

WATER SUPPLY AND DESTRIIBUTION

Project Report submitted by: SPYROU ANDRONICOS

in part satisfaction of the award of Diploma of Technician Engineer in Civil Engineering of the Higher Technical Institute, Cyprus.

Project Supervisor : Mr. Demetris Andreou
Lecturer in Civil
Engineering Department in
HTI.

External Assessor : Mr. Chrysostomos Kambanellas
Water Development Department.

Type of Project : Individual.

JUNE, 1994.

A B S T R A C T

This project has as aim to present the basic principles of water suppling and piping system.

Presentation of the various types of pipes, connections and fitting available.

Engineering design and presentation of the complete distribution system in order to fulfill the requirements of VYZAKIA village.

C O N T E N T S

ABSTRACT

INTRODUCTION

C H A P T E R I : Introduction.

1.1	Why is water so important	1
1.2	What should a water supply system aim to	2
1.3	Quality of water offered	2
1.4	Designing a water supply system	3
1.5	Water supply in Cyprus	4

C H A P T E R II : Occurence, Collection and Sources of Water supply.

2.1	Occurance of water	5
2.2	Collection of water	6
2.3	Basic characteristics of water	6
2.4	Sources of water supply	7

C H A P T E R III : How much water is needed.

3.1	Types of consumption	8
3.2	Domestic consumption	8
3.3	Flactuations in demand	9

C H A P T E R IV : Water Distribution.

4.1	What is the water distribution system	11
4.2	Distribution systems	12
4.3	Transportation of water	14

4.4	Requirements and types of pipes	16
4.5	The internal of pipes	16
4.6	Service pipes	18
4.7	Expansion of distribution systems	19
4.8	Storage reservoirs	19
4.9	Laying of pipes	20
4.10	Testing the pipelines	23
4.11	Valves and valve types	24
4.12	Water meters	24

C H A P T E R V : Pipes and their types.

5.1	Types of Pipe	26
5.2	Advantages and disadvantages of pipes	27
5.3	Cast and spun iron pipes	28
5.3.1	Cast iron pipes	28
5.3.2	Spun iron pipes	28
5.3.2.1	Joints for cast and spun iron pipes	29
5.4	Concrete pipes	33
5.4.1	Reinforced concrete pipes	33
5.4.2	Prestressed concrete pipes	33
5.4.3	Joints for concrete pipes	35
5.5	Steel pipes	36
5.5.1	Joints for steel pipes	38
5.5.1.1	Manual-welding methods for steel pipes.....	38
5.5.1.2	Mechanical (or automatic) welding methods for steel pipes.	40
5.5.1.3	Mechanical joints	42
5.5.1.4	Filler joints	45
5.5.1.5	Gland joints	45

5.5.1.6	Sealing-ring joints	47
5.6	Asbestos cement pipes	48
5.6.1	Gland joints	49
5.6.2	Sealing-ring joints	50
5.7	Plastic Pipes	51
5.7.1	Joints for plastic pipes	52
5.8	General comments on pipe materials	53

C H A P T E R VI : Design the distribution of water
supply to satisfy the requirements
of the village VYZAKIA.

6.	Introduction	55
6.1	Designing the distribution system	55
6.2	Results	55