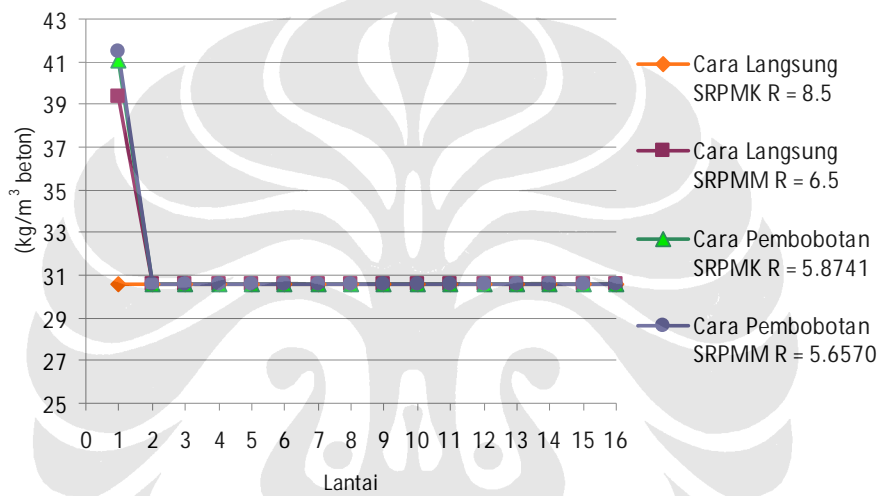


RASIO BERAT TULANGAN LONGITUDINAL SHEARWALL

GEDUNG 16 LANTAI

Lantai	Rasio berat tulangan Longitudinal Shearwall (kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8741	R = 5.6570
16	30.57	30.57	30.57	30.57
15	30.57	30.57	30.57	30.57
14	30.57	30.57	30.57	30.57
13	30.57	30.57	30.57	30.57
12	30.57	30.57	30.57	30.57
11	30.57	30.57	30.57	30.57
10	30.57	30.57	30.57	30.57
9	30.57	30.57	30.57	30.57
8	30.57	30.57	30.57	30.57
7	30.57	30.57	30.57	30.57

6	30.57	30.57	30.57	30.57
5	30.57	30.57	30.57	30.57
4	30.57	30.57	30.57	30.57
3	30.57	30.57	30.57	30.57
2	30.57	30.57	30.57	30.57
1	30.57	39.39	41.02	41.48

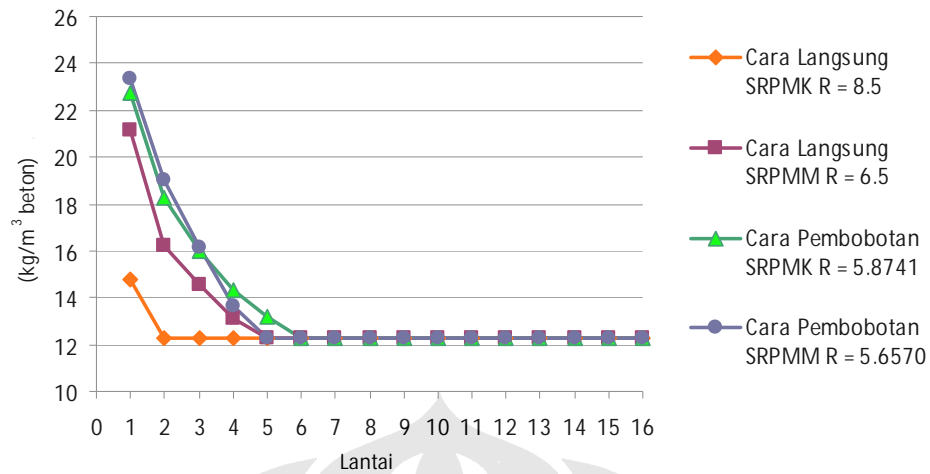


RASIO BERAT TULANGAN GESER SHEARWALL

GEDUNG 16 LANTAI

Lantai	Rasio berat tulangan Geser Shearwall
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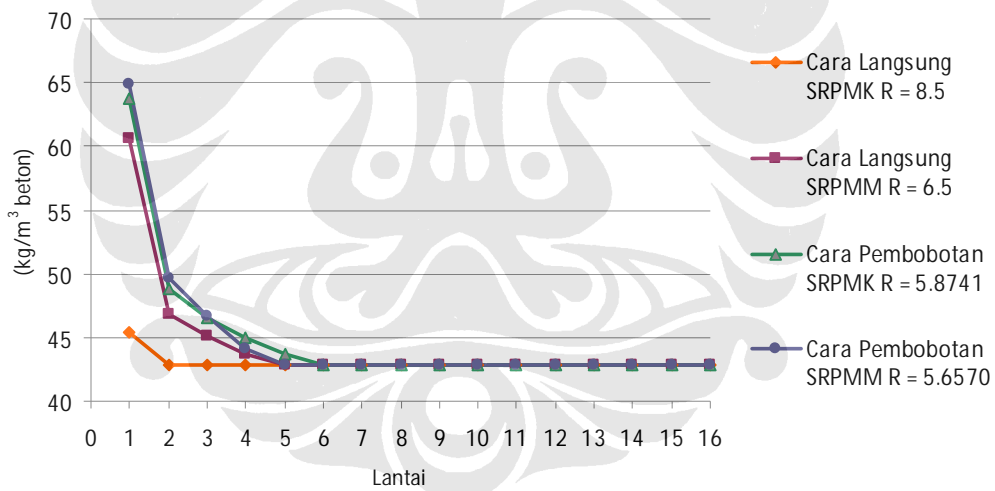
	(kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8741	R = 5.6570
16	12.24	12.24	12.24	12.24
15	12.24	12.24	12.24	12.24
14	12.24	12.24	12.24	12.24
13	12.24	12.24	12.24	12.24
12	12.24	12.24	12.24	12.24
11	12.24	12.24	12.24	12.24
10	12.24	12.24	12.24	12.24
9	12.24	12.24	12.24	12.24
8	12.24	12.24	12.24	12.24
7	12.24	12.24	12.24	12.24
6	12.24	12.24	12.24	12.24
5	12.24	12.24	13.15	12.25
4	12.24	13.09	14.35	13.62
3	12.24	14.55	15.97	16.12
2	12.24	16.22	18.24	19.04
1	14.81	21.16	22.74	23.37



RASIO BERAT TULANGAN SHEARWALL  
GEDUNG 16 LANTAI

Lantai	Rasio berat tulangan Shearwall (kg/m <sup>3</sup> beton)				Gaya geser shearwall (kN)			
	Cara Langsung		Cara Pembobotan		Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8741	R = 5.6570	R = 8.5	R = 6.5	R = 5.8741	R = 5.6570
16	42.81	42.81	42.81	42.81	1520.88	1988.78	2200.80	2285.26
15	42.81	42.81	42.81	42.81	1270.47	1661.32	1838.44	1909.02
14	42.81	42.81	42.81	42.81	1655.10	2164.32	2395.06	2487.00
13	42.81	42.81	42.81	42.81	2114.99	2765.70	3060.54	3178.02
12	42.81	42.81	42.81	42.81	2489.24	3255.08	3602.13	3740.40

11	42.81	42.81	42.81	42.81	2820.02	3687.66	4406.52	4237.41
10	42.81	42.81	42.81	42.81	3126.18	4087.98	4523.82	4697.44
9	42.81	42.81	42.81	42.81	3433.32	4489.64	5093.66	5158.95
8	42.81	42.81	42.81	42.81	3762.06	4919.54	5444.02	5652.96
7	42.81	42.81	42.81	42.81	4133.98	5405.90	5982.24	6211.83
6	42.81	42.81	42.81	42.81	4544.56	5942.76	6576.35	6828.74
5	42.81	42.81	43.72	42.82	5123.96	6700.40	7414.76	7699.33
4	42.81	43.66	44.92	44.19	5469.84	7152.70	7915.27	8219.06
3	42.81	45.12	46.54	46.69	6290.76	8226.24	9103.24	9452.64
2	42.81	46.79	48.81	49.61	7128.04	9321.08	10314.81	10710.72
1	45.38	60.55	63.76	64.85	7961.10	10410.50	11520.36	11962.54

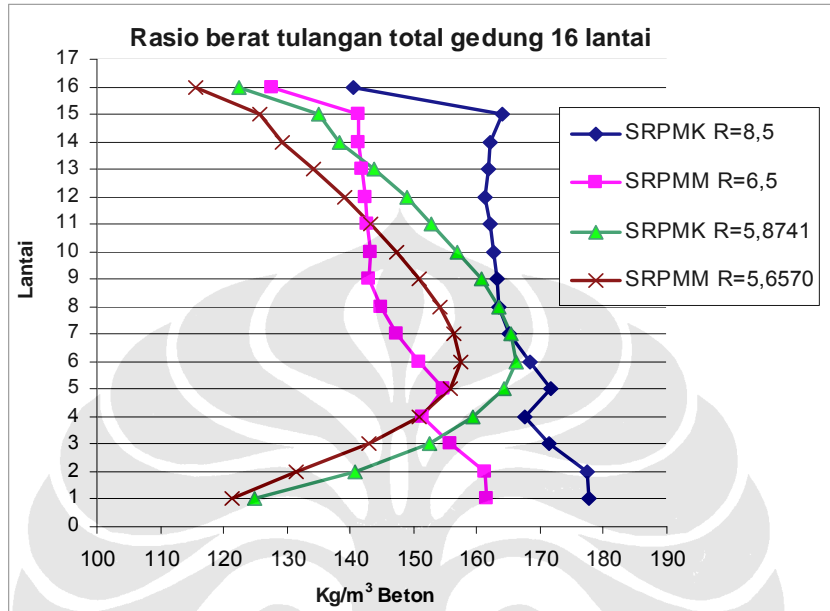


RASIO BERAT TULANGAN TOTAL

GEDUNG 16 LANTAI

Lantai	Rasio berat tulangan struktur setiap lantai (kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8741	R = 5.6570
16	140.60	127.56	122.46	115.57
15	163.92	141.40	135.01	125.63
14	162.22	141.18	138.29	129.23
13	161.70	141.81	143.74	134.15
12	161.27	142.40	149.07	139.10
11	162.10	142.76	152.72	143.26
10	162.69	143.31	156.92	147.41
9	163.15	143.02	160.85	150.77
8	163.40	144.94	163.58	154.09
7	165.09	147.33	165.51	156.42
6	168.46	150.81	166.16	157.35
5	171.65	154.73	164.16	155.87
4	167.45	151.33	159.23	150.99
3	171.40	155.71	152.65	142.82

2	177.46	161.37	140.80	131.44
1	177.71	161.59	125.02	121.47

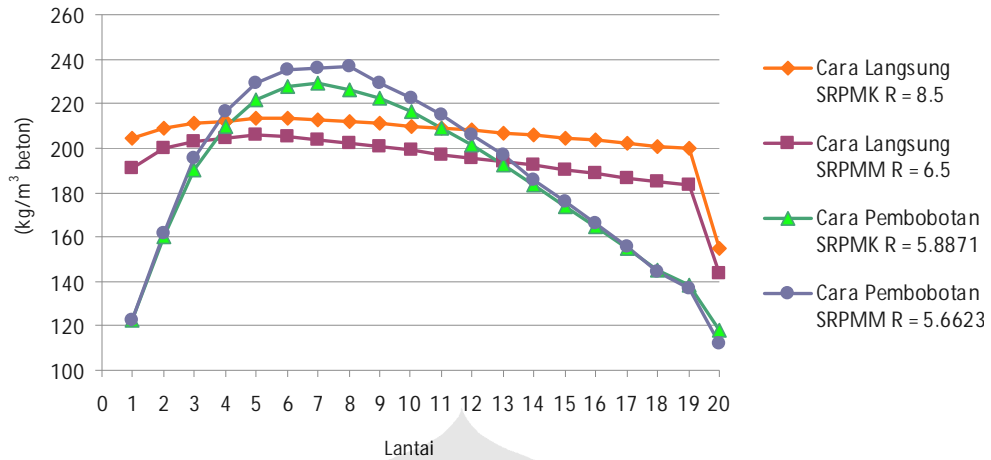


RASIO BERAT TULANGAN LONGITUDINAL BALOK  
GEDUNG 20 LANTAI

Lantai	Rasio berat tulangan Longitudinal Balok (kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8871	R = 5.6623
20	154.75	143.27	117.76	111.68



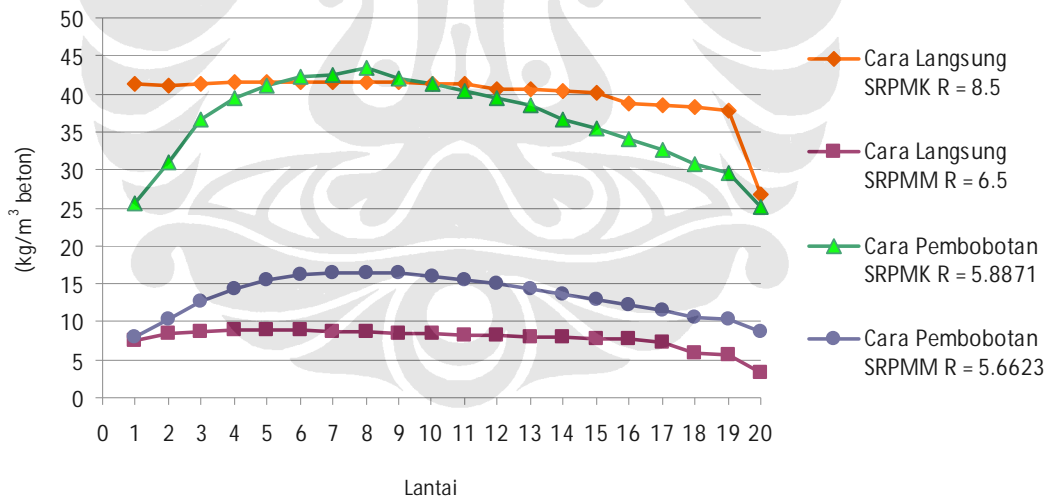
19	199.88	183.54	138.48	136.92
18	200.63	184.67	144.90	144.40
17	201.85	186.34	154.52	155.59
16	203.34	188.41	164.38	166.20
15	204.44	190.26	173.89	176.05
14	205.77	192.18	183.12	185.59
13	207.01	193.73	192.31	196.93
12	207.81	195.41	201.13	205.94
11	208.97	197.14	209.23	214.68
10	209.94	199.12	216.36	222.37
9	211.28	200.40	222.55	228.84
8	211.57	202.19	226.44	236.65
7	212.34	203.59	229.00	236.24
6	213.10	204.81	227.57	235.21
5	213.48	206.07	221.62	229.05
4	212.04	204.57	209.88	216.16
3	211.32	203.20	190.11	195.31
2	208.99	199.56	160.02	161.75
1	204.77	190.98	122.24	122.42



RASIO BERAT TULANGAN GESER BALOK  
GEDUNG 20 LANTAI

Lantai	Rasio berat tulangan Geser Balok beton) (kg/m <sup>3</sup> )			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8871	R = 5.6623
20	26.84	3.28	25.07	8.69
19	37.69	5.52	29.63	10.42
18	38.22	5.78	30.69	10.48
17	38.50	7.29	32.69	11.55
16	38.73	7.72	34.05	12.19
15	40.15	7.84	35.37	12.99
14	40.36	7.94	36.56	13.71
13	40.54	8.07	38.39	14.38

12	40.68	8.17	39.50	15.00
11	41.30	8.30	40.47	15.55
10	41.39	8.42	41.32	16.00
9	41.47	8.56	42.07	16.34
8	41.57	8.69	43.38	16.50
7	41.58	8.78	42.49	16.47
6	41.55	8.89	42.14	16.19
5	41.56	8.91	41.12	15.45
4	41.45	8.83	39.44	14.38
3	41.34	8.73	36.69	12.72
2	41.08	8.47	31.00	10.38
1	41.42	7.58	25.47	8.06

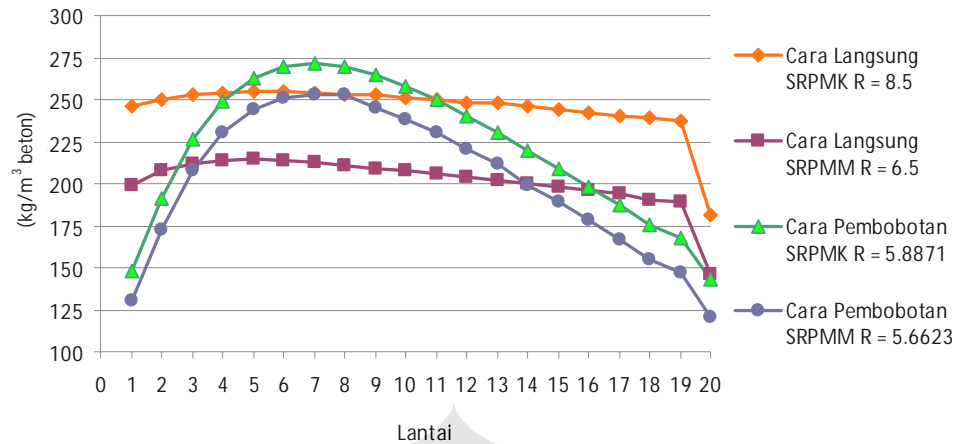


RASIO BERAT TULANGAN BALOK

GEDUNG 20 LANTAI

Lantai	Rasio berat tulangan Balok
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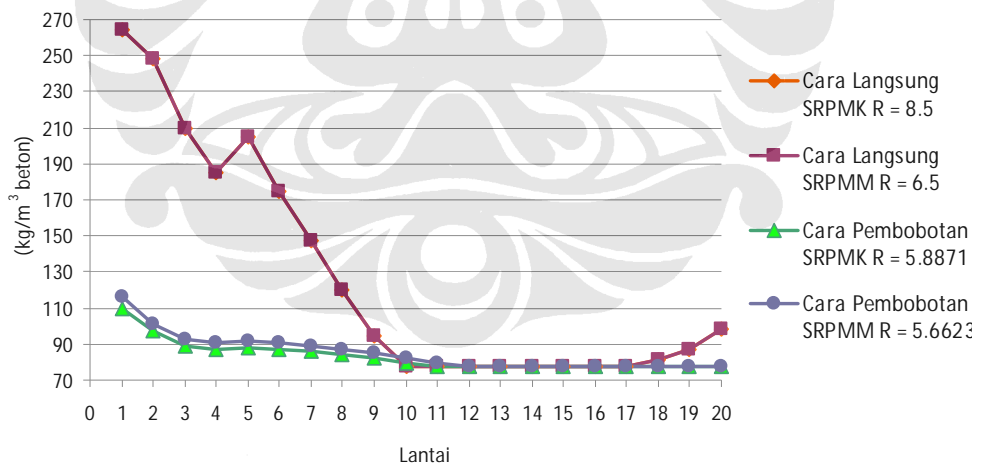
	(kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8871	R = 5.6623
20	181.59	146.55	142.83	120.37
19	237.57	189.06	168.11	147.34
18	238.85	190.45	175.59	154.88
17	240.35	193.63	187.21	167.14
16	242.07	196.13	198.43	178.39
15	244.59	198.10	209.26	189.04
14	246.13	200.12	219.68	199.30
13	247.55	201.80	230.70	211.31
12	248.49	203.58	240.63	220.94
11	250.27	205.44	249.70	230.23
10	251.33	207.54	257.68	238.37
9	252.75	208.96	264.62	245.18
8	253.14	210.88	269.82	253.15
7	253.92	212.37	271.49	252.71
6	254.65	213.70	269.71	251.40
5	255.04	214.98	262.74	244.50
4	253.49	213.40	249.32	230.54
3	252.66	211.93	226.80	208.03
2	250.07	208.03	191.02	172.13
1	246.19	198.56	147.71	130.48



RASIO BERAT TULANGAN LONGITUDINAL KOLOM  
GEDUNG 20 LANTAI

Lantai	Rasio berat tulangan Longitudinal Kolom (kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8871	R = 5.6623
20	98.60	98.60	78.00	78.00
19	87.30	87.30	78.00	78.00
18	81.20	81.20	78.00	78.00
17	78.00	78.00	78.00	78.00
16	78.00	78.00	78.00	78.00
15	78.00	78.00	78.00	78.00
14	78.00	78.00	78.00	78.00

13	78.00	78.00	78.00	78.00
12	78.00	78.00	78.00	78.00
11	78.00	78.00	78.00	79.40
10	78.00	78.00	79.40	82.30
9	95.00	95.00	82.10	85.00
8	120.00	120.00	84.30	87.00
7	147.00	147.00	86.10	89.30
6	175.00	175.00	87.30	91.00
5	205.00	205.00	87.70	92.10
4	185.00	185.00	86.70	90.60
3	210.00	210.00	88.90	92.60
2	248.00	248.00	96.90	101.00
1	264.00	264.00	110.00	116.00

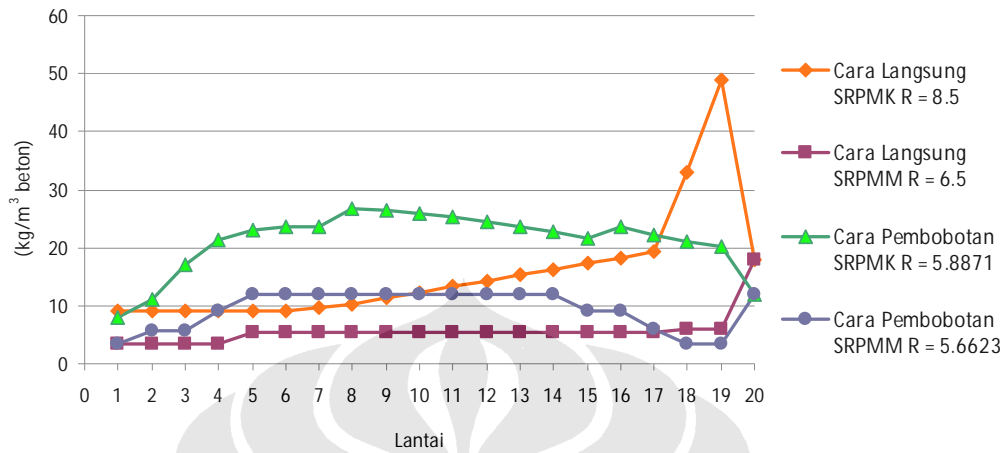


### RASIO BERAT TULANGAN GESER KOLOM

#### GEDUNG 20 LANTAI

Lantai	Rasio berat tulangan Geser Kolom (kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8871	R = 5.6623
20	17.88	17.88	12.05	12.05
19	48.86	5.91	20.25	3.49
18	33.03	5.99	20.96	3.49
17	19.33	5.51	22.23	5.91
16	18.34	5.51	23.62	9.03
15	17.31	5.51	21.65	9.03
14	16.32	5.51	22.67	12.05
13	15.29	5.51	23.63	12.05
12	14.34	5.51	24.54	12.05
11	13.31	5.51	25.29	12.05
10	12.28	5.51	26.01	12.05
9	11.29	5.51	26.48	12.05
8	10.34	5.51	26.76	12.05
7	9.75	5.51	23.71	12.05
6	9.24	5.51	23.51	12.05
5	9.03	5.51	23.01	12.05
4	9.22	3.29	21.42	9.22
3	9.22	3.29	17.01	5.57
2	9.22	3.29	11.04	5.57

1	9.22	3.29	8.04	3.29
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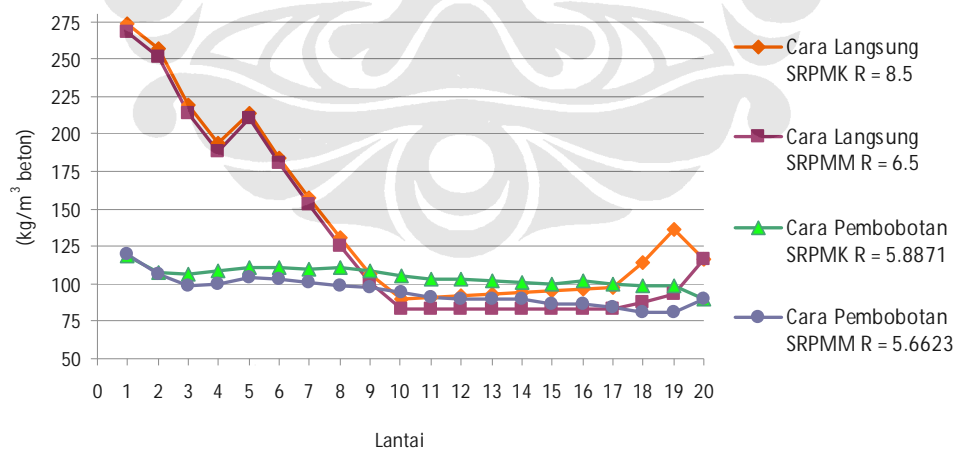


RASIO BERAT TULANGAN KOLOM  
GEDUNG 20 LANTAI

Lantai	Rasio berat tulangan Kolom (kg/m <sup>3</sup> beton)				Gaya geser frame (kN)			
	Cara Langsung		Cara Pembobotan		Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8871	R = 5.6623	R = 8.5	R = 6.5	R = 5.8871	R = 5.6623
20	116.48	116.48	90.05	90.05	242.10	316.61	621.04	757.09
19	136.16	93.21	98.25	81.49	478.79	626.17	1851.35	1924.96
18	114.23	87.19	98.96	81.49	684.48	895.16	2686.94	2793.76
17	97.33	83.51	100.23	83.91	868.33	1135.61	3165.59	3291.40
16	96.34	83.51	101.62	87.03	1036.65	1355.73	3589.01	3731.71



15	95.31	83.51	99.65	87.03	1194.67	1562.39	3956.95	4114.22
14	94.32	83.51	100.67	90.05	1345.60	1759.79	4287.43	4457.86
13	93.29	83.51	101.63	90.05	1490.91	1949.81	4582.86	4765.03
12	92.34	83.51	102.54	90.05	1630.50	2132.39	4846.23	5038.85
11	91.31	83.51	103.29	91.45	1763.41	2306.20	5078.51	5280.41
10	90.28	83.51	105.41	94.35	1888.40	2469.66	5278.19	5488.04
9	106.29	100.51	108.58	97.05	2004.50	2621.50	5438.83	5655.04
8	130.34	125.51	111.06	99.05	2111.34	2761.22	5548.62	5769.17
7	156.75	152.51	109.81	101.35	2209.19	2889.19	5581.01	5802.84
6	184.24	180.51	110.81	103.05	2298.65	3006.18	5535.44	5755.50
5	214.03	210.51	110.71	104.15	2380.04	3112.63	5199.68	5406.35
4	194.22	188.29	108.12	99.82	2452.92	3207.94	5124.40	5328.13
3	219.22	213.29	105.91	98.17	2514.79	3288.85	4233.29	4401.56
2	257.22	251.29	107.94	106.57	2561.02	3349.32	3165.40	3291.27
1	273.22	267.29	118.04	119.29	2584.98	3380.65	1963.06	2041.09

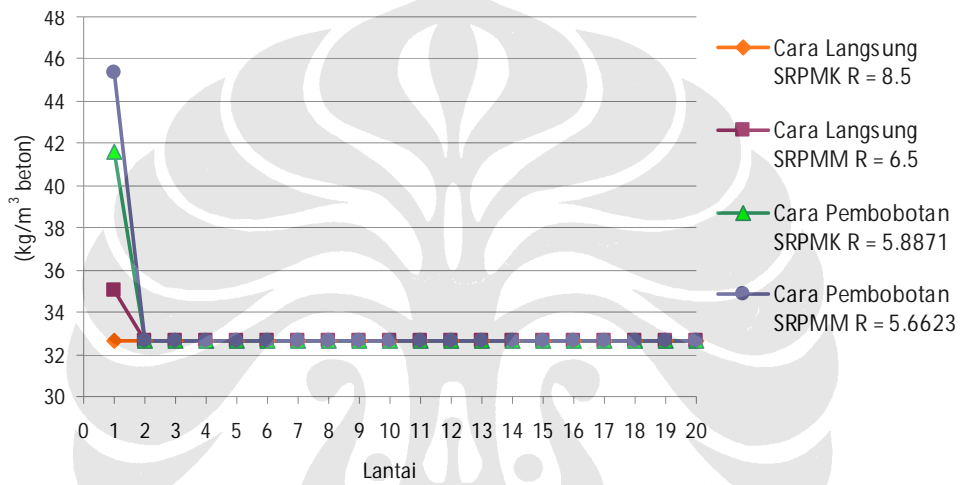


RASIO BERAT TULANGAN LONGITUDINAL SHEARWALL

GEDUNG 20 LANTAI

Lantai	Rasio berat tulangan Longitudinal Shearwall (kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8871	R = 5.6623
20	32.69	32.69	32.69	32.69
19	32.69	32.69	32.69	32.69
18	32.69	32.69	32.69	32.69
17	32.69	32.69	32.69	32.69
16	32.69	32.69	32.69	32.69
15	32.69	32.69	32.69	32.69
14	32.69	32.69	32.69	32.69
13	32.69	32.69	32.69	32.69
12	32.69	32.69	32.69	32.69
11	32.69	32.69	32.69	32.69
10	32.69	32.69	32.69	32.69
9	32.69	32.69	32.69	32.69
8	32.69	32.69	32.69	32.69
7	32.69	32.69	32.69	32.69

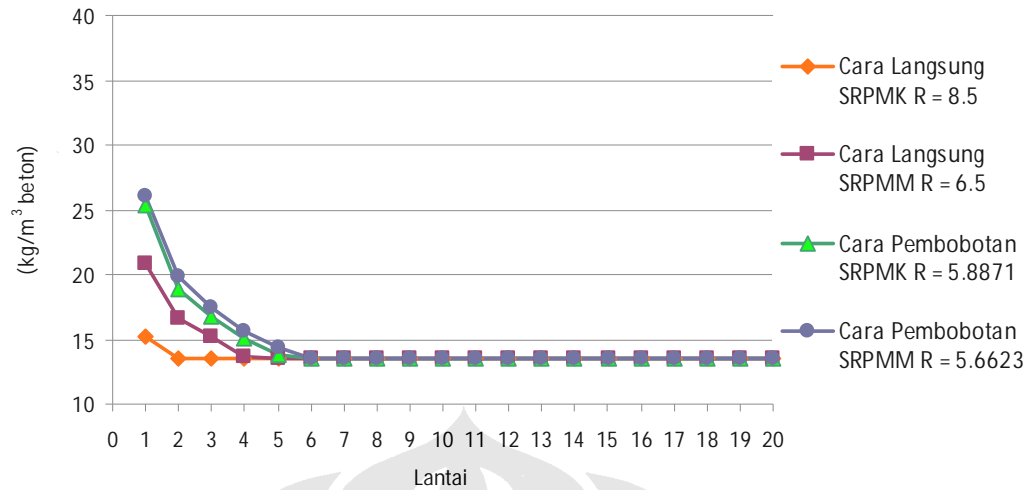
6	32.69	32.69	32.69	32.69
5	32.69	32.69	32.69	32.69
4	32.69	32.69	32.69	32.69
3	32.69	32.69	32.69	32.69
2	32.69	32.69	32.69	32.69
1	32.69	35.03	41.62	45.38



RASIO BERAT TULANGAN GESER SHEARWALL  
GEDUNG 20 LANTAI

Lantai	Rasio berat tulangan Geser Shearwall (kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8871	R = 5.6623
20	13.48	13.48	13.48	13.48

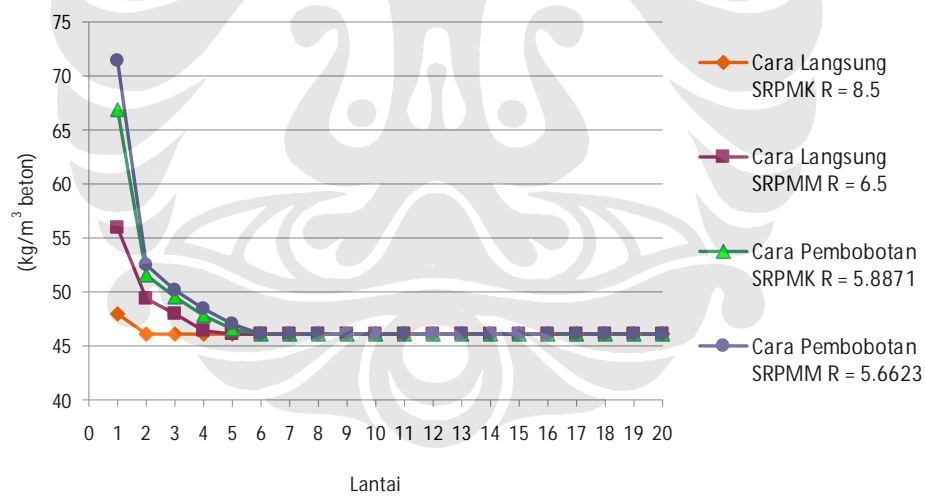
19	13.48	13.48	13.48	13.48
18	13.48	13.48	13.48	13.48
17	13.48	13.48	13.48	13.48
16	13.48	13.48	13.48	13.48
15	13.48	13.48	13.48	13.48
14	13.48	13.48	13.48	13.48
13	13.48	13.48	13.48	13.48
12	13.48	13.48	13.48	13.48
11	13.48	13.48	13.48	13.48
10	13.48	13.48	13.48	13.48
9	13.48	13.48	13.48	13.48
8	13.48	13.48	13.48	13.48
7	13.48	13.48	13.48	13.48
6	13.48	13.48	13.48	13.48
5	13.48	13.48	13.87	14.40
4	13.48	13.73	15.11	15.69
3	13.48	15.24	16.78	17.43
2	13.48	16.66	18.90	19.83
1	15.24	20.88	25.31	26.04



RASIO BERAT TULANGAN SHEARWALL  
GEDUNG 20 LANTAI

Lantai	Rasio berat tulangan Shearwall (kg/m <sup>3</sup> beton)				Gaya geser shearwall (kN)			
	Cara Langsung		Cara Pembobotan		Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8871	R = 5.6623	R = 8.5	R = 6.5	R = 5.8871	R = 5.6623
20	46.17	46.17	46.17	46.17	1552.54	2030.26	2241.66	2330.77
19	46.17	46.17	46.17	46.17	1219.02	1594.14	1760.10	1830.06
18	46.17	46.17	46.17	46.17	1601.54	2094.34	2312.36	2404.28
17	46.17	46.17	46.17	46.17	2046.30	2675.94	2954.52	3072.00
16	46.17	46.17	46.17	46.17	2392.54	3128.76	3454.50	3591.80
15	46.17	46.17	46.17	46.17	2672.74	3495.16	3859.04	4012.46
14	46.17	46.17	46.17	46.17	2900.08	3792.46	4187.30	4353.76
13	46.17	46.17	46.17	46.17	3096.90	4049.88	4471.48	4649.24

12	46.17	46.17	46.17	46.17	3284.01	4294.56	4741.64	4930.16
11	46.17	46.17	46.17	46.17	3480.68	4551.72	5025.62	5225.38
10	46.17	46.17	46.17	46.17	3702.78	4842.18	5346.30	5558.80
9	46.17	46.17	46.17	46.17	3962.94	5182.40	5721.94	5949.40
8	46.17	46.17	46.17	46.17	4270.24	5584.24	6165.60	6410.72
7	46.17	46.17	46.17	46.17	4636.58	6063.32	6694.58	6960.72
6	46.17	46.17	46.17	46.17	5050.36	6604.40	7292.00	7581.86
5	46.17	46.17	46.56	47.09	5641.10	7376.96	8144.96	8468.76
4	46.17	46.42	47.8	48.38	6013.48	7863.88	8682.62	9027.75
3	46.17	47.93	49.47	50.12	6883.34	9001.45	9938.60	10333.69
2	46.17	49.35	51.59	52.52	7786.75	10182.84	11243.00	11689.90
1	47.93	55.91	66.93	71.42	8681.36	11352.72	12534.66	13032.94

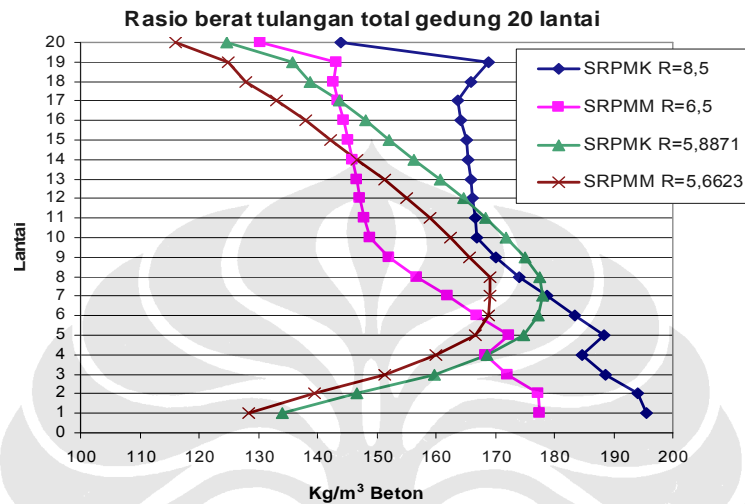


RASIO BERAT TULANGAN TOTAL

GEDUNG 20 LANTAI

Lantai	Rasio berat tulangan struktur setiap lantai (kg/m <sup>3</sup> beton)			
	Cara Langsung		Cara Pembobotan	
	SRPMK	SRPMM	SRPMK	SRPMM
	R = 8.5	R = 6.5	R = 5.8871	R = 5.6623
20	144.05	130.42	124.69	115.96
19	169.00	143.18	135.85	125.06
18	165.94	142.74	138.87	127.99
17	163.79	143.38	143.60	133.15
16	164.30	144.36	148.19	138.03
15	165.11	145.12	152.08	142.17
14	165.55	145.91	156.29	146.65
13	165.93	146.56	160.73	151.32
12	166.14	147.25	164.74	155.06
11	166.67	147.98	168.39	158.90
10	166.92	148.79	171.84	162.54
9	170.06	152.10	175.05	165.62
8	174.11	156.90	177.47	169.04
7	178.69	161.85	177.92	169.25
6	183.43	166.91	177.39	169.01
5	188.41	172.27	174.72	166.65
4	184.69	168.29	168.67	160.11

3	188.63	172.20	159.87	151.42
2	194.10	177.38	146.76	139.39
1	195.59	177.43	134.08	128.32



PERHITUNGAN TULANGAN PELAT (SECARA PRAKTIS)

PERHITUNGAN TULANGAN PELAT GEDUNG 8 LANTAI

Tulangan yang diperlukan : D10-125 (Luas 629 mm<sup>2</sup>)

Tulangan untuk momen tidak terduga 50% dari tulangan lapangan

Faktor kehilangan : 10%

Berat jenis tulangan : 7800 kg/m<sup>3</sup>

Rasio berat tulangan untuk dua arah sebagai berikut :

$$\frac{7800 \times 100 \times 629 \times 1.1 \times 2}{12 \times 10^6} = 89.95 \text{ kg/m}^3$$



#### PERHITUNGAN TULANGAN PELAT GEDUNG 12 LANTAI

Tulangan yang diperlukan : D10-100 (Luas 786 mm<sup>2</sup>)

Tulangan untuk momen tidak terduga 50% dari tulangan lapangan

Faktor kehilangan : 10%

Berat jenis tulangan : 7800 kg/m<sup>3</sup>

Rasio berat tulangan untuk dua arah sebagai berikut :

$$\frac{7800 \times 100 \times 786 \times 1.1 \times 2}{12 \times 10^6} = 112.40 \text{ kg/m}^3$$

#### PERHITUNGAN TULANGAN PELAT GEDUNG 16 LANTAI

Tulangan yang diperlukan : D10-75 (Luas 1048 mm<sup>2</sup>)

Tulangan untuk momen tidak terduga 50% dari tulangan lapangan

Faktor kehilangan : 10%

Berat jenis tulangan : 7800 kg/m<sup>3</sup>

Rasio berat tulangan untuk dua arah sebagai berikut :

$$\frac{7800 \times 100 \times 1048 \times 1.1 \times 2}{12 \times 10^6} = 149.86 \text{ kg/m}^3$$

#### PERHITUNGAN TULANGAN PELAT GEDUNG 20 LANTAI

Tulangan yang diperlukan : D12-100 (Luas 1113 mm<sup>2</sup>)

Tulangan untuk momen tidak terduga 50% dari tulangan lapangan

Faktor kehilangan : 10%

Berat jenis tulangan : 7800 kg/m<sup>3</sup>

Rasio berat tulangan untuk dua arah sebagai berikut :

$$\frac{7800 \times 100 \times 1113 \times 1.1 \times 2}{12 \times 10^6} = 159.16 \text{ kg/m}^3$$

