



Bandung, 6 Pebruari 2011

Nomor : 01 /BBB/II/2011
Lampiran : 1 (satu) Exl

Kepada Yth. :
Bapak Pimpinan
PT. CISANGKAN
Jl. Cijerah No. 107
Telp. (022) 631588
BANDUNG - 40212

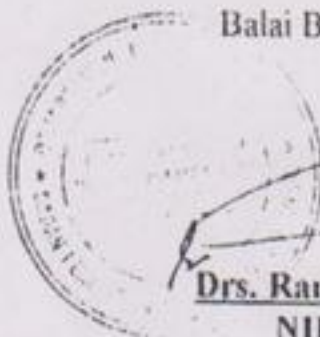
Perihal : *Laporan Hasil Pengujian Conblock*

SURAT PENGANTAR

Berdasarkan surat Bapak Nomor. 001/I/CSK/PR/11, tanggal 14 Januari 2011 perihal Permohonan Pengujian Conblock sebanyak 100 (seratus) buah, bersama ini disampaikan laporan hasil pengujian tersebut seperti terlampir.

Demikian disampaikan, atas perhatiannya diucapkan terima kasih.

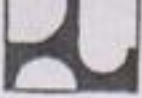
Balai Bahan Bangunan,
Kepala,



[Signature]
Drs. Randing, Dipl.E.Eng
NIP. 110013880

Tembusan kepada Yth. :

1. Kepala Puslitbang Permukiman, sebagai laporan;
2. Kepala Bag. Tata Usaha Puslitbang Permukiman;
3. Peringgal.



**BADAN PENELITIAN DAN PENGEMBANGAN P U
PUSAT PENELITIAN DAN PENGEMBANGAN PEMUKIMAN**

Jl. Panyaungan - Cileunyi Wetan - Kabupaten Bandung 40393 - P.O. Box : 812, Bandung 40008
Telp. (022) 798393, (4 Saluran) Fax : (022) 798392

REGIONAL CENTRE FOR RESEARCH ON HUMAN SETTLEMENTS

Bandung, 6 Pebruari 2011

LAPORAN HASIL PENGUJIAN CONBLOCK

No. 01/BBB/II/1997

I. PENDAHULUAN

- 1.1 Pengirim : PT. CISANGKAN
- 1.2 Contoh uji & banyaknya : Conblock / 100 buah
- 1.3 Diterima tanggal : 14 Januari 1997
- 1.4 Minta diuji : Ketahanan terhadap api (Fire Resistance Test).

II. HASIL PENGUJIAN

No contoh uji	Kode	Lama pengujian (menit)	S u h u (° C)		
			Fanngu	Belakang Benda Uji	Standar
1	2	3	4	5	6
1	1	0	27.90	21.1	20
		30	809.97	62.9	840
		60	911.37	97.9	925
		90	972.73	104.0	980
		120	1012.10	156.0	1010
2	1	0	40.13	24.9	20
		30	832.47	60.5	840
		60	923.23	97.4	925
		90	984.03	97.3	980
		120	1028.07	154.0	1010
3	1	0	44.47	23.4	20
		30	825.90	55.6	840
		60	921.90	93.3	925
		90	981.37	94.1	980
		120	1018.00	125.5	1010

Hanya berlaku untuk pengujian yang dititipkan

1	2	3	4	5	6
1	II	0	34.57	22.7	20
		30	811.97	46.3	840
		60	907.23	76.5	925
		90	963.77	82.0	980
		120	1004.30	88.7	1010
2	II	0	38.17	23.8	20
		30	818.73	45.5	840
		60	923.20	82.0	925
		90	982.07	95.9	980
		120	1031.10	104.6	1010
3	II	0	31.17	24.7	20
		30	845.87	56.3	840
		60	919.83	98.9	925
		90	976.47	98.5	980
		120	1018.48	126.1	1010

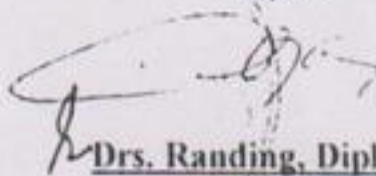
III. KETERANGAN

Hasil ketahanan api dapat dijelaskan sebagai berikut :

- a. Kriteria integritas (tidak terjadi retak tembus).
- b. Kriteria stabilitas (tidak runtuh).
- c. Kriteria insulasi (temperatur dibelakang benda uji rata-rata dibawah syarat maksimum yaitu 260°C).

Bahwa contoh conblock tersebut mempunyai ketahanan api lebih dari 2 jam.

Balai Bahan Bangunan,
Kepala,



Drs. Randing, Dipl.E.Eng
NIP. 110013880

Tembusan kepada Yth. .

1. Kepala Pusat Litbang Permukiman, sebagai laporan.
2. Kepala Bagian Tata Usaha Puslitbang Permukiman.
3. Peringgal.

**PENGUJIAN KETAHANAN API (FIRE RESISTANCE TEST)
KOMPONEN : CONBLOCK**

NO	KODE / NOMOR	INTERVAL (menit)	SUHU TUNGKU (°C)			S U H U (°C)		
			T1	T2	T3	Rata-rata	Backside	Standar
0	1 / 1	0	27.9	27.5	28.3	27.90	21.1	20.0
1		5	480.6	445.2	420.8	448.87	22.7	540.0
2		10	621.9	604.5	569.8	598.73	23.2	705.0
3		15	727.6	717.2	681.1	708.63	24.7	760.0
4		20	782.9	773.3	742.0	766.07	33.8	795.0
5		25	822.1	813.2	784.3	806.53	49.2	820.0
6		30	822.1	819.9	787.9	809.97	62.9	840.0
7		35	843.1	840.6	811.5	831.73	75.7	860.0
8		40	861.9	860.9	832.9	851.90	94.9	880.0
9		45	877.6	877.6	852.7	869.30	97.6	895.0
10		50	892.2	893.0	870.8	885.33	98.0	905.0
11		55	905.7	905.3	885.0	898.67	98.1	915.0
12		60	918.8	917.0	898.3	911.37	97.9	925.0
13		65	931.3	929.4	910.9	923.87	97.9	935.0
14		70	941.2	940.4	921.2	934.27	97.8	945.0
15		75	952.6	951.3	932.1	945.33	97.6	955.0
16		80	962.2	961.1	942.3	955.20	97.7	965.0
17		85	971.2	970.4	952.1	964.57	99.8	975.0
18		90	978.9	978.5	960.8	972.73	104.0	980.0
19		95	986.1	985.9	968.4	980.13	109.5	985.0
20		100	992.9	992.7	976.1	987.23	117.4	990.0
21		105	999.7	999.8	983.3	994.27	127.1	995.0
22		110	1006.3	1006.3	989.8	1000.80	137.3	1000.0
23		115	1012.1	1012.1	996.1	1006.77	146.9	1005.0
24		120	1017.1	1017.4	1001.8	1012.10	156.0	1010.0

**PENGUJIAN KETAHANAN API (FIRE RESISTANCE TEST)
KOMPONEN : CONBLOCK**

NO	KODE / NOMOR	INTERVAL (menit)	SUHU TUNGKU (°C)			S U H U (°C)		
			T1	T2	T3	Rata-rata	Backside	Standar
0	1/2	0	41.7	37.5	41.2	40.13	24.9	20.0
1		5	551.9	513.1	496.1	520.37	24.8	540.0
2		10	656.2	638.8	603.0	632.67	25.0	705.0
3		15	715.1	703.5	664.5	694.37	27.3	760.0
4		20	776.3	761.0	735.0	757.43	37.9	795.0
5		25	817.7	804.2	777.9	799.93	52.2	820.0
6		30	848.0	835.7	813.7	832.47	60.5	840.0
7		35	873.2	863.2	841.0	859.13	68.3	860.0
8		40	880.2	874.8	850.6	868.53	95.8	880.0
9		45	897.6	890.8	869.5	885.97	97.1	895.0
10		50	911.1	902.9	882.3	898.77	97.3	905.0
11		55	924.3	915.3	895.1	911.57	97.3	915.0
12		60	936.4	926.6	906.7	923.23	97.4	925.0
13		65	946.6	938.1	920.0	934.90	97.4	935.0
14		70	957.9	949.0	930.8	945.90	97.3	945.0
15		75	967.6	959.6	941.1	956.10	97.0	955.0
16		80	976.6	968.0	950.4	965.00	97.0	965.0
17		85	983.8	976.6	959.9	973.43	96.3	975.0
18		90	994.1	987.8	970.2	984.03	97.3	980.0
19		95	1001.8	995.9	978.2	991.97	100.9	985.0
20		100	1009.6	1003.7	987.3	1000.20	107.3	990.0
21		105	1017.6	1012.0	995.7	1008.43	117.0	995.0
22		110	1024.3	1018.7	1002.5	1015.17	128.7	1000.0
23		115	1029.8	1025.3	1009.3	1021.47	140.5	1005.0
24	120	1036.6	1031.4	1016.2	1028.07	154.0	1010.0	

**PENGUJIAN KETAHANAN API (FIRE RESISTANCE TEST)
KOMPONEN : CONBLOCK**

NO	KODE / NOMOR	INTERVAL (menit)	SUHU TUNGKU (°C)			S U H U (°C)		
			T1	T2	T3	Rata-rata	Backside	Standar
0	1/3	0	45.6	42.0	45.8	44.47	23.4	20.0
1		5	578.1	563.8	521.3	554.40	23.3	540.0
2		10	681.1	676.7	633.4	663.73	23.5	705.0
3		15	736.1	731.8	695.8	721.23	26.3	760.0
4		20	777.6	773.8	742.3	764.57	35.4	795.0
5		25	809.9	806.3	776.8	797.67	45.8	820.0
6		30	837.0	834.4	806.3	825.90	55.6	840.0
7		35	856.1	855.4	829.1	846.87	67.5	880.0
8		40	873.0	873.0	848.4	864.80	89.9	880.0
9		45	889.3	888.5	866.4	881.40	92.8	895.0
10		50	904.5	902.1	880.3	895.63	92.8	905.0
11		55	917.9	915.0	893.8	908.90	93.2	915.0
12		60	930.7	928.6	906.4	921.90	93.3	925.0
13		65	941.4	939.2	917.5	932.70	93.0	935.0
14		70	951.4	950.1	928.4	943.30	92.7	945.0
15		75	961.7	960.9	939.4	954.00	93.4	955.0
16		80	971.4	969.8	949.4	963.53	92.6	965.0
17		85	980.2	979.2	958.9	972.77	92.8	975.0
18		90	989.0	987.8	967.3	981.37	94.1	980.0
19		95	995.2	994.9	974.5	988.20	94.5	985.0
20		100	1000.9	1000.8	981.7	994.47	99.4	990.0
21		105	1005.3	1005.5	986.4	999.07	103.3	995.0
22		110	1011.3	1011.5	992.7	1005.17	109.0	1000.0
23		115	1016.8	1017.3	998.9	1011.00	118.1	1005.0
24		120	1024.1	1024.1	1005.8	1018.00	125.5	1010.0

**PENGUJIAN KETAHANAN API (FIRE RESISTANCE TEST)
KOMPONEN : CONBLOCK**

NO	KODE / NOMOR	INTERVAL (menit)	SUHU TUNGKU (°C)			S U H U (°C)		
			T1	T2	T3	Rata-rata	Backside	Standar
0	II / 1	0	34.8	34.2	34.7	34.57	22.7	20.0
1		5	549.6	537.9	487.3	524.93	22.6	540.0
2		10	670.9	666.4	628.2	655.17	22.8	705.0
3		15	733.3	729.0	700.1	720.80	23.2	760.0
4		20	775.7	771.0	718.3	755.00	25.7	795.0
5		25	797.1	793.5	767.4	786.00	34.3	820.0
6		30	822.7	819.6	766.7	803.00	46.3	840.0
7		35	845.8	842.9	790.5	826.40	55.0	860.0
8		40	861.6	860.2	837.9	853.23	60.9	880.0
9		45	874.6	874.1	853.0	867.23	65.1	895.0
10		50	888.9	889.8	870.2	882.97	68.8	905.0
11		55	902.3	902.8	884.4	896.50	73.7	915.0
12		60	913.4	912.5	895.8	907.23	76.5	925.0
13		65	924.0	922.9	905.4	917.43	81.7	935.0
14		70	935.1	934.1	915.8	928.33	88.9	945.0
15		75	944.0	943.4	924.7	937.37	92.6	955.0
16		80	952.7	952.5	933.3	946.17	93.9	965.0
17		85	961.6	961.6	942.9	955.37	93.7	975.0
18		90	970.0	969.3	952.0	963.77	82.0	980.0
19		95	977.7	977.5	959.9	971.70	83.9	985.0
20		100	984.7	984.7	967.2	978.87	83.2	990.0
21		105	991.8	991.8	974.6	986.07	84.7	995.0
22		110	997.1	997.5	963.2	985.93	85.4	1000.0
23		115	1003.1	1004.3	987.4	998.27	87.5	1005.0
24		120	1009.2	1010.3	993.4	1004.30	88.7	1010.0

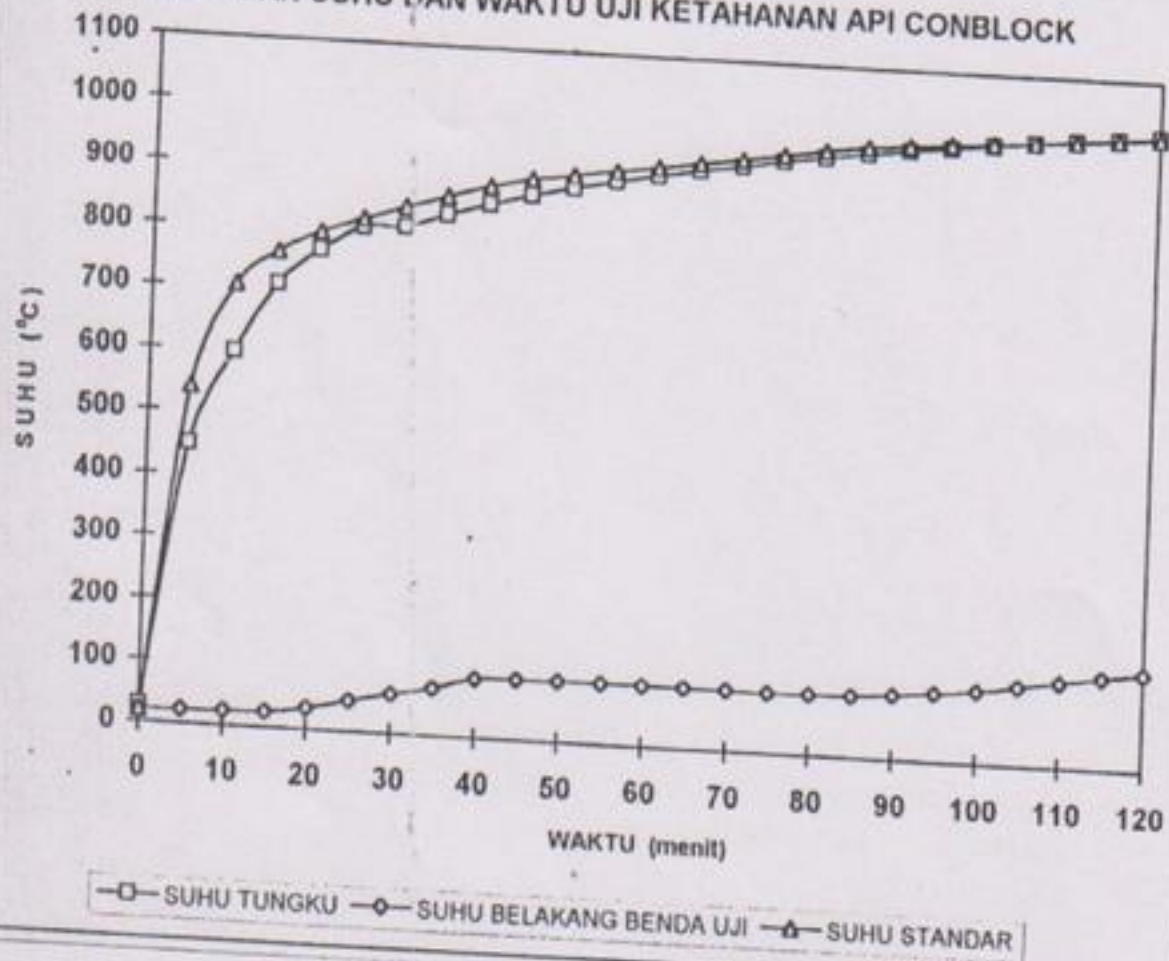
**PENGUJIAN KETAHANAN API (FIRE RESISTANCE TEST)
KOMPONEN : CONBLOCK**

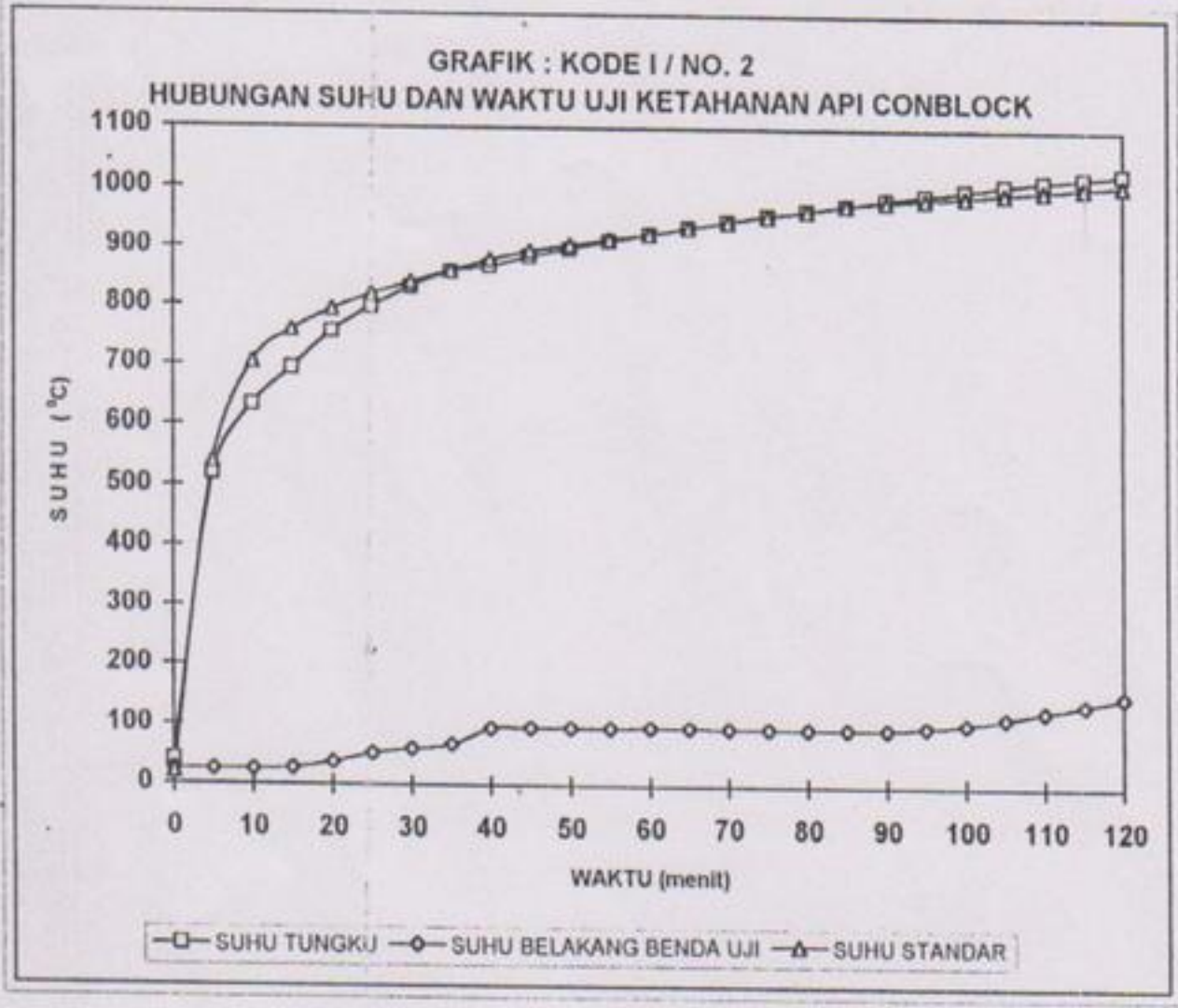
NO	KODE / NOMOR	INTERVAL (menit)	SUHU TUNGKU (°C)			S U H U (°C)		
			T1	T2	T3	Rata-rata	Backside	Standar
0	II / 2	0	40.0	36.3	38.2	38.17	23.8	20.0
1		5	557.5	546.2	488.3	530.67	23.8	540.0
2		10	653.8	650.2	599.2	634.40	23.8	705.0
3		15	708.7	706.6	671.9	695.73	24.7	760.0
4		20	764.4	764.9	735.6	754.97	30.0	795.0
5		25	798.9	800.9	773.2	791.00	38.1	820.0
6		30	825.7	828.6	801.9	818.73	45.5	840.0
7		35	849.3	852.7	827.9	843.30	52.5	860.0
8		40	867.9	871.9	848.8	862.87	59.0	880.0
9		45	885.6	888.4	867.5	880.50	64.7	895.0
10		50	900.5	901.9	882.3	894.90	69.8	905.0
11		55	915.8	917.1	896.7	909.87	75.2	915.0
12		60	929.5	930.3	909.8	923.20	82.0	925.0
13		65	941.2	942.8	921.7	935.23	88.1	935.0
14		70	951.9	953.7	933.1	946.23	92.4	945.0
15		75	961.7	963.6	943.9	956.40	94.6	955.0
16		80	970.1	972.8	952.8	965.23	95.3	965.0
17		85	977.8	980.3	961.3	973.13	95.6	975.0
18		90	986.7	989.4	970.1	982.07	95.9	980.0
19		95	994.5	997.2	978.2	989.97	96.0	985.0
20		100	1001.3	1004.1	985.0	996.80	96.1	990.0
21		105	1008.0	1011.1	992.6	1003.90	97.1	995.0
22		110	1014.4	1017.5	998.5	1010.13	98.5	1000.0
23		115	1032.6	1033.6	1017.4	1027.87	101.2	1005.0
24		120	1035.7	1037.2	1020.4	1031.10	104.6	1010.0

**PENGUJIAN KETAHANAN API (FIRE RESISTANCE TEST)
KOMPONEN : CONBLOCK**

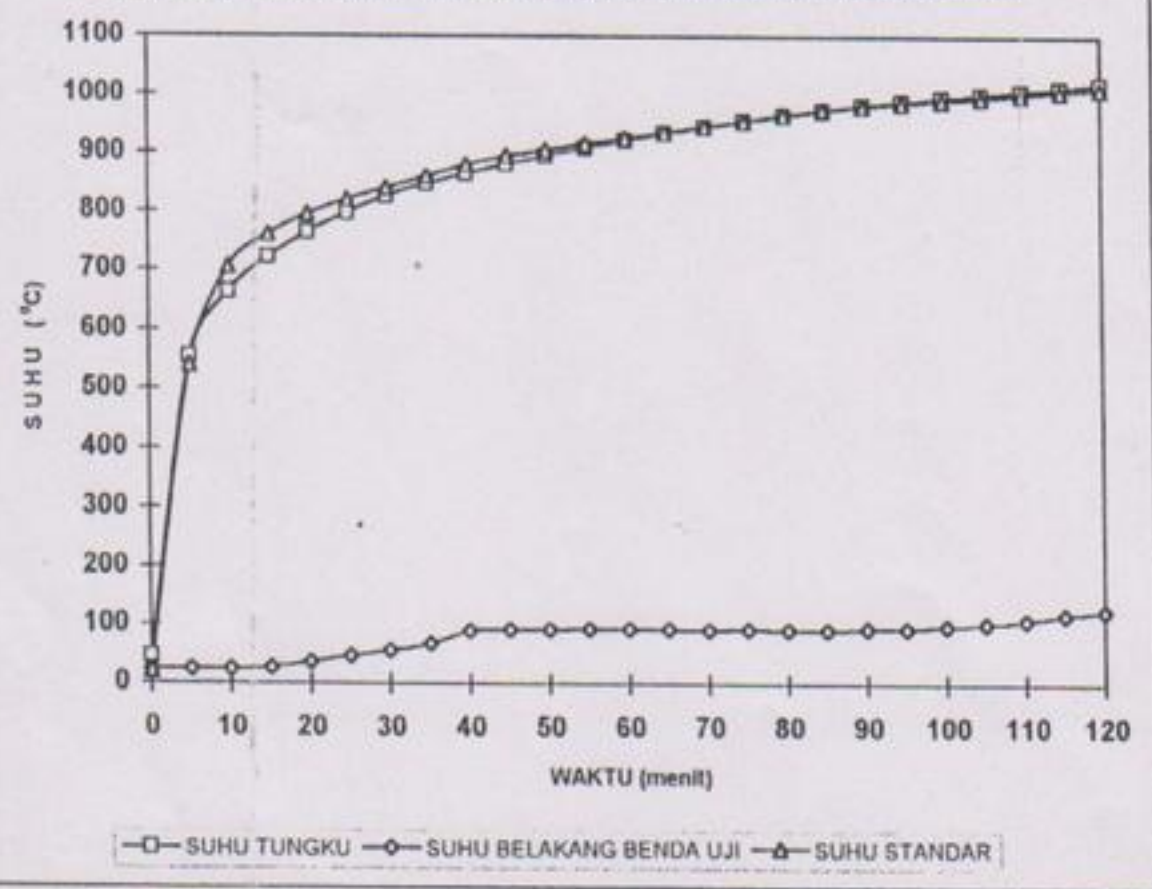
NO	KODE / NOMOR	INTERVAL (menit)	SUHU TUNGKU (°C)			S U H U (°C)		
			T1	T2	T3	Rata-rata	Backside	Standar
0	II / 3	0	32.3	29.3	31.9	31.17	24.7	20.0
1		5	547.7	525.4	503.9	525.67	24.7	540.0
2		10	662.1	653.9	619.1	645.03	24.7	705.0
3		15	737.6	728.8	702.1	722.83	27.1	760.0
4		20	792.0	783.3	754.6	776.63	36.4	795.0
5		25	829.6	821.8	796.1	815.83	47.4	820.0
6		30	858.4	852.5	826.7	845.87	56.3	840.0
7		35	863.1	861.6	829.2	851.30	64.0	860.0
8		40	877.7	876.8	845.8	866.77	73.5	880.0
9		45	892.5	889.7	862.8	881.67	98.4	895.0
10		50	906.7	901.8	875.2	894.57	99.0	905.0
11		55	919.8	914.5	888.2	907.50	99.1	915.0
12		60	931.9	927.2	900.4	919.83	98.9	925.0
13		65	942.8	937.3	912.5	930.87	98.8	935.0
14		70	953.0	947.7	923.0	941.23	98.9	945.0
15		75	962.5	957.6	933.9	951.33	99.0	955.0
16		80	969.9	965.4	941.7	959.00	98.6	965.0
17		85	978.7	974.3	951.8	968.27	98.6	975.0
18		90	986.7	982.1	960.6	976.47	98.5	980.0
19		95	994.6	989.8	969.0	984.47	98.8	985.0
20		100	1003.1	998.3	978.3	993.23	99.2	990.0
21		105	1008.7	1005.3	985.0	999.67	101.8	995.0
22		110	1015.2	1010.9	992.0	1006.03	106.5	1000.0
23		115	1020.8	1017.4	997.9	1012.03	115.1	1005.0
24		120	1027.0	1023.4	1005.0	1018.47	126.1	1010.0

GRAFIK : KODE 1 / NO. 1
HUBUNGAN SUHU DAN WAKTU UJI KETAHANAN API CONBLOCK

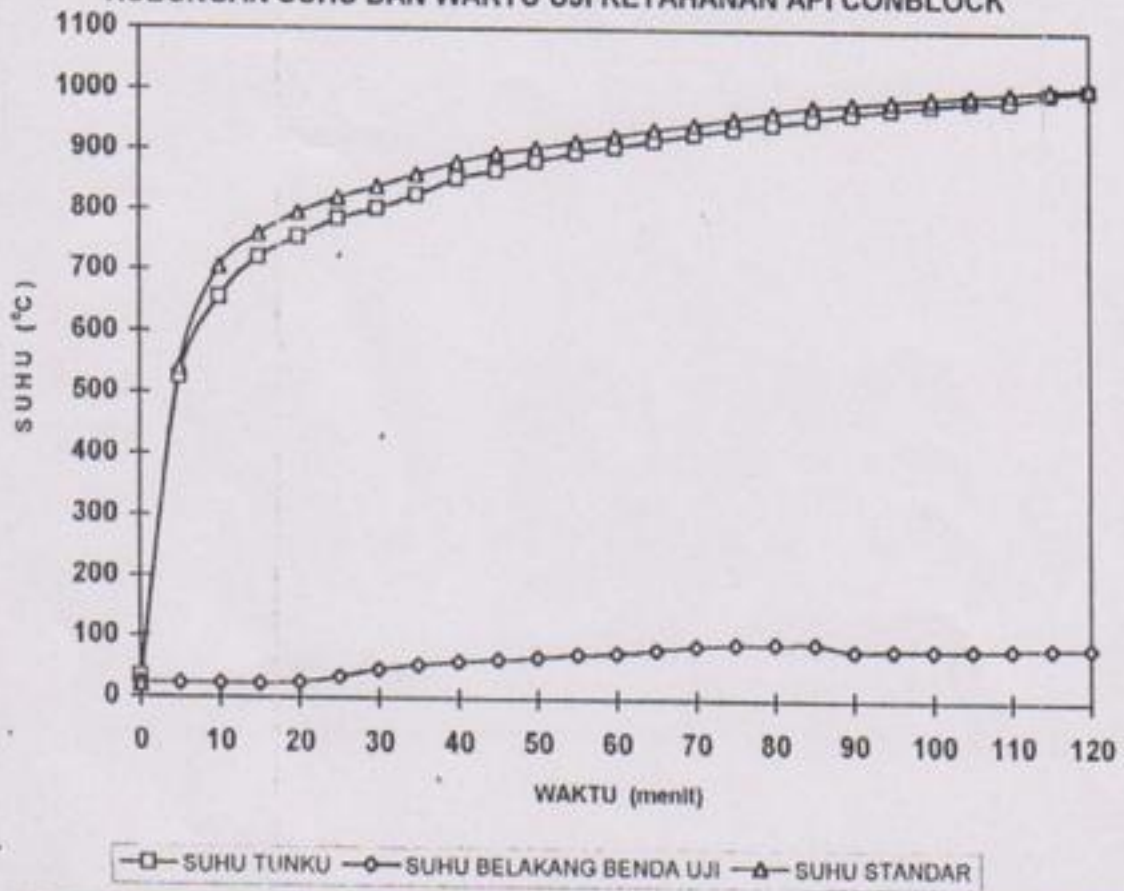




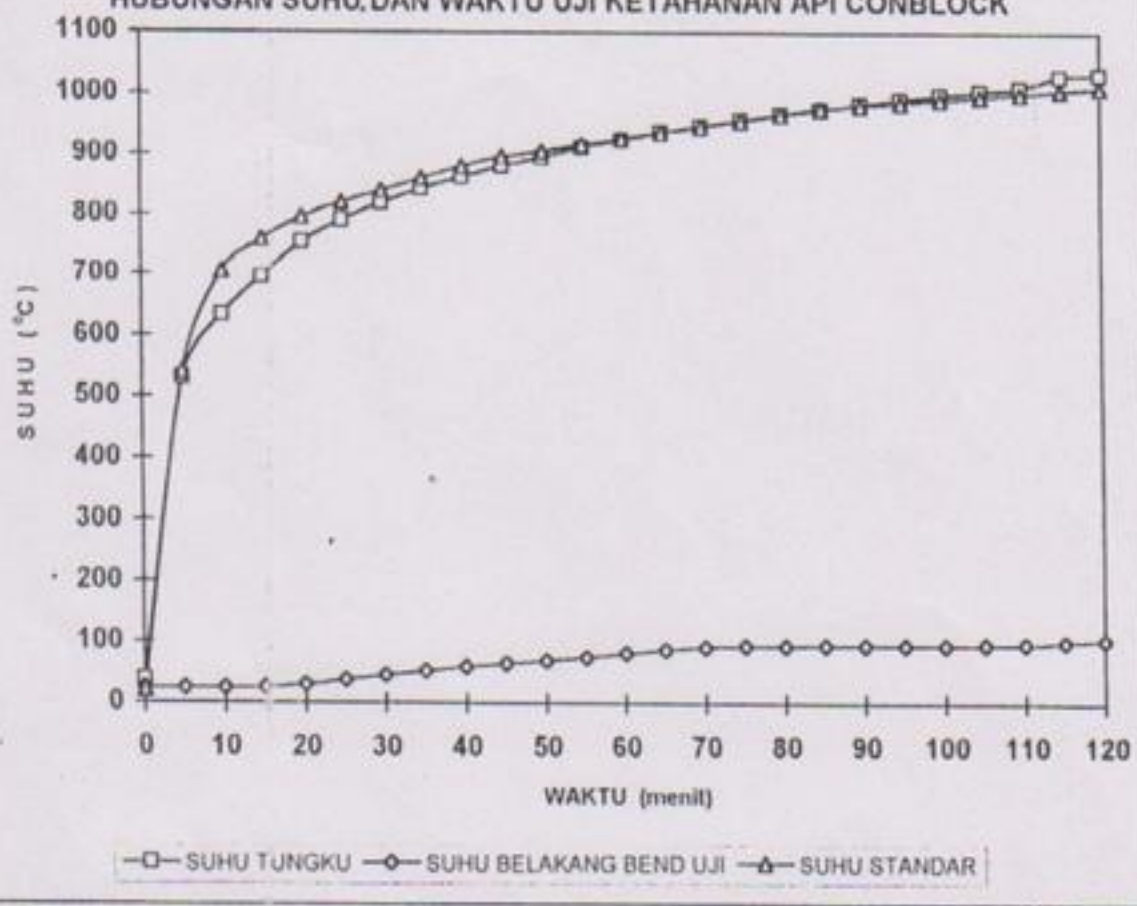
GRAFIK : KODE I / NO. 3
HUBUNGAN SUHU DAN WAKTU UJI KETAHANAN API CONBLOCK



GRAFIK : KODE II / NO. 1
HUBUNGAN SUHU DAN WAKTU UJI KETAHANAN API CONBLOCK



GRAFIK : KODE II / NO. 2
HUBUNGAN SUHU, DAN WAKTU UJI KETAHANAN API CONBLOCK



GRAFIK : KODE II / NO. 3
HUBUNGAN SUHU DAN WAKTU UJI KETAHANAN API CONBLOCK

