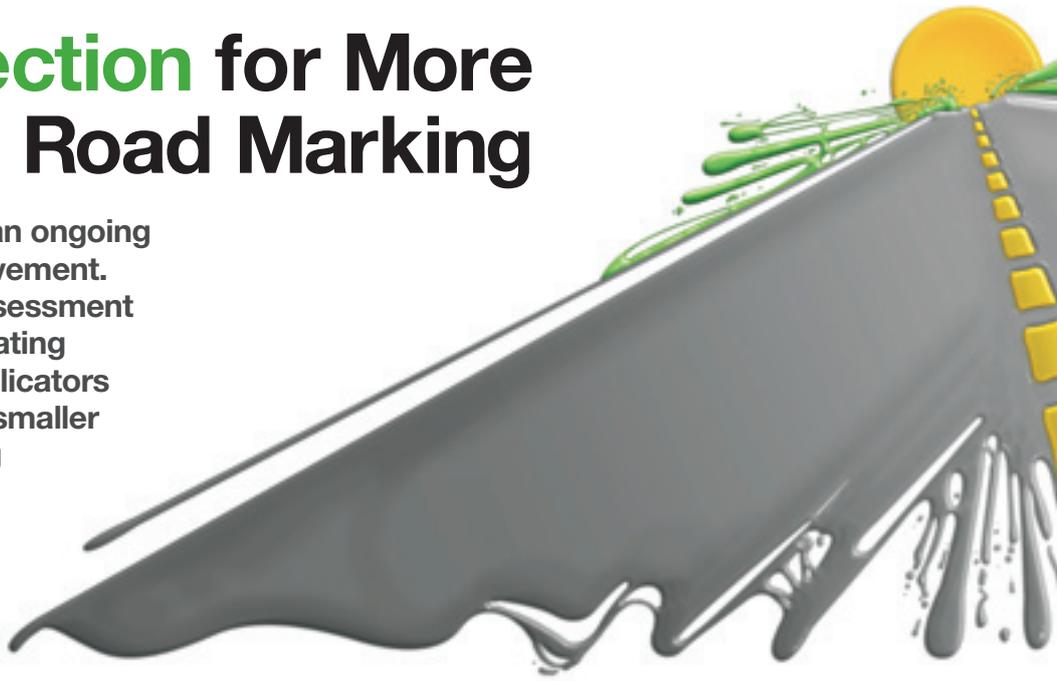


Set the **Direction** for More **Sustainable** Road Marking

The road to sustainability is an ongoing journey of continuous improvement. According to a Life Cycle Assessment (LCA) conducted by Dow Coating Materials, specifiers and applicators can take big steps toward a smaller carbon footprint by replacing solvent-borne traffic paint with high-performance water-borne alternatives based on FASTRACK™ Quick-Dry Technology.



Dow Coating Materials conducted a Life Cycle Assessment (LCA) to compare the environmental and human health impacts of road striping facilitated by FASTRACK™ Water-borne Technology versus other materials, including solvent-borne paint. The results, validated by an objective third party, demonstrate a notably smaller impact potential when using FASTRACK Water-borne Systems, as shown below.

Impact Assessment

Water-borne vs. Solvent-borne Traffic Paint

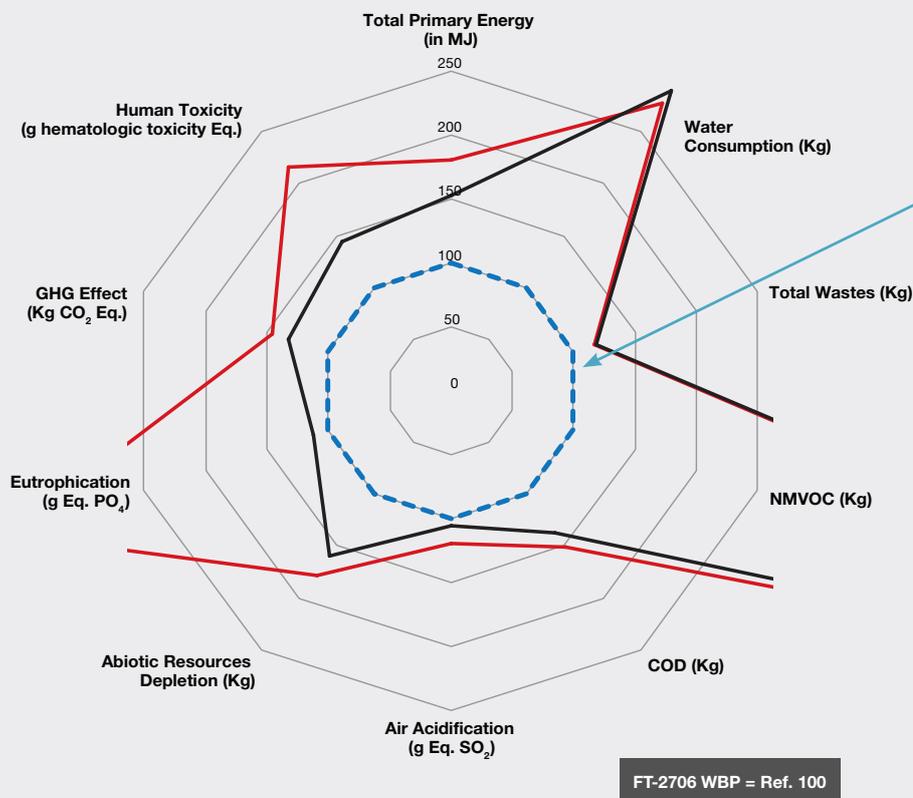


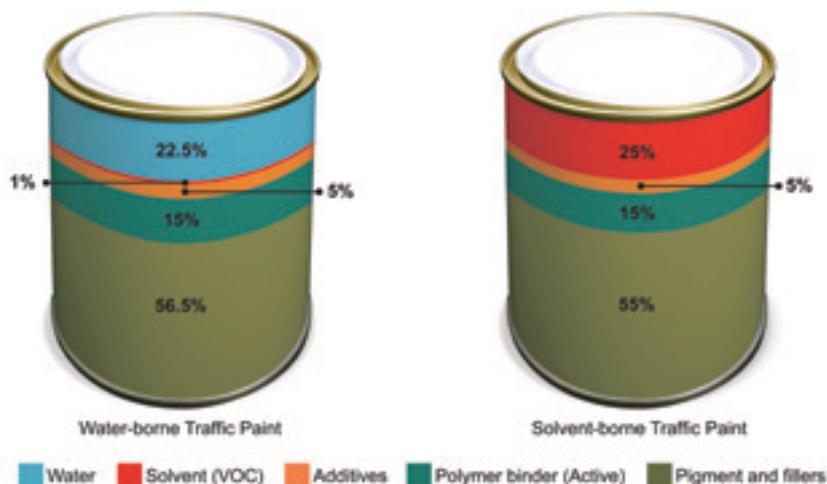
Figure 1. Impact assessment of solvent-based traffic paint versus water-borne traffic paint formulated with FASTRACK™ Quick-Dry Polymers.

Key Learnings

Based on third-party validated Life Cycle Assessment, using water-borne traffic paints formulated with FASTRACK Quick-Dry Polymers reduces road striping's impact potential in 10 out of 10 categories, including VOC emissions, human toxicity and greenhouse gas emissions.

Source: Life Cycle Assessment Road Marking Technologies Eco-Profile. Final Report – Nov. 2012. Dr. H. Kheradmand, LCT, LSA & SD Expert, Dow Coating Materials.

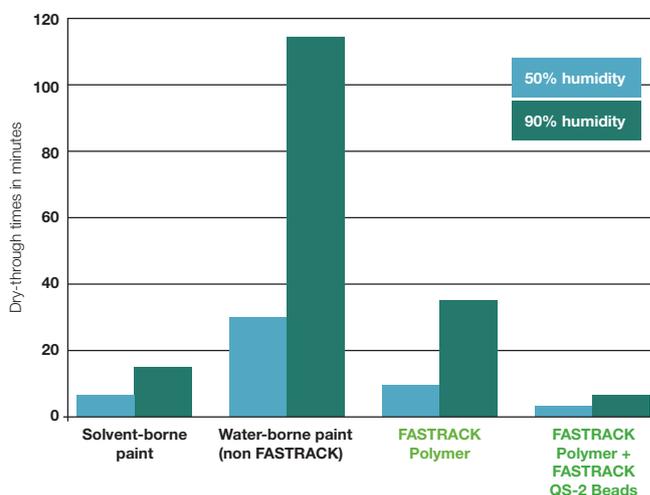
Water-borne traffic paints contain 8 to 10 times less solvent than conventional traffic paint.



It is estimated that more than 20,000 tons of toluene and other petroleum solvents are used and evaporate during the application of road marking products in Europe each year. This poses potential risks both for the environment - due to the emission of volatile organic compounds (VOCs) -- and for the health of workers, with potential dangers linked to storage and transportation due to the highly flammable nature of such solvents. Substitution is possible with water-borne traffic paints that are not flammable, can be applied at ambient temperatures and offer the potential to reduce VOC emissions related to road striping by up to 80%.

FASTRACK™ Water-borne Polymer Technology from Dow features patented quick-dry technology that facilitates the formulation of water-borne traffic paints with accelerated dry times and performance properties that equal or exceed traditional solvent-borne traffic paints. Extensive road marking tests and field trials demonstrate that traffic paints formulated with FASTRACK Polymers offer outstanding durability and toughness, excellent adhesion to various road surfaces and rapid drying. These properties facilitate quick and easy application and long lasting performance.

FASTRACK™ Polymers deliver fast drying



Why we conduct LCAs

LCAs track a product or service from raw material sourcing through end-of-life (cradle to grave). They are typically conducted in accordance with recognized standards such as ISO 14040-14044 and validated by an objective third party. Many factors are taken into consideration. In the case of traffic paint, these would

include the raw materials that go into the final paint formulation, as well as how the paint is applied, how it performs and how long it lasts. The results of an LCA help decision-makers choose more sustainable options and assist in the implementation of green procurement programs and qualification for certified eco labels.

Regular road striping is a top priority that keeps drivers safely on track across a rapidly expanding world. As more people travel on more roads, there is growing interest in striping systems that produce a bright, reflective line while leaving a smaller environmental footprint. Life Cycle Assessment (LCA) is a tool that can help.



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