



PAINT AND PRIMER ID, HOMOGENEITY AND THICKNESS



For many applications, it is critical that the correct paint is applied to metal surfaces not only for cosmetic purposes but for the overall protection of the underlying structure. Paints are chosen based on their ability to withstand external stresses such as weather, ultraviolet radiation as well as for the weight they add to a structure. Thus, the ability to determine that the correct paint has been applied and that the application is both uniform and of the correct thickness is important to the overall durability of the finished product.

Furthermore, often it is necessary to coat a surface with a primer compound. This primer may enable a top coat of paint to adhere to the underlying surface more effectively or, in the case of bonding primer, allow protective materials, such as heat shielding tiles for example, to properly adhere to the subsurface.

There are myriad types of paints and primers, all which have different purposes and provide different properties. It is of great importance that the correct paint and/or primer is chosen for a given application. The use of analytical instruments to ensure quality control and quality assurance of coatings such as paint and primer on surfaces is an important element of the manufacturing process for complex products such as aircraft, naval vessels and automobiles.

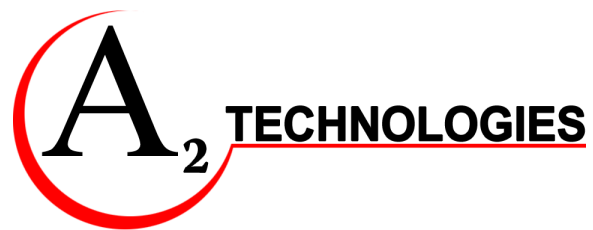
For years, FTIR spectroscopy has been used for qc/qa purposes on coatings and there are many extensive commercial libraries that are available containing the infrared spectra of these coating materials. These libraries have, until now, been used with traditional FTIR spectrometers to analyze samples or paint or coatings on surfaces.

In typical use, an unknown coating is analyzed via FTIR and the spectrum is compared against the library, yielding the identity of the unknown coating sample. These measurements are typically carried out using an FTIR equipped with an internal reflectance (ATR) attachment and many of the commercial libraries are actually collections of ATR spectra.

The Exoscan system is unique not only because it is a high performance hand-held FTIR system that can be used directly at the site of the sample, but also because it offers interchangeable sampling interfaces including an ATR system. Thus, ATR spectra taken in the field with the Exoscan system can be reliably compared against available commercial libraries or specialized user libraries to ensure that the proper paint or primer coating has been applied. Moreover, since Exoscan is used directly on the primed or painted surface, it is possible to look at multiple areas on the surface of a large or complex structure to ensure the uniformity and thickness of the applied coating.

Exoscan makes the non-destructive assessment of surface coatings a powerful means for ensuring the quality of finished coated products.

For additional details on this topic, please see A2 technologies Application Note 201 entitled "First Article Inspection Using the Exoscan"



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