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## Pipes and Pipe Sizing

### Why we use ABS pipe for Ventennas -

We use ABS pipes as the foundation for our Ventennas for a number of reasons:

- 1) ABS is the type of pipe usually used as vent pipes in new home construction, and is therefore easily available.
- 2) ABS is a stable dielectric, with predictable electrical characteristics.
- 3) The black color of the ABS pipe helps to make it unobtrusive.
- 4) ABS is easily painted, with excellent paint adherence.
- 5) ABS pipe is structurally strong, and resistant to deterioration by sunlight.

Although PVC pipe may be used instead of ABS, it does not provide many of the desirable attributes of ABS pipe.

### As to pipe sizes -

Pipe size specifications refer to the inside diameter of a pipe with a "standard" wall thickness. Thus, a pipe defined as a 2" pipe has a nominal 2" inside diameter, if it has the "standard" wall thickness. This "standard" wall thickness (which is different for different diameters of pipe) therefore defines the standard outer diameter of the pipe, as well.

The reason for including a discussion of the "standard" wall thickness is because pipe is available in different "schedules" - schedule 20, schedule 40, schedule 80, etc - which define different wall thicknesses (for use in systems with different pressures).

But, because the outer diameter must remain the same, so the pipe will join with standard connecting fittings, the inner diameter changes with the different wall thickness "schedules".

As a result of all this, even though pipe is specified according to its "standard" inside diameter, it is the outer diameter which actually remains the same, and actually defines the pipe size. So, when you measure your pipe, check the outer diameter to see which size you have.

### The ABS pipe sizes used in Ventennas -

We use Schedule-40 ABS pipe for all our Ventennas. The so-called 1.5 inch pipe has an outer diameter of 1-7/8 inches. **The Ventenna is designed to slip over a pipe with this outer diameter, with about a 6-inch overlap, for mounting.**

The so-called 2 inch pipe has an outer diameter of 2-3/8 inches. This is the outer diameter of the Ventenna.