



Road Emulsion Association Limited

REAL Technical Data Sheet No. 2 - Recommendations for the Safe Handling and Storage of Bitumen Road Emulsions

Bitumen Road Emulsions are suspensions of finely divided bitumen particles in water. There is no evidence to suggest serious health hazards associated with their use. However emulsifying agents are present in small quantities and frequent or prolonged skin contact should be avoided as this might cause skin sensitization.

Emulsions are non-flammable and may be either cold applied, where there is no risk of burns, or hot applied, where additional precautions should be taken.

The CIA black and white marking scheme should be adopted for storage tanks, delivery vehicles and road sprayers.

Safe Handling

Contact with the skin should be avoided by the use of protective clothing, suitable gloves and rubber boots. Barrier creams, particularly of the water repellent type, are beneficial and immediately after work personnel should use a skin cleaner and wash thoroughly with soap and water. Solvents should not be used for the removal of residual material from the skin since they may themselves cause irritation.

Medical advice should be sought at the onset of any skin irritation.

Eyes should be protected from splashes of emulsion droplets by the wearing of suitable goggles or visors. Where the eyes are accidentally splashed with emulsion they should be irrigated thoroughly with cold water and medical advice sought.

In the case of hot applied emulsions the following should also be observed.

Emulsions should not be heated above 90 C.

If emulsions come into contact with hot non-aqueous binders, there is a serious risk of spillage due to rapid expansion of the mixture. Where it is necessary to change from an emulsion to a non-aqueous binder or vice versa reference should be made to the REAL Technical Data Sheet Nos. 3 and 13 or to the emulsion supplier. Care should be taken to ensure that cationic and anionic emulsions are never mixed.

SCALDS AND BURNS should be immediately plunged under cold running water and held there for at least 10 minutes or until thoroughly cold.

No attempt should be made to remove cold bitumen which has adhered to the skin.

Seek immediate medical treatment for any casualty.

Storage Drums

It is important to control stock in storage to ensure that older drums are used first. (SEE BATCH NUMBERS).

Drums in storage should be rolled vigorously at least 5 revolutions in each direction and end over end at least twice. This should be done weekly for 40% emulsions, fortnightly for 50% and above. **On the day of use rolling should be for 2-3 minutes in each direction followed by turning end over end.** Check that this gives a homogenous product; the degree of agitation varies with different temperatures.

It may not be possible to roll small packages due to their shape. In this case mixing should be effected with a suitable clean rod via the filling cap.

Drums should be protected from frost and, if possible, from high temperatures which could cause pressure hazards when the drum is opened. Ensure bungs remain tight.

Drums for return should be stored with their bungs in place. Arrangements should be made with the supplier to dispose safely of drums that are damaged or contain residues.

Further dilution of the emulsion with water should not be carried out without a reference to the manufacturer. Sampling should be carried out in accordance with BS 434.

Storage Bulk

Depending on the design of the storage tank, mixing may be carried out by circulation, paddle mixing or aeration. This should be twice weekly for 40% emulsion and weekly for 50% and above.

Products should also be circulated immediately before use.

The tank should have sufficient capacity to receive deliveries. It should not be overheated and lids should be kept closed and, when necessary, pumps and piping should be washed out with water followed by kerosene. Sampling should be carried out in accordance with BS 434.

The above information applies to all bitumen emulsions. Further guidance can be obtained from the HEALTH AND SAFETY DATA SHEETS issued by the manufacturer.

See also the REAL Code of Good Practice for the Use and Safety of Mobile Storage Tanks.

For further information see Summary and Reference Sheets