

FINAL ASSIGNMENT
HARD CANDY FACTORY PLAN



Presented By:

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APPROVAL SHEET

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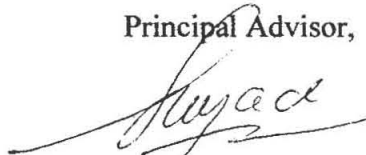
Had been executed on:

Day/Date : Saturday / May, 27th 2006

Thus the one concerned has fulfilled a part of the curriculum requirement on achieving the Bachelor of Engineering degree in Chemical Engineering.

Surabaya, May, 27th 2006

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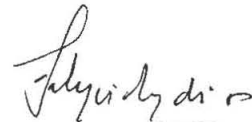
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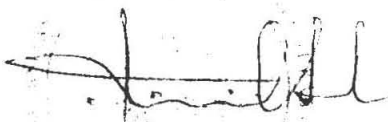
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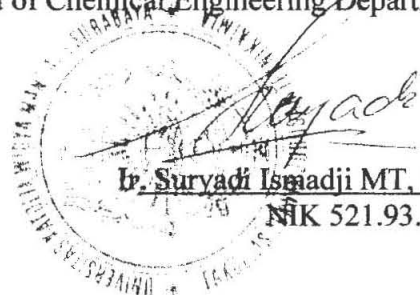
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DECLARATION SHEET

Herewith I declare this Factory Plan really is my own handiwork and not others, neither a part of it nor a whole; in exception to those written in the texts. If ever that this Factory Plan found to be another person work, thus I will consciously accept the consequences that this Factory Plan would be of no use as one of the requirements on my achieving the Bachelor of Engineering degree in Chemical Engineering.

Surabaya, June 2nd, 2006

A handwritten signature in black ink, appearing to be 'Lavinia Tjugito', with a large, sweeping flourish extending from the end of the signature.

Lavinia Tjugito

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PREFACE

I praise the Lord for the completion of this Hard Candy factory plan; since this report is prerequisite in achieving the bachelor of engineering degree in chemical engineering. I also realized that the completion of this report is impossible without the help of so many people. Therefore, we would like to give our gratitude to:

1. Ir. Suryadi Ismadji, MT. Ph. D, principal advisor and head of the chemical engineering department
2. Ir. Rasional S. M. Eng, Dean of Engineering faculty
3. Our family, friends, and all those who are too many to be listed by name that had contributed their kind assistances, support and prayers.

However, I also realized that this factory plan is not perfect, thus further reviews, comments, and suggestions are welcomed for the improvement of this field practice report. I hope that this report will be able to meet the needs of every reader.

ABSTRACT

Hard candy is a standard type of sweet which has the widest range of consumer. Dissolving sugar and water then heating it with high heat, then cooling, is a basic in making hard candy.

The hard candy is manufacture with 3 ton/day capacity. The process of hard candy manufacturing is divided into several steps. The first step is the ingredients weighing which. After weighed, the ingredients are then dissolved, cooked and entered to the kneader. The candies are then formed, cut, wrapped and packaged in boxes.

The preliminary design is:

Raw material : manitol and sorbitol
Product capacity : 3 ton/day
Utility used : water, electricity, diesel, coal and refrigerant
Worker : 259 persons
Factory location : Pandaan, East Java

Based on the economical analysis, the hard candy factory plan is reasonable to build due to :

1. The ROE (Rate of equity) before tax is 59.12 % and ROE after tax is 38.54 % while manufacture with low until high risk is more than 11 %.
2. The POT (pay out time) before tax is 1 year 3 months and POT after tax is 1 year 10 months, while POT for manufacture with low to high risk is less than 5 years.
3. The ROR (Rate of Return) before tax is 51.73 % and ROR after tax is 33.54 %, which is bigger than interest for the mean time (12 %).
4. The BEP (Break even point) is 30.38 % which for mean time National Bank of Indonesia give a loan for chemical industry with the condition of BEP not more than 60 %.

TABLE OF CONTENTS

Title Page	
Approval Sheet	
Declaration Sheet	
Preface.....	i
Abstract.....	ii
Table of Content.....	iii
Table of Lists.....	iv
Table of Figures.....	v
Chapter I. Introduction.....	I-1
Chapter II. Process Description and Selection.....	II-1
Chapter III. Mass Balance.....	III-1
Chapter IV. Heat Balance.....	IV-1
Chapter V. Equipment Specifications.....	V-1
Chapter VI. Utility.....	VI-1
Chapter VII. Factory Location, Arrangement and Instrumentation.....	VII-1
Chapter VIII. Economical Analysis.....	VIII-1
Chapter IX. Discussion and Conclusion.....	IX-1
Bibliography	
Appendix A. Calculation of Mass Balance.....	A-1
Appendix B. Calculation of Heat Balance.....	B-1
Appendix C. Equipment Specifications.....	C-1
Appendix D. Economical Analysis.....	D-1

TABLE OF FIGURES

Figure VI.1. Water treatment flow sheet	VI-23
Figure VII.1. Hard candy factory arrangement.....	VII-10
Figure VII.2. Hard candy process area arrangement	VII-12
Figure VIII.1. Break even point chart with linear method.....	VIII-11

TABLE OF LISTS

Table VI.1. Electricity required for process operations	VI-18
Table VI.2. Electricity required for utility	VI-18
Table VI.3. Electricity required for lamplights.....	VI-19
Table VII.1. Equipment operating schedule in first 12 hours.....	VII-12
Table VII.2. Instrumentation and control equipment.....	VII-16
Table VIII.1. Capital.....	VIII-12
Table VIII.2. Loan from bank.....	VIII-12
Table VIII.3. Explanations for cash flow chart.....	VIII-13
Table VIII.4. Cash flow	VIII-14
Table VIII.5. Rate of return	VIII-16
Table VIII.6. Pay out time	VIII-17
Table D.1. Process equipment prices.....	D-2
Table D.2. Utility equipment prices.....	D-2
Table D.3. Raw material prices.....	D-2
Table D.4. Product prices.....	D-3
Table D.5. Land and buildings prices	D-3
Table D.6. Utility cost estimation	D-5
Table D.7. Operating labor	D-5
Table D.8. Shift work schedule.....	D-6