



## AROUND THE GLOBE: WATERBORNE TRAFFIC MARKINGS IN BRAZIL

### A Successful Case History

The use of waterborne traffic markings in Brazil began in the early 1990s when the technology was first introduced in the marketplace. In 1996, after several years of evaluations, the ABNT (Brazilian Association of Technical Specifications) approved the first Brazilian specification for this application. Since then, waterborne paints have been gaining market share because of their clear advantages over solventborne technology:



1. Fast drying allowing for quicker traffic release during marking operations and higher productivity, even under the high-humidity conditions that are very common in Brazil.
2. Enhanced glass bead retention resulting in higher initial and long-term retroreflectivity. The longer life cycle reduces the frequency of repainting and improves driver safety.
3. Easier handling of waste. Disposal of solventborne waste is difficult and enforced by private road administrators. Contractors do not have the same restrictions with waterborne markings.
4. Waterborne application provides an overall **cost benefit** when durability is included in the cost analysis.

The cost benefit advantage has probably been the most satisfactory for privately held road concessions. It has become very clear that, despite the higher initial cost of waterborne markings compared to solventborne alternatives, the increase in durability offsets this initial investment making waterborne a much more cost-effective technology for road marking. The cost benefit has driven the use of waterborne markings on roads as important as the one connecting Sao Paulo and Rio de Janeiro. This 10 lane highway has been coated with waterborne paint for the last five years. With an ADT of 20,000 per lane, waterborne technology has shown its superiority with over 2 years of durability with good retroreflectivity readings.

One of the latest challenges for waterborne technology in Brazil was the marking of the Interlagos Racetrack for the closing race of the Formula 1 GP last year. Even for these tough conditions, a waterborne marking was selected as the preferred alternative. The racetrack is certainly one of the most demanding places for a traffic marking!

## INDUSTRY NEWS

### Simulator Helps Evaluate Traffic Markings

In 2003, a "Scan Team" of FHWA and AASHTO representatives examined the Accelerated Pavement Marking System Tester at the Federal Highway Research Institute (BASt) in Bergisch Gladbach, Germany.

The tester is used by researchers who apply samples of traffic markings to various road surface substrates. The substrates are then placed on an approximately 25-foot turntable and rotated under tires (up to six) at highway speeds. The benefits of this type of testing are obvious—evaluating pavement markings under controlled conditions and getting results in weeks rather than years.

An updated rotating wheel-wear simulator in Madrid, Spain has also been examined as part of a current feasibility study looking into the development of an accelerated wear simulator in the United States.

How credible and fair are the results of these accelerated tests, considering the myriad of factors that contribute to pavement marking performance? Will the laboratory test be an add-on to the product certification and approval process if road testing is needed to verify the accelerated test results? How does an accelerated test fit in with NTPEP test decks and performance/warranty specifications?

Time will tell. Stay tuned!

## SAFETY FIRST

### The Nation's Growing Danger Zone

According to the National Highway Traffic Safety Administration (NHTSA), rural roads, though often scenic, are actually the most dangerous roads in the nation. In 2001, rural roads accounted for approximately 60 percent of all fatal crashes.

About 60 million people or 21 percent of the nation's population live in rural America (The Road Information Program TRIP, March 2005). Rural areas are defined by the Census Bureau as open country and settlements with fewer than 2,500 residents (ERS/USDA Briefing Room – Measuring Rurality: What is Rural? 2004).

Reasons for the popularity of rural areas include a lower cost of living and small-town quality of life within commuting distances of large metropolitan areas. Additionally, the geographic flexibility of many workers, largely a result of improved technology, allows them to move or to build second homes in rural areas.

As rural populations increase, traffic fatalities are occurring at a rate approximately two-and-a-half times that of other roads. The traffic fatality rate on rural, non-Interstate roads in 2003 was 2.72 deaths for every 100 million vehicle miles traveled, compared to a traffic fatality rate on all other roads in 2003 of 0.99 deaths per 100 million vehicle miles traveled (The Road Information Program TRIP, March 2005).



There are numerous roadway safety improvements that can reduce serious accidents and traffic fatalities. The type of safety improvement appropriate for a section of rural road depends partly on the amount of funding available and the nature of the safety problem. A few of the low-cost options include roadway shoulder rumble strips, edge lines where there are none used currently, wider edge lines for higher visibility, center line rumble strips, improved signage, pavement and lane markings, lighting installation, the use of chevron markings (for traffic calming), and the upgrading or addition of guardrails.

Some states have taken significant steps to reduce traffic fatalities, particularly on rural roads. For example, in 2004, Texas identified 235 safety improvement projects that it planned to complete during the year, mostly on rural roads (United States General Accounting Office. Highway Safety, 2004, P. 44). Georgia has begun adding shoulder rumble strips and centerline reflectors to reduce the number of accidents resulting from running off the road.

Rural roads are a critical link in the nation's transportation system, increasingly providing access between urban areas and the country's heartland. Rural roads are the primary means of travel for more than 60 million Americans who live in rural areas and for those who visit there. Meeting the growing demand for safe and efficient mobility in rural America requires a significant increase in the commitment to improve the design and efficiency of the nation's rural road system.

**For additional information, contact your Rohm and Haas representative; call toll free at 1-866-626-5611; or e-mail us at [Fastrack@rohmmaas.com](mailto:Fastrack@rohmmaas.com).**

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