AMERICAN STANDARD PIPE THREAD

INTRODUCTION

The threaded pipe joint has been in use for more than one hundred years. During this period it has proved to be an excellent leakproof connection for steel and wrought-iron pipe and fittings. However, its use has not been limited to steel and wrought iron. It is used today with materials such as brass, copper, plastic, etc.

The threaded joint is still considered to be an excellent method of connecting pipe to fittings and is used for many piping installations.

STANDARDIZATION

The threaded joint for steel and wrought-iron pipe was standardized as early as 1913 and is called the *American Standard Pipe Thread.*

ADVANTAGES OF STANDARDIZATION

a) Pipe can be manufactured and threaded in one country and the fittings for the same pipe produced in another country.

b) Threading tools (dies and taps) can be standardized, again permitting manufacture of tools in various countries.

Valves, flanges, machines, pumps and many other ...es of equipment requiring threaded pipe attach-...ents can be produced to a standard in many countries.

TECHNICAL TERMS

An understanding of the various technical terms used with threads is necessary. These terms are outlined below.

a) A.S.P.T. – American Standard Pipe Thread

b) N.P.S. – Nominal Pipe Size

c) A.P.S. – Actual Pipe size

d) O.D. – Outside Diameter

e) I.D. – Inside Diameter

f) Male Thread – Exterior thread on pipe or fitting

g) Female Thread – Internal thread on fittings or valves

h) Thread Taper – Necessary for pipe to tighten into fitting

i) Thread Pitch – Referred to as the number of threads per inch

j) Thread Angle – The angle at which the threads are cut (60°)

Running Thread – This is a long thread that does not have any taper. Usually made leak-proof with a locknut.

l) Right-Hand Thread – Normal direction for thread on pipe and fittings

m) Left-Hand Thread – This thread is cut in the opposite direction and is used on left and right nipples and couplings. A left-hand nipple and coupling may be used in place of a union coupling. The nipples are identified with a color on the left-hand thread and the couplings usually have four straight bars on the side.

NOTE: Special *dies* and *taps* are required to cut left-hand male and female threads. It is not a general practice to cut left-hand threads on the job as the nipples and couplings are available from the manufacturer.

Figure 1

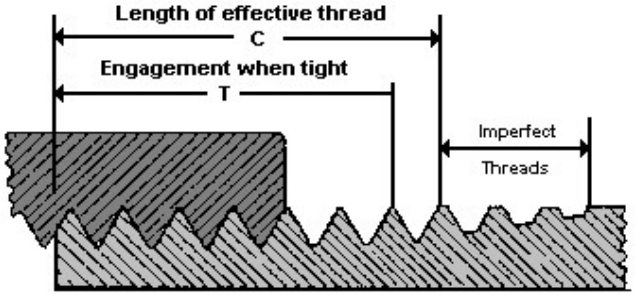

TABLE A

NOMINAL DIAMETER INCHES	THREADS PER INCH	LENGTH OF THERMO (C) INCHES	ENGAGEMENT WHEN TIGHT (T) INCHES
1/8	27	0.25	1/4
1/4	18	0.40	3/8
3/8	18	0.41	3/8
1/2	14	0.53	1/2
3/4	14	0.55	9/16
1	11 1/2	0.68	11/16
1 1/4	11 1/2	0.71	11/16
1 1/2	11 1/2	0.72	11/16
2	11 1/2	0.76	3/4
2 1/2	8	1.14	15/16

NOTE: Nominal pipe sizes larger than 2 1/2 inch use the same pitch, namely 8 threads per inch.