



Coatings Expo - Future Coat Conference 2008
October 14-16, 2008
Chicago, Illinois, USA

Association representative David Glover, CTMA Director, attended the FutureCoat 2008 Conference from October 14 to 16, 2008 in Chicago, Illinois, USA. Our thanks goes to the Federation of Societies for Coatings Technology and the National Paint and Coatings Association for the complimentary registration to attend.

Background:

"Future Coat" was a three-day conference dedicated to the full range of industrial painting process and was very well arranged. In total five core technologies were presented at this conference including: Thermoplastic system developments; Waterborne technology developments; New green chemistries; New additives; and Emerging Nano technology.

The first day offered half-day short courses provided overviews of each technology. This allowed each attendant to participate in a maximum of two technologies. Over the next two days, more in-depth presentations were offered on formulating and adjusting formulations within each technology; application considerations for each technology (including the equipment and environmental considerations); tearing and drying systems required for each technology; and finally how to correct defects on parts.

Green Technologies:

Some of the topic areas covered in this section included the use of new feedstock derived from agricultural sources; the use of natural clays and synthetic platelets as fillers; and new material innovations in Green technologies areas. The latest regulations governing the emission of volatile organic compounds (VOC) along with a forecast of where these new regulations are heading was discussed. This led into how these new regulations will affect the industry and what actions can be taken to meet these requirements. In the near-term, stack treatment systems are available that will meet current and perceivable future emission requirements; however, a system that would bring emissions to a zero level does not yet exist. Presenters' recommendations were in the direction of changing your coding and painting systems to more environmentally friendly processes that have the potential of meeting the new emission standards. This is the only way the industry could see meeting regulations that they are anticipating in the foreseeable future.

Thermoplastic Coating Technology:

This process is commonly known as powder coating and other variations of this technology are thermo-spray coatings. This involves placing the coating on the part by virtue of melting the coating material to the part then allowing the part to cool, thereby solidifying the finished coating. The features of this coating are that it is very tough; it has high corrosion resistance properties; it has high transfer rates; and it has very little waste and very low emissions. On the downside these systems have limited colors, long color changeovers, high energy consumption, and are limited to parts that can tolerate being heated to 300° F. and higher.

Recent advancements in this technology include: reduced curing temperatures so that the system may be used on certain plastics; more and better corrosion resistant additives for metal products; better flow characteristics providing high-end class "A" finishes; and faster cures at lower temperatures.

Waterborne Technologies:

Waterborne paint technologies have been very limited with respect to industrial and production applications and the first application in the automotive sector was coloured base coats which still required a solvent-based primer and a solvent-based clear-coat over them. These clear coats were based on an ultraviolet (UV) curing system to meet throughput requirements of the industry and are capable of carrying paint finishes with less than 20 seconds of high intensity UV exposure, which is far superior to two to three hours of oven cure time. Many new advances were presented including: new dispersion technologies for color coat and base coat pigment, new 2K waterborne polyurethane-based painting presses, low energy 1K waterborne primer/filler base for plastic parts; new high speed technology for thinner film build; low and zero VOC concrete coatings; along with 50 VOC gloss floor paint.

Additives:

A large number of developments have taken place within additives to painting systems, although incrementally these technological developments have, as a whole, made a major advancement in all painting areas. They have made improvements in hide capabilities, flow leveling and surface finish, scratch resistance, reduction in VOC emissions, improved wetting and pigment dispersion, UV protection and appearance. This area has been critical in new paint developments based on natural oilseeds and other renewable resources. Various strides have been made in the area of organic compounds; inorganic/organic hybrid compounds; new enzyme-based catalysts and surfactant additives for painting systems.

Nano and Other Emerging Technologies:

The presentations on nano and other emerging technologies included:

1. New painting system based on antimicrobial surfactants that produce a surface that rejects germs and bacteria.
2. The use of micro-biocides in the emission stream to reduce VOC emissions.
3. Smart coatings that are able to self repair minor surface damage after it occurs.
4. Self assembly technology where pigment self places itself in an orderly fashion to provide the required hide in a very thin film system.
5. Nano technology studies in melamine dispersion, light scatter in coatings, and three-dimensional mapping of nano filters within thin coatings.

Conclusions:

Developments in the painting and coating industry have accelerated over recent years due to government regulations and requirements by industry. Attendance at a conference such as Future Coat is helpful to assess current practices and future development requirements within the coating industry. These systems and processes will require substantial technological change for some of our members in order to meet future regulations and requirements. For the few members that are involved in this activity, they need to be aware of the latest technologies and replacement system needs to better plan for opportunities in the future.

Respectfully submitted,

David Glover

CTMA Director & Windsor Chapter Chair