



BAB V SPESIFIKASI PERALATAN

1. TANGKI PENYIMPANAN ASAM NITRAT (F-110)

| | | | | |
|----------------------------|---|---|------|------------|
| Fungsi | = | Menyimpan Asam Nitrat untuk proses selama 7 hari | | |
| Tipe | = | Silinder vertikal dengan tutup atas jenis elliptical dan tutup bawah plat datar | | |
| Bahan konstruksi | = | Carbon steel SA - 283 Grade C | | |
| Volume tangki | = | 495344.055 | | |
| Diameter tangki | = | 39,847 | ft | = 12,145 m |
| Tinggi tangki Tebal tangki | = | 79,693 | ft | = 24,290 m |
| Tebal tutup atas | = | 1 2/3 | in | |
| Tinggi tutup atas | = | 2 1/3 | in | |
| | = | 2,516 | in | |
| | | | cuft | |
| Tebal tutup bawah | = | 2,509 | in | |
| Jumlah | = | 1 | buah | |

2. POMPA (L-111)

| | | | | |
|--------------------|---|---|------------------------|--|
| Fungsi | = | memindahkan bahan dari F - 110 ke R - 210 | | |
| Type | = | Centrifugal Pump | | |
| Dimensi Pipa | = | pipa 1 1/2 in, sch 40 | | |
| Rate Volumetrik | = | 29,485 | gpm | |
| Total Dynamic Head | = | 117,988 | ft.lbf/lb _m | |
| Effisiensi motor | = | 80% | | |
| Power | = | 5 | hp | |
| Bahan Konstruksi | = | Commercial steel | | |
| Jumlah | = | 1 | buah | |



3. HEATER ASAM NITRAT (E-112)

| | | | |
|-------------------|---|--|-----------------|
| Fungsi | = | Memanaskan Asam nitrat 30 °C menjadi 175 °C menuju | |
| Type | = | reaktor 1-2 shell and tube Heat Exchanger (Fixed Tube) | |
| Shell side | | | |
| ID | = | 15,250 | in |
| B | = | 3,050 | in |
| n | = | 2 | passes |
| Tube side | | | |
| Nt | = | 79.2 | buah |
| L | = | 6 | ft |
| OD | = | 3/4 | in |
| BWG | = | 12 | |
| n | = | 2 | passes |
| Pitch | = | Square pitch 1" | |
| Heat exch, area A | = | 93,294 | ft ² |
| Jumlah heat exch | = | 1 | Buah |
| Bahan konstruksi | = | Alloy Steel | |

4. TANGKI PENYIMPANAN AMONIA (F-120)

| | | | |
|------------------|---|--|----------------|
| Fungsi | = | Untuk menyimpan amonia | |
| Jenis | = | Tangki Horizontal dengan kedua tutup berupa Dishead (Cylindrical Tank) | |
| Bahan Konstruksi | = | Alumunium Alloy | |
| Volume Tangki | = | 428,113 | m ³ |
| Panjang Tangki | = | 42,553 | ft = 12,970 m |
| Diameter Tangki | = | 21,277 | ft = 6,485 m |
| Tebal Tangki | = | 2,359 | in |
| Tebal Tutup | = | 3 | in |
| Jumlah | = | 1 | buah |

5. EXPANDER (G-121)

| | | | |
|--------|---|---|--|
| Fungsi | = | Untuk menurunkan tekanan amonia dari 11.5 menjadi 5 atm | |
| Jenis | = | Gate expander | |



| | | | |
|--------|---|-----|------|
| Power | = | 100 | HP |
| Jumlah | = | 1 | buah |

6. HEATER AMONIA (E-122)

| | | | |
|-----------------------|---|--|-----------------|
| Fungsi | = | Memanaskan ammonia menuju reaktor | |
| Type | = | Shell and tube, 1-2 exchanger (Fixed tube) | |
| Shell side | | | |
| ID | = | 31 | in |
| B | = | 6,2 | in |
| n | = | 1 | passes |
| Tube side | | | |
| Nt | = | 32 | buah |
| L | = | 10 | ft |
| | | | |
| OD | = | $\frac{3}{4}$ | in |
| BWG | = | 12 | |
| n | = | 1 | passes |
| | | | |
| Pitch | = | Square pitch 1" | |
| Heat exch, area A | = | 14,094 | ft ² |
| Jumlah heat exchanger | = | 1 | buah |
| Bahan konstruksi | = | Carbon Steel | |

7. REAKTOR (R-210)

| | | | |
|--------|---|---|--|
| Fungsi | = | Mereaksikan Ammonia dengan Asam nitrat membentuk Ammonium Nitrat. | |
| Type | = | Silinder tegak, tutup atas st. dished, tutup bawah st. dished dilengkapi pengaduk jaket pendingin, dan sparger. (Bubble reaktor dengan pengaduk). | |

Dimensi Shell :

| | | | | | | |
|-------------------------|---|---------|----|---|--------|---|
| Diameter shell , inside | = | 5.2774 | ft | = | 1.6085 | m |
| Tinggi shell | = | 10.5548 | ft | = | 3.2171 | m |
| Tinggi total | = | 11,927 | ft | = | 3,635 | m |
| Tebal shell | = | 0,1858 | in | | | |

Dimensi tutup :

| | | | |
|-------------------|---|-----------------------------|----|
| Tebal tutup atas | = | $\frac{1}{4}$ | in |
| Tebal tutup bawah | = | $\frac{1}{4}$ | in |
| Bahan kontruksi | = | Carbon Steel SA-283 grade C | |

Sistem Pengaduk :

Dipakai impeller jenis turbin dengan 6 buah flat blade dengan 1 buah impeller .



| | | | |
|---------------------------|---|-----|------|
| Jumlah lubang tiap cabang | = | 151 | buah |
| Jumlah reaktor | = | 1 | buah |

8. SCRUBBER (D-211)

Fungsi = Absorpsi gas buang NH₃ menggunakan air proses.

Tipe = Tower Gas Scrubber Tray Column dilengkapi dengan sparger

Dimensi Tangki

| | | | |
|-------------------|---|---------------------|---------------|
| Volume | = | 2416,300 | Cuft |
| Diameter | = | 8,506 | ft = 2,593 m |
| Tinggi | = | 42,534 | ft = 12,964 m |
| Tebal Shell | = | 0,0644 | in |
| Tebal tutup atas | = | 1/4 | in |
| Tebal tutup bawah | = | 1/4 | in |
| Bahan | = | Stainless steel 316 | |
| Jumlah | = | 1 | buah |
| Jumlah Tray | = | 3 | Tray / Plate |
| Tray Spacing | = | 0,4 | ft |

Sistem Sparger

Tipe = Standart perforated pipe

Bahan konstruksi = Commercial Steel

Diameter = 0,016 ft

Jumlah lubang = 306 lubang

Lubang tiap cabang = 15,302 lubang

9. POMPA (L-212)

Fungsi = memindahkan bahan dari R - 210 ke R-310



| | | | | | |
|---------------------------|---|--------------------------|-------------------------------------|---|---------|
| Diameter impeller | = | 1,759 | ft | = | 0,537 |
| Panjang Blade | = | 0,439 | ft | = | 0,132 |
| Lebar Blade | = | 0,352 | ft | = | 0,105 |
| Power Motor | = | 11,176 | hp | | |
| Sistem Pendingin : | | | | | |
| Diameter jaket | = | 5,308 | ft | = | 1,592 m |
| Tinggi jaket | = | 9,875 | ft | = | 2,963 m |
| Jaket spacing | = | 9,367 | in | | |
| Tebal jaket | = | 0,184 | in | | |
| Sistem Sparger : | | | | | |
| Type | = | Standart Perforated pipe | | | |
| Bahan konstruksi | = | Commercial steel | | | |
| Diameter | = | 5 | in | | |
| Jumlah cabang | = | 20 | buah | | |
| Type | = | Centrifugal Pump | | | |
| Rate Volumetrik | = | 0,171 | gpm | | |
| Total Dynamic Head | = | 23,133 | ft.lb _f /lb _m | | |
| Effisiensi motor | = | 80% | | | |
| Power | = | 1 | hp | | |
| Bahan Konstruksi | = | Commercial steel | | | |
| Jumlah | = | 1 | buah | | |

10. MIXING TANK (R-310)

| | | |
|--------|---|---|
| Fungsi | = | Melarutkan larutan NH ₄ NO ₃ menggunakan air proses |
| Type | = | Silinder tegak dengan tutup atas dished dan tutup atas conical dilengkapi pengaduk dan baffle |

Dimensi Shell :

| | | | | | |
|------------------------|---|-------------------------------|----|---|---------|
| Diameter shell, inside | = | 6,623 | ft | = | 2,019 m |
| Tinggi shell | = | 13,247 | ft | = | 4,038 m |
| Tebal shell | = | 0,165 | in | | |
| Tebal tutup atas | = | 0,243 | in | | |
| Tebal tutup bawah | = | 0,243 | in | | |
| Bahan Konstruksi | = | Carbon Steel SA - 283 Grade C | | | |
| Jumlah | = | 1 buah | | | |

Sistem Pengaduk :

Digunakan impeller jenis turbin dengan 6 buah flate blade



| | | | | |
|-------------------|---|----------|---|---------|
| Diameter impeller | = | 2,208 ft | = | 0,673 m |
| Lebar blade | = | 0,444 ft | = | 0,135 m |
| Panjang blade | = | 0,552 ft | = | 0,168 m |
| Lebar baffle | = | 0,666 ft | = | 0,203 m |
| Jumlah baffle | = | 4 buah | | |
| Power motor | = | 42,60 Hp | | |
| Jumlah pengaduk | = | 2 buah | | |

11. POMPA (L-311)

| | | |
|--------------------|---|--|
| Fungsi | = | memindahkan bahan dari R - 310 ke V-320 |
| Type | = | Centrifugal Pump |
| Rate Volumetrik | = | 28,878 gpm |
| Total Dynamic Head | = | 31,872 ft.lb _f /lb _m |
| Effisiensi motor | = | 80% |
| Power | = | 1.84 hp |
| Bahan Konstruksi | = | Commercial steel |
| Jumlah | = | 1 buah |

12. EVAPORATOR (V-320)

| | | |
|--------|---|--|
| Fungsi | : | Memekatkan larutan Ammonium Nitrat |
| Type | : | Standart vertikal tube evaporator (Calandria). |

Bagian shell :

| | | | | |
|---------------------|---|-----------|---|---------|
| Diameter evaporator | = | 7 ft | = | 2,134 m |
| Diameter centerwall | = | 10 ft | = | 3,048 m |
| Tinggi shell | = | 13 ft | = | 3,962 m |
| Tebal shell | = | 1,778 in | | |
| Tebal tutup atas | = | 0,450 in | | |
| Tinggi tutup atas | = | 17,434 in | = | 0,443 m |
| Tebal tutup bawah | = | 0,450 in | | |
| Tinggi tutup bawah | = | 39,464 in | = | 1,002 m |

Tube Calandria :

| | | |
|--------|---|--------------------------|
| Ukuran | = | 4 in sch 40 standart IPS |
|--------|---|--------------------------|

| | | |
|----|---|----------|
| OD | = | 2,880 in |
| ID | = | 2,469 in |



| | | | |
|-------------------|---|--|------|
| Panjang Tube | = | 6 | ft |
| Jumlah Tube | = | 1021 | buah |
| Bahan Konstruksi | = | Carbon steel SA - 203 grade C (2 1/2 Ni) | |
| Jumlah Evaporator | = | 1 | buah |

13. POMPA (L-321)

| | | | |
|--------------------|---|---|-------------------------------------|
| Fungsi | = | Memindahkan bahan dari V - 320 ke S - 330 | |
| Type | = | Centrifugal Pump | |
| Rate Volumetrik | = | 25,230 | gpm |
| Total Dynamic Head | = | 235,829 | ft.lb _f /lb _m |
| Effisiensi motor | = | 84% | |
| Power | = | 11.8 | hp |
| Bahan Konstruksi | = | Commercial steel | |

14. BAROMETRIC CONDENSOR (E-322)

| | | | |
|-------------------------|---|--|-----------|
| Fungsi | = | Mengubah fase H ₂ O _(g) yang menguap dari Evaporator menjadi H ₂ O _(l) | |
| Type | = | Barometric Condensor | |
| Bagian Shell : | | | |
| Diameter Condensor | = | 3,391 ft | = 1,034 m |
| Tinggi Shell | = | 6,783 ft | = 2,067 m |
| Tebal Shell | = | 1/4 in | |
| Tebal Tutup | = | 1/4 in | |
| ID Shell | = | 10 in | |
| Jumlah Condensor | = | 1 | Buah |
| Bagian Tube | | | |
| Outside Diameter (OD) | = | 1,25 in | |
| BWG | = | 18 | |
| Inside Diameter (ID) | = | 1,150 in | |
| Flow area per tube | = | 1,040 in ² | |
| Surface per lin ft | = | 0,327 ft ² | |
| Pitch | = | 1,563 in | |
| Panjang Tube | = | 12 ft | |
| Jumlah Tube | = | 230 | buah |
| Faktor Pengotor | | | |



PRA PERANCANGAN PABRIK
“AMMONIUM NITRAT DARI GAS AMONIA DAN ASAM NITRAT DENGAN
PRILLING PROCESS KAPASITAS 70.000 TON / TAHUN”

Rd ketentuan

=

0,001 Btu / Jam ft² °F



| | | | |
|------------------|---|-----------------------|------------------------------|
| Rd hitung | = | 0,012 | Btu / Jam ft ² °F |
| Bahan Konstruksi | = | Carbon Steel SA - 283 | Grade C |

15. STEAM JET EJECTOR (G-323)

| | | |
|----------------|---|--------------------------------|
| Fungsi | = | Memvacumkan Evaporator |
| Type | = | Single stage steam jet ejector |
| Tekanan | = | 0,4 atm |
| Kapasitas | = | 215,454 kg/jam |
| Waktu Evakuasi | = | 703 menit |
| Panjang | = | 2 inch |
| Jumlah | = | 1 Buah |

16. HOT WELL (F-324)

| | | |
|------------------|---|---|
| Fungsi | = | Untuk menampung kondensat dari Barometric Condensor dan Steam Jet Ejector |
| Bentuk | = | Balok Terbuka |
| Panjang | = | 12,014 ft = 3,662 m |
| Lebar | = | 6,007 ft = 1,831 m |
| Tinggi | = | 6,007 ft = 1,831 m |
| Bahan Konstruksi | = | Beton |
| Jumlah | = | 1 Buah |

17. PRILLING TOWER (S-330)

| | | |
|-------------------------|---|---|
| Fungsi | = | Mengubah larutan amonium nitrat 95% menjadi prill |
| Diameter prilling tower | = | 20 ft = 6,096 m |
| tinggi prilling tower | = | 100 ft = 30,480 m |
| Tebal prilling tower | = | 0,188 in |
| Kecepatan terminal | = | 10,810 ft/s |
| Residence time | = | 12,689 s |
| Massa partikel | = | 0,0000054 lb |
| Luas Partikel | = | 0,0000167 ft ² |



PRA PERANCANGAN PABRIK
“AMMONIUM NITRAT DARI GAS AMONIA DAN ASAM NITRAT DENGAN
PRILLING PROCESS KAPASITAS 70.000 TON / TAHUN”

| | | |
|--------|---|-----------|
| Bahan | = | Alumunium |
| jumlah | = | 1 buah |

18. BLOWER (G-331)

| | | |
|------------------|---|---|
| Fungsi | = | Menyuplai udara dari udara bebas ke Molecular Sieve Air Dryer |
| Type | = | Centrifugal Blower |
| HP shaft | = | 8.7 hp |
| Bahan konstruksi | = | Carbon Steel |
| Jumlah | = | 1 buah |

19. MOLECULAR SIEVE AIR DRYER (D - 343)

| | | |
|-----------------|---|---|
| Fungsi | = | Mengadsorb air dalam udara masuk |
| Type | = | Fix Bed Column Molecular Sieve Air dryer |
| Dasar Pemilihan | = | Effective Capacity , Dew Point yang dihasilkan lebih rendah |
| Tinggi Column | = | 8 m |
| Diameter Column | = | 2 m |

Karakteristik Adsorben

| | | |
|-----------------|---|--------------------|
| Jenis Adsorben | = | Molecular Sieve 4A |
| Bulk Density | = | 40 - 45 lb / cuft |
| Bentuk | = | Pellet |
| Ukuran Partikel | = | 1,6 - 6 mm |
| Spesifik Heat | = | 0,240 BTU / lb °F |

20. CYCLONE (H-333)

| | | |
|-------------------|---|--|
| Fungsi | = | Untuk memisahkan padatan yang terikut udara. |
| Type | = | Cyclone Separator |
| Diameter Cyclone | = | 40,4776 in |
| Diameter Partikel | = | 0,006 ft |
| Tebal shell | = | 0,250 in |
| Tebal tutup atas | = | 0,250 in |
| Tebal tutup bawah | = | 2,2890 in |
| Bahan konstruksi | = | Carbon Steel SA 283 Grade C |
| Jumlah | = | 1 buah |

21. SCREW CONVEYOR (J-332)

| | | |
|-------------------|---|---------------------------------|
| Fungsi | = | Mengangkut prill amonium nitrat |
| Type | = | Plain spout of chutes. |
| Kapasitas | = | 1,263 cuft/jam |
| Panjang | = | 30 ft = 9,144 m |
| Diameter | = | 6 in |
| Kecepatan putaran | = | 16 rpm |
| Power | = | 3 hp |



Jumlah = 1 buah

22. BLOWER (G-335)

Fungsi = Menyuplai udara dari udara bebas ke S -330
Type = Centrifugal Blower
HP shaft = 3,9 hp
Bahan konstruksi = Carbon Steel
Jumlah = 1 buah

23. ROTARY DRYER (B-340)

Fungsi = Mengeringkan bahan dengan bantuan udara panas
Type = Single Shell Direct Rotary Dryer
Kapasitas = 134768,474 kg/jam
Tebal Shell = 6 5/6 in
Diameter = 9,843 ft = 3 m
Panjang = 39,370 ft = 12 m
Sudut Rotary = 1,700 °
Time of passes = 674,847 Detik = 11,247 Menit
Jumlah Flight = 18 buah
Power = 9 HP
Jumlah = 1 buah
Putaran = 3,048 rpm

24. CYCLONE (H-341)

Fungsi = Untuk memisahkan padatan yang terikut udara.
Type = Cyclone Separator
Diameter Cyclone = 135,062 in
Diameter Partikel = 0,014 ft
Tebal shell = 1 1/3 in
Tebal tutup atas = 1 1/3 in
Tebal tutup bawah = 7 2/3 in
Bahan konstruksi = Carbon Steel SA 283 Grade C
Jumlah = 1 buah

25. COOLING SCREW CONVEYOR (J-342)

Fungsi = Mengangkut prill amonium nitrat
Type = Plain spout of chutes.
Panjang = 30 ft = 9,144 m
Diameter = 6 in
Kecepatan putaran = 16 rpm
Power = 91 hp
Jumlah = 1 buah



26. MOLECULAR SIEVE AIR DRYER (D - 343)

| | | |
|-------------------------------|---|---|
| Fungsi | = | Mengadsorb air dalam udara masuk |
| Type | = | Fix Bed Column Molecular Sieve Air dryer |
| Dasar Pemilihan | = | Effective Capacity , Dew Point yang dihasilkan lebih rendah |
| Tinggi Column | = | 8 m |
| Diameter Column | = | 2 m |
| Karakteristik Adsorben | | |
| Jenis Adsorben | = | Molecular Sieve 4A |
| Bulk Density | = | 40 - 45 lb / cuft |
| Bentuk | = | Pellet |
| Ukuran Partikel | = | 1,6 - 6 mm |
| Spesifik Heat | = | 0,240 BTU / lb °F |

27. HEATER UDARA (E-344)

| | | |
|-----------------------|---|--|
| Fungsi | = | Memanaskan Udara menuju Rotary Dryer |
| Type | = | Shell and tube, 1-2 exchanger (Fixed tube) |
| Shell side | | |
| ID | = | 15,25 in |
| B | = | 3,050 in |
| n | = | 2 passes |
| Tube side | | |
| Nt | = | 508 buah |
| L | = | 6 ft |
| OD | = | 3/4 in |
| BWG | = | 12 |
| n | = | 2 passes |
| Pitch | = | Square pitch 1" |
| Heat exch, area A | = | 598,2 ft ² |
| Jumlah heat exchanger | = | 1 buah |
| Bahan konstruksi | = | Carbon Steel SA 283 Grade C |

28. BLOWER UDARA (G - 345)

| | | |
|------------------|---|--|
| Fungsi | = | Untuk menghembuskan udara menuju molecular sieve air dryer |
| Type | = | Centrifugal Blower |
| HP shaft | = | 36 hp |
| Bahan konstruksi | = | Carbon Steel |
| Jumlah | = | 1 buah |

29. BLOWER UDARA (G - 346)

| | | |
|--------|---|---|
| Fungsi | = | Untuk menghembuskan udara menuju rotary dryer |
|--------|---|---|



| | | |
|------------------|---|--------------------|
| Type | = | Centrifugal Blower |
| HP shaft | = | 36 hp |
| Bahan konstruksi | = | Carbon Steel |
| Jumlah | = | 1 buah |

30. SCREEN (H-350)

| | | |
|----------------------|---|---|
| Fungsi | = | Menyeragamkan ukuran partikel produk dari (B-340) |
| Type | = | vibrated sceen |
| kapasitas | = | 6,874 ton / jam |
| speed | = | 50 vibration/dt |
| power | = | 3 hp |
| Ty equivalent design | = | 8 & 20 mesh |
| sieve no. | = | no. 8 & 20 |
| sieve design | = | standart 149 micron |
| sieve opening | = | 0,149 mm |
| ukuran kawat | = | 0,110 mm |
| effisiensi | = | 99,7 % |
| jumlah | = | 1 buah |

31. BELT CONVEYOR (J-352)

| | | |
|--------------------|---|---|
| Fungsi | = | Memindahkan feed recycle kembali ke mixing tank |
| Type | = | Troughed belt conveyor with rolls of equal length |
| Kapasitas maksimum | = | 32 ton/jam |
| Belt - width | = | 14 in |
| in in - trough | = | 9 |
| ft - width | = | |
| - skirt seal | = | 2 ° = 34,471 m |
| Panjang | = | 113,094 |
| Power | = | 2 HP |
| Sudut elevasi | = | 13 |
| Jumlah | = | 1 buah |

32. BUCKET ELEVATOR (J-353)

| | | |
|--------------------|---|---------------------------------------|
| Fungsi | = | Memindahkan Ammonium Nitrat ke Silo |
| Type | = | Centrifugal Discharge Bucket elevator |
| Kapasitas maksimum | = | 14 ton/jam |
| Ukuran bucket | = | 6 in x 4 in x 4 1/4 in |
| Bucket spacing | = | 12 in |
| Tinggi elevator | = | 13,247 ft = 4,038 m |
| Ukuran feed (max) | = | 3/4 in |
| Putaran Head Shaft | = | 8 rpm |



| | | |
|-------------|---|--------|
| Lebar belt | = | 7 in |
| Power total | = | 3,0 HP |

33. HOPPER SCREENER (F-351)

| | | | |
|-------------------------|---|--|------------|
| Fungsi | = | Menampung sementara amonium nitrat sebelum masuk coating drum | |
| Tipe | = | Silinder dengan tutup bawah berbentuk konikal dengan posisi vertikal | |
| Kapasitas | = | 350,565 cuft | |
| Diameter dalam silinder | = | 3,5 ft | = 1,067 m |
| Tinggi silinder | = | 35,530 ft | = 10,829 m |
| tebal shell | = | 1/8 in | |
| Diameter atas conical | = | 3,5 ft | |
| diameter bawah conical | = | 1 ft | |
| tinggi conical | = | 2,025 ft | |
| cone angle | = | 45 ° | |
| Tebal cone | = | 0,094 in | |
| jumlah | = | 1 buah | |

34. SCREW CONVEYOR (J-354)

| | | | |
|-------------------|---|---------------------------------|-----------|
| Fungsi | = | Mengangkut prill amonium nitrat | |
| Type | = | Plain spout of chutes. | |
| Panjang | = | 30 ft | = 9,144 m |
| Diameter | = | 6 in | |
| Kecepatan putaran | = | 16 rpm | |
| Power | = | 2 hp | |
| Jumlah | = | 1 buah | |

35. SCREW CONVEYOR (J-355)

| | | | |
|-------------------|---|----------------------------------|-----------|
| Fungsi | = | Mengangkut Clay dari hopper Clay | |
| Type | = | Plain spout of chutes. | |
| Panjang | = | 30 ft | = 9,144 m |
| Diameter | = | 6 in | |
| Kecepatan putaran | = | 16 rpm | |
| Power | = | 1 hp | |
| Jumlah | = | 1 buah | |

36. COATING DRUM (B-360)

| | | | |
|----------------|---|--|-----------|
| Fungsi | = | untuk mencampur amonium nitrat prill dengan clay | |
| diameter dalam | = | 4,614 ft | = 1,406 m |



| | | | | | | |
|---------------|---|--------------|-------|---|-------|---|
| Panjang shell | = | 9,228 | ft | = | 2,813 | m |
| Putaran | = | 6,502 | rpm | | | |
| Waktu tinggal | = | 2,160 | menit | | | |
| Jumlah flight | = | 8 | buah | | | |
| Tinggi flight | = | 0,577 | ft | | | |
| Tebal flight | = | 3/8 | in | | | |
| bahan | = | Carbon Steel | | | | |
| power | = | 1 | Hp | | | |
| jumlah | = | 1 | buah | | | |

37. HOPPER CLAY (F-361)

| | | | | | | |
|-------------------------|---|---------------------------------------|------|---|-------|---|
| Fungsi | = | Menampung sementara clay | | | | |
| | | sebelum masuk coating drum | | | | |
| Tipe | = | Silinder dengan tutup bawah berbentuk | | | | |
| | | konikal dengan posisi vertikal | | | | |
| Kapasitas | = | 29,197 | cuft | | | |
| Diameter dalam silinder | = | 2 | ft | = | 0,610 | m |
| Tinggi silinder | = | 8,826 | ft | = | 2,690 | m |
| tebal shell | = | 0,123 | in | | | |
| Diameter atas conical | = | 2,0 | ft | | | |
| diameter bawah conical | = | 1 | ft | | | |
| tinggi conical | = | 0,810 | ft | | | |
| cone angle | = | 45 | ° | | | |
| Tebal cone | = | 0,131 | in | | | |
| jumlah | = | 1 | buah | | | |

38. BELT CONVEYOR (J-361)

| | | | | | | |
|--------------------|---|---|---------|----|-------|---|
| Fungsi | = | Memindahkan feed menuju silo | | | | |
| Type | = | Troughed belt conveyor with rolls of equal length | | | | |
| Kapasitas maksimum | = | 32 | ton/jam | | | |
| Belt | - | width | = | 12 | in | |
| | - | trough | = | 9 | in | |
| | - | width | = | 9 | in | |
| | - | skirt seal | = | 2 | in | |
| Panjang | = | 12,780 | ft | = | 3,895 | m |
| Sudut elevasi | = | 15 | ° | | | |
| Power | = | 1 | HP | | | |
| Jumlah | = | 1 | buah | | | |



39. BUCKET ELEVATOR (J-362)

| | | |
|--------------------|---|---------------------------------------|
| Fungsi | = | Memindahkan Ammonium Nitrat ke Silo |
| Type | = | Centrifugal Discharge Bucket elevator |
| Kapasitas maksimum | = | 14 ton/jam |
| Ukuran bucket | = | 6 in x 4 in x 4 1/4 in |
| Bucket spacing | = | 12 in |
| Tinggi elevator | = | 17,073 ft = 5,204 m |
| Ukuran feed (max) | = | 3/4 in |
| Putaran Head Shaft | = | 7,819 rpm |
| Lebar belt | = | 7 in |
| Power total | = | 3 HP |
| Alat pembantu | = | Hopper chute (pengumpan) |
| jumlah | = | 1 buah |

40. SILO AMONIUM NITRAT (F-370)

| | | |
|-------------------------|---|--|
| Fungsi | = | Menampung sementara clay sebelum masuk coating drum |
| Tipe | = | Silinder dengan tutup bawah berbentuk konikal dengan posisi vertikal |
| Kapasitas | = | 610,734 cuft |
| Diameter dalam silinder | = | 8 ft = 2,286 m |
| Tinggi silinder | = | 11,809 ft = 3,599 m |
| tebal shell | = | 0,119 in |
| Diameter atas conical | = | 7,5 ft |
| diameter bawah conical | = | 1 ft |
| tinggi conical | = | 5,264 ft |
| cone angle | = | 45 ° |
| Tebal cone | = | 0,883 in |
| jumlah | = | 1 buah |



PRA PERANCANGAN PABRIK
“AMMONIUM NITRAT DARI GAS AMONIA DAN ASAM NITRAT DENGAN
PRILLING PROCESS KAPASITAS 70.000 TON / TAHUN”
