Sustainability: Impacts and Challenges in the Coatings Industry

Published in CFCM Trade Magazine
Winter 2014

January 17, 2014

Companies in the paint and coatings industry woke up a long time ago and smelled the coffee. Industry leaders fully realize that an industry requiring a broad range and varying mix of chemicals for their products must be conscious of the health, safety and environment within which these chemicals are used. The coatings industry embraced the need for a renewed focus on environment and health protection, green practices and sustainability before regulators and the public ramped up demands to impose stricter rules. Much has happened since then.

By definition, sustainability is a relatively new concept that has emerged and evolved worldwide over the past 20 years as a result of significant concerns about the unintended social, environmental, and economic consequences of rapid population growth, economic growth and consumption of our natural resources. A focus on sustainability practices in industries and corporations ensures that we will continue to have the water, materials and resources to protect human health and the environment in the coming decades.

Early Focus on Sustainability

Many years ago the coatings industry, like other industry sectors, complied with internal rules for health, safety and environmental protection of its workers, through programs like CoatingsCare. In Canada, manufacturers also voluntarily reduced VOC emissions in architectural products by 50 percent over a 20-year period. Recent regulations have pushed that percentage closer to 100 percent today. They understood the important benefits of Material Safety Data Sheets (MSDs) and the Workers Health Management Information Systems (WHMIS) as essential tools in the use and marketing of safer products at both the wholesale and customer level. All of these things continue to be an important part of the business culture in the paint and coatings industry.

The coatings industry, primarily through CPCA, understood the necessity to be ‘inside the tent’ on important discussions that have impacted the industry. In recent years
there have been significant strides made to ensure industry’s products are safe for both consumer and industrial use. Every step of the way industry has been there to ensure that appropriate, science-based decisions form the basis of legislation and regulations impacting the sector. This has lead to tremendous successes for the paint and coatings industry, as follows:

1) The adoption of VOC regulations in 2009 for architectural and automotive coatings produced even greater reductions in VOC emissions, in some cases an additional 18% percent reduction in architectural coatings, based on 2002 levels, and more than a 60 percent reduction in the automotive refinishing sector;
2) The increased presence of industrial waterborne coatings products has also reduced VOC emissions significantly and led to additional health and safety benefits in the workplace;
3) Various pollution prevention initiatives under programs such as the Chemicals Management Plan and the Toxic Reductions Plan have further promoted safety in the workplace and safer products for the consumer;
4) Further risk management of chemicals in commerce that include regulations and pollution prevention initiatives such as codes of practice and compliance agreements clearly highlights the growing confidence by governments that the coatings industry is responsible, as for example, the current proposed Code of Practice for both MEKO and DEGME, in lieu of regulation;
5) Post-consumer paint recycling programs under Extended Producer Responsibility (EPR) programs now exist in every Province, which led to the recycling of 25 million kilograms of leftover paint in Canada last year;
6) Numerous efforts to establish acceptable and recognized standards for the ‘green’ coatings products under organizations like the Masters Painters Institute with strong performance standards and approved product lists now referenced by users in many sectors of the economy.

These efforts continue unabated. The Association continues to take a leadership role to ensure that ongoing initiatives are appropriate and that industry has direct input into their development. Once regulations and/or pollution prevention plans are in place, there is an extensive effort by CPCA to ensure that industry is fully aware of the many regulations and that member companies are in full compliance. Governments regularly consult the Association before moving forward on new initiatives that impact the coatings industry.

**Sustainability Drivers: Competition and Social License**

Arguably, adherence to these new rules has lead to increased competition among those doing business in the industry. Companies seek to have a competitive edge in many instances with respect to more environmentally friendly or ‘green’ product offerings. Low-VOC or no-VOC products are often displayed in commercials extoling the features of various coatings products. Companies are aggressively pursuing and deploying new
technologies in product formulations to ensure they remain on the cutting edge and can, in some cases, stay ahead of the regulator and their competition. The ability to make an environmental or sustainable claim with respect to products has become part of a company’s unique selling proposition. It has also allowed them to flourish in an increasingly complex sustainable business environment.

The question is how did this all come to pass and where will it end? Sustainable development ties together the concern for the capacity of natural systems to co-exist with the social and economic challenges faced by society. Dating back to the early 1970s sustainability was used to describe an economy that was “in equilibrium with the basic ecological support systems.” In 1987 the Brundtland Commission issued a report entitled “Our Common Future,” which sparked a new mantra by environmentalists everywhere related to the definition of sustainable development as, “Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

Since then governments and NGO’s have continued its activism for a greater focus on environmental sustainability, culminating in the Canadian Environmental Protection Act (1999), the cornerstone of Canada’s environmental efforts. It continues to be the prism through which environmental sustainability is viewed. It is an important part of Canada’s broader legislative framework aimed at preventing pollution as well as protecting the environment and human health.

In effect, this led to what has become known as a ‘social license’ to operate. All of the things that are couched in terms of sustainability must be addressed if companies wish to continue operating or gain market access and market share. Intuitively we all know that if the market, the consumer, views industry as bad or in some way immoral by virtue of how it treats the environment, sales will diminish. The coatings industry has made great strides to ensure the industry is not perceived in this way.

As previously noted, there is often considerable complexity involved in gaining and maintaining a ‘social license’ to operate, but properly prepared and supported, the challenges created by such circumstance can usually be overcome. Difficulties arise most frequently when companies are unable or unwilling to make the nominal investment to make things work. The most common problems encountered include the following:

• The company sees gaining a social license in terms of a series of tasks or transactions (in effect making a deal), while the community grants the license on the basis of the ‘quality’ of that relationship.

• The company confuses acceptance for approval, co-operation or technical credibility with social credibility. Often a company may delay stakeholder engagement with respect to certain undertakings whether it is in the launch of a new product or a
We must continue to ensure the proper metrics are used in assessing the sustainability of industrial powder coatings, as well as in assessing carbon footprint and TiO2 usage. It is generally accepted that TiO2 production creates an average carbon footprint of 5.2 tons due to the significant quantity of energy required. On the surface, this seems to be high, but it would be incorrect to make such an assumption because of the downstream properties of the chemical that produce other benefits, as Tony Mash, the former head of the British Coatings Federation recently argued. He noted that, “While TiO2 has a high carbon footprint per ton, it does prove to be an essential material in many decorative paints. It has excellent properties in terms of opacity, which will significantly enhance how much paint it takes to coat a surface. The greater the opacity, the less is required to cover a given area … with fewer coats needed. It also enhances life expectancy and scrub resistance (for interiors), a highly efficient reflector of infrared radiation from sun and heat.” All of this produces great benefits from downstream use and not all are immediately recognized or accounted for in assessing carbon footprint.

For industrial powder coatings, there is also an opportunity to further reduce carbon footprint in the reduction of layer thickness, followed by epoxy/hybrid replacement, as well as the lowering of curing temperatures. Industry recognizes this and continues to work on initiatives to take advantage of such opportunities in the name of sustainability, while maintaining product performance.

We must continue to ensure the proper metrics are used in assessing the sustainability...
of a particular product and inform regulators and the public of these indisputable facts. One of our members, a world leading chemical supplier, BASF, maintains that for every ton of carbon dioxide emitted in manufacturing processes, the product saves the consumer three tons of CO2 emissions because of the way the product is used. Efforts must be made to ensure these positive elements are properly measured and conveyed to customers, governments and the public. When probably measured and recognized, the efforts for shifting to a low-carbon economy will drive forward a new era of technological innovation in the paint and coatings industry.

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