



## Application Note No. 9 Painting TIL-TEK Antennas

In some applications, painting of the antenna, base, reflector, mounting hardware, etc ... is required. Since there are numerous types of paints supplied by a multitude of manufacturers, it is obviously impractical and impossible to generate a generic procedure for surface preparation and painting of various antennas.

The approach taken by TIL-TEK is to provide a clear description of the various surfaces and materials involved, and a description of paint additives to avoid when painting the radomes of antennas. This information can then be forwarded to a paint manufacturer / supplier of the end user's choice which knowing this information, can clearly recommend a paint product and procedure for the application thereof.

### Surfaces of Antenna Components

TIL-TEK antennas can be divided into three basic applicable components, the reflector (or base), the radome and the mounting hardware. The materials and surfaces of these antenna components are described below and for reference purposes, these are clearly identified on each TIL-TEK data sheet in the section entitled "Materials". When preparing and painting these surfaces, the specific paint manufacturer's recommendations should be adhered to in order to ensure proper adhesion of the paint.

#### 1: Reflector / Base:

The material used for reflectors / bases of TIL-TEK antennas is aluminum which has been treated by a chromate conversion process known as "*Iridite®*" or "*Alodine®*". This process produces a coating of aluminum and chromic oxide on the surface of the aluminum.

#### 2: Radomes:

TIL-TEK utilizes two types of radome material for antennas, these are either the fibreglass tubular type of radome or plastic formed radomes. The materials used for the tubular type fibreglass type radome is composed of "*Fibreglass reinforced Vinyl Ester Resin*". The material used for the plastic formed radomes is "*Acrylonitrile/Styrene/Acrylate Copolymer*" or simply known as "*ASA*".

#### 3: Mounting Hardware:

TIL-TEK antennas are normally shipped with one of three types of mounting hardware materials. The specific types of hardware are fabricated using either 316 or 304 Stainless Steel, Hot Dipped Galvanized Steel, Iridited Aluminum (same as reflectors above) or an electrodeposited zinc coating on steel.

### Paint Additives To Avoid on Radomes

In general, the objective is to provide an electromagnetically transparent coating which will not affect the radiation properties of the antenna. In order to prevent problems, the paint manufacturer should be advised to only provide products which do "**NOT**" contain any electrically conductive or metallic (either ferrous or non ferrous) materials. Examples of these materials typically used in paints are; graphite, carbon, red oxide, metallic flakes, etc ... .

The above is presented as a recommendation by TIL-TEK to ensure proper performance of the products and if in doubt or should you have any further questions regarding this application note, please do not hesitate to contact TIL-TEK Antennas directly.

Iridite® is a registered trademark of MacDermid Inc.  
Alodine® is a registered trademark of Henkel Surface Technologies.