

Welsh contractor invests in cold mix recycling

Making best use of secondary material in highway applications has taken a big step forward in North Wales, where roads have been maintained using entirely recycled asphalt.

Cold mix road repair material containing 100% recycled asphalt has been laid this summer on three rural sites in North Wales. The trials were carried out to demonstrate that structural integrity can be restored to a failing carriageway without having to make use of primary aggregates or hot bitumen. They represent a major cooperation in innovation, between Welsh private contractor Hogan Construction and bitumen specialist Nynas.

Highway recycling is certainly not a new concept and asphalt mixes that contain a proportion of reused plantings are commonly specified by environmentally aware clients. But laying asphalt that contains no virgin aggregate whatsoever and at an ambient temperature represents an unusual – some might say enlightened – step forward for both a highway authority and road contractor.

Trials were carried out by Hogan Construction on behalf of local authorities in Gwynedd and Anglesey. Over 500t of recycled material was laid as a binder course on behalf

of both clients, on three separate unclassified routes of between 50m and 1km in length.

Hogan’s Director of Business Development David Morris says the trials were carried out to prove that cold mix asphalt made up of mainly recycled material can be used to good effect in a road renewal. “For years we have recycled our planing materials for use in low-value applications, such as in hardcore for

“We would like to see incentives for clients to procure contracts in a more sustainable way.”

Dennis Day

farm tracks or as general fill materials. But we are now trying to get higher value products from recycled material to offer it to clients for use as a structural layer within the road itself.

“We wanted to lay an asphalt made up of 100% recycled material, because we saw the potential in certain cases to reduce the use of primary aggregates in the highway

maintenance process,” he adds. “The clients are perfectly happy with how the material has performed so far and we will be carrying out further tests over the coming months.”

Making use of entirely recycled material in an asphalt application has clear benefits, such as doing away with the need to extract primary aggregates from a quarry. Rejuvenating exhausted road material that would otherwise be sent away to landfill also helps to reduce waste. But use of recycled asphalt that does not have to be heated when laid represents a huge environmental gain, which has the potential for saving in excess of 80% of carbon emissions compared to conventional highway maintenance techniques, according to Mr Morris.

Cold applied road repair is made possible by using a bitumen emulsion, specially developed for recycled asphalt applications. Hogan Construction worked alongside the materials supplier Nynas which supplied its Nymuls CP50 emulsion for use in the North Wales trials. Planned road surfacing material was



Asphalt material laid on three sites in North Wales contained no virgin aggregates



Better value from recycled material is being offered by Hogan Construction

delivered to Hogan’s depot where it was screened and graded. The graded material together with the emulsion was then blended in accordance with the mix design to produce the cold mix which is stockpiled in the depot.

The cold mix was subsequently hauled from the depot and laid and compacted at the designated sites at an ambient temperature of between 19°C and 24°C. A further feature of the material is that the low laying temperatures makes it safer to handle.

An overlay of surface dressing was specified by the client in each case. According to Nynas Cold Paving & Surface Treatments

Manager Dennis Day, there was no urgency to get the material laid within a few hours as is often the case with hot mix applications. “One of the great benefits of cold mix is that the material has a significantly extended shelf life; in this case up to four weeks,” he says. “For the three trial sites, we mixed up the material the previous week and stockpiled it ready for use. This reduced waste and meant material could be laid outside of normal hours.”

Mr Day has been developing cold mix asphalts for over 15 years. He acknowledges that when he started, the process was probably ahead of its time. But now the twin

drivers of sustainability and carbon savings mean that techniques are starting to become more widely accepted. “Government initiatives can help promote cold mix, but unfortunately there is no clear mechanism in place to encourage local authorities. We would like to see incentives for clients to procure contracts in a more sustainable way.”

Mr Morris agrees that more could be done to encourage the use of sustainable products including cold mix. “There are not enough direct incentives for clients to use these sustainable products, which are no cheaper in financial terms. But the bigger picture needs to be looked at in terms of reducing carbon emissions, better use of primary aggregates and avoiding waste going to landfill.”

Permissions are not currently in place to use the cold mix recycled material on heavily trafficked, primary roads. But the process has a certain future nonetheless says Mr Day on rural roads which make up a high percentage of the overall highway network. “Local authorities can fall into a trap of just thinking about using innovative products on major roads, when in fact the bulk of the resurfacing work is likely to take place on unclassified routes.”



Trials were carried out in rural settings

email:	info@modernasphalts.com
	paul.adby@nynas.com