

September 2006

## ROOFING ASPHALT: QUALITY AND SUPPLY

A combination of factors has raised concerns in the U.S. roofing industry about the price – and even the availability—of roofing asphalt. These concerns have implications for the immediate future with consequences that are likely to continue for quite some time.

This report will provide some background about and offer some suggestions for contending with the situation. The most important of those suggestions is to be sure your communication lines are open with your suppliers and customers. Nearly everyone NRCA has spoken to about the subject is certain the industry faces a period of uncertainty and volatility; the most informed contractors will be the ones best able to respond.

### Background

Asphalt is used in a variety of roofing materials, most notably built-up roof systems, asphalt shingles and polymer-modified bitumen roof systems. Asphalt is also found in some coatings and mastics.

Asphalt is imported to the U.S. and produced in U.S. refineries in raw form for further finishing, such as by oxidizing or blending to provide finished asphalt for different applications.

Of the imported asphalt, according to the Energy Information Administration, about two-thirds comes from Venezuela and about one-third comes from Canada. Asphalt can be – and is – produced from a variety of crude oils; asphalt industry experts tell us that there can be significant differences among the asphalts' properties depending on the source of the crude. In all, about 3 percent of crude oil is refined to asphalt.

In addition, the vast majority of the asphalt produced in the U.S. is used in road and highway construction as paving-grade asphalt. The properties of paving-grade asphalt are somewhat different from roofing asphalt and require different production processes. Between 10 percent and 20 percent of U.S.-produced asphalt is used for roofing.

Asphalt—both paving- and roofing-grade—is a crude oil derivative that is referred to as a “bottom” product, or by-product, in the refining process—as distinguished from other crude oil derivatives such as gasoline and diesel fuel that are the primary production targets. “Bottom” products like asphalt were long considered to be largely give-away

products by refineries and historically have been available at low cost. As recently as about 1970, asphalt could be purchased for less than \$30 per ton; current prices are approaching \$600 per ton.

In addition, there is less "light" crude oil available in the current marketplace. "Light" crudes produce a greater percentage of gasoline and diesel fuel and less than 10 percent asphalt. "Heavy" crudes are more prominent in the marketplace, and as much as 30 percent of these "heavy" crudes result in asphalt. Refiners, therefore, have more incentives either to sell asphalt more profitably or to alter production methods to produce less asphalt.

It should also be noted that though this report is intended to address issues pertaining to roofing asphalt, issues pertaining to crude oil supply also apply to all products that contain or use crude oil derivatives. Because most common polymer materials are petroleum-based, crude oil supply is likely to affect many commonly used roofing materials.

### **The Issue**

The overriding issue for the U.S. roofing industry is whether it will be able to continue to depend on a reliable supply of high-quality asphalt. There are at least three reasons for concern:

1. *Geopolitics.* Obviously, there is instability in the Middle East, home to the world's largest supplies of crude oil. In addition, about 25 percent of roofing asphalt comes from Venezuela (either originating as Venezuelan crude or as a finished product), and the percentage is even higher on U.S.'s East Coast. A supply disruption in Venezuela could have immediate and serious consequences, and Venezuela's government has been vocally anti-American. A supply disruption anywhere in the Middle East could have equally serious consequences.
2. *Rising prices for other petroleum products.* Even though prices for asphalt have increased dramatically in recent months, they have not increased at the same pace as other petroleum products, including, of course, gasoline and diesel fuel. As a result, refineries are much more inclined to produce more gasoline and diesel fuel when they can -- and less asphalt. And doing that requires technological improvements--usually involving the addition of cokers to the refineries at an approximate cost of \$1 billion each. With increasing gasoline prices, cokers now seem to make economic sense, and an increasing number of refineries are planning to add them. Cokers make it possible for refineries to produce more gasoline, kerosene and diesel fuel (and consequently less asphalt) from crude oil.
3. *Environmental issues.* A new federal mandate for ultra-clean fuels goes into effect in October. Among other things, it is likely to drive up the price of gasoline and diesel fuel even further, exacerbating the existing gap in pricing with asphalt. It is also unclear whether refiners outside the U.S. will be willing to meet the U.S.

clean fuel mandates and continue to sell here, which will only serve to provide more incentives for U.S. refiners to produce more gasoline and diesel fuel. In addition, the total number of U.S.-based refineries has declined dramatically during the past 50 years from more than 250 to less than 50. And when you add to this equation the difficulty oil companies are having getting the necessary approvals to build new refineries, we have a situation where there will be incredible supply pressures on all petroleum-based products.

Ironically, one of the only ways the situation will improve is if the price of asphalt *increases*—possibly substantially—and provides proper economic incentives for refiners to continue to produce it. Few people argue the price will not increase; the only question is how quickly it will rise.

### **The One Certainty: Uncertainty**

It is likely these changes will take some time to occur. Cokers are expensive and take a couple of years to build—on top of the year or more it usually takes for a refiner to go through the permitting process.

However, market forces will continue to change and dictate even more change. If asphalt becomes more profitable to produce, someone will find a way to make it. If gasoline prices continue to increase, we're more likely to see the movement to coker technology accelerate. And obviously any major disruptions to crude oil supply can make the rest of the conversation irrelevant.

### **What Roofing Contractors Can Do**

NRCA recommends three things.

First, and most importantly, stay in communication with your suppliers and customers. Prices are likely to be volatile, and the more you can predict future pricing, the better you will be able to bid work.

Second, consider adding language to your bids, proposals and contracts to protect you in the event of dramatic price changes. Some sample language is included as a part of this report.

Third, stay engaged in the national debate concerning energy policy. We learned last month the effect on our economy that problems at a single Alaskan crude oil source (Prudhoe Bay) can have. And Prudhoe Bay “only” accounts for 2 percent to 3 percent of U.S. oil consumption. We need more refineries. We need more exploration. We need less rigid federal regulation. We're learning the hard way why all of these things matter. NRCA's Washington, D.C., office is a good source of current information about energy-related initiatives. So is NRCA's Web site, [www.nrca.net](http://www.nrca.net).

As always, look to NRCA for more information. And look to its industry partners, such as the Asphalt Roofing Manufacturers Association and Asphalt Institute, for more information as well. NRCA will be monitoring the situation closely and reporting to you regularly.

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**POTENTIAL CONTRACT PROVISIONS FOR ROOFING CONTRACTORS TO CONSIDER CONCERNING INSTABILITY IN THE ASPHALT MARKET**

Because of the uncertainty in supply and volatility of prices for asphalt and asphalt-containing products, this contract is based upon the following allowances:

[List products and allowances.]

Roofing Contractor [Insert name of roofing contractor] will submit to General Contractor or Owner [Insert name of General Contractor or Owner with whom roofing contractor has contracted] invoices or other documentation stating the actual prices charged by suppliers to the Roofing Contractor. The amount of the contract will then be adjusted to reflect the difference between the allowance and the actual amount.

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Due to unstable supply of asphalt (petroleum) based roofing products and volatility in pricing, the price quoted in this proposal is valid only for orders placed and paid for within the next \_\_\_\_\_ days. Thereafter, if there is an increase in the price paid by the roofing contractor for asphalt-related products, the amount of this contract shall be similarly increased to reflect the increased costs to obtain materials. If Customer desires to lock-in prices for asphalt products, payment must be made in accordance with this proposal and arrangements must be made for suitable storage and increased handling of these materials prior to their installation.

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The construction industry is subject to material availability problems and escalating prices relating to asphalt and asphalt-based roofing products due to world conditions. The availability and pricing of these products is subject to sudden and significant changes beyond the control of construction contractors and their suppliers. Because of the difficulty in obtaining firm prices for petroleum-based products from suppliers, roofing contractor [insert name of roofing contractor] cannot provide fixed, firm prices for

asphalt products for future projects. If there is an increase in the price of petroleum-based products charged to roofing contractor subsequent to making this proposal/contract, the price set forth in this proposal/contract shall be increased to reflect the additional cost to roofing contractor upon roofing contractor's submittal of written documentation of the increased charges.



The supply and price of asphalt and asphalt-containing roofing products are unstable and highly volatile due to conditions that are beyond the control of the roofing contractor. If the originally contemplated materials are not available or there is a \_\_\_\_ % or greater increase in material pricing charged to the roofing contractor between the date of this proposal and the time when the work is to be performed, this contract may be changed and the time to perform may be extended based upon the availability of materials and the additional costs to obtain materials, provided the roofing contractor provides advance written notice and submits written documentation.

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