# PROJECT REPORT

# OF

# ALCOHOLIC DRINKS BOTTLING PLANTS

# PURPOSE OF THE DOCUMENT

This particular pre-feasibility is regarding Alcoholic Drinks Bottling Plants.

The objective of the pre-feasibility report is primarily to facilitate potential entrepreneurs in project identification for investment and in order to serve his objective; the document covers various aspects of the project concept development, start-up, marketing, finance and management.

[We can modify the project capacity and project cost as per your requirement. We can also prepare project report on any subject as per your requirement.]

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SAMADHAN
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# PROJECT AT GLANCE

| | | |
|---|---|---|
| **1** | **Name of Proprietor/Director** | XXXXXXXX |
| **2** | **Firm Name** | XXXXXXXX |
| **3** | **Registered Address** | XXXXXXXX |
| **4** | **Nature of Activity** | XXXXXXXX |
| **5** | **Category of Applicant** | XXXXXXXX |
| **6** | **Location of Unit** | XXXXXXXX |
| **7** | **Cost of Project** | 24.78 Rs. In Lakhs |
| **8** | **Means of Finance** | |
| **i)** | **Own Contribution** | 2.48 Rs. In Lakhs |
| **ii)** | **Term Loan** | 15.30 Rs. In Lakhs |
| **iii)** | **Working Capital** | 7.00 Rs. In Lakhs |
| **9** | **Debt Service Coverage Ratio** | 3.21 |
| **10** | **Break Even Point** | 0.30 |
| **11** | **Power Requiremnet** | 20 KW |
| **12** | **Employment** | 10 Persons |
| **13** | **Major Raw Materials** | Various machinery such as bottle filing, capping, pasteurization unit & labelling unit |

**14 Details of Cost of Project & Means of Finance**

**Cost of Project**

| Particulars | Amount in Lacs |
|---|---|
| Land | Owned/Leased |
| Building & Civil Work | Owned/Leased |
| Plant & Machinery | 15.00 |
| Furniture & Fixture | 0.50 |
| Other Misc Assets | 1.50 |
| Working Capital Requirement | 7.78 |
| **Total** | **24.78** |

**Means of Finance**

| Particulars | Amount in Lacs |
|---|---|
| Own Contribution | 2.48 |
| Term Loan | 15.30 |
| Working capital Loan | 7.00 |
| **Total** | **24.78** |

## 1. INTRODUCTION

Alcoholic beverages are a large group of beverages that contain varying amount of alcohol. Example of some of alcoholic beverages are Beer, wine, distilled spirits such as brandy, whiskey, rum, gin, cognac, vodka, tequila etc.

They are produced from sugar containing liquid by alcoholic fermentation. Sugar, fermentable by yeast are present as such or are generated from raw materials by processing i.e. by hydrolytic cleavage of starch and dextrin, yielding simple sugar. the nutritional energy value of ethanol is high 7kcal/g or 29kJ/g.

Beer making or brewing uses germinated barley (malt), hops, yeast and water. In addition, of malt, other starch containing material is also added e.g., wheat, unmalted cereal called adjuncts (barley, wheat, corn and rice), starch flour, starch degradation products and fermentable sugar. Hops and aroma compound formed during fermentation are responsible for aroma, flavor and bitter taste of beer. Bottle filling of beer proceeds from fermentation tank to seminar fully automatic bottling process followed by pasteurization at 62 $^{o}$C for 20 minutes.

Wine is the fermented produced from grapes. Wine involves longer fermentation process than beer and also long aging process resulting in alcohol content of 9% - 16% ABV. Sparkling wines can be made with second fermentation.

A distilled beverage, spirit or liquor is an alcoholic beverage produced by distillation (concentration by distillation) ethanol is produced by mean of fermenting grain. Unsweetened, distilled, alcoholic beverages that have an alcohol content of at least 20% ABV are called spirits. For the most common distilled beverages, such as whiskey and vodka, the alcohol content is around 40%. Vodka, whiskey, gin, Brandy, Soju, baijiu, tequila are examples of distilled beverages.

| TYPE | ALCOHOL CONCENTRATION |
|---|---|
| Beer | 3 – 15% |
| Wine | 8 – 17% |
| Fortified wine | 15 -22% |
| Spirits | 15 – 98% |
| Fruit juice | <0.1% |
| Cider | 4 – 8% |

TYPICAL ABV RANGES FOR DIFFERENT ALCOHOL

The concentration of alcohol in a beverage is usually stated as the percentage of alcohol by volume (ABV, the number of ml of pure ethanol in 100 ml of beverage) or as proof. Proof is twice the percentage of alcohol by volume at 60 degrees Fahrenheit (e.g., 80 proof = 40% ABV).

## 2. PRODUCT DESCRIPTION

### 2.1 USES OF ALCOHOL BOTTLING PLANT

The bottling plant is used for bottling of different alcoholic beverages and liquors such as

i. Bottling of beer

ii. Bottling of wine

iii. Bottling of spirits such as Whiskey, Gin, Rum, Brandy etc.

### 2.2 RAW MATERIAL REQUIREMENT FOR ALCOHOL BOTTLING PLANT

Various machinery such as bottle filling, capping, pasteurization unit and labelling unit are required in alcoholic beverage bottling plant.

### 2.3 MANUFACTURING PROCESS

***BOTTLE WASHING***

Bottles are rinsed with filtered water to remove impurities and cleared of labels. Sometimes carbon dioxide injected into bottles to reduce oxygen level. Empty Bottle Inspector (EBC) used to check the bottles for good washing otherwise rejects it.

***FILLING AND CAPPING***

washed bottles are then sent to filling machine which fills the bottles with Liquor. A few inert gases can be injected on the top to disperse the oxygen. Full Bottle

Inspector (FBI) check bottles for underfilling or overfilling. Capper applies bottle caps and sealed the bottles.

***PASTEURIZATION***

Filled bottles are then pasteurized at $140^0$F for 2-3 minutes. This helps to stops the growth of yeast that remains in the beer after packaging.

***LABELLING***

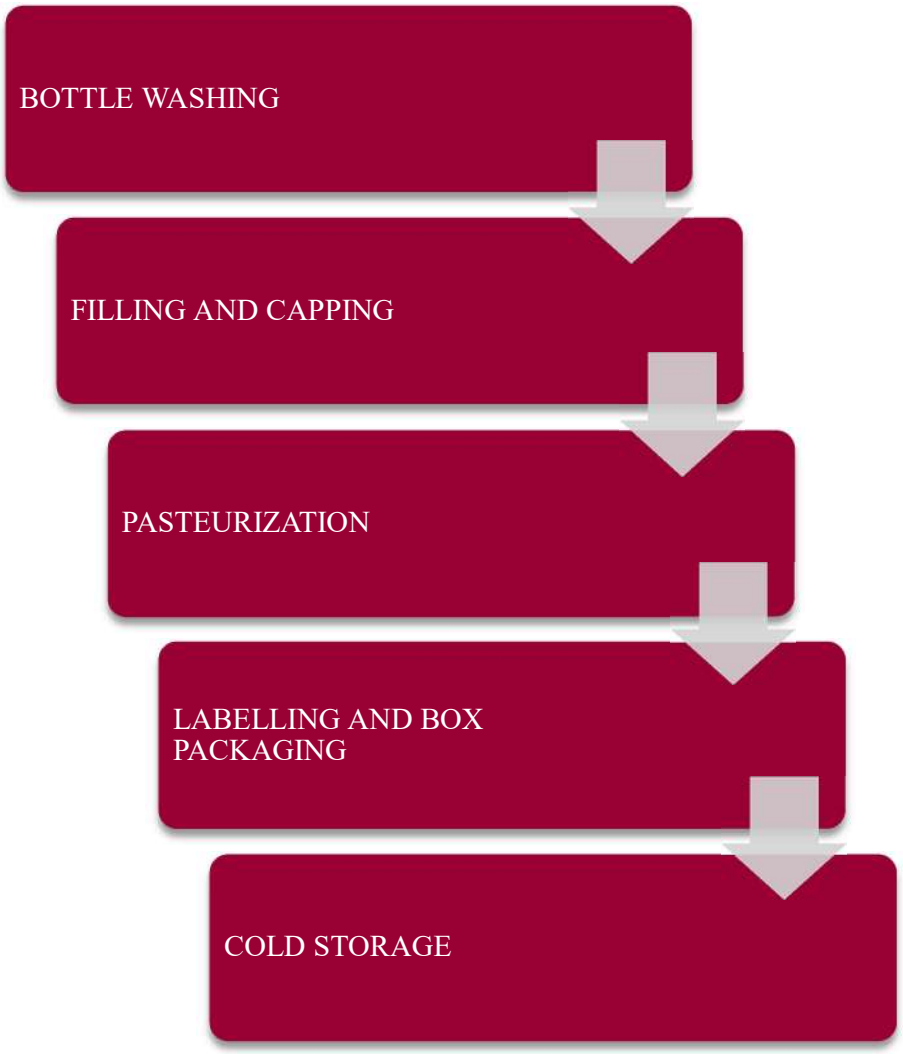
After pasteurization labels are applied. It should include the batch number, lot number, date & time of bottling, expiry dates etc.

***BOX PACKING***

Bottles are then packed into boxes and sent to the warehouse and ready for sale.

***COLD STORAGE***

To avoid all and any chemical or biochemical reaction, it is advisable to keep the products at temperatures below -18 ºC. The fluctuations of temperature in the storage chambers may impair the quality of the products, as well as to reduce their useful life.




**FLOW CHART OF BOTTLING PROCESS FOR ALCOHOLIC DRINKS**

## 3. PROJECT COMPONENTS

### 3.1 LAND/ CIVIL WORK

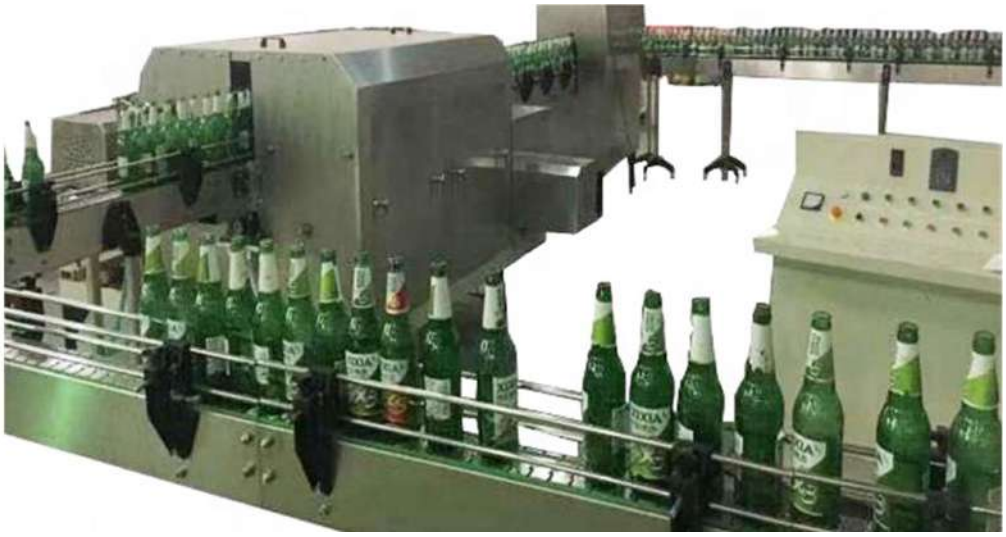
An area of almost 1500-2000 Sq. ft. would be suitable for bottling plant. This space would be required for raw materials storage mainly, production, packaging, storage of finished goods, and administrative work.

We have not considered the cost of Land purchase & Building Civil work in the project. It is assumed that land & building will be on rent & approx. rental of the same will be Rs. 20000-25000 per month.

## 3.2 PLANT AND MACHINERY

### *1. BOTTLE WASHING/CLEANING/ RINSING MACHINE*

The machine uses rotary glass bottle brushing machine for inside and outside brushing. The bottle is soaked in water before brushing. The bottle cleaning machine is suitable for water, juice, beer and wine bottles. The machine is suitable for different size bottle when with same bottle necks.



### *2. BOTTLE FILLING AND CAPPING MACHINE*

The machine incorporates filling and capping machine. It is widely used for Wine, beer, vodka, soya sauce, vinegar and so on. The machine adopts plain structure and vacuum air breathing principle makes filling easy and simple. It has precise filling level, no bottle break and leakage , easy operate and maintain. It consist of electromagnetic capping heads, with burden discharge function, make sure minimum bottle crash during capping.

### *3. PASTEURIZATION MACHINE*

This machine adopts the principle of pasteurization, biologically sterilizes the bottled alcohol. The qualified alcohol maintains a continuous and slow speed on the conveyor of Sterilizer. After the treatment of several temperature zones, certain spraying temperature and certain sterilizing time, Vegetative microorganisms are killed and the purpose is achieved for extending the time of preservation.

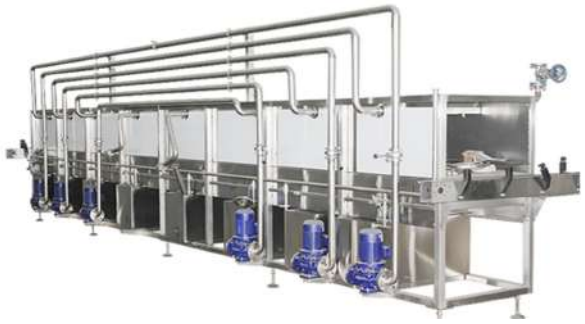
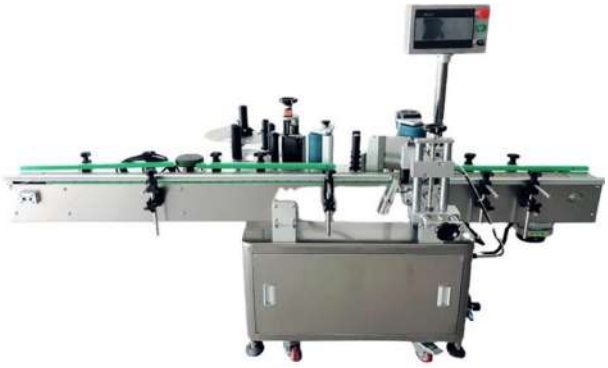


**FIG:** pasteurization temperature – 62 – 82$^{o}$C ; Pasteurization Temperature – 30 seconds to 10 minutes; Power 3 kW; Pressure 0.4 – 0.5 Mpa; Price 5 – 10 lacs INR

### *4. LABELLING MACHINE*

The machine is used for alcohol bottle labelling machine. The machine consists of touch screen control panel that can control bottle conveying speed. The labelling device controlled by air cylinder.



### *5. COLD ROOM*

This is probably the simplest freezer used for freezing the liquors and alcohols, when working at lower scale. It is constituted by a freezing chamber in which the products are introduced. The insertion of the products may be accomplished by movable shelves provided with small wheels. The shelves may be loaded and unloaded manually. The product is placed on trays, and these ones are taken to the shelves. The air passes on the product already packed at the temperature range from -30ºC to -40ºC at a speed from 1.5 to 6.0 m/s, depending on the product. The high speed provides a good transference of heat.

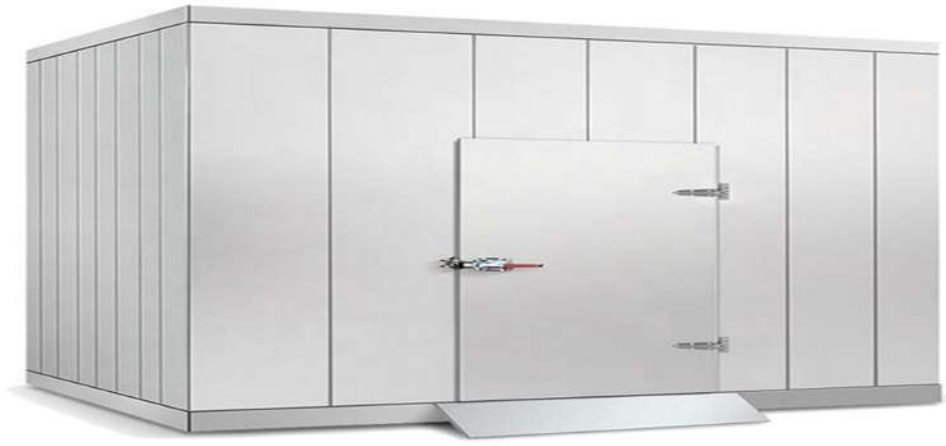


**FIG:** Temperature – (-50$^{o}$C) to 20$^{o}$C; Capacity 100 – 1000 ton; Power 7 kW; Price 5 – 12 lacs INR

## 4. LICENSE & APPROVALS

1. Obtain a Trade License from the local authority.
2. The next step is to apply for MSME Udyam Online registration and get the GST (Goods and Service Tax) certification.
3. Apply for a “No-objection Certificate” from the Pollution Control Board.
4. Food Safety and Standard Authority of India (FSSAI) License
5. BIS and AGMARK certification if required
6. Food Safety and Food Quality Certifications Such as ISO 22000: 2018, HACCP CERTIFICATION.
7. NOC from Pollution Control Board.

**PROJECTED BALANCE SHEET** **(in Lacs)**

| PARTICULARS | 1st year | 2nd year | 3rd year | 4th year | 5th year |
|---|---|---|---|---|---|
| ***Liabilities*** | | | | | |
| Capital | | | | | |
| Opening Balance | | 4.40 | 7.35 | 10.21 | 14.72 |
| *Add:- Own Capital* | 2.48 | | | | |
| Add:- Retained Profit | 4.17 | 6.95 | 9.36 | 12.51 | 15.85 |
| Less:- Drawings | 2.25 | 4.00 | 6.50 | 8.00 | 10.50 |
| Closing Balance | 4.40 | 7.35 | 10.21 | 14.72 | 20.07 |
| Term Loan | 13.60 | 10.20 | 6.80 | 3.40 | - |
| Working Capital Limit | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 |
| Sundry Creditors | 1.65 | 3.09 | 3.76 | 6.01 | 7.08 |
| Provisions & Other Liabilities | 0.75 | 1.00 | 2.50 | 3.50 | 5.00 |
| **TOTAL :** | **27.40** | **28.64** | **30.27** | **34.63** | **39.15** |
| ***Assets*** | | | | | |
| **Fixed Assets ( Gross)** | 17.00 | 17.00 | 17.00 | 17.00 | 17.00 |
| Gross Depriciation | 2.53 | 4.67 | 6.50 | 8.06 | 9.38 |
| **Net Fixed Assets** | **14.48** | **12.33** | **10.50** | **8.94** | **7.62** |
| **Current Assets** | | | | | |
| Sundry Debtors | 3.40 | 5.06 | 6.11 | 7.26 | 8.52 |
| Stock in Hand | 6.39 | 8.14 | 9.87 | 11.77 | 13.83 |
| Cash and Bank | 1.14 | 1.86 | 2.78 | 4.65 | 5.19 |
| Loans and advances | 2.00 | 1.25 | 1.00 | 2.00 | 4.00 |
| **TOTAL :** | **27.40** | **28.64** | **30.27** | **34.63** | **39.15** |

**PROJECTED PROFITABILITY STATEMENT** **(in Lacs)**

| PARTICULARS | 1st year | 2nd year | 3rd year | 4th year | 5th year |
|---|---|---|---|---|---|
| Capacity Utilisation % | **50%** | **55%** | **60%** | **65%** | **70%** |
| **SALES** | | | | | |
| CEILING FAN | 78.38 | 101.18 | 122.25 | 145.30 | 170.33 |
| **Total** | **78.38** | **101.18** | **122.25** | **145.30** | **170.33** |
| **COST OF SALES** | | | | | |
| Raw material cost | 49.50 | 61.71 | 75.24 | 90.09 | 106.26 |
| Electricity Expenses | 1.92 | 2.53 | 2.76 | 3.00 | 3.23 |
| Depreciation | 2.53 | 2.15 | 1.83 | 1.56 | 1.32 |
| Wages & labour | 8.40 | 9.24 | 10.16 | 11.18 | 12.30 |
| Repair & maintenance | 0.78 | 1.01 | 1.22 | 1.45 | 1.70 |
| Consumables | 1.96 | 2.53 | 3.06 | 3.63 | 4.26 |
| Packaging cost | 1.18 | 1.52 | 1.83 | 2.18 | 2.55 |
| **Cost of Production** | 66.26 | 80.69 | 96.11 | 113.09 | 131.63 |
| **Add: Opening Stock** | - | 3.92 | 5.06 | 6.11 | 7.26 |
| **Less: Closing Stock** | 3.92 | 5.06 | 6.11 | 7.26 | 8.52 |
| Cost of Sales | 62.35 | 79.55 | 95.06 | 111.93 | 130.37 |
| **GROSS PROFIT** | **16.03** | **21.63** | **27.19** | **33.36** | **39.96** |
| **GROSS PROFIT RATIO** | **20.45%** | **21.37%** | **22.24%** | **22.96%** | **23.46%** |
| Salary to Staff | 3.36 | 3.70 | 4.07 | 4.47 | 4.92 |
| Interest on Term Loan | 1.50 | 1.32 | 0.95 | 0.58 | 0.20 |
| Interest on working Capital | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 |
| Rent | 3.00 | 3.15 | 3.31 | 3.47 | 3.65 |
| Selling & Administration Expenses | 3.14 | 5.06 | 7.33 | 8.72 | 10.22 |
| **TOTAL** | **11.77** | **14.00** | **16.43** | **18.01** | **19.76** |
| NET PROFIT | 4.26 | 7.63 | 10.76 | 15.36 | 20.20 |
| Taxation | 0.09 | 0.68 | 1.41 | 2.84 | 4.35 |
| PROFIT (After Tax) | 4.17 | 6.95 | 9.36 | 12.51 | 15.85 |
| **NET PROFIT RATIO** | **5.32%** | **6.87%** | **7.65%** | **8.61%** | **9.30%** |

**PROJECTED CASH FLOW STATEMENT** **(in Lacs)**

| PARTICULARS | 1st year | 2nd year | 3rd year | 4th year | 5th year |
|---|---|---|---|---|---|
| ***SOURCES OF FUND*** | | | | | |
| Own Margin | 2.48 | | | | |
| Net Profit | 4.26 | 7.63 | 10.76 | 15.36 | 20.20 |
| Depriciation & Exp. W/off | 2.53 | 2.15 | 1.83 | 1.56 | 1.32 |
| Increase in Cash Credit | 7.00 | - | - | - | - |
| Increase In Term Loan | 15.30 | - | - | - | - |
| Increase in Creditors | 1.65 | 1.44 | 0.68 | 2.24 | 1.08 |
| Increase in Provisions & Other liabilities | 0.75 | 0.25 | 1.50 | 1.00 | 1.50 |
| **TOTAL :** | **33.96** | **11.46** | **14.77** | **20.16** | **24.10** |
| ***APPLICATION OF FUND*** | | | | | |
| Increase in Fixed Assets | 17.00 | | | | |
| Increase in Stock | 6.39 | 1.75 | 1.73 | 1.90 | 2.06 |
| Increase in Debtors | 3.40 | 1.66 | 1.05 | 1.15 | 1.25 |
| Increase in loans and advances | 2.00 | - 0.75 | - 0.25 | 1.00 | 2.00 |
| Repayment of Term Loan | 1.70 | 3.40 | 3.40 | 3.40 | 3.40 |
| Drawings | 2.25 | 4.00 | 6.50 | 8.00 | 10.50 |
| Taxation | 0.09 | 0.68 | 1.41 | 2.84 | 4.35 |
| **TOTAL :** | **32.83** | **10.74** | **13.84** | **18.29** | **23.56** |
| Opening Cash & Bank Balance | - | 1.14 | 1.86 | 2.78 | 4.65 |
| Add : Surplus | 1.14 | 0.72 | 0.93 | 1.87 | 0.54 |
| Closing Cash & Bank Balance | **1.14** | **1.86** | **2.78** | **4.65** | **5.19** |

**CALCULATION OF D.S.C.R**

| PARTICULARS | 1st year | 2nd year | 3rd year | 4th year | 5th year |
|---|---|---|---|---|---|
| | | | | | |
| CASH ACCRUALS | 6.70 | 9.10 | 11.18 | 14.07 | 17.17 |
| Interest on Term Loan | 1.50 | 1.32 | 0.95 | 0.58 | 0.20 |
| **Total** | 8.20 | 10.42 | 12.13 | 14.65 | 17.37 |
| | | | | | |
| **REPAYMENT** | | | | | |
| Instalment of Term Loan | 1.70 | 3.40 | 3.40 | 3.40 | 3.40 |
| Interest on Term Loan | 1.50 | 1.32 | 0.95 | 0.58 | 0.20 |
| | | | | | |
| Total | 3.20 | 4.72 | 4.35 | 3.98 | 3.60 |
| | | | | | |
| **DEBT SERVICE COVERAGE RATIO** | **2.56** | **2.21** | **2.79** | **3.68** | **4.82** |
| **AVERAGE D.S.C.R.** | | | | | **3.21** |

| REPAYMENT SCHEDULE OF TERM LOAN | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | Interest | 11.00% |
| Year | Particulars | Amount | Addition | Total | Interest | Repayment | Closing Balance |
| ist | Opening Balance | - | | | | | |
| | 1st month | | 15.30 | 15.30 | - | - | 15.30 |
| | 2nd month | 15.30 | - | 15.30 | 0.14 | - | 15.30 |
| | 3rd month | 15.30 | - | 15.30 | 0.14 | - | 15.30 |
| | 4th month | 15.30 | - | 15.30 | 0.14 | - | 15.30 |
| | 5th month | 15.30 | - | 15.30 | 0.14 | - | 15.30 |
| | 6th month | 15.30 | - | 15.30 | 0.14 | - | 15.30 |
| | 7th month | 15.30 | - | 15.30 | 0.14 | 0.28 | 15.02 |
| | 8th month | 15.02 | - | 15.02 | 0.14 | 0.28 | 14.73 |
| | 9th month | 14.73 | - | 14.73 | 0.14 | 0.28 | 14.45 |
| | 10th month | 14.45 | - | 14.45 | 0.13 | 0.28 | 14.17 |
| | 11th month | 14.17 | - | 14.17 | 0.13 | 0.28 | 13.88 |
| | 12th month | 13.88 | - | 13.88 | 0.13 | 0.28 | 13.60 |
| | | | | | **1.50** | **1.70** | |
| **2nd** | Opening Balance | | | | | | |
| | 1st month | 13.60 | - | 13.60 | 0.12 | 0.28 | 13.32 |
| | 2nd month | 13.32 | - | 13.32 | 0.12 | 0.28 | 13.03 |
| | 3rd month | 13.03 | - | 13.03 | 0.12 | 0.28 | 12.75 |
| | 4th month | 12.75 | - | 12.75 | 0.12 | 0.28 | 12.47 |
| | 5th month | 12.47 | - | 12.47 | 0.11 | 0.28 | 12.18 |
| | 6th month | 12.18 | - | 12.18 | 0.11 | 0.28 | 11.90 |
| | 7th month | 11.90 | - | 11.90 | 0.11 | 0.28 | 11.62 |
| | 8th month | 11.62 | - | 11.62 | 0.11 | 0.28 | 11.33 |
| | 9th month | 11.33 | - | 11.33 | 0.10 | 0.28 | 11.05 |
| | 10th month | 11.05 | - | 11.05 | 0.10 | 0.28 | 10.77 |
| | 11th month | 10.77 | - | 10.77 | 0.10 | 0.28 | 10.48 |
| | 12th month | 10.48 | - | 10.48 | 0.10 | 0.28 | 10.20 |
| | | | | | **1.32** | **3.40** | |
| **3rd** | Opening Balance | | | | | | |
| | 1st month | 10.20 | - | 10.20 | 0.09 | 0.28 | 9.92 |
| | 2nd month | 9.92 | - | 9.92 | 0.09 | 0.28 | 9.63 |
| | 3rd month | 9.63 | - | 9.63 | 0.09 | 0.28 | 9.35 |
| | 4th month | 9.35 | - | 9.35 | 0.09 | 0.28 | 9.07 |
| | 5th month | 9.07 | - | 9.07 | 0.08 | 0.28 | 8.78 |
| | 6th month | 8.78 | - | 8.78 | 0.08 | 0.28 | 8.50 |
| | 7th month | 8.50 | - | 8.50 | 0.08 | 0.28 | 8.22 |
| | 8th month | 8.22 | - | 8.22 | 0.08 | 0.28 | 7.93 |
| | 9th month | 7.93 | - | 7.93 | 0.07 | 0.28 | 7.65 |
| | 10th month | 7.65 | - | 7.65 | 0.07 | 0.28 | 7.37 |
| | 11th month | 7.37 | - | 7.37 | 0.07 | 0.28 | 7.08 |
| | 12th month | 7.08 | - | 7.08 | 0.06 | 0.28 | 6.80 |
| | | | | | **0.95** | **3.40** | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **4th** | Opening Balance | | | | | | |
| | 1st month | 6.80 | - | 6.80 | 0.06 | 0.28 | 6.52 |
| | 2nd month | 6.52 | - | 6.52 | 0.06 | 0.28 | 6.23 |
| | 3rd month | 6.23 | - | 6.23 | 0.06 | 0.28 | 5.95 |
| | 4th month | 5.95 | - | 5.95 | 0.05 | 0.28 | 5.67 |
| | 5th month | 5.67 | - | 5.67 | 0.05 | 0.28 | 5.38 |
| | 6th month | 5.38 | - | 5.38 | 0.05 | 0.28 | 5.10 |
| | 7th month | 5.10 | - | 5.10 | 0.05 | 0.28 | 4.82 |
| | 8th month | 4.82 | - | 4.82 | 0.04 | 0.28 | 4.53 |
| | 9th month | 4.53 | - | 4.53 | 0.04 | 0.28 | 4.25 |
| | 10th month | 4.25 | - | 4.25 | 0.04 | 0.28 | 3.97 |
| | 11th month | 3.97 | - | 3.97 | 0.04 | 0.28 | 3.68 |
| | 12th month | 3.68 | - | 3.68 | 0.03 | 0.28 | 3.40 |
| | | | | | **0.58** | **3.40** | |
| **5th** | Opening Balance | | | | | | |
| | 1st month | 3.40 | - | 3.40 | 0.03 | 0.28 | 3.12 |
| | 2nd month | 3.12 | - | 3.12 | 0.03 | 0.28 | 2.83 |
| | 3rd month | 2.83 | - | 2.83 | 0.03 | 0.28 | 2.55 |
| | 4th month | 2.55 | - | 2.55 | 0.02 | 0.28 | 2.27 |
| | 5th month | 2.27 | - | 2.27 | 0.02 | 0.28 | 1.98 |
| | 6th month | 1.98 | - | 1.98 | 0.02 | 0.28 | 1.70 |
| | 7th month | 1.70 | - | 1.70 | 0.02 | 0.28 | 1.42 |
| | 8th month | 1.42 | - | 1.42 | 0.01 | 0.28 | 1.13 |
| | 9th month | 1.13 | - | 1.13 | 0.01 | 0.28 | 0.85 |
| | 10th month | 0.85 | - | 0.85 | 0.01 | 0.28 | 0.57 |
| | 11th month | 0.57 | - | 0.57 | 0.01 | 0.28 | 0.28 |
| | 12th month | 0.28 | - | 0.28 | 0.00 | 0.28 | - |
| | | | | | **0.20** | **3.40** | |

| | | |
|---|---|---|
| DOOR TO DOOR | 60 | MONTHS |
| MORATORIUM PERIOD | 6 | MONTHS |
| REPAYMENT PERIOD | 54 | MONTHS |

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