DAFTAR PUSTAKA

[1] Badan Pusat Statik. 2022 “Kegiatan Pertambangan” Jakarta : Badan Pertambangan Indonesia.

[2] Efendi, Marlin. 2017 *“Upaya Peningkatan Produksi Batu Andesit”* dalam *Jurnal Teknik Pertambangan*, Jakarta : Universitas Islam Bandung.

[3] Aprillya, Salma rafifa. (2012). Apa Itu Batu Andesit? Mengenal Batu Andesit, Jakarta : Universitas Veteran

[4] Admin. 2017. “open pit mining”. e- Jurnal Agincourtresources

[5] Admin. 2020, “Memahami Vibrating screen Secara Mendalam”. Surabaya : CV Bakti.

[6] Fauzy I., D. Guntoro, D.Nasrudin. 2017. Analisis Produksi Crushing Plant DalamPencapaian Target Produksi Andesit di CV Panghegar Mitra Abadi Desa Lagadar Kecamatan Margaasih Kabupaten Bandung Provinsi Jawa Barat. Jurnal Teknik Pertambangan 3,2.

[7] Antek Shared. 2014, “*Jenis-jenis Site plant Crusher dan Cara Kerjanya*”. e-Jurnal Teknik Pertambangan.

[8] Admin. 2020, “Memahami Coveyor Belt Secara Mendalam”. Surabaya : CV Bakti.

[9] Apriliyanto, Danang Dwi. 2020 “ *Evaluasi Kinerja Unit Crushing Plant Batu Andesit*”, Mataram : Universitas Muhammadiyah Mataram.

[10] Indonesianto, Yanto. 2013. “Pemindahan Tanah Mekanis”. Yogyakarta : UPN Veteran.

[11] Fauzy I., D. Guntoro, D.Nasrudin. 2017. Analisis Produksi Crushing Plant DalamPencapaian Target Produksi Andesit di CV Panghegar Mitra Abadi Desa Lagadar Kecamatan Margaasih Kabupaten Bandung Provinsi Jawa Barat. Jurnal Teknik Pertambangan 3,2.

LAMPIRAN

PERHITUNGAN SEBARAN MATERIAL DI SETIAP SCREEN

1.Perhitungan sebaran material di setiap screen

D = $\frac{TxC}{MxW}$

Dimana,

D = Sebaran material (m)

T = Output Tph (tph)

C = Kepadatan yang terjadi (t/m^3)

M = Kecepatan turun material (m/hr)

W = Lebar mesh (m)

1.1 Perhitungan sebaran material screen 1 sebelum dianalisa

Dimana,

T = 619 tph

C = 2,3 t/m^3

M = 1820 m

W = 2,4 m

D = $\frac{619\ x\ 2{,}3}{1820\ x\ 2{,}4} = \frac{1424}{4368}$

= 0,326 m^2

= 32,6 cm^2

= ***326 mm^2***

1.2 Perhitungan sebaran material screen 1 sesudah dianalisa

Dimana,

T = 678 tph

C = 2,3 t/m^3

M = 1820 m

W = 2,4 m

$$D = \frac{678\ x\ 2{,}3}{1820\ x\ 2{,}4} = \frac{1559}{4368}$$

= 0,357 m^2

= 35,7 cm^2

= ***357 mm^2***

1.3 Perhitungan sebaran material screen 2 sebelum dianalisa

Dimana,

T = 123,8 tph

C = 2,3 t/m^3

M = 1820 m

W = 2,4 m

$$D = \frac{123{,}8\ x\ 2{,}3}{1820\ x\ 2{,}4} = \frac{285}{4368}$$

= 0,326 m^2

= 32,6 cm^2

= ***326 mm^2***

1.4 Perhitungan sebaran material screen 2 sesudah dianalisa

Dimana,

T = 135,5 tph

C = 2,3 t/m^3

M = 1820 m

W = 2,4 m

D = $\frac{135,5 \; x \; 2,3}{1820 \; x \; 2,4} = \frac{312}{4368}$

= 0,072 m^2

= 7,2 cm^2

= 72 mm^2

1.5 Perhitungan sebaran material screen 3 sebelum dianalisa

Dimana,

T = 229 tph

C = 2,3 t/m^3

M = 1820 m

W = 2,4 m

D = $\frac{229 \; x \; 2,3}{1820 \; x \; 2,4} = \frac{526,7}{4368}$

= 0,121 m^2

= 12,1 cm^2

= 121 mm^2

1.6 Perhitungan sebaran material screen 3 sesudah dianalisa

Dimana,

T = 273 tph

C = 2,3 t/m^3

M = 1820 m

W = 2,4 m

$$D = \frac{273\ x\ 2{,}3}{1820\ x\ 2{,}4} = \frac{627{,}4}{4368}$$

= 0,144 m^2

= 14,4 cm^2

= ***144 mm^2***

LAMPIRAN

PERHITUNGAN EFISIENSI AYAKAN GETAR (VIBRATING SCREEN)

1. Efisiensi Screen

Eff = $\frac{a}{f} x\ 100\%$

Eff = Efisiensi Screen (%)

a = Berat produk yang lolos (ton/jam)

f = Berat kapasitas design (ton/jam)

1.1 Efisiensi Screen sebelum dianalisa

1.1.1 efisiensi screen 1 deck 1

a = 61,9 ton/jam

f = 79,84 ton/jam

Eff deck I = $\frac{61,9}{79,84} x\ 100\%$ = 77,53%

1.1.2 efisiensi screen 1 deck 2

a = 61,9 ton/jam

f = 79,84 ton/jam

Eff deck II = $\frac{61,9}{79,84} x\ 100\%$ = 77,53%

1.1.3 efisiensi screen 2 deck 1

a = 12,38 ton/jam

f = 16,78 ton/jam

Eff deck II = $\frac{12,38}{16,78}\ x\ 100\%$ = 73,77%

1.1.4 efisiensi screen 2 deck 2

a = 12,38 ton/jam

f = 16,78 ton/jam

Eff deck II = $\frac{12,38}{16,78}\ x\ 100\%$ = 73,77%

1.1.5 efisiensi screen 3 deck 1

a = 137,3 ton/jam

f = 188,95 ton/jam

Eff deck II = $\frac{137,3}{188,95}\ x\ 100\%$ = 72,66%

1.1.6 efisiensi screen 3 deck 2

a = 22,89 ton/jam

f = 33,43 ton/jam

Eff deck II = $\frac{22,89}{33,43}\ x\ 100\%$ = 68,47%

1.1.7 efisiensi screen 3 deck 3

a = 57,21 ton/jam

f = 79,52 ton/jam

Eff deck II = $\frac{57,21}{79,52}\ x\ 100\%$ = 71,94%

1.1 Efisiensi Screen sesudah dianalisa

1.2.1 efisiensi screen 1 deck 1

a = 67,76 ton/jam

f = 79,84 ton/jam

Eff deck I = $\frac{67,76}{79,84}\ x\ 100\%$ = 84,86 %

1.2.1 efisiensi screen 1 deck 2

a = 67,76 ton/jam

f = 79,84 ton/jam

Eff deck I = $\frac{67,76}{79,84}\ x\ 100\%$ = 84,86 %

1.1.3 efisiensi screen 2 deck 1

a = 13,55 ton/jam

f = 16,78 ton/jam

Eff deck II = $\frac{13,55}{16,78}\ x\ 100\%$ = 80,75 %

1.1.3 efisiensi screen 2 deck 2

a = 13,55 ton/jam

f = 16,78 ton/jam

Eff deck II = $\frac{13,55}{16,78}$ x 100% = 80,75 %

1.1.5 efisiensi screen 3 deck 1

a = 163,87 ton/jam

f = 188,95 ton/jam

Eff deck II = $\frac{163,87}{188,95}$ x 100% = 86,72 %

1.1.6 efisiensi screen 3 deck 2

a = 27,31 ton/jam

f = 33,43 ton/jam

Eff deck II = $\frac{27,31}{33,43}$ x 100% = 81,69 %

1.1.7 efisiensi screen 3 deck 3

a = 68,28 ton/jam

f = 79,52 ton/jam

Eff deck II = $\frac{68,28}{79,52}$ x 100% = 85.86%

LAMPIRAN

PERHITUNGAN KELUARAN AYAKAN GETAR (VIBRATING SCREEN)

2. Perhitungan keluaran screen

Perhitugan screen = $\frac{jumlah\ produk\ lolos}{jumlah\ keseluruhan\ produk}\ x\ 100\%$

2.1 Hasil keluaran screen hasil penelitian awal

2.1.1 Hasil keluaran screen 1 deck 1

jumlah produk lolos = 61,9 ton/jam

jumlah keseluruhan produk = 619 ton/jam

Perhitugan screen = $\frac{61,9}{619}\ x\ 100\%$ = 10%

2.1.2 Hasil keluaran screen 1 deck 2

jumlah produk lolos = 61,9 ton/jam

jumlah keseluruhan produk = 619 ton/jam

Perhitugan screen = $\frac{61,9}{619}\ x\ 100\%$ = 10%

2.1.3 Hasil keluaran screen 2 deck 1

jumlah produk lolos = 12,38 ton/jam

jumlah keseluruhan produk = 123,8 ton/jam

Perhitugan screen = $\frac{12,38}{123,8}\ x\ 100\%$ = 10%

2.1.4 Hasil keluaran screen 2 deck 2

jumlah produk lolos = 12,38 ton/jam

jumlah keseluruhan produk = 123,8 ton/jam

Perhitugan screen = $\frac{12,38}{123,8}\ x\ 100\%$ = 10%

2.1.5 Hasil keluaran screen 3 deck 1

jumlah produk lolos = 137,3 ton/jam

jumlah keseluruhan produk = 228,82 ton/jam

Perhitugan screen = $\frac{137,3}{228,82}\ x\ 100\%$ = 60%

2.1.6 Hasil keluaran screen 3 deck 2

jumlah produk lolos = 22,89 ton/jam

jumlah keseluruhan produk = 228,82 ton/jam

Perhitugan screen = $\frac{22,89}{228,82}\ x\ 100\%$ = 10%

2.1.7 Hasil keluaran screen 3 deck 3

jumlah produk lolos = 57,21 ton/jam

jumlah keseluruhan produk = 228,82 ton/jam

Perhitugan screen = $\frac{57,21}{228,82}\ x\ 100\%$ = 25%

2.1 Hasil keluaran screen sesudah analisa

2.1.1 Hasil keluaran screen 1 deck 1

jumlah produk lolos = 67,76 ton/jam

jumlah keseluruhan produk = 677,56 ton/jam

Perhitugan screen = $\frac{67,76}{677,56}\ x\ 100\%$ = 10%

2.1.2 Hasil keluaran screen 1 deck 2

jumlah produk lolos = 67,76 ton/jam

jumlah keseluruhan produk = 677,56 ton/jam

Perhitugan screen = $\frac{67,76}{677,56}\ x\ 100\%$ = 10%

2.1.3 Hasil keluaran screen 2 deck 1

jumlah produk lolos = 13,55 ton/jam

jumlah keseluruhan produk = 135,51 ton/jam

Perhitugan screen = $\frac{13,55}{135,51}\ x\ 100\%$ = 10%

2.1.4 Hasil keluaran screen 2 deck 2

jumlah produk lolos = 13,55 ton/jam

jumlah keseluruhan produk = 135,51 ton/jam

Perhitugan screen = $\frac{13,55}{135,51}\ x\ 100\%$ = 10%

2.1.5 Hasil keluaran screen 3 deck 1

jumlah produk lolos = 263,87 ton/jam

jumlah keseluruhan produk = 273,11 ton/jam

Perhitugan screen = $\frac{263,87}{273,11}\ x\ 100\%$ = 60%

2.1.6 Hasil keluaran screen 3 deck 2

jumlah produk lolos = 27,31 ton/jam

jumlah keseluruhan produk = 273,11 ton/jam

Perhitugan screen = $\frac{27,31}{273,11}\ x\ 100\%$ = 10%

2.1.7 Hasil keluaran screen 3 deck 3

jumlah produk lolos = 68,28 ton/jam

jumlah keseluruhan produk = 273,11 ton/jam

Perhitugan screen = $\frac{68,28}{273,11}\ x\ 100\%$ = 25%

D = $\frac{TxC}{MxW}$

Dimana,

D = Sebaran Material (M)

T = Output Ton/jam

C = Kepadatan Yang terjadi (t/m3)

M = kecepatan turun material (m/jam)

W = Lebar Mesh (m)

LAMPIRAN

PERHITUNGAN AYAKAN GETAR 1 (VIBRATING SCREEN 1)

1. Screen 1 (2 deck apperture 90 mm dan 30 mm)

a. Perhitungan mesh Apperture 90 mm

1. Perhitungan Luas Mesh (1 segmen)

   P = 2400 mm

   L = 1200 mm

   LM = P x L

   = 2400 mm x 1200 mm

   = 2,880,000 / 1,000,000 (konversi 1 m^2)

   = 2,88 m^2

2. Perhitungan Volume Mesh

   Ø 10 = 0,010 m (tebal diameter kawat)

   Volume mesh = Tebal kawat x Luas mesh

   = 0,010 m x 2,88 m^2

   = 0,028 m^3

   = 28 x 10^{-3} m^3

3. Perhitungan massa total mesh

   Volume mesh = 28 x $10^{-3\ m3}$

   Density HC = 7850 $^{kg}/_{m3}$

   $= \frac{Density\ HC\ X\ Volume\ Mesh}{2}$

   $= \frac{7850\ kg/m3\ x\ 28\ x\ 10-3\ m3}{2}$

$= \frac{226.08\ kg}{2}$

= 113.04 kg

4. Perhitungan kemampuan mesh dalam menerima beban material

Massa total mesh = 113.04 kg

Percepatan gravitasi = 9.81 $^{m}/_{s2}$

W = Masaa total mesh x Percepatan gravitasi

= 113.04 kg x 9.81 $^{m}/_{s2}$

= 1,108.92 kg $^{m}/_{s2}$

= 1,108.92 N

b. Perhitungan mesh Apperture 30 mm

1. Perhitungan Luas Mesh (1 segmen)

P = 2400 mm

L = 1200 mm

LM = P x L

= 2400 mm x 1200 mm

= 2,880,000 / 1,000,000 (konversi 1 m^2)

= 2,88 m^2

2. Perhitungan Volume Mesh

Ø 8 = 0,008 m (tebal diameter kawat)

Volume mesh = Tebal kawat x Luas mesh

= 0,008 m x 2,88 m^2

= 0,023 m^3

= 23 x 10^{-3} m^3

3. Perhitungan massa total mesh

   Volume mesh = 23 x 10^{-3} m^3

   Density HC = 7850 $^{kg}/_{m3}$

   $= \frac{Density\ HC\ X\ Volume\ Mesh}{2}$

   $= \frac{7850\ kg/m3\ x\ 23\ x\ 10-3\ m3}{2}$

   $= \frac{180,55}{2}$

   = 90.275 kg

4. Perhitungan kemampuan mesh dalam menerima beban material

   Massa total mesh = 90.275 kg

   Percepatan gravitasi = 9.81 $^{m}/_{s2}$

   W = Masaa total mesh x Percepatan gravitasi

   = 90.275 kg x 9.81 $^{m}/_{s2}$

   = 885.6 kg $^{m}/_{s2}$

   = 885.6 N

1. Screen 2 (2 deck apperture 30 mm dan 11 mm)

a. Perhitungan mesh Apperture 30 mm

1. Perhitungan Luas Mesh (1 segmen)

   P = 2400 mm

   L = 1200 mm

   LM = P x L

   = 2400 mm x 1200 mm

   = 2,880,000 / 1,000,000 (konversi 1 m^2)

   = 2,88 m^2

2. Perhitungan Volume Mesh

   Ø 8 = 0,008 m (tebal diameter kawat)

   Volume mesh = Tebal kawat x Luas mesh

   = 0,008 m x 2,88 m^2

   = 0,023 m^3

   = 23 x 10^{-3} m^3

3. Perhitungan massa total mesh

   Volume mesh = 23 x 10^{-3} $m3$

   Density HC = 7850 $^{kg}/_{m3}$

   $= \frac{Density\ HC\ X\ Volume\ Mesh}{2}$

   $= \frac{7850\ kg/m3\ x\ 23\ x\ 10-3\ m3}{2}$

   $= \frac{180{,}55\ kg}{2}$

   = 90.275 kg

4. Perhitungan kemampuan mesh dalam menerima beban material

   Massa total mesh = 90.275 kg

   Percepatan gravitasi = 9.81 $^{m}/_{s2}$

   W = Masaa total mesh x Percepatan gravitasi

   = 90.275 kg x 9.81 $^{m}/_{s2}$

   = 885.6 kg $^{m}/_{s2}$

   = 885.6 N

a. Perhitungan mesh Apperture 11 mm

1. Perhitungan Luas Mesh (1 segmen)

   P = 2400 mm

   L = 1200 mm

   LM = P x L

   = 2400 mm x 1200 mm

   = 2,880,000 / 1,000,000 (konversi 1 m^2)

   = 2,88 m^2

2. Perhitungan Volume Mesh

   Ø 5 = 0,005 m (tebal diameter kawat)

   Volume mesh = Tebal kawat x Luas mesh

   = 0,005 m x 2,88 m^2

   = 0,014 m^3

   = 14 x 10^{-3} m^3

3. Perhitungan massa total mesh

   Volume mesh = $14 \times 10^{-3\ m3}$

   Density HC = $7850\ {}^{kg}/_{m3}$

   $= \frac{Density\ HC\ X\ Volume\ Mesh}{2}$

   $= \frac{7850\ kg/m3 \times 14 \times 10-3\ m3}{2}$

   $= \frac{113{,}04\ kg}{2}$

   = 56.52 kg

4. Perhitungan kemampuan mesh dalam menerima beban material

   Massa total mesh = 56.52 kg

   Percepatan gravitasi = $9.81\ {}^{m}/_{s2}$

   W = Masaa total mesh x Percepatan gravitasi

   = 56.52 kg x $9.81\ {}^{m}/_{s2}$

   = 554.5 kg $^{m}/_{s2}$

   = 554.5 N

1. Screen 3 (3 deck apperture 27 mm, 14 mm dan 6,5 mm)

a. Perhitungan mesh Apperture 27 mm

1. Perhitungan Luas Mesh (1 segmen)

   P = 2400 mm

   L = 1200 mm

   LM = P x L

   = 2400 mm x 1200 mm

= 2,880,000 / 1,000,000 (konversi 1 m^2)

= 2,88 m^2

2. Perhitungan Volume Mesh

Ø 7 = 0,007 m (tebal diameter kawat)

Volume mesh = Tebal kawat x Luas mesh

= 0,007 m x 2,88 m^2

= 0,020 m^3

= 20 x 10^{-3} m^3

3. Perhitungan massa total mesh

Volume mesh = 20 x 10^{-3} m^3

Density HC = 7850 $^{kg}/_{m3}$

$$= \frac{Density\ HC\ X\ Volume\ Mesh}{2}$$

$$= \frac{7850\ kg/m3\ x\ 20\ x\ 10{-}3\ m3}{2}$$

$$= \frac{158.26\ kg}{2}$$

= 79.13 kg

4. Perhitungan kemampuan mesh dalam menerima beban material

Massa total mesh = 79.13 kg

Percepatan gravitasi = 9.81 $^{m}/_{s2}$

W = Masaa total mesh x Percepatan gravitasi

= 79.13 kg x 9.81 $^{m}/_{s2}$

= 776.26 kg $^{m}/_{s2}$

= 776.26 N

a. Perhitungan mesh Apperture 14 mm

1. *Perhitungan Luas Mesh (1 segmen)*

   P = 2400 mm

   L = 1200 mm

   LM = P x L

   = 2400 mm x 1200 mm

   = 2,880,000 / 1,000,000 (konversi 1 m^2)

   = 2,88 m^2

2. *Perhitungan Volume Mesh*

   Ø 6 = 0,006 m (tebal diameter kawat)

   Volume mesh = Tebal kawat x Luas mesh

   = 0,006 m x 2,88 m^2

   = 0,017 m^3

   = 17 x 10^{-3} m^3

3. *Perhitungan massa total mesh*

   Volume mesh = 17 x 10^{-3} m^3

   Density HC = 7850 $^{kg}/_{m3}$

   $= \frac{Density\ HC\ X\ Volume\ Mesh}{2}$

   $= \frac{7850\ kg/m3\ x\ 17\ x\ 10-3\ m3}{2}$

   $= \frac{135.65}{2}$

= 67.82 kg

4. *Perhitungan kemampuan mesh dalam menerima beban material*

Massa total mesh = 67.82 kg

Percepatan gravitasi = 9.81 $^{m}/_{s2}$

W = Masaa total mesh x Percepatan gravitasi

= 67.82 kg x 9.81 $^{m}/_{s2}$

= 665.36 kg $^{m}/_{s2}$

= 665.36 N

a. Perhitungan mesh Apperture 6,5 mm

1. *Perhitungan Luas Mesh (1 segmen)*

P = 2400 mm

L = 1200 mm

LM = P x L

= 2400 mm x 1200 mm

= 2,880,000 / 1,000,000 (konversi 1 m^2)

= 2,88 m^2

2. *Perhitungan Volume Mesh*

Ø 3 = 0,003 m (tebal diameter kawat)

Volume mesh = Tebal kawat x Luas mesh

= 0,003 m x 2,88 m^2

= 0,0086 m^3

$= 8{,}6 \times 10^{-3}\ m^3$

3. *Perhitungan massa total mesh*

Volume mesh $= 8{,}6 \times 10^{-3}\ m^3$

Density HC $= 7850\ {}^{kg}/_{m3}$

$$= \frac{Density\ HC\ X\ Volume\ Mesh}{2}$$

$$= \frac{7850\ kg/m3 \times 8{,}6 \times 10{-}3\ m3}{2}$$

$$= \frac{67.82\ kg}{2}$$

$= 33.91$ kg

4. *Perhitungan kemampuan mesh dalam menerima beban material*

Massa total mesh $= 33.91$ kg

Percepatan gravitasi $= 9.81\ {}^{m}/_{s2}$

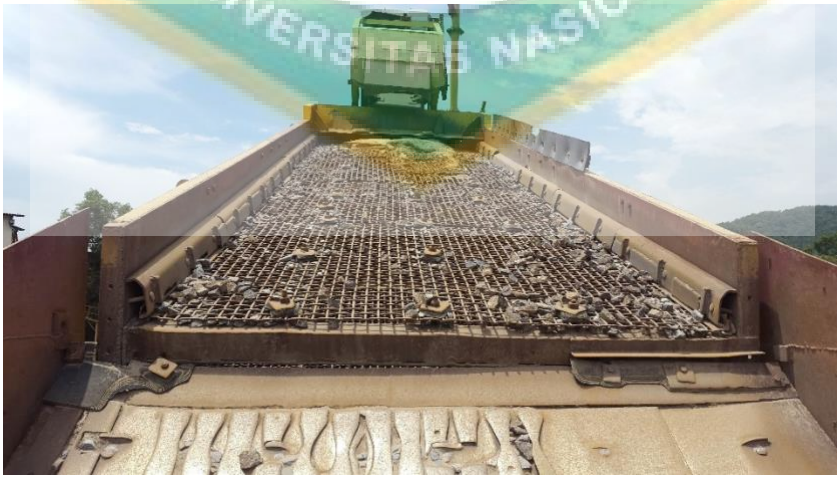
W = Masaa total mesh x Percepatan gravitasi

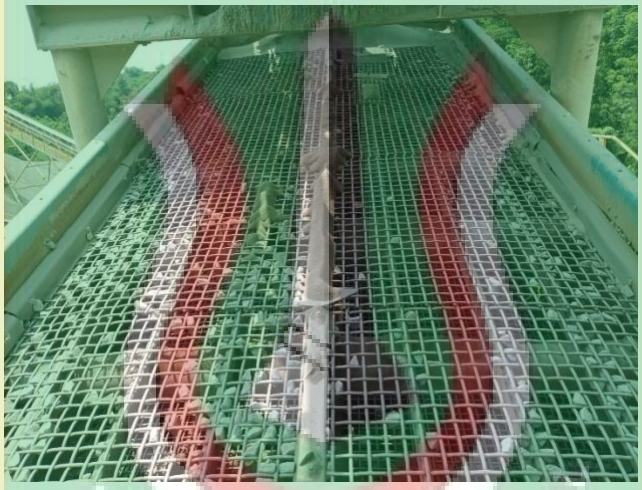
$= 33.91$ kg $\times 9.81\ {}^{m}/_{s2}$

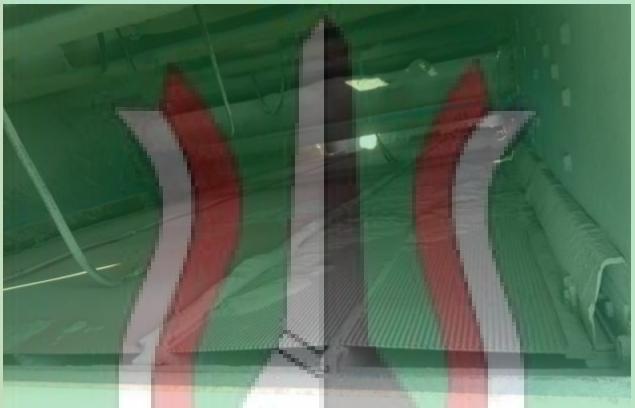
$= 332.66$ kg ${}^{m}/_{s2}$

$= 332.66$ N

LAMPIRAN







Bryan

ORIGINALITY REPORT

26%	25%	4%	12%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	ecampus.sttind.ac.id Internet Source	3%
2	Submitted to Universitas Nasional Student Paper	3%
3	behappycraft.wordpress.com Internet Source	2%
4	baktisurabaya.com Internet Source	2%
5	docplayer.info Internet Source	2%
6	karyailmiah.unisba.ac.id Internet Source	1%
7	repository.usd.ac.id Internet Source	1%
8	pt.scribd.com Internet Source	1%
9	123dok.com Internet Source	1%