

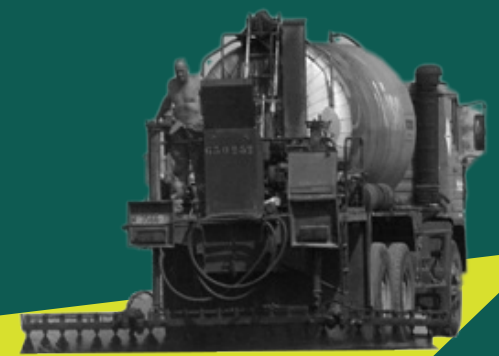
WATER BASED TECHNOLOGIES TO REPLACE PETROLEUM SOLVENTS



Making progress, possible.

WATER BASED TECHNOLOGIES TO REPLACE PETROLEUM SOLVENTS

1. Prime Coats
2. Bond/Tack Coats
3. Surface Dressing
4. Packaging
5. Environment



C55 FAST TRACK EMULSION PRIME

A solventless bitumen emulsion used for priming **compacted** granular bases, and in particular, slushed bases, prior to the application of asphalt or other bitumen surfacing.

Solventless prime coats meet environmental regulations and protect workers during application.

Advantages:

1. Controlled and rapid drying/breaking speed to enable same day paving.
2. Significant product and productivity savings.
3. Waterproofing layer to protect the base.
4. Enables strong inter layer adhesion between the base and asphalt layers.
5. Water based emulsion technology for total safety in use.
6. Can be applied to damp surfaces.
7. Protects the base from weather and traffic during construction.
8. Hardens and toughens the surface of the base.
9. Excellent storage stability for transport over long distances.
10. Quality assured through CE marking.
11. Fully conforms to EN13808.
12. Global EPD. A verified environmental declaration.

C50 PENETRATING EMULSION PRIME

A solventless bitumen emulsion used for priming **porous**, granular road bases prior to the application of asphalt or other bitumen surfacing.

Solventless prime coats meet environmental regulations and protects workers during application.

Advantages:

1. High Penetration Power to seal and reinforce porous road bases.
2. Controlled, predictable, breaking/drying time for improved productivity.
3. Water based emulsion technology for total safety in use.
4. Can be applied to damp surfaces.
5. Protects the base from weather and traffic during construction.
6. Hardens and toughens the surface of the base.
7. Excellent storage stability for transport over long distances.
8. Quality assured through CE marking
9. Fully conforms to EN13808.
10. Global EPD. A verified environmental declaration.

C60 EMULSION TACK COAT

A solventless bitumen emulsion tack coat, applied between asphalt layers.

Pavements are stressed/distorted each time a heavy vehicle passes over the structure. It is essential that pavement layers are bonded together, so that a solid, monolithic structure is formed, resulting in improved pavement life.

Bonded structures show 3.8 times the lifespan of un-bonded structures.

Conventional bond coats based on bitumen cutback or emulsion generally have extended drying times of between 24 and 48 hours and must be protected from site traffic if pick up of the bond coat onto wheels is to be avoided.

This slows down paving operations and restricts construction traffic.

EP have developed fast setting Bitumen Emulsion Bond Coats to improve the efficiency of asphalt operations, whilst at the same time offering high strength, thermo-adhesive bonding of asphalt layers.

Advantages

1. Strong inter layer adhesion of conventional asphalt layers.
2. High strength.
3. Controlled and fast drying/breaking speed to enable asphalt paving in less than 1 hour.
4. Water based emulsion technology for total safety in use.
5. Low application rates and costs per M².
6. Excellent storage stability for transport over long distances.
7. Fully conforms to EN13808.
8. Quality assured through EC marking.
9. Global EPD. A verified environmental declaration.

EP60 EMULSION TACK COAT

Polymer Modified Thermo-Adherent Emulsion.

On thinner asphalt layers the interface is stressed more justifying the use of a modified binder emulsion.

Advantages:

1. Extra Performance bonding of Polymer Modified and thin surfacing layers.
2. Extra Performance bonding of highly stressed pavement layers.
3. High, long term cohesive strength for better adhesion to base and aggregates.
4. High strength.
5. Controlled and fast drying/breaking speed to enable asphalt paving in less than 1 hour.
6. Water based emulsion technology for total safety in use.
7. Excellent storage stability for transport over long distances.
8. Fully conforms to EN13808.
9. Quality assured through EC marking.
10. Global EPD. A verified environmental declaration.

C69 FOR SURFACE DRESSING

Surface dressing is primarily used to maintain existing asphalt roads.

In Europe for example, over 500 million m² of road surfacing is maintained annually, using this method.

The surface dressing industry has evolved and become more technically sophisticated.

Originally the liquid bitumen waterproofing layer consisted of hot bitumen mixed with a petroleum solvent (bitumen cutback) but these products were both dangerous in use and had to be renewed every 5 years or less.

The use of cutbacks is now prohibited in many countries.

Advantages:

1. Maintenance of all categories of roads up to 3000 heavy vehicles per day.
2. Restore skid resistance and prevent potholes.
3. Cost saving alternative to surface replacement.
4. To surface and protect properly designed and constructed secondary road bases.
5. Extend road service life by up to 15 years.
6. Controlled setting times minimising road closure times.
7. Excellent adhesion to damp aggregates, so the waterproof layer is protected for longer. Over 98% adhesion in Vialit plate testing.
8. High, long term cohesive strength for better adhesion to base and aggregates.
9. Polymer Modified Emulsions to EN 13808.

EP69 POLYMER MODIFIED EMULSION FOR SURFACE DRESSING

Polymer Modified Bitumen Emulsion for use in Surface Dressing applications.

EP69 represents the latest technology developments in Polymer Modified Emulsions.

Advantages:

1. Extended road service life by up to 15 years.
2. Controlled setting times minimising road closure time.
3. High, long term cohesive strength for better adhesion to base and aggregates.
4. Excellent adhesion to damp aggregates, so the waterproof layer is protected for longer. Over 98% adhesion in Vialit plate testing.
5. Water based, safe technology.
6. Highly elastic, to accommodate minor movement in the base.
7. Highly effective in extreme temperatures.

ENVIRONMENT



Environmental Product Declarations (EPD)

Repsol is the first European manufacturer of bitumen and bituminous emulsions to be awarded the Environmental Product Declarations (EPD) for their conventional bitumens, polymer-modified bitumens, as well as cationic and anionic emulsions.

This milestone has been made possible thanks to the efforts of their Asphalts Unit with the help of their Sustainability Division.

The award granted by AENOR represents another step in their commitment to the environment and circular economy.

These documents issued by AENOR provide quantified and verifiable information on our products' environmental performance and were prepared based on the Life Cycle Assessment study of each process using quantified environmental data.

EXPORT STABLE EMULSIONS

Emulsions are defined as a heterogeneous, thermodynamically unstable system that is composed of two phases: the bitumen phase and the water phase, formed by water, emulsifiers, and pH regulators.

Due to this natural instability, a process takes place over time that causes decantation of the binder phase, with the water and bitumen gradually separating.

This ultimately causes the emulsion to break down in part or in full, going from a typical phenomenon to flocculation to coalescence and finally sedimentation.

To solve these problems, Repsol has developed a range of emulsions, which have great storage stability, improving the natural sedimentation process during prolonged periods of storage in customs and transport over long distances.



UK

Hurstwood Court
New Hall Hey Road
Rossendale, Lancashire
BB4 6HR

info@epemulsions.com

SPAIN

Calle de Orense, 6
Planta 3-A2,
28020
Madrid

UAE

BC, 4th, A2, Business Center
Dubai South Business Park
P.O. Box 713347
Dubai

TANZANIA

2nd Floor, Karimjee Jivanjee
Next to NBC Bank Headquarters
P.O. Box 38268
Sokoine Drive
Dar es Salaam

easa@epemulsions.com

SPAIN

Carretera
Alumbres
Escombreras km 7,8
30350
Cartagena,
Murcia

UAE

FBC50434
Compass Building,
Al Shohada Road,
Al Hamra Industrial Zone-FZ,
Ras Al Khaimah
Dubai