

## LAMPIRAN

Lampiran 1. Data waktu Antar Kerusakan Komponen

No	Tanggal Kerusakan	Waktu Antar Kerusakan (Hari)	<i>Downtime</i> (Menit)
1	20/10/2020	20	300
2	19/11/2020	30	232
3	09/12/202	20	343
4	24/12/2020	15	293
5	05/01/2021	12	321
6	23/01/2021	18	230
7	01/02/2021	9	121
8	03/03/2021	30	649
9	10/04/2021	40	539
10	29/04/2021	19	219
11	03/06/2021	35	545
12	27/06/2021	24	212
13	04/08/2021	38	385
14	04/09/2021	31	359
15	25/09/2021	21	232
16	30/09/2021	5	294
17	12/10/2021	12	329
18	04/11/2021	23	238
19	23/11/2021	19	193
20	22/12/2021	29	293
21	28/12/2021	6	149
22	21/01/2022	24	286
23	07/03/2022	45	622
24	06/04/2022	30	594
25	14/05/2022	38	694
26	31/05/2022	17	320
27	10/06/2022	10	200
28	18/06/2022	18	330
29	02/07/2022	15	304
30	22/07/2022	20	403
31	30/07/2022	8	184

32	14/08/2022	15	213
33	03/09/2022	20	423
34	18/09/2022	15	186
35	21/10/2022	33	632
36	30/10/2022	9	149
37	18/11/2022	19	310
38	29/11/2022	11	290
39	18/11/2022	19	285

Lampiran 2. Data Waktu Antar Kerusakan (*Time to Failure*)

No	Tanggal Kerusakan	Ti (Menit)
1	20/10/2020	43200
2	19/11/2020	28800
3	09/12/2020	21600
4	24/12/2020	17280
5	05/01/2021	25920
6	23/01/2021	12960
7	01/02/2021	43200
8	03/03/2021	57600
9	10/04/2021	27360
10	29/04/2021	50400
11	03/06/2021	34560
12	27/06/2021	54720
13	04/08/2021	44640
14	04/09/2021	30240
15	25/09/2021	7200
16	30/09/2021	17280
17	12/10/2021	33120
18	04/11/2021	27360
19	23/11/2021	41760
20	22/12/2021	8640
21	28/12/2021	34560
22	21/01/2022	64800
23	07/03/2022	43200
24	06/04/2022	54720

25	14/05/2022	24480
26	31/05/2022	14400
27	10/06/2022	25920
28	18/06/2022	21600
29	02/07/2022	28800
30	22/07/2022	11520
31	30/07/2022	21600
32	14/08/2022	28800
33	03/09/2022	21600
34	18/09/2022	47520
35	21/10/2022	12960
36	30/10/2022	27360
37	18/11/2022	15840
38	29/11/2022	27360

Lampiran 3. Data Waktu Antar Perbaikan (*Time to Repair*)

No	Tanggal Kerusakan	Ti (Menit)
1	20/10/2020	230
2	19/11/2020	232
3	09/12/2020	232
4	24/12/2020	232
5	05/01/2021	238
6	23/01/2021	280
7	01/02/2021	285
8	03/03/2021	286
9	10/04/2021	290
10	29/04/2021	293
11	03/06/2021	293
12	27/06/2021	293
13	04/08/2021	294
14	04/09/2021	294
15	25/09/2021	300
16	30/09/2021	304
17	12/10/2021	310
18	04/11/2021	320

19	23/11/2021	321
20	22/12/2021	329
21	28/12/2021	330
22	21/01/2022	330
23	07/03/2022	343
24	06/04/2022	359
25	14/05/2022	380
26	31/05/2022	382
27	10/06/2022	385
28	18/06/2022	400
29	02/07/2022	403
30	22/07/2022	423
31	30/07/2022	539
32	14/08/2022	545
33	03/09/2022	580
34	18/09/2022	594
35	21/10/2022	622
36	30/10/2022	632
37	18/11/2022	649
38	29/11/2022	654

#### Lampiran 4. *Time To Repair*

#### **Goodness-of-Fit**

<b>Distribution</b>	<b>Anderson-Darling (adj)</b>	<b>Correlation Coefficient</b>
Weibull	3,583	0,953
Lognormal	0,881	0,985
Exponential	14,984	*
Loglogistic	0,907	0,979
3-Parameter Weibull	1,159	0,986
3-Parameter Lognormal	0,729	0,987
2-Parameter Exponential	4,226	*
3-Parameter Loglogistic	0,731	0,984
Smallest Extreme Value	10,874	0,867
Normal	2,722	0,942
Logistic	2,619	0,937

#### **Table of Percentiles**

<b>Distribution</b>	<b>Percent</b>	<b>Percentile</b>
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Weibull	1	77,4265
Lognormal	1	109,330
Exponential	1	2,56156
Loglogistic	1	97,9245
3-Parameter Weibull	1	121,893
3-Parameter Lognormal	1	123,481
2-Parameter Exponential	1	122,908
3-Parameter Loglogistic	1	118,953
Smallest Extreme Value	1	-103,409
Normal	1	-9,92366
Logistic	1	-47,1860
Weibull	5	134,658
Lognormal	5	147,664
Exponential	5	13,0733
Loglogistic	5	147,282
3-Parameter Weibull	5	147,893
3-Parameter Lognormal	5	153,900
2-Parameter Exponential	5	130,737
3-Parameter Loglogistic	5	154,846
Smallest Extreme Value	5	73,7347
Normal	5	91,2560
Logistic	5	90,2710
Weibull	10	171,939
Lognormal	10	173,326
Exponential	10	26,8536
Loglogistic	10	177,169
3-Parameter Weibull	10	170,669
3-Parameter Lognormal	10	175,484
2-Parameter Exponential	10	141,000
3-Parameter Loglogistic	10	178,802
Smallest Extreme Value	10	151,966
Normal	10	145,194
Logistic	10	152,494
Weibull	50	325,953
Lognormal	50	305,026
Exponential	50	176,665
Loglogistic	50	305,026
3-Parameter Weibull	50	309,000
3-Parameter Lognormal	50	298,068
2-Parameter Exponential	50	252,579
3-Parameter Loglogistic	50	295,942
Smallest Extreme Value	50	356,703
Normal	50	335,463
Logistic	50	335,463

## Table of MTTF

Distribution	Mean
Weibull	329,378
Lognormal	336,184
Exponential	254,873
Loglogistic	338,009
3-Parameter Weibull	333,152
3-Parameter Lognormal	338,230
2-Parameter Exponential	310,828
3-Parameter Loglogistic	342,868
Smallest Extreme Value	333,804
Normal	335,463
Logistic	335,463

## Lampiran 5. Revisi Sidang Akhir

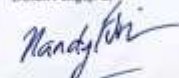
UNIVERSITAS 17 AGUSTUS 1945 SURABAYA  
FAKULTAS TEKNIK  
PROGRAM STUDI TEKNIK INDUSTRI


**REVISI SIDANG TUGAS AKHIR**

NAMA : Rahma Oktaviani  
NBI : 1411900046  
JUDUL : ANALISIS PERAWATAN GRINDING BALL GUNA MEMINIMALISASI KERUGIAN AKIBAT RECYCLE PRODUKSI SEMEN (STUDI KASUS: PADA PT. SEMEN INDONESIA (PERSERO) TBK DI TUBAN)  
BATAS BIMBINGAN REVISI : 1 Minggu setelah Sidang

NO	URAIAN	BAB	HALAMAN	NO	URAIAN	BAB	HALAMAN
1.	gambar & tabel kecil, tabel gelas, dibulatkan dan gelas	9	29-38				
2.	Diagram pareto	9	35				
3.	Tabel yang tidak ada data yang tidak di penuhi.	9					
4.	Perlu lingkitan ?	9					
				1.	Biaya kerugian sangat penting maintenance & perawatan. Siga penting maintenance dan keselamatan. ✓		
				2.	Kemampuan material bagus. ✓		
				3.	Jam ada masalah selanjutnya. ✓		
				4.	Gambar plot probabilitas diperkecil. ✓		


Telah Direvisi,  
Dosen Pengajar 1,  
  
Dr. Jaka Purmana, ST., MT

Dosen Pengajar 2,  
  
Handy Febri-Rafoto, ST., MT

Surabaya, 07 Desember 2023  
Mengetahui  
Dosen Pembimbing/Ketua Pengajar,  
  
Ir. Mochammad Singgih, MM


## Lampiran 5. Jurnal Bimbingan Tugas Akhir














**JURNAL BIMBINGAN TUGAS AKHIR**  
**PRODI TEKNIK INDUSTRI**  
**SEMESTER GASAL 2023/2024**



Nama : RAHMA OKTAVIANI  
NBI : 141920046  
Judul Penelitian : ANALISIS PERALATAN BANGUNAN BANGUNAN BINA MEMINIMALISASI KERUSAKAN RECYCLE PRODUKSI SEMEN

Dosen Pembimbing: Ir. Mohammad Singgih, MM



No.	Tanggal	Materi Bimbingan	Catatan Pembimbing	Paraf Pembimbing
1	9 Agustus 2023	Bab I	Membaca Bab I	
2	14 Agustus 2023	Bab I	Membaca Bab I	
3	16 Agustus 2023	Bab II	Membaca Bab II	
4	15 Agustus 2023	Bab II	Membaca Bab II	
5	21 Agustus 2023	Bab I, II, III	Membaca Bab I, II, dan III	
6	28 Agustus 2023		ACC revisi skripsi proposal	
7	13 September 2023	Bab IV	Membaca Bab IV dan melanjutkan bab IV	
8	18 Oktober 2023	Bab IV	Membaca dan membaca Bab IV	
9	6 November 2023	Bab IV	Membaca Bab IV	
10	8 November 2023	Bab IV	ACC Bab IV	
11	13 November 2023	Jurnal	Jurnal	
12	14 Desember 2023	Jurnal	Jurnal	
13	22 November 2023		ACC mengantar keantar hasil	

## Lampiran 6. Surat Balasan Ijin Perusahaan



Kepada Yth : Mgr of Finish Mill Operation  
Perihal : Permohonan Penelitian

R/74203200/002-2

Terlampir kami sampaikan data mahasiswa permohonan Penelitian dari:

**UNIVERSITAS 17 AGUSTUS 1945 SURABAYA**

Nama Mahasiswa : Rahma Oktaviani  
Jumlah Mahasiswa : 1 (satu) orang  
Dalam Rangka : Penelitian  
Jurusan : TEKNIK INDUSTRI  
Tanggal Pengajuan : 1 August 2023 s.d 31 October 2023  
Lama Penelitian : 3 (tiga) bulan

Material Proposal Mahasiswa :

Tuban, 1 August 2023  
Hormat Kami  
SM Of L & D Operational and Certification  
Ttd  
ANDI ANINDA ANWAR, S.Psi., MM.

Mohon *konfirmasi* atas permohonan kami,

Mahasiswa tersebut : ( X ) dapat dibantu ( ) tidak dapat dibantu

Tanggal disetujui : August 2023 s.d 31 October 2023

Pembimbing yang ditunjuk

*Nopeg* : 897  
*Nama Pegawai* : ABDURROHMAN  
*Unit Kerja* : Group of FM 1-2 Planner  
*Jabatan* :

Tuban, 7 August 2023

(GATHOT SUWARNO)



