



8 March 2005

## CLASSIFICATION OF PENETRATION GRADE BITUMEN FOR ROAD TRANSPORT

On 21 January 2005 a letter addressed to Ms D Fourie, Specialist Dangerous Goods of the South African Bureau of Standards was sent seeking to enlist her support for the appropriate allocation of the UN packaging code and provisions for the road transport of *penetration grade bitumen* compliant with SABS 307, as there appeared to be an anomaly emanating from the interpretation of the SANS 10228: *The identification and classification of dangerous substances and goods*. In this document bitumen is deemed to fall under UN Code 1999: TARS LIQUID (including road asphalt and oils, bitumen and cutbacks) and classified under Class 3 – flammable liquids (with a flash point of 60.5°C or less) and more specifically under packaging groups II and III. This is entirely inappropriate for the following reasons:

- (1) Bitumen is an end product of the refinery process of crude petroleum whereas tar is derived from the pyrolysis of coal.
- (2) The flash point of penetration grade bitumen is greater than 230°C
- (3) Penetration grade bitumen, used in road/airfield construction and dam linings, is a viscous, non volatile liquid, significantly distinct from other volatile substances listed in the Orange Book which fall within the class and packaging groups mentioned above – viz. acetone, benzene petrol, toluene, diesel and paraffin.

Globally for both land and sea transport UN code 3257 – ELEVATED TEMPERATURE LIQUID is accorded to penetration grade bitumen which Sabita believes appropriate given that the liquid is transported typically between 100°C and 170°C (a temperature range well below its flash point) to attain a suitable viscosity for pumping into tanks or spraying on a work surface during construction. Penetration grade bitumen is also conveyed at ambient temperatures when it does not constitute a hazard at all.

Another issue brought to Ms Fourie's attention was the relevance of the transport emergency cards (Tremcards) describing, among other things, the nature of the hazard associated with the substance being transported as well as protection and safety procedures. A Tremcard for a UN code 1999 substance would be wholly inappropriate for incidents associated with penetration grade bitumen and may lead to severe injuries and/or loss.

In the light of the above and in the interests of cost-effective and safe transport of penetration grade bitumen we requested that consideration be given to the reclassification of the substance to fall within the UN code 3257.

The following answer was received from Ms Daleen Fourie, Specialist : Dangerous Good of SABS dated 22 February 2005:

***“On strength of the information forwarded to us, we agree to reclassify “penetration grade bitumen” from UN 1999; TARS LIQUID; Class 3 to UN 3257; ELEVATED TEMPERATURE LIQUID, N.O.S.; Class 9; Packing Group III.”***