

Handling the Risk of Bitumen Price Fluctuations

Over the past three to four years most surfacing contractors have suffered losses because of the fluctuations in bitumen prices. These days bitumen is not a by product that oil companies discount to try to get rid of. It is a global product priced according to the opportunity cost of refining it further to fuel oil, diesel or petrol. This means that the price of bitumen in New Zealand depends on global demand. Consequently it is problematical to predict bitumen price movements in six months, eighteen months or three years time.

Land Transport NZ (now NZTA) recognised this in May 2008 and issued a General Circular, 08/03; Reseal Price Index. This General Circular strongly recommended that this Index be applied to ALL contracts because of the new global market and because it is not now possible for contractors to get fixed bitumen prices. The Circular also recognised that modifying the formula (or not applying it unless the changes in price from one month to the next were substantial), was unfair and created a risk premium often greater than the actual changes.

It is unfortunate that most local authorities and NZTA (Highways) ignore these recommendations from their funder and rarely provide for market fluctuations on contracts 12 months or less. NZTA (Highways) make matters worse by imposing a 100 point change requirement in the Index from one month to the next before market fluctuations apply. This is clearly arbitrary and against what the contracting industry has advised. It was introduced unilaterally by NZTA (Highways) without any consultation with the Industry. Ironically, it's the small contractors that really find this difficult because they do not have the financial backing to absorb these price fluctuations.

The current formula for calculating bitumen price market fluctuations has been operating since the year 2000. Generally it has operated well but during times of large peaks and troughs in recent years it's been found to be wanting. Over this time Roading New Zealand has been working with NZTA and the Industry to refine the formula and to make it work better. An analysis of the calculated price changes based on the NZTA formula compared to the actual rises and falls in bitumen prices has shown the following three problems

- The existing formula based on the Singapore Heavy Sulphur Fuel Oil (HSFO) international marker struggles to replicate price changes during a period of market volatility (peaks and troughs).
- Having a 40% weighting for bitumen in the reseals index is no longer appropriate because of the different types of contracts used. In reality the weighting ranges from 5% for large contracts involving maintenance rehabilitation and reseals to 40% - 50% for pure reseal contracts.
- The accuracy of the index varies significantly depending on the price of bitumen at tender time and the currency exchange rate.

Roading New Zealand has been working with NZTA for around 18 months trying to develop a better model for replicating bitumen prices changes. This has proven very complex and more work is needed. The complexity arises because the market is not large and it imports bitumen as well as purchasing it from the NZ Refinery.

Despite this we have found that it is possible to improve the formula for calculating bitumen price market fluctuations by addressing the other two problems. This can be done by

- Moving away from a formula that includes a specific weighting for bitumen to volumetrics. In essence, this means applying a price adjustment to the actual tonnes of bitumen used. The beauty of this approach is that it is valid for all contracts, even those using asphaltic concrete.
- Moving away from an “index” approach when calculating the price adjustment over a given time period. Instead, use the actual \$ change in bitumen cost, (e.g. \$50) applied to the actual tonnes of bitumen used.

These two suggestions are how bitumen price market fluctuations are determined in the USA and Australia. Isn't it time we did the same.