



## THE MASTER PAINTERS INSTITUTE

*AN INSTITUTE dedicated to the establishment of quality standards and quality assurance  
in the painting and coating application industries, principally in the U.S.A. and Canada.*

### MPI's New Environmental Notation System Announced February 25, 2002

For the most part, efforts to improve the environment relative to paints and coatings have revolved around Volatile Organic Compounds (VOCs). In some instances, life-cycle aspects have been considered, but most (both regulatory and voluntary) bodies consider only VOC levels and their reduction. Few, if any, 'factor in' coating durability, performance, or 'duty-cycle'. Reducing VOCs without appropriate consideration for life cycle or for duty cycle is seen by some to be a case of "a half loaf is better than no loaf at all". But, is it?

To use a simple example, if an interior coating "Y" has **150** grams/liter (g/l) VOCs and coating "Z" has **200** g/l, many would say "Y" is more 'environmentally friendly' than "Z". In some jurisdictions, coating "Y" could be used, whereas coating "Z" could not be used. However;

- Q. What if "Y" needed 3 coats but "Z" only needed 2 coats to cover the same surface?  
A. For one liter, "Y" would contribute **450** g/L VOCs, whereas "Z" would contribute **400** g/L or **50** g/L less.
- Q. What if "Y" lasted 1 year but "Z" lasted 2 years?  
A. "Y", with 2 one-coat repaints needed, would add **300** g/L VOCs, whereas "Z" would add **200** g/L or **100** g/L less.
- Q. How many VOC g/L did "Y" contribute over the 2-year duty cycle?  
A.  $450+300=750$ , this includes both the initial and maintenance applications.
- Q. How many VOC g/l did "Z" contribute over the same 2-year duty cycle?  
A.  $400+200=600$ , this includes both the initial and maintenance applications or **150** g/L less.
- Q. Does "Y" still seem more 'environmentally friendly' than "Z"?  
A. We think not, particularly when one considers the number of liters (at 3.78 liters per U.S. gallon) sold on a single project, or in a single jurisdiction, or in all of North America.

MPI has been advised of 'user' concerns from specification writers, architects, and property managers from U.S. Federal and State Government agencies, from the military, from Canadian Federal, Provincial, and regional Government agencies, and from 'owners' across North America. We are given to understand this same body of concerned people and agencies are now using MPI's performance standards.

Over the last two years, MPI has developed new categories of higher performing products and the coatings industry is beginning to respond with products that meet those standards while more and more 'users' are increasingly specifying those product categories. Recently, MPI completed studies in its coatings lab and confirmed the essence of those results in the field. MPI then published the MPI Green Paper #1. Following very strongly supportive initial reaction, MPI is now embarking on the first phases of a new Environmental Notation System (ENS).

This new system (ENS) will address environmental preferability from a g/L of VOCs contributed standpoint **plus** a duty cycle perspective. Initially, categories of interior paints will be included in the system as the larger focus is presently on indoor air quality. This can be expanded, later, to include 'most-used' categories of exterior paints.

- ENS will 'bonus' on 3 MPI ranges of g/L of VOCs. These ranges (presently in use) are reviewed periodically, and are based upon MPI's understanding of definitions and levels defined by a variety of jurisdictions, including EPA, California's South Coast Air Quality Management District, U.S. Green Building Council and the Canadian Environmental choice program. (It should be noted that jurisdiction category definitions and approaches are presently **vastly different**.) MPI's "E" will designate an environmental range of VOC levels. **E3** will be the lowest level of VOCs, **E2** the second lowest. **E1** will be the highest acceptable range, and a blank will indicate either higher VOCs or a lack of information from the paint manufacturer.

**Important Note:** With MPI's newly adjusted VOC ranges for most of the most-used interior waterborne categories, products indicated as E2 or E3 will meet or exceed most jurisdictions **including the paint requirements of the U.S. Green Building Council's LEED program**, even before the duty cycle and other bonus points are considered.

- ENS will 'bonus' (plus or minus from a base line) higher performing MPI product categories.
- It will also 'bonus' higher performing MPI gloss/sheen level categories.
- It will also provide 'bonus' opportunities for appropriate use of a product category. Examples include:
  1. The durability of a Flat would be much greater on a ceiling than it would on a high-traffic school corridor wall.
  2. A semi-gloss alkyd is much more durable and serviceable (and 'environmentally friendly!') on interior doors and frames than is a conventional latex over a duty cycle.
- ENS will provide 'bonus' opportunities for individual products that address new environmental Ozone Forming Potential (OFT) initiatives (e.g. Scientific Certification Systems) when these are approved by appropriate agencies either as purchasing decisions or in environmental regulation.
- An **EPP (Environmental Performance Product) Rating** will be the total of the "E" range number and the applicable bonus points (= or -).
- The "E" (VOC) range will be published on virtually all of MPI's approx. 150 categories of coatings. The **EPP Rating** will initially be published for selected indoor categories. This will allow program users to further familiarize themselves with the options while maintaining present information.

The ENS has many life cycle considerations but does not include costs such as raw materials production, containers, transportation, disposal, etc. Color choices which impact environmental friendliness, are also excluded. This system sets a high standard for coating durability but does not include the higher cost of more frequent repainting or the costs (both in dollars or employee disruption) associated with repainting occupied facilities where lower performing paint is used.

Also, MPI believes that flat paints (i.e. below 5 units at 60 degrees) are almost always the lowest performing sheen and are not always appropriately specified for many high traffic areas. This, coupled with the very high error level in current VOC testing below 100 g/l, causes MPI to decline (at this time) to drop its VOC ranges as low as 50 g/l called for by some authorities. MPI believes that true environmental friendliness considers product performance first, then selects on the basis of environmental friendliness.

MPI also believes that specifiers and 'users' should consider lighter colors when concerned about true environmental friendliness. Lighter colors most often have lower levels of colorants. The vast majority of universal colorants currently used not only result in a decline of performance, but also contribute their own VOCs in addition to that of the paint. Lighter colors often reflect light better, and this can make better use of available light without further requirement for more energy use.

Specifiers and 'users' should also consider gloss and sheen levels higher than "Flat" for most applications, not only for greater light reflection, but also as performance generally increases with the increase in units of gloss. Further, higher gloss levels are more serviceable, therefore often requiring less strength in the cleaners used. This generally results in less environmental impact from the cleaners used, and often results in assisting to extend the duty cycle of the applied paint.

MPI's lab currently tests a wide variety of paint products to its performance standards from a wide variety of North American paint manufacturers. It uses a 'battery' of tests and test methods (e.g. the MPI scrub test reflects 'real world' conditions as to when maintenance painting is required. Other scrub tests require a break completely through the paint film, but few owners wait to see this condition before repainting).

Products passing this testing (and subsequent random confirmation and/or challenge testing) are listed in the current edition of the MPI Approved Products List (APL). The APL is an integral part of the MPI Architectural Specification Painting Manual, and the MPI Maintenance Repainting Manual. These manuals are part of a larger Quality Assurance program in existence since the mid 1960s.

Components of the program are now referenced in guide specifications from the U.S. Department of Defense, U.S. Federal agencies, the Canadian Government National Master Specification, owners like LDS Church, major architectural firms, specification writers, condo councils, property management, etc. Some apparently reference components: paint categories or products from the MPI Approved Products List, MPI referenced paint systems from options (with pros & cons) available, MPI Surface Preparation Standards, MPI Gloss/Sheen Standards, MPI Guide Specifications, etc. Some reference the complete program!

In order to provide 'more tools' to existing users of the program, MPI will introduce the initial phase of the Environmental Notation System in the February 2002 printed edition of the MPI Approved Products List and in the monthly update of one of its websites ([www.paintinfo.com](http://www.paintinfo.com)).