

# Pavement Marking Material Shortage

June 10, 2010

## Issue:

Shortages of four key raw materials used to produce waterborne traffic paint, extruded and spray thermoplastics, and epoxy have led to delays and increased costs. These particular materials constitute about 85 percent of the pavement marking market.

## Background

The following materials are in short supply (Source: ATSSA Press Release 05/25/2010 [http://www.atssa.com/galleries/default-file/Raw%20Materials%20Shortage%20FINAL\\_5-25-10.pdf](http://www.atssa.com/galleries/default-file/Raw%20Materials%20Shortage%20FINAL_5-25-10.pdf) )

- **Acrylic Resin:** This raw material is the backbone for all waterborne traffic paint. Suppliers of acrylic resins for roadway paint have instituted price indexes to manage the month to month volatility. (Note: *Methyl Methacrylate (MMA)* is an acrylic resin.) Propylene, a key component, has climbed over 80 percent in the last six months. Suppliers have had significant outages in the production due to unforeseen shortfalls. Force majeure has been declared by a major producer in the acrylic resin industry.
- **Rosin Esters:** This is the primary resin system used in “alkyd-based” thermoplastic. China has traditionally been a significant exporter of rosin ester into the U.S. This year, Asian demand and a poor rosin crop in Asia have driven rosin pricing to historic highs. U.S. rosin manufacturers are extremely tight in supply due to a shift in the adhesives market from petroleum based chemistry to rosin-based. There has also been some domestic rosin production that has been taken off-line due to a lack of return on investment in the past. The trouble the roadway safety industry faces is that rosin ester prices for road markings are the lowest price of all industries to which this material is supplied. Larger industries, such as the adhesive industry, pay a much higher price for rosin ester, therefore, as demands increase and supplies tighten, thermoplastic manufacturers, who pay the lower price, are the hardest hit.
- **Liquid Epoxy Resin:** There have been severe shortages in the chemicals used for epoxy resin production. This has caused sales allocation across all epoxy industries and price increases in the neighborhood of 30-plus percent
- **Titanium Dioxide (TiO<sub>2</sub>):** This is the white pigment used in all white roadway paint, thermoplastic, epoxy and a multitude of other chemistries. The TiO<sub>2</sub> industry has struggled through financial and production issues for years and it is comprised of a very limited number of manufacturers. As the economic recession hit, TiO<sub>2</sub> productive capacity was taken out of the system. The Asian market is now demanding significant quantities of the product and substantial volumes of TiO<sub>2</sub> are being exported by U.S. manufacturers to Asia. Growth demand in 2010 for TiO<sub>2</sub> has been in the range of five percent domestically, but the increased demand in Asia, coupled with the lowered capacity of market, has caused significant shortfalls in supply. Like rosin esters, TiO<sub>2</sub> prices paid for road markings are near the bottom price paid of all industries to which this material is supplied. Larger industries, such as the automobile industry, pay a much higher price for TiO<sub>2</sub>, therefore, as demands increase and supplies tighten, those who pay the lower price, in this case the roadway safety industry, are the hardest hit.

## Current Status

- Only 50-60% of normal supply available
- Price increases of up to 25 percent.
- 6-8 week backlog in orders
- Shortages may last until the end of the 2010 calendar year.
- Not all State DOTs have become aware of the shortage situation, and may not believe that contractors are having supply problems. According to ATSSA, pavement marking suppliers were legally obligated to provide materials under contracts to clients, including State DOTs for their maintenance programs. In many cases these contracts were let prior to the onset of shortages, and the suppliers have honored these commitments. Now, as resurfacing projects are nearing completion, contractors and subcontractors may have difficulties in obtaining pavement marking materials. This may lead to the assessment of liquidated damages on the contractors and, more importantly, may lead to projects without pavement markings.
- Effects noted in the following States: IN, IA, MI, MN, MO, ND, OH, SD, TN, TX, UT, VT, WA, WI as well as Alberta and Saskatchewan in Canada

## FHWA Position

### Contracting Considerations for Existing and Future Contracts

On a case-by-case basis, FHWA Division Offices should work with their State DOTs to determine if a reported material shortage is related to a circumstance that is beyond the control of the contractor and if there is a basis for a time extension in accordance with the contract requirements. In documenting these situations, the contracting agency should verify that:

- The contractor had a written commitment to supply the specified pavement marking material in a manner that corresponds to the contract time,
- Written statements are available from the original supplier that they are no longer capable of supplying the specified pavement marking material and quantity required to meet the contract time, and
- Documentation indicates that the contractor is unable to supply material from all practical sources.

In such cases, the contracting agency may consider:

- Switching to alternate permanent pavement marking materials that meet specification requirements and are readily available. These may include:
  - Tapes
  - Epoxy
  - Raised Pavement markings (RPMs)
  - Other State or Federal Government Agency-approved solvent-based Volatile Organic Compound (VOC) compliant pavement markings.
  - Other State or Federal government Agency approved waterborne pavement markings
- If the contracting agency has its own supplies of permanent pavement marking materials available, they may consider making these materials available to the contractor for purchase. For Federal-aid projects, this would require a Public Interest Finding.

- Deletion of pavement markings items from the contract, with placement of pavement markings by State DOT or Local Agency forces. For Federal-aid projects, this would require a Public Interest Finding.
- Delaying contract lettings until supplies are more plentiful.
- Granting time extensions and requiring that contractor maintain traffic until materials are available.
- Suspension of liquidated damages for striping contractors who are unable to deliver products in accordance with established project schedules due to the lack of raw materials used to produce roadway striping products. Suppliers and Contractors are indicating that they may still be able to produce and acquire paint supplies but the amounts and timing are unpredictable.
- Applying marking materials at application rates lighter than specification requirements
- Applying centerline pavement markings while delaying edge line markings until supply problems abate

### **Price Adjustments**

- FHWA is not currently aware of the use of price indices by any State DOT for pavement marking materials.
- FHWA will not participate in retroactive adjustments on contracts that were awarded without adjustment clauses. Based on a legal opinion during the 2004 steel escalation period, we have no legal basis for participating in such costs. However, contracting agencies may retroactively adjust prices for these materials without Federal participation.

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## News Articles noting this Issue

Associated General Contractors 05/21

<http://newsletters.agc.org/highway/2010/05/21/pavement-marking-material-shortages>

Associated Pennsylvania Constructors 05/21

[http://www.paconstructors.org/01NEWSARTICLES/2010/NEWS052110\\_1.asp](http://www.paconstructors.org/01NEWSARTICLES/2010/NEWS052110_1.asp)

Ohio Contractors Association 05/21

<http://www.ohiocontractors.org/pdfs/Newsletters/Newsletter5-21-10.pdf>

New York Times 05/24 <http://www.nytimes.com/2010/05/24/us/24paint.html>

Seattle Daily Journal of Commerce Nuts and Bolts Blog 05/24:

<http://www.djc.com/blogs/NutsAndBolts/?p=184>

Roads & Bridges 05/25

<http://www.roadsbridges.com/index.cfm?fuseaction=showNewsItem&newsItemID=20753>

Wisconsin State Journal 05/25 [http://host.madison.com/wsj/news/local/article\\_a63dc0de-6851-11df-b00b-001cc4c03286.html](http://host.madison.com/wsj/news/local/article_a63dc0de-6851-11df-b00b-001cc4c03286.html)

Burlington Free Press 05/26 <http://www.burlingtonfreepress.com/article/20100526/>

[NEWS02/5260315/Street-paint-shortage-might-slow-Vermont-projects](http://www.burlingtonfreepress.com/article/20100526/NEWS02/5260315/Street-paint-shortage-might-slow-Vermont-projects)

CNNMoney.com 05/26 [http://money.cnn.com/2010/05/26/news/companies/road\\_striping/index.htm?source=cnn\\_bin&hpt=Sbin](http://money.cnn.com/2010/05/26/news/companies/road_striping/index.htm?source=cnn_bin&hpt=Sbin)

ENR 05/26 <http://enr.construction.com/products/materials/2010/0526-HighwayPaint-1.asp>

KSL.com 05/27 <http://www.ksl.com/?nid=148&sid=10929735>

St Louis Today 05/27 <http://www.stltoday.com/stltoday/news/stories.nsf/stlouiscitycounty/story/536AF9A6B93A92EF86257730000E79C3?OpenDocument>

Journal of Commerce (Canada) 06/02 <http://www.joconl.com/article/id39125>

WBIR.com 06/04 <http://www.wbir.com/news/local/story.aspx?storyid=123402&provider=rss>

FortWayne.com 06/05 <http://www.journalgazette.net/article/20100605/LOCAL/306059980>

Finance & Commerce 06/07 <http://www.finance-commerce.com/article.cfm/2010/06/08/Drying-up--officials-struggling-with-shortage-of-pavementmarking-paint>

UpNorthLive.com 06/07 <http://www.upnorthlive.com/news/story.aspx?id=467358>