


Waterborne wave looms for Canada



In its efforts to reduce VOC emissions, Environment Canada has proposed regulations that may require substantial changes to paint, primer and clearcoat formulations. Canadian painters will most likely find their choices limited to high-solids primer, waterborne basecoat and high-solids clearcoat in the near future. The good news is that low-VOC systems could boost productivity.

By Cindy Macdonald, editor

Although Environment Canada says manufacturers are free to meet its proposed volatile organic compounds (VOC) regulations in any way they see fit, the federal department has structured its proposal in such a way that the use of waterborne basecoats such as those mandated for Europe and California is the most obvious solution.

“Europe has basically converted to waterborne basecoat, and California is pursuing similar standards, so it makes sense that an environmental legislator would include waterborne basecoat in any proposed regulation for Canada,” says Bruce Henderson, who handles regulatory affairs for DuPont Performance Coatings in Canada.

Environment Canada is collecting information on the economic and social impact of its proposed legislation, and is planning further stakeholder meetings in October.

But, "the most likely scenario is that waterborne basecoats will be required by the new regulations," says Henderson.

Alex Cavadias, Environment Canada's unit head for VOC Controls, says the department conducted a review of various North American and European standards, and found the California regulations were "the most appropriate to follow" in order to get any meaningful reduction in VOC emissions.

"California is on the leading edge of regulating VOCs, and suppliers tend to match the lowest standard in North America," explains Cavadias.

VOCs are a set of chemical compounds commonly found in refinish coatings, as well as in preparation and cleaning products used in bodyshops. They react with sunlight and contribute to smog. Cavadias, during an industry meeting in May to introduce the proposed VOC limits, explained that, for most urban areas in Canada, VOCs from solvent use will soon be the largest source of VOCs caused by humans.

Cavadias emphasizes that Environment Canada's intention is only to impose VOC limits, not to dictate what technologies should be used to accomplish compliance. "We recognize that there are different technologies that can reach these limits. We know that there are technologies commercially available at this time that can do so."

In fact, some of those technologies are being used, and will be used, to meet environmental legislation in California and Europe. Regarding high-solids primers, waterborne basecoats and high-solids clears, Henderson says, "I believe, personally, that paint companies will leverage or develop product lines for global use, meaning the waterborne basecoat and clearcoat technologies that are being launched in Europe will be basically the same as the ones launched in California and Canada."

When will the wave hit?

Environment Canada held a consultation workshop in May for industry stakeholders, and is now gathering and ana-

lyzing feedback from that meeting and from its discussion paper outlining the elements under consideration for the regulations. (The VOC limits are outlined in the table on page 16, and the discussion paper is available online at www.ec.gc.ca/nopp/voc/en/secAR.cfm.)

Environment Canada plans to present the results of the feedback from stakeholders in October, discuss any changes based on the feedback provided, and discuss a timetable for imple-

mentation. Cavadias says the department plans to publish draft regulations in Canada Gazette, Part I during the winter of 2006-2007. An obligatory 60-day comment period follows. Any time after that, the regulations can be published in Canada Gazette, Part II, at which time they become law. There is generally a phase-in period for this type of regulation.

The proposed regulations would prohibit the manufacture, import and

WATERBORNE: THE REALITY

Since converting to BASF's Glasurit 90-Line waterborne paint system several months ago, False Creek Collision Plus has put about 100 paint jobs using waterborne paint through its booth, with no complaints. Painters at the Vancouver-based collision repair facility are happy to have made the switch.

From the painter's point of view, the process remains much the same, but False Creek's two painters found they had to throw out some of their old ideas. "The primer step is the same, and so is the clear coat, but relying on air to dry the basecoat was deceiving, and all new to me," reports Bobby Belegris. "When you apply the paint, it really looks wet. You have to trust the air to suck the water out."

Belegris and Joe Pulice are now hearty supporters of waterborne paints. "I definitely want to work in a shop that uses waterborne paints, now that I've experienced it," says Pulice.

"You need fewer coats with waterborne basecoat, so it easily cuts the application time in half," reports Belegris. That is offset by the longer drying time than solvent-based finishes.

"In some ways," Belegris continues, "it's easier to paint with waterborne. You don't get wrinkling, because it doesn't attack the existing coatings the like a solvent-based material would."

Changes to the shop's equipment were minor, says Bernhard Rubbert, owner of False Creek Collision. The existing HVLP spray guns were suitable, and no additional heating of mixing or storage areas was necessary. The shop was already equipped

with a downdraft spray booth, so Rubbert added a portable air jet system to provide air movement. He's considering a wall-mounted air movement system as well.

For now, the waste stream for waterborne and solvent-based is not segregated.

"I can't say there are no conversion costs, but I consider this an investment, not a cost. The training, the downtime, these are part of the investment," says Rubbert.

As well, Rubbert is marketing his use of environmentally-friendly processes to clients, local dealerships and parts suppliers.

Rubbert says the productivity lost during the conversion was not significant. He estimates that the paint department ran 20 to 30% slower than usual for one week, and was back to normal by the end of the second week. He planned for the lower productivity, and scheduled the conversion for a time when business was slow.

Prior to purchasing this collision repair business, Rubbert worked with BASF in Germany, and was involved with development of the waterborne auto refinish coatings.

Once he purchased False Creek Collision Plus, he wanted to upgrade the paint system, and decided an environmentally friendly option was desirable for both employees and nearby residents.

Rubbert strongly suggests that other shops follow his lead, and avoid the chaos of the transition period if regulations requiring waterborne coatings come to fruition. "It would be much better to be prepared. Do it now rather than waiting."

sale of non-compliant coatings in Canada. Coating manufacturers, distributors, jobbers, and even refinish shops will be subject to the regulations.

As a member of the Canadian Paint and Coatings Association's (CPCA) auto refinish group, Henderson is aware that the association's response to Environment Canada's proposed regulations was that "the primary VOC improvement areas were technically feasible from a coatings company perspective." This refers, he explains, to the high-solids primer and clears, and water-

borne basecoat. However, there are other areas of the proposal for which suitable technology does not yet exist.

"Environment Canada has recommended category limits similar to California's 2009 regulations," Henderson continues. "The complicating factor for coatings companies, is that there are a number of new technologies needed to meet California's regulations. These technologies will most likely require new polymers. Those will be subject to New Substance Notification under the Canadian Environmen-

tal Protection Act, and that complicates the time line a bit."

As well, converting Canadian collision repair facilities to waterborne and the subsequent training will be an enormous task. "Most coatings companies will have to focus most of their efforts on converting bodyshops to the new technologies" once phase-in begins, says Henderson.

Change could be good

"We know that once a shop has converted, it can do the repairs more or

Environment Canada's proposed VOC content limits (in g/L) "as applied", and limits required by other jurisdictions

	U.S. EPA & OTC g/L (lb./gal) (sometimes referred to as National Rule)		California Air Resource Board (CARB) Suggested Control Measures g/L (lb./gal.)	Environment Canada's proposed limits g/L (lb./gal.)		European Union Directive 2004/42/CE (g/L)
	Effective Sept. 1998		Effective 2009 & 2010	Effective date not yet proposed		Effective Jan. 2007
Pretreatment wash primers	780 (6.5)	Pretreatment coating	660 (5.5)	660 (5.5)	Wash primer	780
Primer surfacer	580 (4.8)	Primers	250 (2.1)	250 (2.1)	Surfacer/filler and general (metal) primer	540
Primer sealer	550 (4.6)					
Single-stage and two-stage coatings	600 (5.0)	Single-stage coating	340 (2.8)	340 (2.8)	Topcoats	420
Multi-stage (more than 2 stages)	630 (5.3)	Clear coats	250 (2.1)	250 (2.1)		
		Color coats	420 (3.5)	420 (3.5)		
Multi-colored	680 (5.7)	Multi-colored	680 (5.7)	680 (5.7)		
Specialty coatings	840 (7.0)	Adhesion promoter	540 (4.5)	540 (4.5)	Special finishes	840
		Temporary protective coating	60 (0.5)	60 (0.5)	Body filler/stopper	250
		Truck bed line coating	310 (2.6)	310 (2.6)		
		Underbody coating	430 (3.6)	430 (3.6)		
		Uniform finish coating	540 (4.5)	540 (4.5)		
		Any other coating type	250 (2.1)	250 (2.1)		

less as effectively as before,” says Henderson. “Training, training, training will be the key.”

“In general, we’ve seen some areas of productivity improvements with the technology that we’re bringing in to Europe,” he adds. “The application time for the waterborne basecoat is significantly reduced. Although the flash time to clearcoat is longer, with good booth airflow, overall productivity could be better with the new systems.”

David Bly, Akzo Nobel’s global product manager - Sikkens, explains several benefits of waterborne paint:

“In many cases, the coverage rate of waterborne paint is much higher. In turn, this will allow for fewer layers applied to the vehicle. An additional benefit to a waterborne basecoat is that the coating is, in effect, inert. This allows the paint shop to apply the coating to many different and potentially

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— David Bly, Akzo Nobel

unstable substrates without the concern of swelling or surface changes when the film is dried.”

Equipment and process changes needed for collision repair facilities to handle these new products will, of course, vary depending on the existing equipment.

“Shops that are currently up-to-date with equipment and the shop environment will have minimal investment

needed to make the conversion to waterborne coatings,” says Bly.

Several suppliers have noted that heaters in the mix room, and for the waterborne paint storage area, stainless steel spray guns and air flow modifications in the booth may be necessary. Air flow devices can range from portable air blowers to integrated wall-mounted units.

Keep ahead of the wave

“We’re a number of years away from crunch time,” says Henderson. Logistically, the infrastructure to supply waterborne is just now getting into place, and very little waterborne basecoat is manufactured in North America yet.

However, several paint company sources have noted that the technology and formulations are not likely to change significantly between now and then, so there’s no reason for Canadians not to stay ahead of the wave. **bodyshop**