



Briefing note on rubberised asphalt for the Used Tyre Working Group

Rubber modified asphalt – What is it?

Rubber modified asphalt is prepared from common asphalt paving mixes with the addition of recycled tyre rubber granulate or powder:

- Existing tools and equipment can be used
- The material can be mixed on or off-site
- It can be placed in a thinner layer than common asphalt
- It requires less maintenance over a long period of use

Rubber modified asphalt can be used on motorways as well as urban roads and even small lanes

Characteristics

Rubber modified asphalt differs from the unmodified material in some of the following ways:

- Higher viscosity
- Lower penetration
- Higher softening point (ball-and-ring)
- Lower breaking point (Fraas)
- Lower thermal susceptibility
- Higher elastic recovery
- Higher resistance to ageing
- Better adhesion to aggregate



Benefits of rubberised asphalt

- Smoother ride
- Safety – including reducing skid
- Improved surface water drainage
- Reduced safety hazards e.g. aquaplaning, water spray
- Significant reduction of traffic noise in urban areas
- Initial capital construction cost-savings
- Major cost savings due to reduced material requirements
- Reduction of maintenance costs through improved crack resistance
- Improved structural stability by preventing moisture penetration into road foundation

Impact on tyre availability?

Rubberised asphalt can have a significant impact upon the annual quantity of untreated tyres:

- Estimates are that 1500 tyres are used to produce the material required for each lane-mile of rubberised paving – dependent upon the mix selected
- The minimum width of one UK lane –mile is between 2.5 and 3.25 metres
- With \pm 143 passengers car tyres per tonne, approximately 10.5 tonnes of tyres could be consumed with each lane-mile
- A 10 mile, 6 lane road could consume 630 tonnes



The experience so far:

- Rubberised asphalt has been used within the EU in over 300 trials in a variety of test installations since the 1960's (ETRA)
- The first trials were held in Belgium, France, Germany and the Netherlands, followed by Austria, Italy, Portugal, Spain, Sweden and the UK, and then Greece, Hungary and Poland
- Some 50 trials have been carried out over the past five years – resulting in over 100 miles of installation
- Within the EU, Spain has made the greatest recent advances by providing standards and regulations – with support from the Environment Ministry and the tyre recycling industries
- Sweden has extensively studied the potential and is implementing a long term programme