



UNITED KINGDOM



PRODUCTS

providing Safe and Sustainable Solutions

Colas operates throughout the UK supplying an extensive range of products to local markets from strategically located depots. With over 80 years in manufacturing within the bitumen emulsion market, Colas is able to draw on a vast level of experience and knowledge which is complemented by a strong focus on **research and development**. As a result the company has built up unrivalled expertise in product manufacture, application techniques and specialist equipment. Colas are committed towards delivering innovation across a number of market sectors with the aim of achieving **sustainable solutions** for our customers enabling them to deliver best value.

Colas provides an extensive portfolio of products for use in the following market sectors:

- Highway Maintenance
- Local Authorities
- Surfacing Contractors
- Utilities
- Civil Engineering
- Toll Manufacturing

Colas local depot **NETWORK**

All Colas products are manufactured in accordance with a Quality System certified to ISO9001 and are available through the company's National Sales Office or from a network of local depots (see Map) and independent stockists, details of which are available on request.





products designed to provide

**SAFE AND
SUSTAINABLE
SOLUTIONS.**

Our technical expertise is supported by the highest regard for **safety, quality and customer care**. In view of the constant development being undertaken in our laboratories, we advise customers in their own interests to ensure that this guide is the latest publication.

All products are sold subject to our standard conditions of sale which are available on request. No responsibility will be accepted for the use of any of our product(s), which is not in accordance with our current recommendations. For further information or for on-site advice please call our National Sales Office:

T: 01925 632616

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BITUCRETE



Bitucrete is a deferred set, storage grade macadam which has been approved by the BBA for use as a first time permanent repair material in footways; footpaths and cycle tracks (certificate 07/H128). It is also ideal for instant high quality temporary repairs on carriageways. **Bitucrete** is cold applied and therefore safe to handle.

Available in a variety of grades, **Bitucrete** can be used for footway repairs, patching, reinstatements and temporary surfacing. **Bitucrete** provides an immediate cure for potholes in car parks, roads, drives, factory floors and many other surfaces. **Bitucrete** is a combination of paving grade bitumen's, additives and selected aggregates. High PSV granite or basalt aggregate makes it suitable for all classes of road and footways. Available in black and red.

Where to use?

- Patches potholes in bituminous surfaces
- Reinstates trenches in lightly trafficked surfaces
- Provides temporary ramping for high kerbs and exposed ironwork
- Fills worn areas in paths and drives

Preparation

Ensure that the surface to be repaired is clean and free from loose material, oil, grease and standing water. Prime base surface with **Leotak**.

Edges of the area to be repaired should be formed vertically as far as possible and then treated with **Bitukold**, **RS Bitukold** or **RS Bitukold Spray** edge sealant prior to forming joints. For small potholes, **Bitukold**, **RS Bitukold** or **RS Bitukold Spray** may be used over the surface area of the hole as a tack coat. Workability can be ensured even in cold weather by simply manipulating the **Bitucrete** in its sealed bag. N.B: To aid workability of bagged **Bitucrete** in winter, store bags in a warm area (>10°C ambient temperature) for 24 hours prior to use if possible.

Application

Tip sufficient **Bitucrete** from the bag to over-fill the hole, ensuring that all corners are filled. Compact the material to the surrounding level using a compactor, roller or hand tamper depending on the nature of the site. For large areas use a vibrating plate or roller slightly wetting the drum with water. If under-filling has taken place, simply add more product and compact to level. Material should not be laid any deeper than 2½ times the size of the nominal stone in any one layer. The repair will withstand immediate heavy trafficking, however, where the repair is to be crossed by fork-lift trucks and HGVs, extra compaction and curing time must be allowed. **Bitucrete** remains flexible for some time after application. Curing is brought about by both air drying and compaction. The rate of cure is dependent upon temperature as well as the weight and volume of traffic. However, under normal traffic conditions, **Bitucrete** will not depress, track or pick up during the curing process. As the material will take up the contours of potholes naturally and form an immediate repair, it is ideal for irregularly shaped potholes. **Bitucrete** is also suitable for temporary ramping of exposed ironwork.

BITUCRETE

Grade	Nominal Size	Material Specification
4mm	0/4mm	AC 4 fine surf 160/220DS
6mm	0/6mm	AC 6 med surf 160/220DS
6mm (Red)	0/6mm	AC 6 med surf 160/220DS
10mm	0/10mm	AC 10 close surf 160/220DS

Coverage

The table below shows the approximate rate of spread of various compacted thicknesses of **Bitucrete**. Please note that the covering capacity of **Bitucrete** may be affected by such factors as the density and grading of the aggregates, condition of the substrate and final state of compaction. On more irregular substrates, heavier rates of spread are to be expected.

Spread Rate Guide	
Average thickness of course (mm)	Coverage (m²/t)
20	18 to 24
25	15 to 19
30	13 to 15
35	11 to 13
40	10 to 12
45	9 to 11
50	8 to 10
60	7 to 8.5
70	6 to 7.5
75	5 to 6.5
100	4 to 5

Packaging

Bitucrete is available in 25kg sealed plastic bags (40 x 25kg per pallet).

Storage

Bitucrete has a storage life of up to six months in sealed bags and under good storage conditions. Bags are batch numbered for easy stock rotation.

Standards

Bitucrete is BBA HAPAS Approved Certificate 07/H128. **Bitucrete** complies with BS EN 13108-1 Bituminous mixtures. Material Specification. Asphalt Concrete.

Safety

For full safety information, please download the **Bitucrete** Safety Data Sheet 03b from our website www.colas.co.uk



COLPATCH



Colpatch is a **BBA HAPAS** approved, cold applied storage grade macadam that is ideal for instant, high quality repairs to bituminous and concrete surfaces. **Colpatch** is formulated from paving grade bitumen, selected aggregates and Macfix additive supplied under licence by Macismo Asphalt & Innovation. This unique additive results in flexibility within the repair reducing the risk of reflective cracking. It also provides the long storage properties of **Colpatch** which enables the remaining material to be stockpiled externally all year round without deterioration and remains workable in cold weather conditions. **Colpatch** is easy to use with no mixing required with a long storage life of up to two years. To accommodate the customer's storage capability the material is available in a variety of options.

Where to use?

- Patches/potholes in bituminous surfaces
- Reinstates trenches in trafficked surfaces
- Carriageway repairs
- Reinstatements and temporary surfaces

Preparation

Ensure that the surface to be repaired is clean and free from loose material, oil, grease and standing water.

To achieve a long lasting repair it is recommended that the base surface is primed with **Leotak**. Edges of the area to be repaired should be vertically formed as far as possible and then treated with a **Bitukold Spray** edge sealant prior to forming joints. For small potholes, **Bitukold** or **RS Bitukold** may be used over the surface area of the hole as a tack coat. However a quick repair can be performed without any cutting out, tack coats or edge sealants.

Application

Apply sufficient **Colpatch** to over-fill the area to be reinstated, ensuring that all corners are filled by gently kneading the material with a shovel to evenly spread it across the full area.

Compact the material to the surrounding level using a hand tamper or compactor/roller. For large areas and deep sections, use a vibrating plate or roller slightly wetting the drum with water. If under-filling has taken place, simply add more product and compact to level.

It is recommended that deep patches should be built up in 15-40mm compacted layers as this will result in better compaction being achieved.

Once compacted the **Colpatch** is ready to be trafficked. Curing is brought about by both air drying and compaction, with the rate of cure dependent upon temperature and the weight and volume of traffic. However, under normal traffic conditions, **Colpatch** will not depress, track or pick up during the curing process.

Colpatch remains flexible for some time after application as the material will take up the contours of potholes naturally and form an immediate repair, it is ideal for irregularly shaped potholes.

COLPATCH



Coverage

The following table shows the approximate rate of spread of various compacted thicknesses of **Colpatch**.

Spread Rate Guide	
Average thickness of course (mm)	Coverage (m ² /t)
20	22 to 28
30	15 to 19
40	11 to 15
50	9 to 12
60	8 to 10
75	6 to 8
100	4 to 6

Please note that the covering capacity of **Colpatch** may be affected by such factors as the density and grading of the aggregates, condition of the substrate and final state of compaction. On more irregular substrates, heavier rates of spread are to be expected.

Packaging

Colpatch is available in bulk loads, 1 tonne bulk bags; 25kg sealed bags (40 x 25kg per pallet) and 25kg sealed buckets (36 x 25kg per pallet).

Storage

Keep free from frost and extremes of heat.

Standards

Colpatch is BBA HAPAS Approved Certificate 11/H179

Safety

For full safety information, please download the **Colpatch** Safety Data Sheet from our website www.colas.co.uk



BITUKOLD



Bitukold is a cold hand applied, thixotropic bitumen emulsion designed for sealing vertical joints. On small patches, **Bitukold** can also be used as a tack coat, thereby saving on the need to use a separate tack coat emulsion. **Bitukold** is mainly used for the protection of new joints in freshly laid asphalt or macadam.

Where to use?

- Transverse or longitudinal vertical joints
- Trench reinstatements
- Patch repairs
- Drain or manhole frames and exposed ironwork
- Kerb channels

Preparation

Bitukold should not be applied in ambient temperatures of less than 5°C. Ensure surface is clean and free from loose material, oil, grease, standing water and weeds.

Application

A soft fibre or turks head brush should be used to apply the **Bitukold**. The brush must be dampened using clean water and any excess shaken off before commencing application. Then using a full brush of material, apply evenly in one direction, covering the whole face of the joint. In very hot weather application will be easier if the joint surface is slightly dampened.

In normal conditions surfacing can commence within 15 minutes. The application of hot material rapidly completes the drying. Drying will be delayed in cold, damp and humid weather. Wash the brushes immediately after use with soapy water followed by **Leoclean**.

Coverage

On vertical joints 1.5kg/m² gives a dried film thickness of 1mm. For joints 50mm deep, a 15kg bucket covers approximately 200 linear metres of joint. Saw cutting the edge of the joint will maximise the rate of spread. As a tack coat in small patches and potholes a spread rate of 0.25-0.45kg/m² should be achieved.

Packaging

Bitukold is available in re-sealable 15kg yellow lidded buckets (36 x 15kg per pallet).

Storage

Protect from frost or extremes of heat. **Bitukold** has a storage life of up to six months in sealed buckets under good storage conditions.

Standards

Bitukold complies with BS 594987 clause 6.8 Joints, and is suitable for jointing as required in Clause 903.22(iii) of the Specification of Highway Works.

RS BITUKOLD



RS Bitukold is a rapid setting, cold applied thixotropic bitumen emulsion designed for sealing vertical joints. The cationic formulation of **RS Bitukold** ensures a rapid set even in cold, damp conditions, with an initial cure taking place within 15 minutes. **RS Bitukold** is mainly used for the protection of new joints in freshly laid asphalt or macadam.

Where to use?

- Transverse and longitudinal vertical joints
- Trench reinstatements
- Patch repairs
- Drain or manhole frames and exposed ironwork
- Kerb channels

Preparation

RS Bitukold should not be applied in ambient temperatures of less than 5°C. Ensure surface is clean and free from loose material, oil, grease, standing water and weeds.

Application

RS Bitukold can be applied by pouring from a spouted watering can or, alternatively, spray applied through the **Roadmaster Sprayer**.

In normal conditions surfacing can commence within 15 minutes. The application of hot material rapidly completes the drying. Drying will be delayed in cold, damp and humid weather.

Coverage

RS Bitukold should be applied at a rate of 0.7 – 1.5kg/m² depending upon the texture and porosity of the surface and the application method.

For joints 50mm deep, a 15kg bucket covers approximately 200 linear metres. Saw cutting the edge of the joint will maximise the rate of spread.

Packaging

RS Bitukold is available in re-sealable 15kg black lidded buckets (36 x 15kg per pallet) or cardboard boxes containing 60 x 10kg bags.

Storage

Protect from frost or extremes of heat. **RS Bitukold** has storage life of up to six months in sealed buckets under good storage conditions.

Standards

RS Bitukold is a CE Marked cationic emulsion to BS EN13808:2013 C60B3/4 or C65B3/4. **RS Bitukold** also complies with BS 594987: Clause 6.8 Joints, vertical face coating, and is suitable for jointing as required in clause 903.2 (iii) of the Specification of Highway Works. Full CE Marking information is available from the Colas website www.colas.co.uk

Safety

For full safety information, please download the **RS Bitukold** Safety Data Sheet 93 from our website www.colas.co.uk

RS BITUKOLD SPRAY



RS Bitukold Spray is a rapid setting, cold applied bitumen emulsion designed for sealing vertical joints. The cationic formulation of **RS Bitukold Spray** ensures a rapid set even in cold, damp conditions, with an initial cure taking place within 15 minutes.

Where to use?

- Transverse and longitudinal vertical joints
- Trench reinstatements
- Patch repairs
- Drain or manhole frames
- Kerb channels

Preparation

Ensure that the surface is clean and free from loose materials, oil, grease, standing water and weeds.

Application

Shake can well and invert. Apply **RS Bitukold Spray** in even strokes with nozzle 200-300mm away from the surface to be treated. Ensure complete coverage. After use, spray briefly, with can in upright position to clear nozzle.

Coverage

The coverage rate for **RS Bitukold Spray** should be 0.7 – 1.5 kg/m², depending on the texture and porosity of the surface.

Packaging

RS Bitukold Spray is supplied in 600ml aerosol cans (12 per box).

Storage

- Caution: pressurised container, protect from sunlight
- Do not pierce or burn even after use
- Do not expose to temperatures exceeding 50°C
- Do not spray on a naked flame or any incandescent material
- Keep out of reach of children

Standards

RS Bitukold Spray complies with BS 594987 clause 6.8 Joints, vertical face coating.

Safety

For full safety information, please download the **RS Bitukold Spray** Safety Data Sheet 54 from our website www.colas.co.uk

COLSPRAY



Colspray is a rapid setting, cold applied bitumen spray designed for sealing vertical joints. **Colspray** can also be used as a tack coat helping to prevent the ingress of water.

Where to use?

- Transverse or longitudinal vertical joints
- Trench reinstatements
- Patch repairs
- Drain or manhole frames
- Kerb channels

Preparation

Ensure that the surface is clean and free from loose materials, oil, grease, standing water and weeds.

Application

Shake can vigorously before use. Turn can upside down and apply **Colspray** in even strokes with nozzle 200-300mm away from the surface to be treated. Ensure complete coverage. After use spray briefly with can in upright position to clear nozzle.

Coverage

The coverage rate for **Colspray** should be 0.7 to 1.5m², depending on the texture and porosity of the surface.

Packaging

Colspray is supplied in 750ml aerosol cans (12 per pack).

Storage

- Caution: pressurised container, protect from sunlight
- Do not pierce or burn even after use
- Do not expose to temperatures exceeding 50°C
- Do not spray on a naked flame or any incandescent material
- Keep out of reach of children

Standards

Colspray complies with BS 594987 clause 6.8 joints, vertical face coating.

Safety

For full safety information, please download the **Colspray** Safety Data Sheet 148 from our website www.colas.co.uk

H4



H4 is a hot poured joint sealant designed for the treatment of reinstatements and asphalt overlays.

Where to use?

- Transverse or longitudinal vertical joints
- Patch repairs
- Trench reinstatements
- Drain or manhole frames
- Kerb channels

Preparation

Ensure that the joints to be sealed are clean and free from dust, fuel and oil spillage. The face of the joints should be dry with a surface temperature ideally of at least 10°C. Do not apply to icy surfaces or in rain.

Application

H4 must be heated before use. For best results, use a heating kettle with an indirect heating system such as hot oil. Ensure that **H4** doesn't exceed 200°C and that the oil does not exceed 230°C. When hot, pour either from a watering can or direct from the melting kettle via a pressure fed heated hose with a special nozzle. The 25kg tin pails are not suitable for placing on or over direct heat (i.e. gas or wood fire).

Coverage

For a 40mm vertical joint face and a 2mm coated thickness of **H4** 0.08kg seals approximately one linear metre of joint, or a 25kg pack seals approximately 300 linear metres of joint.

Packaging

H4 is supplied in 25kg siliconized easy strip cartons (20x 25kg per pallet) or 12.5kg siliconized easy strip cartons (40 x 12.5kg per pallet) and in 25kg leak proof metal pails with handles (24 x 25kg per pallet), these pails are particularly convenient for use during hot weather.

Storage

Keep free from frost and extremes of heat. Do not stack. Do not store in direct sunlight.

Standards

H4 is a CE Marked paving grade bitumen complying to BS EN12591:2009 which also complies with BS 594987 clause 6.8 Joints. **H4** is suitable for jointing as required in Clause 903.22(i) of Volume 1 of the Specification for Highway Works. Full CE Marking information is available from the Colas website www.colas.co.uk

Safety

SAFETY HANDLING PRECAUTIONS (when hot)

- Wear suitable protective clothing (heat resistant gauntlet gloves, overalls, protective footwear, face visor)
- DO NOT allow water to contact hot material
- DO NOT exceed maximum safe heating temperature
- If molten material contacts skin:
 - DO NOT attempt to remove
 - Immerse affected area in cold running water for at least 10 minutes
 - Seek medical advice without delay
 - This product is hazardous for transportation when carried at temperatures above 100°C

For full safety information, please download the **H4** Safety Data Sheet 12 from our website www.colas.co.uk

H4 POLYMER



H4 Polymer is a modified hot poured joint sealant designed for the treatment of reinstatements and asphalt overlays giving greater flexibility to the joint.

Where to use?

- Transverse or longitudinal vertical joints
- Patch repairs
- Trench reinstatements
- Drain or manhole frames
- Kerb channels

Preparation

Ensure that the joints to be sealed are clean and free from dust, fuel and oil spillage. The face of the joints should be dry with a surface temperature ideally of at least 10°C. Do not apply to icy surfaces or in rain.

Application

H4 Polymer must be heated before use. For best results, use a heating kettle with an indirect heating system such as hot oil. Ensure that **H4 Polymer** doesn't exceed 200°C and that the oil does not exceed 230°C. When hot, pour either from a watering can or direct from the melting kettle via a pressure fed heated hose with a special nozzle. The 25kg tin pails are not suitable for placing on or over direct heat (i.e. gas or wood fire).

Coverage

For a 40mm vertical joint face and a 2mm coated thickness of **H4 Polymer**: 0.08kg of

H4 Polymer seals approximately one linear metre of joint, or a 25kg pack seals approximately 300 linear metres of joint.

Packaging

H4 Polymer is supplied in 25kg leak proof metal pails with handles (24 x 25kg per pallet), these pails are particularly convenient for use during hot weather.

Storage

Keep free from frost and extremes of heat. Do not stack. Do not store in direct sunlight.

Standards

H4 Polymer is a CE Marked paving grade bitumen complying to BS EN14023:2010 which also complies with BS 594987 clause 6.8 Joints. **H4 Polymer** is suitable for jointing as required in Clause 903.22(ii) of Volume 1 of the Specification for Highway Works. Full CE Marking information is available from the Colas website www.colas.co.uk

Safety

SAFETY HANDLING PRECAUTIONS (when hot)

- Wear suitable protective clothing (heat resistant gauntlet gloves, overalls, protective footwear, face visor)
- DO NOT allow water to contact hot material
- DO NOT exceed maximum safe heating temperature
- If molten material contacts skin:
 - DO NOT attempt to remove
 - Immerse affected area in cold running water for at least 10 minutes
 - Seek medical advice without delay
 - This product is hazardous for transportation when carried at temperatures above 100°C

For full safety information, please download the **H4 Polymer** Safety Data 12 from our website www.colas.co.uk

PREFORMED ROAD MARKINGS



Preformed Road Markings are skid resistant thermoplastic symbols, letters and numbers. They are non-toxic, contain no lead or chromate pigments and are skid resistant to >55 SRV.

Where to use?

- Roads
- Car parks
- Playgrounds
- Cycle lanes

Preparation

Preformed Road Markings are easy to apply to bituminous and concrete surfaces. Before application, always ensure that the area is clean, dry and free from dust, oil and fuel residues.

Premark Primer is required for concrete, stone and worn macadam surfaces. Ensure that the primer is completely dry before the material is applied. In cold conditions warming of the surface prior to application is required to enhance adhesion. Clean application area thoroughly by removing all sand, dirt, chemicals and oily substances.

Clean the area where **Eurolines** are to be applied thoroughly by removing all sand, dirt, chemicals and oily substances. If there is any moisture present in the surface this must be removed with the gas burner.

Application

Place the **Preformed Road Markings** on the surface with the beaded top coat facing up. Make sure the individual pieces are positioned correctly and with no gaps in-between.

Heat the material using a powerful gas burner (pressure min. 3 bar). Move the flame slowly but steadily 10 to 30 cm over the material in a sweeping motion so that heat is evenly applied. The material must be heated until all the material is liquid (approx. 200°C).

Applying insufficient heat will result in inadequate bonding and failure. If overheated, superficial scorching of the material can occur by means of brown blotching, but this discolouring will soon disappear once the marking is exposed to traffic and weather.

Coverage

Varies dependent upon the size and type of symbol, letter or number being installed.

Packaging

Preformed Road Markings are supplied in flat pack cardboard boxes. Some symbols and markings are supplied in pieces that may require assembly on-site.

PREFORMED ROAD MARKINGS

Storage

- Keep flat and store in a cool, dry place – between 2°C and 32°C.
- Maximum of 25 packs high.
- Shelf life in sealed packaging is 6 months.
- In cold weather, application will be assisted by storing overnight at room temperature.

Standards

Complies to EN 1436 Classes: S3, Q3, R3.

Safety

SAFETY HANDLING PRECAUTIONS (when hot)

- Wear suitable protective clothing (heat resistant gauntlet gloves, overalls, protective footwear, face visor)
- DO NOT allow water to contact hot material
- DO NOT exceed maximum safe heating temperature
- If molten material contacts skin:
 - DO NOT attempt to remove
 - Immerse affected area in cold running water for at least 10 minutes
 - Seek medical advice without delay

Safety

For full safety information, please download the **Preformed Road Markings** Safety Data Sheet 106 from our website www.colas.co.uk

EUROLINES



Eurolines are skid resistant thermoplastic markings designed for demarcation and lining. They are non-toxic, contain no lead or chromate pigments and are skid resistant to >55 SRV.

Preparation

Eurolines are easy to apply to bituminous and concrete surfaces. Before application always ensure the area is clean, dry and free from dust, oil and fuel residues. **Premark Primer** should be used when applying **Eurolines** to concrete, stone and worn macadam surfaces. Ensure that the primer is completely dry before the material is applied. In cold conditions warming of the surface prior to application is required to enhance adhesion.

Clean area where **Eurolines** are to be applied thoroughly by removing all sand, dirt, chemicals and oily substances. If there is any moisture present in the surface this must be removed with the gas burner.

Application

Eurolines should be placed on the surface with the beaded top coat facing up making sure the individual pieces are positioned correctly and with no gaps in-between.

The material should be heated using a powerful gas burner (pressure min. 3 bar). Move the flame slowly but steadily 10 to 30cm over the material in a sweeping motion so that heat is evenly applied. The material must be heated until all the material is liquid (approx. 200°C).

Applying insufficient heat will result in inadequate bonding and subsequent failure of the material. If overheated, superficial scorching of the material can occur resulting in brown blotching, but this discolouring will soon disappear once the **Eurolines** are exposed to traffic and weather.

Coverage

5000mm x 100mm
5000mm x 50mm

Packaging

Eurolines come in a variety of colours: White, Yellow, Primrose and Red in packs ready for use. Each pack contains either:

- 6 (100mm x 5000mm) rolls
- 12 (50mm x 5000mm) rolls

Storage

- Keep flat and store in a cool, dry place – between 2°C and 32°C.
- Maximum of 25 packs high.
- Shelf life in sealed packaging is 6 months.
- In cold weather, application will be assisted by storing overnight at room temperature.

Standards

Complies to EN 1436 Classes: S3, Q3, R3.

EUROLINES

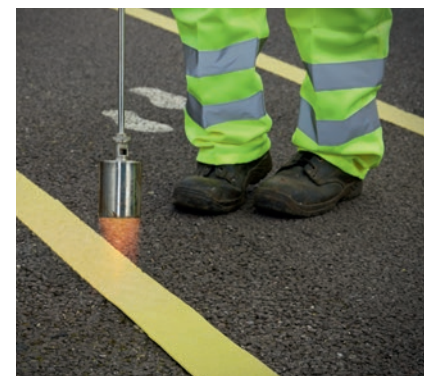
Safety

SAFETY HANDLING PRECAUTIONS (when hot)

- Wear suitable protective clothing (heat resistant gauntlet gloves, overalls, protective footwear, face visor)
- DO NOT allow water to contact hot material
- DO NOT exceed maximum safe heating temperature
- If molten material contacts skin:
 - DO NOT attempt to remove
 - Immerse affected area in cold running water for at least 10 minutes
 - Seek medical advice without delay

Safety

For full safety information, please download the **Eurolines** Safety Data Sheet 106 from our website www.colas.co.uk



PATCHMASTER 100



Patchmaster 100 is a cationic bitumen emulsion specifically formulated to be used in conjunction with automated spray injection patching equipment and to be used with an approved aggregate. The emulsion is used both as a tack coat and as a binder in the spray injection patching operation. For higher stressed repairs use polymer modified **Patchmaster 200**.

Where to use?

In conjunction with automated spray injection patching equipment.

Preparation

See operators method statement.

Application

Patchmaster 100 is designed for use with specialist spray injection patching equipment and should only be used when the ground temperature is $>5^{\circ}\text{C}$ and rising, and $<40^{\circ}\text{C}$. Humidity should preferably not exceed 70%, although **Patchmaster 100** can be applied in higher humidity and in colder temperatures but this will prolong the break time.

Coverage

See operators method statement.

Packaging

Patchmaster 100 emulsion is available in bulk loads or 200kg drums.

Storage

Protect from frost. Drums should be rolled frequently to avoid separation. Bulk material should be circulated before use. For further information please refer to BS434-2:2006, section 5; Clause 5.2 'storage'.

Standards

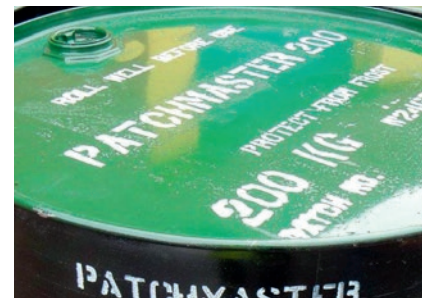
Patchmaster 100 is a CE Marked cationic bitumen emulsion complying to BS EN13808:2013 C60B4/5. Full CE Marking information is available from the Colas website www.colas.co.uk

Emulsion	
Binder content (EN 1428)	58 - 62% (Class 6)
Efflux 2mm @ 40°C (EN 12846-1)	15 - 70 s (Class 3)
Water effect on binder adhesion (EN 13614)	≥ 90 (Class 3)
Breaking behaviour (EN 13075-1)	110 - >170 (Class 4/5)

Safety

For full safety information, please download the **Patchmaster 100** Safety Data Sheet 46 from our website www.colas.co.uk

PATCHMASTER 200



Packaging

Patchmaster 200 emulsion is available in bulk loads or 200kg drums.

Storage

Protect from frost. Drums should be rolled frequently to avoid separation. Bulk material should be circulated before use. For further information please refer to BS434-2:2006, Section 5; Clause 5.2 'storage'.

Standards

Patchmaster 200 is a CE Marked cationic bitumen emulsion complying to BS EN13808:2013 C60BP4/5. Full CE Marking information is available from the Colas website www.colas.co.uk

Emulsion	
Binder content (EN 1428)	58 - 62% (Class 6)
Efflux 2mm @ 40°C (EN 12846-1)	15 - 70 s (Class 3)
Water effect on binder adhesion (EN 13614)	≥ 90 (Class 3)
Breaking behaviour (EN 13075-1)	110 - >170 (Class 4/5)
Recovered Binder	
Penetration @ 25°C (EN 1426)	≤ 220 - ≤ 330 dmm (class 5/6/7)
Softening point (EN 1427)	$\geq 39^{\circ}\text{C}$ (Class 7)
Cohesion by pendulum (EN 13588)	$\geq 0.75/\text{cm}^2$ (Class 5)

Patchmaster 200 is a polymer modified cationic bitumen emulsion specifically formulated to be used in conjunction with automated spray injection patching equipment and to be used with an approved aggregate.

The emulsion is used both as a tack coat and as a binder in the spray injection patching operation and is ideal for higher stress repairs.

Where to use?

In conjunction with automated spray injection patching equipment.

Preparation

See operators method statement.

Application

Patchmaster 200 is designed for use with specialist spray injection patching equipment and should only be used when the ground temperature is $>5^{\circ}\text{C}$ and rising, and $<40^{\circ}\text{C}$. Humidity should preferably not exceed 70%, although **Patchmaster 200** emulsion can be applied in higher humidity and in colder temperature but this will prolong the break time.

Coverage

See operators method statement.

Safety

For full safety information, please download the **Patchmaster 200** Safety Data Sheet 46 from our website www.colas.co.uk

COLSEAL



Colseal is a pre-mixed slurry seal for sealing utility reinstatement and patch repairs. It is also ideal for sealing pre-surface dressing patches. It can also be used for covering score marks and for the treatment of driveways and pathways.

Where to use?

- Carriageways
- Footways
- Driveways

Preparation

The surface should be clean, dry and free of any loose chippings/debris (the treatment and removal of any weeds and moss should be carried out prior to laying preparation). Use masking tape to protect any kerbs/ironwork etc. from being covered (this is to be removed when the surface is completely dry, after the whole application is complete).

Application

Mix thoroughly before use with a drill paddle.

Pour onto surface in manageable amounts and using a soft brush with handle or squeegee, spread evenly over the surface to the recommended thickness of approximately 1.5mm-2mm, promptly finishing this area in the same directional brush stroke.

If a thickness greater than 1.5mm-2mm is required we recommend an additional application but it must be ensured that the first application is set fully before reapplying.

The material should be applied on a dry day at temperatures of 10 °C and rising with no possibility of rainfall. Setting times vary with temperature. At the recommended thickness setting times will be, at 25°C approximately 1-3 hours and at 10°C 3-6 hours.

Coverage

1 x 25kg bag will cover approximately 10-14m² @ 1.5mm-2mm thickness, depending on surface texture.

Packaging

Colseal is supplied in 25kg buckets (36 x 25kg per pallet) or cardboard boxes containing 40 x 25kg bags.

Storage

Store in a cool, dry place, protect from frost.

Standards

Supplied in accordance to ISO9001.

Safety

For full safety information, please download the **Colseal** Safety Data Sheet 152 from our website www.colas.co.uk

OVERBANDING

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Colstrips are HAPAS approved skid resistant overbanding and crack sealing thermoplastic strips, designed to seal and repair static cracks up to 5mm wide and 20mm deep in nonporous bituminous and concrete highways. **Colstrips** seal patches and reinstatements preventing the ingress of water helping to extend the life of the repair. **Colstrips** are easy to apply with no wastage and can be trafficked almost immediately. **Colstrips** are non-toxic, contain no lead or chromate pigments and are skid resistant to >65 SRV.

Where to use?

Overbanding for patches and reinstatements

Preparation

Colstrips are easy to apply to bituminous and concrete surfaces. Before application always ensure the area is clean, dry and free from dust and oily residues. Concrete surfaces should be primed with **CP Primer**, ensuring that the primer is completely dry before the **Colstrips** are applied.

Application

Preheat the surface making sure it is free from moisture, remove **Colstrips** from their protective wrapping and place on the road surface.

Heat the **Colstrips** with a propane torch using a slow sweeping motion, making sure that you do not spot heat any areas as this may scorch the material.

Colstrips must be heated until it starts to bubble and melt when heat can be removed.

The material will cool and harden within 5-10 minutes of installation.

Do not use **Colstrips** in wet conditions.

Applying insufficient heat will result in inadequate bonding and subsequent failure of the material.

Coverage

1 metre lengths.

Packaging

Colstrips are supplied in flat pack cardboard boxes, each box contains 80 (1000mm x 35mm) strips.

Storage

- Keep flat and store in a cool, dry place – between 2°C and 32°C.
- Maximum of 25 packs high.
- Shelf life in sealed packaging is 6 months.
- In cold weather, application will be assisted by storing overnight at room temperature.

Standards

Complies to EN 1436 Classes: S5.

Safety

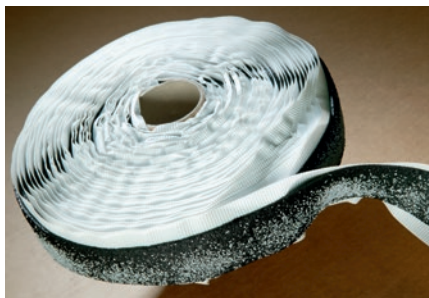
SAFETY HANDLING PRECAUTIONS (when hot)

- Wear suitable protective clothing (heat resistant gauntlet gloves, overalls, protective footwear, face visor)
- DO NOT allow water to contact hot material
- DO NOT exceed maximum safe heating temperature
- If molten material contacts skin:
 - DO NOT attempt to remove
 - Immerse affected area in cold running water for at least 10 minutes
 - Seek medical advice without delay

For full safety information, please download the **Colstrips** Safety Data Sheet 106 from our website www.colas.co.uk



GRIPSTRIP



Gripstrip is an anti-skid, self-adhesive, overbanding joint and crack sealing tape. **Gripstrip** consists of an extruded bituminous compound modified with elastomers and fast bonding resins. It is extremely safe and convenient to use as it does not require any heating or mixing.

Where to use?

- Horizontal cracks in asphaltic roads
- Transverse and longitudinal joints
- Trench reinstatements
- Patch repairs
- Drain or manhole frames

Preparation

Ensure that the joint or crack is dry, clean and free from dust, fuel and oil spillage. For best results use when ambient temperature is 15°C or above. **Gripstrip** should not be applied to cracks wider than 10mm unless the crack has been pre-filled with approved material such as **Jointfill A2**, **Jointfill N1** & **N2** or **Leoseal R**.

Application

Gripstrip is applied to the road surface manually or with a specially adapted trolley. It is self-adhesive with the underside protected by peel off backing paper.

Once laid heavy foot pressure should be applied to assist adhesion. Applied **Gripstrip** will become embedded through trafficking.

Coverage

Each roll will overband 25 linear metres.

Packaging

Gripstrip is supplied in a box with 2 x 40mm x 25m rolls.

Storage

Keep in dry store under cover.

Standards

Gripstrip has a skid resistance value of ≥ 60 and therefore complies with the requirements of the New Roads and Street Works Act.

Safety

For full safety information, please download the **Gripstrip** Safety Data Sheet 94 from our website www.colas.co.uk

JOINTGRIP OB



Jointgrip OB is an anti-skid overbanding joint sealant. It is a proprietary formulation of blended paving grade bitumen incorporating special polymers and abrasive aggregates to provide a compound of toughness, flexibility, adhesiveness and resistance to flow.

Where to use?

- Horizontal cracks in concrete and asphaltic roads
- Transverse and longitudinal joints
- Airfield surfaces where extra protection is required beyond edges or joints or cracks
- Trench reinstatements
- Patch repairs

Preparation

Ensure that the joint or crack is dry, clean and free from dust, fuel and oil spillage. For best results cracks to be sealed should be thoroughly cleaned and dried using a hot compressed air lance, grit-blasting or power brushing to remove all detritus. Do not apply to icy surfaces or in cold, damp conditions.

Application

Jointgrip OB should be heated and agitated in a purpose built temperature controlled bitumen preheater and horizontal mixer unit ensuring that the temperature does not exceed 200°C. The material should be discharged within the specified pouring temperature (170 - 200°C) into a pre-warmed suitable pouring bucket and then into an overbanding shoe of the appropriate width, and then applied at a thickness between

2 - 2.5mm. Alternatively, for small sites a heavy duty metal bucket may be used with a pourer lip, positioned on a purpose-built stand with gas ring. **Jointgrip OB** will need to be broken up and heated in the bucket to just pourable temperature and agitated with a flat metal stirrer, having one end curved to enable aggregate to be kept suspended.

N.B: Agitate the material in the bucket from time to time to avoid localised over-heating and aggregate separation (Warning: do not over-heat).

Properties

Density (SG)	1.5kg/ltr
Application/ pouring temp	170 - 200°C
Safe heating temp	200°C
Flash point	>250°C
Softening point	85°C
Flow (ASTM Plate)	≤5mm

If required an application of sand whilst hot will remove reflectivity (gloss) of the finished overband - however, the initial gloss finish of the product diminishes soon after trafficking.

JOINTGRIP OB

Coverage

When used as an overbanding on reinstatement joints, reflective and small cracks, 1000kgs will overband approximately 3500 linear metres at 40mm width, 2.5mm height.

Rate of use may increase dependent on application.

Packaging

Jointgrip OB Jointgrip OB is available in 25kg (approx.) paper sacks (40 x 25kg per pallet) and 12.5kg siliconized easy strip cartons (40 x 12.5kg per pallet).

Storage

Keep in dry store under cover.

Standards

Jointgrip OB complies with the skid resistance value required by the new Roads and Street Works Act.

Safety

SAFETY HANDLING PRECAUTIONS (when hot)

- Wear suitable protective clothing (heat resistant gauntlet gloves, overalls, protective footwear, face visor)
- DO NOT allow water to contact hot material
- DO NOT exceed maximum safe heating temperature
- If molten material contacts skin:
 - DO NOT attempt to remove
 - Immerse affected area in cold running water for at least 10 minutes
 - Seek medical advice without delay

NB: This product is hazardous for transportation when carried at temperatures above 100°C.

For full safety information, please download the **Jointgrip OB** Safety Data Sheet 35 from our website www.colas.co.uk

ANTISKID

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ANTISKID SHEETS



Antiskid Sheets are skid resistant thermoplastic sheets available in a variety of colours which are ideal for application on bus and cycle lanes as well as other high stress areas. They are easy to use, can be cut to size and are instantly trafficked once cooled. **Antiskid Sheets** are non-toxic, contain no lead or chromate pigments and are skid resistant to >55 SRV.

Preparation

Antiskid Sheets are easy to apply to bituminous and concrete surfaces. Before application always ensure the area is clean, dry and free from dust, oil and fuel residues. **Premark Primer** should be used when **Antiskid Sheets** are applied to concrete, stone and worn macadam surfaces. Ensure that the primer is completely dry before the material is applied. In cold conditions warming the surface prior to application is required to enhance adhesion.

Application

Antiskid sheets should be placed on the surface with the beaded top coat facing up making sure the individual pieces are positioned correctly and with no gaps in-between.

The material should be heated using a powerful gas burner (pressure min. 3 bar). Move the flame slowly but steadily 10 to 30cm over the material in a sweeping motion so that heat is evenly applied. The material must be heated until all the material is liquid (approx. 200°C).

Calcined bauxite should be applied using a shovel as soon as the **Antiskid Sheet** material is molten and working in small areas (approximately 200mm) at a time ensure that it has embedded into the melted **Antiskid Sheet**. Repeat the process until the **Antiskid Sheet** is completely covered. Once cooled the excess bauxite should then be removed using a stiff brush, with any areas where bauxite has not been retained being reheated and further bauxite applied.

Applying insufficient heat to the Antiskid Sheets will result in inadequate bonding and subsequent failure of the material. If overheated, superficial scorching of the material can occur resulting in brown blotching, but this discolouring will soon disappear once the **Antiskid Sheets** are exposed to traffic and weather.

Coverage

Each sheet will cover an area of 1m x 600mm. 1 x 25kg bag of 1-3mm calcined bauxite is sufficient to treat three **Antiskid Sheets**.

Packaging

Antiskid Sheets are supplied in flat pack boxes each box contains 5 sheets (1000mm x 600mm).

Storage

- Keep flat and store in a cool, dry place – between 2°C and 32°C.
- Maximum of 25 packs high.
- Shelf life in sealed packaging is 6 months.
- In cold weather, application will be assisted by storing overnight at room temperature.

ANTISKID SHEETS

Standards

Complies to EN 1436 Classes: S3, Q3, R3.

Safety

SAFETY HANDLING PRECAUTIONS (when hot)

- Wear suitable protective clothing (heat resistant gauntlet gloves, overalls, protective footwear, face visor)
- DO NOT allow water to contact hot material
- DO NOT exceed maximum safe heating temperature
- If molten material contacts skin:
 - DO NOT attempt to remove
 - Immerse affected area in cold running water for at least 10 minutes
 - Seek medical advice without delay

For full safety information, please download the **Antiskid Sheet** Safety Data Sheet 106 from our website www.colas.co.uk



Colasgrip is a high performance, high friction and coloured surfacing. It comprises of a two component thermosetting pigmentable epoxy resin binder dressed with natural or pigmented coloured aggregates, normally calcined bauxite or granite. **Colasgrip** is a chemically curing system and can also be used for protection against fuel, oil spillage and de-icing salts. It is supplied in road and heritage grades.

Where to use?

- Carriageways (especially junctions, bends, roundabouts and other hazard areas)
- Bus lanes
- Cycle lanes
- Pedestrian crossings
- Heritage/decorative
- Rumble strips
- Toll approaches

Preparation

Prior to application of **Colasgrip**, ensure that surfaces are clean, sound and dry.

1. All dust, dirt and loose material should be swept from the surface.
2. If the surface is dirty or contaminated by oil or grease, it should be water jet washed or cleaned using a 2% aqueous solution of detergent applied over the whole surface. The surface should then be scrubbed vigorously with a stiff brush to remove contaminants, thoroughly washed with clean water and allowed to dry or dried with a hot compressed air lance.

3. Any damage to the surface or irregularity must be repaired properly before applying **Colasgrip**.
4. New asphalt should be trafficked for at least four weeks before applying **Colasgrip**.
5. **Colasgrip** should not be applied to "fatted up" black top or multi-layer surface dressings.
6. Ensure surface is completely dry and above 5°C.
7. If necessary the texture depth of the surface should be studied and measured to determine the consumption rate of the binder. Measurement should be carried out using the sand patch method.

Mixing

1. The A and B components (resin and hardener) may separate in the containers on storage. It is essential that each component is stirred using the low speed high torque drill fitted with helical stirrer for 2 minutes and re-dispersed properly before mixing together. Component A should be stirred first ensuring that the stirrer is cleaned before stirring component B.
2. If coloured binder is required, 1 sachet of pigment should be added to component B and mixed for 2 minutes until it is a uniform colour.
3. Empty the contents of the smaller container (A component) into larger container (B component) for mixing and blending.
4. Mix contents together using the low speed high torque drill fitted with helical stirrer. Advised duration of mixing process – two minutes. It is essential that all of the component from each container are mixed thoroughly with each other. Ensure material from the bottom, sides and corners is mixed properly. Failure to mix the binder properly will result in poor strength and cure of the system.
5. In cold weather, store the binder overnight in a warm store. This lowers the viscosity of the binder and makes it easier to use. It may also be necessary to pre-warm the A and B components to 20°C to help pouring and blending.



Application

Colasgrip is ideal for the delineation of bus and cycle lanes, pedestrian crossings, junctions, bends, roundabouts and other hazard areas. For each type of application Colas can recommend the right type and size of aggregate to use.

1. Place the aggregate to one side.
2. The temperature of A & B components should be between +10°C and +35°C before mixing, with the ambient temperature range being between +5°C and +35°C.
3. The mixed binder should be poured out as uniformly as possible and distributed by a squeegee with serrated edge (v notches) 5mm wide and 5mm deep at 5mm centres. Care should be taken to obtain an even coating without puddles or thinly spread areas. Application rate will depend on texture depth and will be between 1.3-2.0kg/m².
4. Once satisfied that there is an even coating of the binder without puddles or thinly spread areas, the aggregate should be applied as soon as possible. Bags of aggregate should be distributed along the length of the area to be covered to aid this application. As the epoxy resin is applied, the bags are split and the aggregate applied onto the binder to excess. The aggregate should be "broadcast" onto the surface and where necessary a soft brush or flat bladed squeegee can be used to gently even distribution. Rolling is not required. Using 1-3mm aggregate the application rate is 10-12kg/m².

5. After all of the areas have been covered with aggregate to excess, the material must be allowed to cure. The time it will take the material to cure will vary according to the surface temperature, but is typically 2 hours at 25°C. After completion the area should be swept to remove excess aggregate to leave around 6-10m² of aggregate on the surface. The excess aggregate may be collected and used again as long as it has not been contaminated.
6. Use **Leoclean** cleaning fluid before mix has hardened.

Colasgrip can be applied by spray machine or by hand. For application by spray machine please refer to the method statement for spray application.

Equipment

The equipment required for the hand application of **Colasgrip** is generally composed of:

- 1 stirrer (low speed high torque drill fitted with helical stirrer)
- Serrated 'V' notched squeegees
- Mobile generator
- Mixing container
- Soft and stiff bristle brushes
- Shovel

Other optional equipment such as a mechanical sweeper with suction system and heating tanks may be required, but this will depend on the size of the site(s).

COLASGRIP



Coverage

Binder: 1.4-2.2kg/m² (dependant on surface texture)

Aggregate: 10-12kg/m² (minimum 6-10kg/m² after sweeping)

Packaging

Colasgrip is supplied in premeasured kits containing sufficient binder and aggregate to treat approximately 5 or 16m² (subject to surface texture of substrate).

Storage

12 months if stored in dry conditions, under cover, above 10°C and out of direct sunlight. Stir both components thoroughly before mixing with each other.

Standards

Colasgrip is produced to a manufacturing system accredited to ISO9001.

Safety

For full safety information, please download the **Colasgrip** Safety Data Sheet 129 from our website www.colas.co.uk

PREFORMED SURFACE DRESSING



Preformed Surface Dressing is an exceptionally versatile, ready-to use, hard wearing skid resistant surface for pedestrian trafficked areas. It comprises of a high performance polymer modified bituminous binder and a layer of skid resistant calcined bauxite chippings, strengthened by an integral mesh. **Preformed Surface Dressing** can be used on most surfaces, including wood, concrete, asphalt and steel.

Where to use?

- Footways
- Foot-ramps
- Footbridges
- Platforms
- Pedestrian subways

Preparation

Surfaces must be dry, clean and free from dust, oil and fuel spillage. **CP Primer** should be used to enhance initial adhesion of **Preformed Surface Dressing** on all sites.

Application

Roll out enough material to cover the area to be surfaced and with the backing film upwards cut the **Preformed Surface Dressing** with a sharp knife. Then prime the substrate using **CP Primer**, applying as thinly and evenly as possible as too much could result in the primer bleeding through or the debonding of the **Preformed Surface Dressing**.

When the **CP Primer** is touch dry, peel off the backing film and apply the **Preformed Surface Dressing** to the surface. Take care to ensure that the positioning of the **Preformed Surface Dressing** is accurate as once laid it is extremely difficult to remove. Edges should be butt jointed or overlapped to achieve a neat close-fitting finish.

Coverage

Each roll will cover 5m².

Packaging

Preformed Surface Dressing is supplied in rolls 5m long by 1m wide, 30 rolls per pallet.

Storage

Rolls should be stored upright. Keep in dry store under cover and protect from frost and extreme heat.

Standards

Preformed Surface Dressing is produced to a manufacturing system accredited to ISO9001.

Safety

For full safety information, please download the **Preformed Surface Dressing** Safety Data 14 from our website www.colas.co.uk

TAC-PADS



Tac-Pads are a two part system and are installed to alert blind and partially sighted people to proceed with caution. They are easy to apply, can be trafficked immediately and are available in buff; red and grey. **Tac-Pads** are non-toxic, contain no lead or chromate pigments and are skid resistant to >55 SRV.

Where to use?

- Footpaths
- Uncontrolled crossing points
- Controlled crossing points
- Cycle routes
- Approach to any hazardous areas

Preparation

Tac-Pads must be applied to a level surface. Surfaces must be dry, clean and free from dust, oil and fuel spillage. **Premark Primer** is required for concrete, stone and worn macadam surfaces.

Clean the application area thoroughly by removing all sand, dirt, chemicals and oily substances. Remove all moisture present (if any) in the surface with a gas burner.

Application

Position both adhesive and **Tac-Pad** layers in position ensuring that the beaded side of the **Tac-Pad** sheet is uppermost and that the individual pieces are positioned correctly and with no gaps in-between. Sheets may be cut to shape using tinsnips or a stanley knife if required.

Remove the **Tac-Pad** layer and heat the adhesive layer using a powerful gas burner (pressure min. 3 bar). Move the flame slowly but steadily 10 to 30 cm over the material in a sweeping motion so that heat is evenly applied. The material must be heated until all the material is liquid (approx. 200°C). Immediately after heating place the **Tac-Pad** on top of the adhesive layer with the beaded top coat facing up.

Applying insufficient heat will result in inadequate bonding and failure. If overheated, superficial scorching of the material can occur resulting in brown blotching, but this discolouring will soon disappear once the marking is exposed to traffic and weather.

For application on non-bituminous surface (e.g. concrete) follow the same steps as above but in addition apply **Premark Primer** (sealer) to the entire surface area where the **Tac-Pads** are to be installed. Allow the primer to dry until it is no longer sticky before applying the **Tac-Pads**.

Coverage

Both the **Tac-Pad** and adhesive layer are 400mm x 400mm.

Packaging

Tac-Pads are supplied in flat pack cardboard boxes each box contains 10 sets.

TAC-PADS



Storage

- Keep flat and store in a cool, dry place – between 2°C and 32°C.
- Maximum of 25 packs high.
- Shelf life in sealed packaging is 6 months.
- In cold weather, application will be assisted by storing overnight at room temperature.

Standards

Complies to EN 1436 Classes: S3, Q3, R3.

Safety

SAFETY HANDLING PRECAUTIONS (when hot)

- Wear suitable protective clothing (heat resistant gauntlet gloves, overalls, protective footwear, face visor)
- DO NOT allow water to contact hot material
- DO NOT exceed maximum safe heating temperature
- If molten material contacts skin:
 - DO NOT attempt to remove
 - Immerse affected area in cold running water for at least 10 minutes
 - Seek medical advice without delay

For full safety information, please download the **Tac-Pads** Safety Data Sheet 106 from our website www.colas.co.uk

THERMOSAFE 65



Thermosafe 65 is a skid resistant thermoplastic sheet for surfaces that require a higher skid resistant finish. Available in a variety of colours, It is ideal for worn/polished road surface covers and to provide a non-slip surface to stairs, steps and access ramps for the disabled. **Thermosafe 65** is cost effective and a rapid effective solution to those road users most at risk; i.e. those who ride motorcycles or scooters and are particularly vulnerable to sudden changes in surface grip. The sheets are easy to use; can be cut to size and are instantly trafficked once cooled. **Thermosafe 65** is non-toxic, contain no lead or chromate pigments and are skid resistant to >65 SRV.

Preparation

Thermosafe 65 is easy to apply to ironwork, bituminous, concrete, block paving as well as treated and untreated surfaces. Always ensure the area is clean, dry and free from dust, oil and fuel residues. Warming the surface prior to application is required to enhance adhesion. Apply **Thermosafe Primer** to the area and apply the sheets immediately.

Application

Thermosafe 65 should be applied with a hand lance. Trafficking can commence when material has fully cooled. Sheets may be cut to shape using tinsnips or a Stanley knife if required.

Coverage

Each sheet will cover an area of 1000mm x 600mm.

Packaging

Thermosafe 65 is supplied in flat pack cardboard boxes, each box contains 5 sheets (1000mm x 600mm).

Storage

- Keep flat and store in a cool, dry place – between 2°C and 32°C.
- Maximum of 25 packs high.
- Shelf life in sealed packaging is 6 months.
- In cold weather, application will be assisted by storing overnight at room temperature.

Standards

Complies to EN 1436 Classes: S5.

Safety

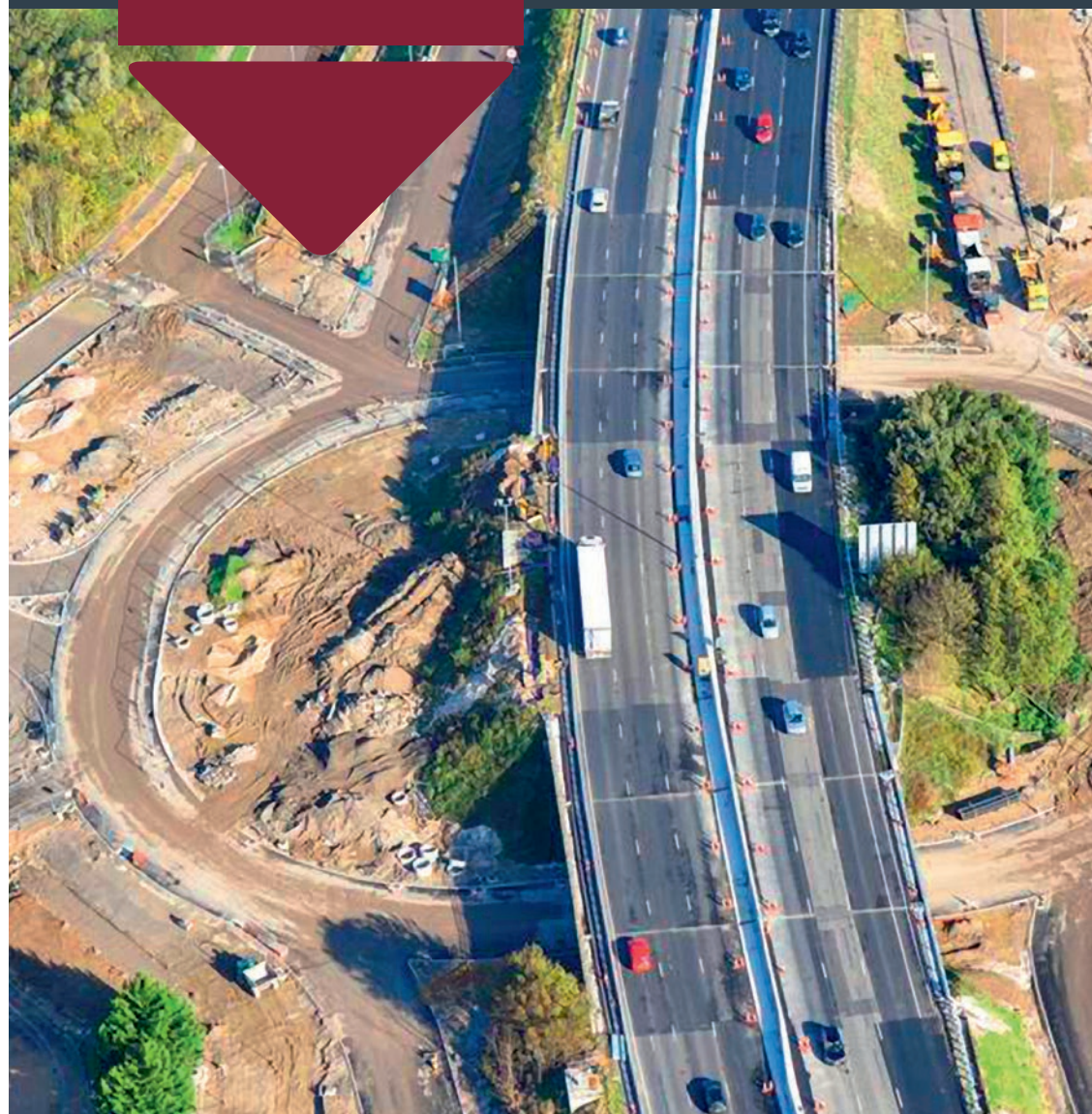
SAFETY HANDLING PRECAUTIONS (when hot)

- Wear suitable protective clothing (heat resistant gauntlet gloves, overalls and protective footwear)
- DO NOT allow water to contact hot material
- DO NOT exceed maximum safe heating temperature
- If molten material contacts skin:
 - DO NOT attempt to remove
 - Immerse affected area in cold running water for at least 10 minutes
 - Seek medical advice without delay

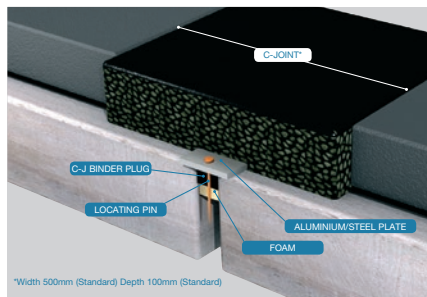
For full safety information, please download the **Thermosafe 65** Safety Data Sheet 106 from our website www.colas.co.uk

SEALANTS

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C-JOINT



Problems with bridge expansion joints are well known. A punishing environment created by traffic loads and climate conditions means that the right jointing system is imperative if the structure and bearings are to be protected from water and salts.

Expansion joint systems developed in the past have either not performed adequately, e.g. due to mechanical failure, or were not cost effective. **C-Joint** bridges this gap.

The Colas C-Joint system is the perfect choice for low to medium movement bridge expansion joints. It is an asphaltic plug joint which is able to accommodate up to $\pm 25\text{mm}$ horizontal movement from mid gap opening position. Special grades are designed for greater movement for particular situations.

The main components of **C-Joint** are a high performance elastomer modified bitumen binder and single size aggregate. Together they create a joint matrix which gives both flexibility and strength enabling the joint to accommodate all kinds of movement whether they are thermal, rotational or traffic induced. As it is completely watertight the bridge structure and bearing system are fully protected.

Several different grades of binder are available in order to meet different climatic conditions throughout the world. For the bridge engineer **C-Joint** is a cost effective, durable and versatile bridge joint system and comes with the guarantee of the Colas name.

Features and Benefits

Flexible

C-Joint is virtually omni-directional being able to accommodate longitudinal, rotational, vertical and transverse movements. It can accommodate up to $\pm 25\text{mm}$ horizontal movement.

Watertight

Being completely watertight, **C-Joint** protects the structure and bearing system from moisture. Drainage can be incorporated into **C-Joint** to remove any sub surface water.

Silent

When trafficked there is little or no increase in noise levels.

Quick Installation

Rapid installation and the ability to be installed in partial widths reduces the disruption to road users and other costs.

Versatile and Adaptable: **C-Joint** can be installed in new and old structures and is constructed to meet the requirements of individual sites.

Rapidly and Easily Repaired

If damaged by accident, **C-Joint** can be easily and rapidly repaired. During resurfacing work it can be planed off and topped up again.

Safe: **C-Joint** is flush with the road surface, provides no obstacle to traffic and has no parts to come loose and become traffic hazards.

Durable: **C-Joint** contains no mechanical parts which may require replacement and is able to withstand structure movements and traffic loads in all climates.

Safety

SAFETY HANDLING PRECAUTIONS (when hot)

- Wear suitable protective clothing (heat Resistant gauntlet glove, overalls, protective footwear, face visor).
- DO NOT allow water to contact hot material.
- DO NOT exceed maximum safe heating temperature.
- If molten material contacts skin:
 - DO NOT attempt to remove
 - Immerse affected area in cold running water for at least 10 minutes.
 - Seek medical advice without delay.

This product is hazardous for transportation when carried at temperatures above 100°C .

For full safety information, please download the **C-Joint** Safety Data Sheet 19 from our website www.colas.co.uk

JOINTFILL N1

Jointfill N1 is a polymer modified, bituminous, hot applied joint sealant compound. It is designed to be tough, flexible and have good extension properties over a wide range of ambient temperatures. **Jointfill N1** is suitable for joints between concrete and bituminous surfacing preventing entry of water and other materials. It has excellent recovery properties and low temperature flexibility.

Jointfill N1 is not recommended for overbanding due to its lack of skid resistance.

Jointgrip OB is recommended for overbanding due to its superior skid resistance properties.

Where to use?

- Carriageways
- Runways
- Motorways
- Footways

Preparation

Damaged joints must be repaired using an epoxy mortar approved by Colas. If necessary joints should also be treated by grit blasting. Joints and cracks should always be thoroughly cleaned and dried with a hot compressed air lance in order to remove all moisture and dirt. This process should be carried out immediately prior to the application of **Jointfill N1**.

Concrete joints should be primed with **CP Primer** before applying **Jointfill N1**.

Application

Jointfill N1 should be heated indirectly and agitated in a purpose-built sealant preheater unit with thermostatic control. Ensuring that the temperature does not exceed 190°C . The heater unit should be oil-jacketed. The materials should then be pumped into the joint, or poured at temperatures between 170°C - 180°C using a melter pourer or bucket and 'V' mould, with the minimum loss of temperature. Joints should be sealed to a level of at least 3mm below the surface.

Application Properties

Pouring temperature	$175^{\circ}\text{C}/185^{\circ}\text{C}$
Safe heating temperature	185°C for 6 hours maximum. 190°C maximum temperature.

Coverage

Weight of Jointfill N1 sealant to fill 100m joint (kg)

Depth of joint (mm)	Width of joint (mm)					
	15	20	25	30	35	40
20	35	46	58	70	81	93
25	-	-	72	87	101	116
30	-	-	-	-	122	139
35	-	-	-	-	142	162
40	-	-	-	-	-	185

Packaging

Jointfill N1 is available in plastic lined paper sacks holding 15kg (nominal). Remove the paper and load into heating equipment.

Storage

Keep in dry store under cover.

Standards

Jointfill N1 is manufactured on a purpose-built plant to an ISO 9001 quality system which covers all Colas manufactured products. Under this system all batches undergo rigorous QC testing before being released for use.

Jointfill N1 complies with the specification given BS EN14188-1:2004 Joint Fillers and Sealants – specifications for hot applied sealants for a Type N1 Sealant.

JOINTFILL N1

Test Name	Method	Specification
Softening point (°C) (Ring and Ball)	BS EN 1427	≥85
Cone penetration (dmm) (25°C, 150g, 5s)	BS EN 13880-2	40 to 130
Resilience (25°C, 75g ball, 5s) (%)	BS EN 13880-3	≥60
Flow resistance (mm) (60°C, 5h, 75%)	BS EN 13880-5	<2
Extension test: 3 cycles of extension to 75% at a rate of 6mm/hr at -20°C	BS EN 13880-10	Pass 3 cycles
Density	BS EN 13880-1	Typically 1.015g/cm ³ at 25°C

Safety

SAFETY HANDLING PRECAUTIONS (when hot)

- Wear suitable protective clothing (heat resistant gauntlet glove, overalls, protective footwear, face visor).
- DO NOT allow water to contact hot material.
- DO NOT exceed maximum safe heating temperature.
- If molten material contacts skin:
 - DO NOT attempt to remove
 - Immerse affected area in cold running water for at least 10 minutes.
 - Seek medical advice without delay.

This product is hazardous for transportation when carried at temperatures above 100°C.

For full safety information, please download the **Jointfill N1** Safety Data Sheet 06 from our website www.colas.co.uk

JOINTFILL N2

Jointfill N2 is a polymer modified, bituminous, hot applied joint sealant compound. It is designed to be tough, flexible and have good extension properties over a wide range of ambient temperatures. **Jointfill N2** is suitable for joints between concrete and bituminous surfacing preventing entry of water and other materials. It has excellent recovery properties and low temperature flexibility. **Jointfill N2** is not recommended for overbanding due to its lack of skid resistance. **Jointgrip OB** is recommended for overbanding due to its superior skid resistance properties.

Where to use?

- Carriageways
- Runways
- Motorways
- Footways

Preparation

Damaged joints must be repaired using an epoxy mortar approved by Colas. If necessary joints should also be treated by grit blasting. Joints and cracks should always be thoroughly cleaned and dried with a hot compressed air lance in order to remove all moisture and dirt. This process should be carried out immediately prior to the application of **Jointfill N2**.

Concrete joints should be primed with **CP Primer** before applying **Jointfill N2**.

Application

Jointfill N2 should be heated indirectly and agitated in a purpose-built sealant preheater unit with thermostatic control. Ensuring that the temperature does not exceed 190°C. The heater unit should be oil-jacketed. The materials should then be pumped in to the joint, or poured at temperatures between 170°C – 180°C using a melter pourer or bucket and 'V' mould, with the minimum loss of temperature. Joints should be sealed to a level of at least 3mm below the surface.

Application Properties	
Pouring temperature	175°C/185°C
Safe heating temperature	185°C for 6 hours maximum. 190°C maximum temperature.

Coverage

Weight of Jointfill N2 sealant to fill 100m joint (kg)						
Depth of joint (mm)	Width of joint (mm)					
	15	20	25	30	35	40
20	30	40	50	61	71	81
25	–	–	63	76	89	102
30	–	–	–	–	122	122
35	–	–	–	–	142	142
40	–	–	–	–	–	162

Packaging

Jointfill N2 is available in plastic lined paper sacks holding 15kg (nominal). Remove the paper and load into heating equipment.

Storage

Keep in dry store under cover.

Standards

Jointfill N2 is manufactured on a purpose-built plant to an ISO 9001 quality system which covers all Colas manufactured products. Under this system all batches undergo rigorous QC testing before being released for use. **Jointfill N2** complies with the specification given in BS EN 14188-1-2004: Joint Fillers and Sealants – Specifications for Hot Applied Sealants for a Type N2 Sealant.

JOINTFILL N2

Test Name	Method	Specification
Softening point (°C) (Ring and Ball)	BS EN 1427	≥85
Cone penetration (dmm) (25°C, 150g, 5s)	BS EN 13880-2	40 to 100
Resilience (25°C, 75g ball, 5s) (%)	BS EN 13880-3	≤60
Flow resistance (mm) (60°C, 5h, 75%)	BS EN 13880-5	≤3
Extension test: 3 cycles of extension to 75% at a rate of 6mm/hr at -20°C	BS EN 13880-10	Pass 3 cycles
Density	BS EN 13880-1	Typically 1.015 g/cm³ at 25°C

Safety

SAFETY HANDLING PRECAUTIONS (when hot)

- Wear suitable protective clothing (heat resistant gauntlet glove, overalls, protective footwear, face visor).
- DO NOT allow water to contact hot material.
- DO NOT exceed maximum safe heating temperature.
- If molten material contacts skin:
 - DO NOT attempt to remove
 - Immerse affected area in cold running water for at least 10 minutes.
 - Seek medical advice without delay.

This product is hazardous for transportation when carried at temperatures above 100°C.

For full safety information, please download the **Jointfill N2** Safety Data Sheet 06 from our website www.colas.co.uk

JOINTFILL A2

Jointfill A2 is a hot applied rubberised bitumen compound designed to be tough, flexible and have good extension properties over a wide range of temperature conditions. It is used for sealing horizontal expansion joints on concrete and asphalt pavements where low movement is expected. **Jointfill A2** prevents entry of water and other materials, it has good recovery properties and low temperature flexibility. **Jointfill A2** is not recommended for overbanding due to its lack of skid resistance, **Jointgrip OB** is recommended for this application due to its superior skid resistance properties.

Where to use?

- Carriageway
- Car parks
- Footways

Preparation

Joints must be cleaned by a hot compressed air lance or by grit blasting. Damaged joints must be repaired using an epoxy mortar approved by Colas. Joints should be primed with **CP Primer** before applying **Jointfill A2**.

Application

Jointfill A2 should be heated indirectly and agitated in a purpose-built sealant preheater unit with thermostatic control, ensuring that the temperature does not exceed 190°C. The heater unit should be oil-jacketed. The materials should then be pumped into the joint, or poured at temperatures between 170°C - 180°C using a melter pourer or bucket and 'V' mould, with the minimum loss of temperature. Joints should be sealed to a level of at least 3mm below the surface.

More thorough advice is given in BS2499-2:1992 Hot Applied Joint Sealant Systems for Concrete Pavements. Code of Practice for Application and Use of Joint Sealants.

Application Properties

Pouring temperature	175°C/185°C
Safe heating temperature	185°C for 6 hours maximum. 190°C maximum temperature.

Coverage

Weight of Jointfill A2 sealant to fill 100m joint (kg)

Depth of joint (mm)	Width of joint (mm)					
	15	20	25	30	35	40
20	36	48	60	72	84	96
25	–	–	75	90	105	120
30	–	–	–	108	126	144
35	–	–	–	–	147	168
40	–	–	–	–	–	192

Packaging

Jointfill A2 is supplied in plastic lined paper sacks holding 20kg (nominal) of material. Remove paper and put into heating equipment.

Storage

Keep in dry store under cover.

Standards

Jointfill A2 is manufactured on a purpose-built plant to an ISO 9001 quality system which covers all Colas manufactured products. Under this system all batches undergo rigorous QC testing before being released for use. If a BS EN14188-1:2004 product is required see **Jointfill N1** and **Jointfill N2**.

JOINTFILL A2

Test	Specification
Softening point	Typically 70 to 90°C
Cone penetration (25°C, 150g)	25 to 50mm
Flow (mould method at 45°C)	<15%
Extension test (0°C, ASTM D1191)	Pass
Density	Typically 1.2g/m ² at 25°C

Safety

SAFETY HANDLING PRECAUTIONS (when hot)

- Wear suitable protective clothing (heat Resistant gauntlet glove, overalls, protective footwear, face visor).
- DO NOT allow water to contact hot material.
- DO NOT exceed maximum safe heating temperature.
- If molten material contacts skin:
 - DO NOT attempt to remove
 - Immerse affected area in cold running water for at least 10 minutes.
 - Seek medical advice without delay.

This product is hazardous for transportation when carried at temperatures above 100°C.

For full safety information, please download the **Jointfill A2** Safety Data Sheet 06 from our website www.colas.co.uk

SETT GROUT



Sett Grout is a hot applied bituminous compound which secures all types of setts/cobbles. It has been developed in order to solve the pouring and setting problems encountered with some filled bitumen grouting materials. Adhesion, flow and pouring properties have been improved whilst still retaining recommended softening point and penetration characteristics.

Where to use?

- To secure all types of setts and cobbles

Preparation

When grouting cobbles/setts, use the cobbles/setts manufacturer's installation instructions ensuring that cobbles/setts are dry and clean.

Application

Sett Grout should be heated indirectly and agitated/stirred in a purpose-built sealant preheater-unit with thermostatic control to ensure that solids are evenly dispersed throughout the pouring material at all times. The heater unit should be oil-jacketed. Ensure that the temperature does not exceed 190°C as this will result in hardening and loss of elasticity. The materials should then be pumped into the joint, or poured at temperatures between 170°C - 180°C using a melter pourer or bucket and 'V' mould, with the minimum loss of temperature. Joints should be sealed to a level of at least 3mm below the surface.

In cold conditions the temperature of the **Sett Grout** should be raised accordingly and in frosty weather this could well be up to, but not above

190°C to counteract the chilling effect the setts/cobbles will have on the poured grout.

Coverage

The spread rate for a 20mm wide x 75mm deep joint ~ 3kg/linear metre of joint. N.B: When using 200mm x 100mm setts, 1m² of granite setts contains 15 linear metres of joint.

On this basis, the spread rate of **Sett Grout** is 45kg/m² of granite setts, assuming joints are 20mm wide x 75mm deep.

Packaging

Sett Grout is available in 25kg (nominal) paper sacks or as a shrink-wrapped pallet (40 x 25kg).

Storage

Keep in dry store under cover.

Standards

Sett Grout is a proprietary product produced to a manufacturing system accredited to ISO9001.

Safety

SAFETY HANDLING PRECAUTIONS (when hot)

- Wear suitable protective clothing (heat resistant gauntlet glove, overalls, protective footwear, face visor).
- DO NOT allow water to contact hot material.
- DO NOT exceed maximum safe heating temperature.
- If molten material contacts skin:
 - DO NOT attempt to remove
 - Immerse affected area in cold running water for at least 10 minutes.
 - Seek medical advice without delay.

This product is hazardous for transportation when carried at temperatures above 100°C.

For full safety information, please download the **Sett Grout** Safety Data Sheet 33 from our website www.colas.co.uk

STUD GROUT



Stud Grout is a hot applied bituminous compound which secures reflective road studs. It has been developed in order to solve the pouring and setting problems encountered with some bitumen grouting materials. Adhesion, flow and pouring properties have been improved whilst still retaining recommended softening point and penetration characteristics.

Where to use?

- To secure all types of reflective road studs

Preparation

When grouting road studs, use the road stud manufacturer's installation instructions ensuring that studs are dry and clean.

Application

When using **Stud Grout** to secure road studs, the wall of the cavity should be primed with **CP Primer** to ensure a good adhesion of the grout. Care must be taken to ensure that there is no condensation on the studs and in extreme cold these should be taken from a warm storage area or warmed prior to laying. In cold conditions the temperature of the **Stud Grout** should be raised accordingly and in frosty weather this could well be up to, but not above 190°C to counteract the chilling effect that the cavity walls and body of the stud will have on the poured grout.

Coverage

Spread Rate – refer to road stud manufacturer's guidance.

Packaging

Stud Grout is available in 25kg (nominal) paper sacks or as a shrink-wrapped pallet (40 x 25kg).

Storage

Keep in dry store under cover.

Standards

Stud Grout is a proprietary product produced to a manufacturing system accredited to ISO9001.

Safety

SAFETY HANDLING PRECAUTIONS (when hot)

- Wear suitable protective clothing (heat resistant gauntlet glove, overalls, protective footwear, face visor).
- DO NOT allow water to contact hot material.
- DO NOT exceed maximum safe heating temperature.
- If molten material contacts skin:
 - DO NOT attempt to remove
 - Immerse affected area in cold running water for at least 10 minutes.
 - Seek medical advice without delay.

This product is hazardous for transportation when carried at temperatures above 100°C.

For full safety information, please download the **Stud Grout** Safety Data Sheet 33 from our website www.colas.co.uk

FOOTWAY SURFACE TREATMENTS

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CATIONIC SLURRYSEAL EMULSION (CSS)



Cationic Slurry Seal Emulsion (CSS) is a key constituent of slurry seal for hand or machine application. Ideal for rejuvenating cracked, spalled and worn surfaces, it is based on a K3 cold emulsion with a fast application and drying time of approximately 30 minutes. This means that the material can be laid quickly, economically and safely with the minimum disruption to road users and residents.

By varying the size of aggregates used, the texture depth can be altered to suit site requirements with typical slurries based on 0/4 or 0/6mm grades for footway or urban carriageway application.

Other components are required to be mixed on site with **CSS** emulsion in order to produce a slurry seal e.g. stabiliser, cellulose fibre and cement. These materials are supplied by Colas and further details are available on request.

For higher stressed areas, Colas can offer a polymer modified version of **CSS**, please contact our National Sales Office for further information.

Where to use?

- Footways
- Carriageways
- Car parks
- Hard shoulders

Preparation

The surface to be treated must be free from all dust and loose material and should be cleaned thoroughly with a mechanical broom and/or suction sweeper, supplemented if necessary by hand sweeping. Open cracks must be cleared of vegetation and other loose material. All debris and loose material arising must be removed.

Application

Colas **CSS** emulsion mixes can be produced in simple bell mixers or, for larger quantities, in purpose built mixing equipment provided proper attention is given to mix composition. **CSS** mixes are spread using a soft broom and/or rubber bladed squeegee. It is recommended that **CSS** is only applied when the ground temperature is 5°C and rising or less than 40°C.

Coverage

When using 4mm aggregate the coverage from a 200kg drum is approximately 160 – 200m².

Packaging

CSS is supplied in Bulk and in 200kg drums (the latter is subject to minimum order quantities).

Storage

Protect from frost. Drums should be rolled frequently to avoid separation. Bulk material should be circulated before use. For further information please refer to BS434-2:2006, Section 5; Clause 5.2 'Storage'.

CATIONIC SLURRYSEAL EMULSION (CSS)

Standards

Colas CSS is a CE Marked cationic emulsion to BS EN13808:2013 C55B(F) or C60B(F).

Colas CSS also complies with the withdrawn BS434-1 Standard as a K3 Type emulsion.

Full CE Marking information is available from the Colas website www.colas.co.uk

Properties

Particle charge	Positive (Cationic)
Residue on sieving 500µm	0.1% m/m max
Residue on sieving 160µm	0.25% m/m max
Binder content	56% m/m min
Efflux 2mm @ 40°C	15-70s (Class3)
Coagulation at low temperature	Nil

Safety

For full safety information, please download the **Cationic Slurry Seal** Emulsion Safety Data Sheet 02k from our website www.colas.co.uk

LEOCATIC SPRAY



Leocatic Spray is a 60% bitumen content, cold applied cationic emulsion. **Leocatic Spray** is particularly useful for the construction and maintenance of footways and other low stress sites. **Leocatic Spray** is an exceptionally versatile product with a variety of uses.

Where to use?

- Surface dressing
- Stabilising footpaths
- Patching
- Tack coat

Preparation

Varies depending on the application.

Application

SURFACE DRESSING:

Leocatic Spray is ideal for surface dressing lightly trafficked sites such as footways. Depending on site conditions it may be necessary to apply a double surface dressing wherein two binder and chipping applications are carried out in quick succession. Typical rates of application when 6mm chippings are used (as guide only).

Double Dressing

1st application – 0.9 - 1.4 l/m²
2nd application – 0.9 - 1.4 l/m²

For design guidelines refer to Road Note 39.

STABILISING FOOTPATHS:

On sites subject to low stress it may be economical to prepare, in situ, a combined binder/surface course by means of an application of **Leocatic Spray** into the interstices of the aggregate after the latter has been spread on the foundation and compacted. **Leocatic Spray** is particularly effective where the stone layer is open or wet. For a full specification please contact your local Colas office.

PATCHING:

When repairing potholes and deep depressions, the area to be treated should first be cleaned of all loose material and cut out to a regular shape with all the sides vertical or slightly undercut. The bottom and sides of the hole or depression should be thoroughly coated with emulsion. Clean aggregate should be placed in the hole to a thickness slightly greater than its depth and well rammed or rolled. The minimum amount of emulsion required to coat the stones should then be poured on (excessive amounts of emulsion may create 'fat' spots in the road). The patch should then be covered with clean 10mm or 6mm chippings and again rolled or rammed.

BOND COAT:

Where coated macadams or asphalts are employed, a bond/tack coat of **Leocatic Spray** can be used (and may be specified) between layers to provide an adhesive and dust free surface.

Typical emulsion rates of application:
0.3 - 0.5 l/m².

LEOCATIC SPRAY

BASE TREATMENT:

A freshly cut or placed formation and/or freshly laid sub-base can be sealed with **Leocatic Spray** in order to preserve moisture equilibrium and so retain volume and strength.

Typical emulsion rates of application:
0.9 - 1.4 l/m².

REMEDIAL TREATMENT:

Where the shape of the surface to be healed is satisfactory but a surface is slippery or in danger of imminent break-up, surface dressing with **Leocatic Spray** may be employed as a remedial treatment to seal the surface and/or restore surface texture.

Approximate rates of application when 6mm chippings are used: 1.1 - 1.5 l/m².

Coverage

Please see above the various applications for guidance.

Packaging

Leocatic Spray is available in bulk, 200kg drums and 25kg containers.

Storage

Protect from frost. 200kg and 25kg units should be rolled frequently to avoid separation. Bulk material should be regularly circulated. For further information please refer to BS434-2: 2006: Clause 5.2 storage.

Standards

Leocatic Spray is a CE Marked cationic emulsion to BS EN13808:2013 C55B3.

Leocatic Spray also complies with the withdrawn BS434-1 Standard as a K1-60 Type emulsion.

Full CE Marking information is available from the Colas website www.colas.co.uk

Safety

For full safety information, please download the **Leocatic Spray** Safety Data Sheet 23 from our website www.colas.co.uk

LEOCHIP VLS



Leochip VLS is a cold applied, durable surface dressing binder. It is ideal for producing a high quality, natural and aesthetically pleasing finish to driveways and footpaths.

Where to use?

- Driveways
- Footpaths
- Tow paths
- Decorative areas

Preparation

Surfaces must be free from weeds, standing water, dust, dirt, loose material and oil spillage. Any potholes should be patched and any cracks should be filled with Colas **Leoseal R** or a **Leoseal R** and sand mortar mixture.

Application

Leochip VLS can be poured from a watering can, spread by hand using an ordinary notched rubber bladed squeegee or sprayed through a specially adapted nozzle.

It should be applied at a spread rate of 1.3 to 1.8lts/m² depending upon the texture and porosity of the surface and choice of chipping size (2.8/6.3 Gc 85/20f1 chippings are recommended).

Leochip VLS should be applied in temperatures >10°C and dry conditions should prevail for at least 12 hours after application.

N.B: Not all aggregates are suitable for use with bitumen emulsion and advice regarding aggregate suitability can be obtained by contacting our National Sales Office.

Coverage

Depending on the texture and porosity of the surface to be treated **Leochip VLS** will achieve the following approximate coverage rates.

25kg = 14 to 19m²

200kg = 110 to 155m².

Typical aggregate coverage is 7-10kg/m².

Packaging

Leochip VLS is available in 200kg drums or 25kg containers.

Storage

Protect from frost. Drums should be rolled frequently to avoid separation. For further information please refer to BS434-2:2006. Section 5; Clause 5.2 Storage.

Standards

Leochip VLS is a CE Marked cationic emulsion to BS EN13808:2013 C67B.

Full CE Marking information is available from the Colas website www.colas.co.uk

Safety

For full safety information, please download the **Leochip VLS** Safety Data Sheet 23 from our website www.colas.co.uk

SURFACE DRESSING BINDERS

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SECURE CHIP



Secure Chip is a spray applied emulsion binder for application to recently completed surface dressings. It is designed to reduce the amount of post sweeping required by securing the dressing aggregate in the mosaic structure minimising the risk of damaged windscreens from chippings dislodged by passing vehicles. Application of Colas **Secure Chip** also gives a pleasing aesthetic and long lasting black colour resembling an asphalt surface.

The low application rate of **Secure Chip** results in the rapid breaking of the emulsion meaning that sites can be opened to traffic quickly minimising any disruption to local residents.

Where to use?

- On recently surface dressed roads

Preparation

Secure Chip should be applied to recently applied surface dressings that have been swept.

Application

Secure Chip should be machine spray applied to recent surface dressing, after an initial sweeping of the site, at a temperature 85°C.

Coverage

Secure Chip should be applied at spread rate of 0.2 - 0.4L/m².

Packaging

Secure chip is supplied in bulk loads.

Storage

Secure Chip should be stored at 80 – 85°C in purpose built bulk storage tanks or spray tankers. For further guidance please contact our National Sales Office.

Standards

Secure Chip complies with BS EN 13808:2013 for C50BP3/4 or C55BP3/4.

Safety

For full safety information, please download the **Secure Chip** Safety Data Sheet 156 from our website www.colas.co.uk

SURFIX C



Surfix C is a conventional grade cationic bitumen emulsion for surface dressing. By using selected emulsifying agents with a suitable emulsion grade penetration bitumen **Surfix C** has been specifically designed for use as a hot applied surface dressing binder.

Where to use?

Surfix C is suitable for use on carriageways, driveways, footways, canal tow paths and all sites as a conventional grade surface dressing binder as specified in the Design Guide for Road Surface Dressing, Road Note 39.

Preparation

Please refer to the Road Surface Treatment Association's (RSTA)/ADEPT Code of Practice for Surface Dressing Part 5 – Surface Preparation.

Application

Surfix C should be applied at a temperature of 85°C through a bulk binder distributor which has been tested for compliance to BS 1707 (hot binder distributors for surface dressing).

The surface dressing works should be in accordance with the recommendations contained in Design Guide for Road Surface Dressing, Road Note 39 and the RSTA's Codes of Practice for Surface Dressing.

Coverage

Refer to the Design Guide for Road Surface Dressing, Road Note 39 or contact our National Sales Office for further guidance.

Packaging

Supplied in bulk loads and 200kg drums.

Storage

In purpose built bulk storage tanks or spray tankers **Surfix C** should be stored at 80 – 85°C and circulated daily when required.

Drums should be rolled frequently to avoid separation and must be protected from frost. For further information regarding the storage of emulsion in drums please refer to BS434-2:2006: Clause 5.2 storage.

Standards

Surfix C is a CE Marked cationic emulsion to BS EN13808:2013 C69BF2/3/4.

Surfix C also complies with the withdrawn BS434-1 Standard as a K1-70 Type emulsion.

Full CE Marking information is available from the Colas website www.colas.co.uk

Emulsion	
Binder content (EN1428)	67-71% (Class 9)
Efflux 4 mm @ 40°C (EN 12846-1)	5 – 100 s (Class 5/6)
Water effect on binder adhesion (EN 13614)	≥ 90 (Class 3)
Breaking behaviour (EN 13075-1)	< 110 – 195 (Class 2/3/4)

Recovered binder	
Penetration @ 25°C (EN 1426)	≤ 330 (Class 7)
Softening point (EN 1427)	≥ 35°C (Class 8)
Cohesion by pendulum (EN 13588)	NR

Dangerous regulated substances	NPD
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Safety

For full safety information, please download the **Surfix C** Safety Data Sheet 15 from our website www.colas.co.uk



Surfix 80S is a BBA HAPAS approved intermediate grade polymer modified bitumen emulsion. By using selected emulsifying agents with a suitable emulsion grade penetration bitumen, it has been specifically designed for use as a hot applied surface dressing binder.

Where to use?

Surfix 80S is suitable for use on carriageways, driveways, footways, canal tow paths and all sites as an intermediate grade surface dressing binder as specified in the Design Guide for Road Surface Dressing, Road Note 39.

Preparation

Please refer to the Road Surface Treatment Association's (RSTA)/ADEPT Code of Practice for Surface Dressing Part 5 – Surface Preparation.

Application

Surfix 80S should be applied at a temperature of 85°C through a bulk binder distributor which has been tested for compliance to BS 1707 (hot binder distributors for surface dressing).

The surface dressing works should be in accordance with the recommendations contained in Design Guide for Road Surface Dressing, Road Note 39 and the RSTA's Codes of Practice for Surface Dressing.

Coverage

Refer to the Design Guide for Road Surface Dressing, Road Note 39 or contact our National Sales Office for further guidance.

Packaging

Supplied in bulk loads.

Storage

Surfix 80S should be stored at 85°C in a purpose built bulk storage tank or spray tanker and circulated daily. For further information please refer to BS434-2 2006 clause 5.2 storage.

Standards

Surfix 80S is a CE Marked cationic bitumen emulsion to BS EN13808:2013 C69BP2/3.

Surfix 80S complies with the requirements of Road Note 39, Design Guide for Road Surface Dressing as an Intermediate Grade surface dressing binder.

Full CE Marking information is available from the Colas website www.colas.co.uk

Emulsion	
Binder content (EN1428)	67-71% (Class 9)
Efflux 4 mm @ 40°C (EN 12846-1)	5 – 100 s (Class 5/6)
Water effect on binder adhesion (EN 13614)	≥ 90 (Class 3)
Breaking behaviour (EN 13075-1)	< 110 – 155 (Class 2/3)

Recovered binder	
Penetration @ 250C (EN 1426)	≤ 220 (Class 5)
Softening point (EN 1427)	≥ 35°C (Class 8)
Cohesion by pendulum (EN 13588)	NR

SURFIX 80S

SLX 80

Stage 1 durability – stabilised binder	
Durability of penetration @ 25°C (EN 1426)	NPD
Durability of softening point (EN 1427)	NPD
Durability of cohesion by pendulum (EN 13588)	NPD

Stage 2 durability – aged binder	
Durability of penetration @ 25°C (EN 1426)	≤ 220 (Class 5)
Durability of softening point (EN 1427)	NPD
Durability of cohesion by pendulum (EN 13588)	≥ 1.0 J/com ² (Class 4)

Dangerous regulated substances	NPD
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Safety

For full safety information, please download the **Surfix 80S** Safety Data Sheet 15 from our website www.colas.co.uk



SLX 80 is a BBA HAPAS approved premium grade polymer modified cationic bitumen emulsion. By using selected emulsifying agents with a suitable emulsion grade penetration bitumen it has been specifically designed for use as a hot applied surface dressing binder. Conventional non-modified surface dressing binders may lack the cohesive strength necessary to retain chippings under the extra shear stress imposed on road surfaces by vehicles braking or turning sharply. The addition of polymer gives improved properties and enhanced performance.

To aid application **SLX 80** has a slight thixotropic nature and excellent breaking properties.

Where to use?

SLX 80 is suitable for use on higher stressed, heavier trafficked sites as a premium grade surface dressing binder as specified in Road Note 39.

Preparation

Please refer to the Road Surface Treatment Association's (RSTA)/ADEPT Code of Practice for Surface Dressing Part 5 – Surface Preparation.

Application

SLX 80 should be applied at a temperature of 85°C through a bulk binder distributor which has been tested for compliance to BS 1707 (hot binder distributors for surface dressing).

The surface dressing works should be in accordance with the recommendations contained in Design Guide for Road Surface

Dressing, Road Note 39 and the RSTA's Codes of Practice for Surface Dressing.

Due to high residual binder viscosity, optimum results are obtained with **SLX 80** during the warmer months of May to August.

Coverage

Refer to the Design Guide for Road Surface Dressing, Road Note 39 or contact our National Sales Office.

Packaging

Supplied in bulk loads.

Storage

SLX 80 should be stored at 85°C in a purpose built bulk storage tank or spray tanker and circulated daily. For further information please refer to BS434-2 2006 clause 5.2 storage.

Standards

SLX80 is a CE Marked cationic bitumen emulsion to BS EN13808:2013 C69BPF3/4 or C70BPF3/4.

SLX80 complies with the requirements of Road Note 39, Design Guide for Road Surface Dressing as a Premium Grade surface dressing binder. Full CE Marking information is available from the Colas website www.colas.co.uk

Emulsion	
Binder content (EN1428)	67-71 (Class 9) or ≥71 (Class 10)
Efflux 4mm @ 40°C (EN 12846-1)	5 – 100 s (Class 5/6)
Water effect on binder adhesion (EN 13614)	≥ 90 (Class 3)
Breaking behaviour (EN 13075-1)	70 – 195 (Class 3/4)

SLX 80

PREMIUM 80

Recovered binder	
Penetration @ 25°C (EN 1426)	≤ 220 (Class 5)
Softening point (EN 1427)	≥ 43°C (Class 6)
Cohesion by pendulum (EN 13588)	≥ 1.2 J/cm² (Class 3)

Stage 1 durability – stabilised binder	
Durability of penetration @ 25°C (EN 1426)	NPD
Durability of softening point (EN 1427)	NPD
Durability of cohesion by pendulum (EN 13588)	NPD

Stage 2 durability – aged binder	
Durability of penetration @ 25°C (EN 1426)	NPD
Durability of softening point (EN 1427)	NPD
Durability of cohesion by pendulum (EN 13588)	NPD

Safety

For full safety information, please download the **SLX 80** Safety Data Sheet 16 from our website www.colas.co.uk



Premium 80 is a BBA HAPAS approved premium grade polymer modified cationic bitumen emulsion. By using selected emulsifying agents with a suitable emulsion grade penetration bitumen, it has been specifically designed for use as a hot applied surface dressing binder.

Where to use?

Premium 80 is suitable for use on higher stressed, heavier trafficked sites as a premium grade surface dressing binder as specified in the Design Guide for Road Surface Dressing, Road Note 39.

Preparation

Please refer to the Road Surface Treatment Association's (RSTA)/ADEPT Code of Practice for Surface Dressing Part 5 – Surface Preparation.

Application

Premium 80 should be applied at a temperature of 85°C through a bulk binder distributor which has been tested for compliance to BS 1707 (hot binder distributors for surface dressing).

The surface dressing works should be in accordance with the recommendations contained in Design Guide for Road Surface Dressing, Road Note 39 and the RSTA's Codes of Practice for Surface Dressing.

Due to high residual binder viscosity, optimum results are obtained with **Premium 80** during the warmer months of May to August.

Coverage

Refer to the Design Guide for Road Surface Dressing, Road Note 39 or contact your local Colas depot for further guidance.

Packaging

Supplied in bulk loads.

Storage

Premium 80 should be stored at 85°C in a purpose built bulk storage tank or spray tanker and circulated daily.

Standards

Premium 80 is a CE Marked cationic bitumen emulsion to BS EN13808:2013 C70BPF2/3/4.

Premium 80 complies with the requirements of Road Note 39, Design Guide for Road Surface Dressing as a Premium Grade surface dressing binder. Full CE Marking information is available from the Colas website www.colas.co.uk

Emulsion	
Efflux 4 mm @ 40°C (EN 12846-1)	5 – 70 s (Class 5)
Water effect on binder adhesion (EN 13614)	≥ 90 (Class 3)
Water effect on binder adhesion (EN 13614)	< 110 – 195 (Class 2/3/4)

Recovered binder	
Penetration @ 25°C (EN 1426)	≤ 220 (Class 5)
Softening point (EN 1427)	≥ 46°C (Class 5)
Cohesion by pendulum (EN 13588)	≥ 1.2 J/cm² (Class 3)

PREMIUM 80

Stage 1 durability – stabilised binder

Durability of penetration @ 25°C (EN 1426)	NPD
Durability of softening point (EN 1427)	NPD
Durability of cohesion by pendulum (EN 13588)	NPD

Stage 2 durability – aged binder

Durability of penetration @ 25°C (EN 1426)	NPD
Durability of softening point (EN 1427)	NPD
Durability of cohesion by pendulum (EN 13588)	NPD

Dangerous regulated substances	NPD
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Safety

For full safety information, please download the **Premium 80** Safety Data Sheet 16 from our website www.colas.co.uk



PRINMULS MP90X



Prinmuls MP90X is a BBA HAPAS approved super premium grade polymer modified bitumen emulsion with a high binder content. Specifically designed for use as a heavy duty surface dressing binder on high speed and heavily trafficked roads.

Where to use?

Prinmuls MP90X is suitable for use on higher stressed, heavier trafficked sites as a super-premium grade surface dressing binder as specified in the Design Guide for Road Surface Dressing, Road Note 39.

Preparation

Please refer to the Road Surface Treatment Association's (RSTA)/ADEPT Code of Practice for Surface Dressing Part 5 – Surface Preparation.

Application

Prinmuls MP90X should be applied at a temperature of 85°C through a bulk binder distributor which has been tested for compliance to BS 1707 (hot binder distributors for surface dressing).

The surface dressing works should be in accordance with the recommendations contained in Design Guide for Road Surface Dressing, Road Note 39 and the RSTA's Codes of Practice for Surface Dressing.

Due to high residual binder viscosity, optimum results are obtained with **Prinmuls MP90** during the warmer months of May to August.

Coverage

Refer to the Design Guide for Road Surface Dressing, Road Note 39 or contact your local Colas depot or representative for further guidance.

Packaging

Supplied in bulk loads

Storage

Prinmuls MP90X should be stored at 85°C in a purpose built bulk storage tank or spray tanker and circulated daily. For further information please refer to BS434-2 2006 clause 5.2 storage.

Standards

Prinmuls MP90X is a CE Marked cationic bitumen emulsion to BS EN13808:2013 C70BPF2/3/4.

Prinmuls MP90X complies with the requirements of Road Note 39, Design Guide for Road Surface Dressing as a Super Premium Grade surface dressing binder. Full CE Marking information is available from the Colas website www.colas.co.uk

PRINMULS MP90X

Emulsion	
Binder content (EN1428)	≥69 (Class 10)
Efflux 4 mm @ 40°C (EN 12846-1)	5 – 100 s (Class 5/6)
Water effect on binder adhesion (EN 13614)	≥ 90 (Class 3)
Breaking behaviour (EN 13075-1)	70 – 195 (Class 3/4)

Recovered binder	
Penetration @ 250°C (EN 1426)	≤ 220 (Class 5)
Softening point (EN 1427)	≥ 50°C (Class 4)
Cohesion by pendulum (EN 13588)	≥ 1.4 J/cm² (Class 2)

Stage 1 durability – stabilised binder	
Durability of penetration @ 25°C (EN 1426)	NPD
Durability of softening point (EN 1427)	NPD
Durability of cohesion by pendulum (EN 13588)	NPD

Stage 2 durability – aged binder	
Durability of penetration @ 25°C (EN 1426)	≤ 150 (Class 5)
Durability of softening point (EN 1427)	NPD
Durability of cohesion by pendulum (EN 13588)	≥ 1.4 J/cm² (Class 2)

Dangerous regulated substances	NPD
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Safety

For full safety information, please download the **Prinmuls MP90X** Safety Data Sheet from our website www.colas.co.uk



BOND COATS

Colbond 50	70
Colbond Multi	72
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COLBOND 50



Colbond 50 is nominally a 50% binder content polymer modified bitumen emulsion. It forms a uniform film of polymer modified bitumen on the road surface which promotes a strong adhesive bond between a bituminous overlay and the existing surface. The application of **Colbond 50** also improves the waterproofing of the road pavement.

Colbond 50, when fully broken, prevents 'pick-up' on the wheels, tracks or tyres of the paver/delivery vehicles and prevents debonding of the overlay during subsequent service life when subjected to traffic stresses.

Where to use?

- Carriageways
- Footways
- Car parks

Preparation

Surface to be sprayed must be free from detritus, standing water, loose material and oil spillage.

Application

Prior to the application **Colbond 50** should be homogenized thoroughly. **Colbond 50** should be applied at 0.7lts/m² to achieve the recommended 0.35kg/m² residual spread rate stated in BS594987 Clause 5.5.2. Vehicular traffic should be kept off the treated area until the emulsion has fully broken and the colour changes from brown to black, then the overlay should be applied.

It is recommended that **Colbond 50** is only applied when the ground temperature is 5°C and rising or <40°C. Humidity should preferably not exceed 70% however **Colbond 50** can be applied in higher humidity but this will prolong the break time. Because the base binder used in **Colbond 50** is polymer modified, it behaves differently from conventional bitumen emulsions and it may therefore be necessary to warm the **Colbond 50** to ease application. When applying through small motorised or petrol driven units ensure the sprayer system is flushed regularly, this is of particular importance when impeller driven pumps are used.

Coverage

It is recommended that the **Colbond 50** is applied at coverage rates specified in BS594987 Clause 5.5 application of bond coats.

For further information or guidance please contact our National Sales Office.

Packaging

Colbond 50 is available in bulk or 200kg drums.

Storage

Protect from frost. Bulk should be circulated before use. Drums should be rolled frequently to avoid separation. For further information please refer to BS434-2:2006 Section 'Storage'.

Standards

Colbond 50 is a CE Marked cationic emulsion to BS EN13808:2013 C50BP5 which also complies with BS594987 Clause 5.5 Application of bond coats.

Full CE Marking information is available from the Colas website www.colas.co.uk

COLBOND 50

Property	Test Method	Performance Class
Emulsion binder content	EN1428	Class 4 (48-52%)
Emulsion viscosity	EN12846- 1	Class 3 (15-70s)
Breaking value	EN13075- 1	Class 5 (> 170)
Recovered binder minimum peak vialit cohesion	EN13588	Class 4 (>1.0J/cm ²)

Safety

For full safety information, please download the **Colbond 50** Safety Data Sheet 11 from our website www.colas.co.uk

COLBOND MULTI



Colbond Multi is a polymer modified cationic bitumen emulsion designed to be applied both as a bond coat and vertical joint paint. **Colbond Multi** forms a uniform film of polymer modified bitumen on both horizontal and vertical faces forming a strong adhesive bond between bituminous overlay and the existing surface. In addition the application of it also improves the waterproofing of the road pavement.

Colbond Multi, when fully broken, prevents 'pick-up' on the wheels, tracks or tyres of the paver/delivery vehicles and prevents disbanding/debonding of the overlay during subsequent service life when subjected to traffic stresses.

Applied to vertical edges **Colbond Multi** replaces conventional hot pour bitumen.

Where to use?

- Carriageways
- Footways
- Car parks

Preparation

Surface to be treated must be free from detritus, standing water, loose materials and oil spillage.

Application

Prior to application **Colbond Multi** should be circulated thoroughly.

Colbond Multi should be applied at 0.52lts/m² to achieve the recommended 0.35kg/m² residual spread rate stated in BS594987 Clause 5.5 application of bond coats and 6.8 Joints. Vehicular traffic should be kept off the treated area until the emulsion has fully broken, colour changes from brown to black, then the overlay should be applied. It is recommended that **Colbond Multi** is applied when the ground temperature is 5°C and rising or <40°C.

Humidity should preferably not exceed 70% however **Colbond Multi** can be applied in higher humidity but this will prolong the break time.

Colbond Multi should be applied at 85°C using a mechanical spray tanker calibrated to BS1707 (Hot binder distributors for road surface dressing).

Coverage

It is recommended that the **Colbond Multi** is applied at coverage rates specified in BS594987 Clause 5.5 Application of bond coats and 6.8 Joints.

Further guidance is available by contacting our National Sales Office.

Packaging

Colbond Multi is available in bulk loads.

Storage

Protect from frost. Bulk material should be circulated before use. For further information please refer to BS434-2 2006 clause 5.2 storage.

Standards

Colbond Multi is a CE Marked cationic emulsion to BS EN13808:2013 C65BP4 or C67BP4.

Full CE Marking information is available from the Colas website www.colas.co.uk.

COLBOND MULTI

Property	Test Method	Performance Class
Emulsion binder content	EN1428	Class 8 (65-69%) or Class 8 (67-71%)
Emulsion viscosity	EN12846- 1	Class 3 (15-70s)
Breaking value	EN13075- 1	Class 5 (> 170)
Recovered binder minimum peak vialit cohesion	EN13588	Class 4 (>1.0J/cm ²)

Safety

For full safety information, please download the **Colbond Multi** Safety Data Sheet 11b from our website www.colas.co.uk



Leotak is a cold applied rapid-acting 40% cationic bitumen emulsion. When cured **Leotak** forms a thin uniform film of bitumen on the road surface which gives an adhesive bond between a bituminous overlay and an existing surface. For best results, tack coating is strongly recommended when performing tasks such as overlaying with hot rolled asphalt, macadam or when patching or carrying out inlaid work. **Leotak** adheres exceptionally well, even in damp conditions. The overlay is held securely in place and the entry of water between road pavement courses is hindered.

Where to use?

- Carriageways
- Footways
- Car parks

Preparation

Surface to be treated must be free from detritus, standing water, loose materials and oil spillage.

Application

Leotak should be sprayed or hand applied between 0.3 and 0.6lts/m² (depending on the texture, porosity etc. of the surface) to give the thinnest film consistent with complete coverage.

Vehicular traffic should be kept off the treated area until the emulsion has fully broken, colour changes from brown to black. When emulsion has fully broken then apply the overlay.

Coverage

1 x 25kg container should cover approximately 40m².

1 x 200kg drum should cover approximately 320m².

Packaging

Leotak is available in Bulk, 200kg drums, 25kg and 12.5kg containers.

Storage

Protect from frost. Bulk material should be circulated before use. Drums should be rolled frequently to avoid separation. For further information please refer to BS434-2: 2006 Section 'Storage'.

Standards

Leotak is a CE Marked cationic emulsion to BS EN13808:2013 C40B.

Leotak also complies with the withdrawn BS434-1 Standard as a K1-40 Type emulsion.

Full CE Marking information is available from the Colas website www.colas.co.uk

Safety

For full safety information, please download the **Leotak** Safety Data Sheet 23 from our website www.colas.co.uk

MORTARS

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COLAS C45

Colas C45 is a pre-mixed cement based non-shrink bedding mortar suitable for the support of road ironwork and highway furniture. When placed the mixed mortar will harden in approximately 10 minutes. The compressive strength gain will reach 20N/mm² within 45 minutes allowing early opening of roads to vehicular traffic. The self-contained product only needs to be mixed with water on site and the rapid setting assists the re-bedding of manhole frames and the setting of new frame systems. The product is chloride free and can be safely used with cast iron and steel units.

Where to use?

- Re-bedding of raised manhole frames.
- Bedding of frames in new roads.
- Support of road furniture.

Preparation

Laitance and all loose material including dust, oil and grease should be removed in order to produce a sound substrate. The work area should be pre-wetted taking care to remove any standing water before placing the **Colas C45** mortar. To achieve the most consistent mortar mix, mechanical mixing is recommended. Thorough hand mixing is suitable but care should be taken to ensure that the mix is fully wetted out without the use of excess water. Mechanical mixing may be carried out in a suitable vessel using a slow speed high torque drill and mortar stirrer. Hand mixing may be carried out using a clean spot board or wheelbarrow. Each 25kg bag of **Colas C45** requires to be mixed with 2.5 to 3.0 litres of water to give a mortar consistency.

Excess water should not be added once setting of the mortar has commenced and further mixing **should not** be used to re-work the mix. The mortar should be placed within approximately 10 minutes of mixing. The working time may be extended in cold conditions and may be slightly shortened in hot conditions.

Application

Set suitable levelling shims onto the working surface ready to receive the frame or unit. Place the mixed mortar onto the prepared surface and lower the frame or unit onto the mortar and knock down onto the pre-set shims to line and level. The bed thickness laid in a single application should be between 15mm to 75mm. Thicker support beds can be achieved by applying further material as soon as the lower bed has hardened sufficiently not to damage the original bed. The placed mortar will have hardened sufficiently to carry out further work, such as haunching, within 20 minutes depending on the ambient conditions. Alternatively thicker beds may be formed by adding clean dry pea shingle up to a maximum of 30% of the weight of the **Colas C45**. No additional water is required for mixing.

Curing: No special curing is required at temperatures between 5°C and 35°C. For placing at temperatures outside this range, contact our National Sales Office.

Coverage

Each 25kg bag of **Colas C45** will enable a manhole frame 600mm x 600mm to be raised approximately 25mm. The volume yield of each 25kg bag of **Colas C45** is approximately 12.75 litres.

Packaging

Colas C45 is supplied in 25kg sack bags (50 x 25kg bags per pallet) and 25kg buckets (40 x 25kg per pallet).

Storage

Colas C45 will have a shelf life of 6 months when kept in dry conditions at a temperature of 5°C to 35°C.

COLAS C45

Standards

Colas C45 has been tested in accordance with appropriate parts of EN 12390. The product conforms to DTp: HD 27/15. Design Manual for Roads and Bridges V7 Sec2 3.11. Mortars for bedding ironwork such as manhole cover frames during repairs may be trafficked when the strength is expected to be 20N/mm². For rapid construction, this strength should be achieved within 2 hours. **Colas C45** will achieve the required strength of 20N/mm² within 45 minutes at a temperature of 20°C.

Performance

Compressive Strength (Water addition: 2.75 litres per 25kg of **Colas C45**).

Typical Mortar Properties @ 20°C		
Compressive strength	45mins	20MPa
	60mins	25MPa
	1 day	35MPa
	7 days	45MPa
	28 days	55MPa
Density	2200 kg/m ³	
Approx. working life @ 20°C	10 mins	

Variations in water content and ambient temperature may alter mortar consistency and compressive strength achieved.

Safety

For full safety information, please download the **Colas C45** Safety Data Sheet 119 from our website www.colas.co.uk

COLAS C60

Colas C60 is a pre-mixed cement based non-shrink bedding mortar suitable for the support of road ironwork and highway furniture. The mixed mortar, when laid, will harden in approximately 10 minutes. The compressive strength gain will reach 20N/mm² within 1 hour allowing early opening of roads to vehicular traffic. The self-contained product only needs to be mixed with water on site and the rapid setting assists the re-bedding of manhole frames and the setting of new frame systems. The product is chloride free and can be safely used with cast iron and steel units.

Where to use?

- Re-bedding of raised manhole frames.
- Bedding of frames in new roads.
- Support of road furniture.

Preparation

Laitance and all loose material including dust, oil and grease should be removed in order to produce a sound substrate. The work area should be rewetted taking care to remove any standing water before placing the **Colas C60** mortar. To achieve the most consistent mortar mix, mechanical mixing is recommended. Thorough hand mixing is suitable but care should be taken to ensure that the mix is fully wetted out without the use of excess water. Mechanical mixing may be carried out in a suitable vessel using a slow speed high torque drill and Mortar Stirrer. Hand mixing may be carried out using a clean spot board or wheelbarrow. Each 25kg bag of **Colas C60** requires 2.5 to 3.0 litres of water to give a mortar consistency.

Excess water should not be added once setting of the mortar has commenced, further mixing **should not** be used to re-work the mix. The mortar should be placed within approximately 10 minutes of mixing. The working time may be extended in cold ambient conditions and may be slightly shortened in hot ambient conditions.

Application

Set suitable levelling shims onto the working surface ready to receive the frame or unit. Place the mixed mortar onto the prepared surface and lower the frame or unit onto the mortar and knock down onto the pre-set shims to line and level. The bed thickness laid in a single application should be between 15mm to 75mm. Thicker support beds can be achieved by applying further material as soon as the lower bed has hardened sufficiently not to damage the original bed. The placed mortar will have hardened sufficiently to carry out further work, such as haunching, within 20 minutes depending on the ambient conditions. Alternatively thicker beds may be formed by adding clean dry pea shingle up to a maximum of 30% of the weight of the **Colas C60**. No additional water is required for mixing.

Curing: No special curing is required at temperatures between 5°C and 35°C. For placing at temperatures outside this range, contact our National Sales Office.

Coverage

Each 25kg bag of **Colas C60** will enable a manhole frame 600mm x 600mm to be raised approximately 25mm. The volume yield of each 25kg bag of **Colas C60** is approximately 12.75 litres.

Packaging

Colas C60 is supplied in 25kg sack bags (50 x 25kg bags per pallet) and 25kg buckets (40 x 25kg per pallet).

COLAS C60

Storage

Colas C60 will have a shelf life of 6 months when kept in dry conditions at a temperature of 5°C to 35°C.

Standards

Colas C60 has been tested in accordance with appropriate parts of EN 12390. The product conforms to DTp: HD 27/15. Design Manual for Roads and Bridges V7 Sec 2 3.11 Mortars for bedding ironwork such as manhole cover frames during repairs may be trafficked when the strength is expected to be 20N/mm². For rapid construction, this strength should be achieved within 2 hours. **Colas C60** will achieve the required strength of 20N/mm² within 1 hour at a temperature of 20°C.

Performance

Typical Mortar Properties @ 20°C		
Compressive strength	60mins	20MPa
	1 day	35MPa
	7 days	45MPa
	28 days	55MPa
Density	2200 kg/m ³	
Approx. working life @ 20°C	10 mins	

Variations in water content and ambient temperature for particular applications may alter mortar consistency and compressive strength achieved.

Safety

For full safety information, please download the **Colas C60** Safety Data Sheet 120 from our website www.colas.co.uk

COLAS C90

Colas C90 is a pre-mixed cement based non shrink bedding mortar suitable, for the support of road ironwork and highway furniture. The mixed mortar, when placed, will harden in approximately 10 minutes. The compressive strength gain will reach 20N/mm² within 2 hours allowing early opening of roads to vehicular traffic. The self-contained product only needs to be mixed with water on site and the rapid setting assists the re-bedding of manhole frames and the setting of new frame systems. The product is chloride free and can be safely used with cast iron and steel units.

Where to use?

- Re-bedding of raised manhole frames.
- Bedding of frames in new roads.
- Support of road furniture.

Preparation

Laitance and all loose material including dust, oil and grease should be removed in order to produce a sound substrate. The work area should be pre-wetted taking care to remove any standing water before placing the **Colas C90** mortar. To achieve the most consistent mortar mix, mechanical mixing is recommended. Thorough hand mixing is suitable but care should be taken to ensure that the mix is fully wetted out without the use of excess water. Mechanical mixing may be carried out in a suitable vessel using a slow speed high torque drill and mortar stirrer. Hand mixing may be carried out using a clean spot board or wheelbarrow. Each 25kg bag of **Colas C90** requires 2.5 to 3.0 litres of water to give a mortar consistency.

Excess water should not be added once setting of the mortar has commenced, further mixing **should not** be used to re-work the mix. The mortar should be placed within approximately 10 minutes of mixing. The working time may be extended in cold ambient conditions and may be slightly shortened in hot ambient conditions.

Application

Set suitable levelling shims onto the working surface ready to receive the frame or unit. Place the mixed mortar onto the prepared surface and lower the frame or unit onto the mortar and knock down onto the pre-set shims to line and level. The bed thickness laid in a single application should be between 15mm to 75mm. Thicker support beds can be achieved by applying further material as soon as the lower bed has hardened sufficiently not to damage the original bed. The placed mortar will have hardened sufficiently to carry out further work, such as haunching, within 20 minutes depending on the ambient conditions. Alternatively thicker beds may be formed by adding clean dry pea shingle up to a maximum of 30% of the weight of the **Colas C90**. No additional water is required for mixing.

Curing: No special curing is required at temperatures between 5°C and 35°C. For placing at temperatures outside this range, contact our National Sales Office.

Coverage

Each 25kg bag of **Colas C90** will enable a manhole frame 600mm x 600mm to be raised approximately 25mm. The volume yield of each 25kg bag of **Colas C90** is approximately 12.75 litres.

Packaging

Colas C90 is supplied in 25kg sack bags (50 x 25kg bags per pallet) and 25kg buckets (40 x 25kg per pallet).

Storage

Colas C90 will have a shelf life of 6 months when kept in dry conditions at a temperature of 5°C to 35°C.

Standards

Colas C90 has been tested in accordance with appropriate parts of EN12390. The product conforms to DTp: HD 27/15. Design Manual

COLAS C90

for Roads and Bridges V7 Sec2 3.11 Mortars for bedding ironwork such as manhole cover frames during repairs may be trafficked when the strength is expected to be 20N/mm². For rapid construction, this strength should be achieved within 2 hours. **Colas C90** will achieve the required strength of 20N/mm² within 2 hour at a temperature of 20°C.

Performance

Typical Mortar Properties @ 20°C		
Compressive strength	90mins	20MPa
	1 day	35MPa
	28 days	55MPa
Particle size	0 – 2.0mm	
Density	2200 – 2300kg/m ³	
Approx. working life @ 20°C	10 mins	

Variations in water content and ambient temperature for particular applications may alter mortar consistency and compressive strength achieved.

Safety

For full safety information, please download the **Colas C90** Safety Data Sheet 121 from our website www.colas.co.uk

COLAS CUBESET

COLAS CUBESET

Colas Cubeset is a single pre-mixed cement based non-shrink concrete designed with selected graded silica aggregates and additives. The mixed product may be placed in sections of 20mm up to 650mm in a single pour. **Colas Cubeset** is suitable for all concrete works where early strength development is required in order to allow early use of the placed sections. The product may be used for localised repairs plus large area placement or re-instatement of concrete pavements.

The mixed concrete, when placed, will harden in approximately 20 minutes. The compressive strength gain will reach 22N/mm² within 2 hours allowing early opening of sections to foot and vehicular traffic. The self-contained product only needs to be mixed with water on site. The product is chloride free and can be safely used in contact with steel reinforcement. After placement no special curing is required in moderate ambient conditions.

Where to use?

- Concrete restoration – recasting with concrete or mortar.
- Structural strengthening – adding mortar or concrete.
- Increasing physical resistance – adding mortar or concrete.
- Resistance to chemicals – adding mortar or concrete.
- Preserving or restoring passivity – increasing cover with additional mortar or concrete.
- Preserving or restoring passivity – replacing contaminated or carbonated concrete.

Other uses include:

- Concrete repairs to accept foot and vehicular traffic.
- Forming of new pavement areas.
- Re-instatement of deteriorated pavement areas.
- Rapid repairs to roadways & runways.
- Structural support situations.

Preparation

Laitance and all loose material including dust, oil and grease should be removed in order to produce a sound substrate. The work area should be pre-wetted taking care to remove any standing water before placing the **Colas Cubeset**. To achieve the most consistent concrete mix, mechanical mixing using a forced action mixer such as the Creteangle is recommended. Small mixes may be made using a heavy duty slow speed high torque drill and mortar stirrer. Each 25kg bag of **Colas Cubeset** requires 2.25 litres of water to give a medium workability concrete consistency. Excess water should not be added. Once setting of the concrete has commenced, further mixing should not be used to re-work the mix. The concrete should be placed within approximately 15 minutes of mixing. The working time may be extended in cold ambient conditions and may be slightly shortened in hot ambient conditions. For cold weather working warm water, up to 30°C, may be used for mixing.

Part bag mixing should not be undertaken.

Application

Mixed **Colas Cubeset** should be placed onto the dampened prepared surface as soon as mixing is complete. Once placed fully compact the concrete to obtain maximum strength development. The bed thickness applied in a single application should be between 20mm to 650mm. The placed concrete will have hardened sufficiently to carry out further work within 20 minutes depending on the surrounding ambient conditions.

Curing: No special curing is required at temperatures between 5°C and 35°C. For placing at temperatures outside this range, contact our National Sales Office.

At early stages do not allow placed concrete to rapidly dry and protect from rain and frost.

Coverage

The volume yield of each 25kg bag of **Colas Cubeset** is approximately 11.5 litres.

Packaging

Colas Cubeset is supplied in 25kg sack bags (50 x 25kg per pallet).

Storage

Colas Cubeset will have a shelf life of 6 months when kept in dry conditions at a temperature of 5°C to 35°C. Storage at higher temperatures or high humidity may reduce the shelf life.

Standards

Colas Cubeset has been tested in accordance with appropriate parts of EN12390, EN13412. **Colas Cubeset** meets the requirements of the Highways England Specification for Highway Works Series 1700 for Structural Concrete.

Performance

Typical Mortar Properties @ 20°C		
Compressive strength	2hrs	20MPa
	1 day	35MPa
	7 days	45MPa
	28 days	65MPa
Density	2200 – 2300kg/m ³	
Approx. working life @ 20°C	15 mins	
Elastic modulus in compression	41.2GPa @ 28 days	
Bond strength via pull off test	2.4MPa @ 28 days	
Cl content	<0.003%	

Safety

For full safety information, please download the **Colas Cubeset** Safety Data Sheet 122 from our website www.colas.co.uk

COLAS HSC10

Colas HSC10 is a single pre-mixed cement based non-shrink concrete suitable for thick section placing where rapid early strength gain is required. **Colas HSC10** is supplied to site ready to use only requiring the addition of mixing water to produce a medium workability high strength durable concrete. The mixed concrete, when placed, will harden in approximately 10 minutes and reach initial set in approximately 15 minutes. **Colas HSC10** can be placed in a single pass from 30mm to 400mm. Thicker sections can be achieved by placing additional layers once the preceding layer has reached initial set. The compressive strength gain will reach 18N/mm² within 1 hour allowing early opening of roads to vehicular traffic. The rapid setting assists the re-bedding of manhole frames and the setting of new frame systems. The product is chloride free and can be safely used with cast iron and steel units. After placement, no special curing is required in moderate ambient conditions.

Where to use?

- Infilling around re-bedded raised manhole
- Infilling around manhole frames in new roads
- Support of road furniture

Preparation

Laitance and all loose material including dust, oil and grease should be removed in order to produce a sound substrate. The work area should be pre-wetted taking care to remove any standing water before placing the **Colas HSC10** concrete. To achieve the most consistent concrete mix, mechanical mixing is recommended. Thorough hand mixing is suitable but care should be taken to ensure that the mix is fully wetted out without the use of excess water. Mechanical mixing may be carried out in a suitable vessel using a slow speed high torque drill and paddle. Hand mixing may be carried out using a clean spot board or wheelbarrow.

Application

Each 25kg tub or bag of **Colas HSC10** requires 1.0 to 1.75 litres of water to give a stiff concrete. Excess water should not be added. Combine the aggregate and cement portions and gradually add water until a stiff concrete consistency is achieved. Once setting of the concrete has commenced, further mixing should not be used to re-work the mix. The concrete should be placed within approximately 5 minutes of mixing. The working time may be extended in cold ambient conditions and may be slightly shortened in hot ambient conditions.

Required mixing water is 1.0 to 1.75 litres. Aggregates as supplied contain moisture. Do not add excessive water. Variations in water content for particular applications may alter concrete consistency and compressive strength achieved. Place mixed concrete onto dampened prepared substrate as soon as possible after mixing. Compact concrete into place using a suitable tamp or float. Tools and mixers should be cleaned with water before the **Colas HSC10** has hardened.

Curing: No special curing is required at temperatures between 5°C and 35°C.

Coverage

The volume yield of each 25kg bag of **Colas HSC10** is approximately 12 litres.

Packaging

Colas HSC10 is supplied in 25kg bags (50 x 25kg bags per pallet) and 25kg buckets (40 x 25kg per pallet).

Storage

Colas HSC10 will have a shelf life of 6 months when kept in unopened packaging at a temperature of 5°C to 35°C. Storage at higher temperatures may reduce the shelf life.

COLAS HSC10

Standards

Colas HSC10 conforms to BES 6001
"Responsible sourcing of construction product".

Performance

Typical Mortar Properties @ 20°C		
Compressive strength	60mins	18MPa
	1 day	40MPa
	28 days	60MPa
Particle size	0 – 10.0mm	
Density	2300 – 2400kg/m ³	
Approx. working life @ 20°C	10 mins	

Concrete for installing ironwork such as manhole cover frames during repairs may be trafficked when the strength is expected to be 20N/mm². For rapid construction, this strength should be achieved within 2 hours. **Colas HSC10** will achieve the required strength of 20N/mm² within 1½ hours at a temperature of 20°C.

Safety

For full safety information, please download the **Colas HSC10** Safety Data Sheet 154 and 155 from our website www.colas.co.uk

COLAS HSC6

COLAS HSC6

Colas HSC6 is a single pre-mixed cement based non- shrink concrete suitable for thick section placing where rapid early strength gain is required.

Colas HSC6 may be used for the support of road ironwork and highway furniture, barriers and stanchion posts. The mixed concrete, when placed, will harden in approximately 10 minutes. The compressive strength gain will reach 20N/mm² within 2 hours allowing early opening of roads to vehicular traffic. The self-contained product only needs to be mixed with water on site and the rapid setting assists the re-bedding of road ironwork and the setting in of new systems.

The product is chloride free and can be safely used with cast iron and steel units. The concrete can be placed in sections of 20 to 200mm. Greater thicknesses can be built up in layers. After placement no special curing is required in moderate ambient conditions.

Where to use?

- Installation of road ironwork.
- Support of road furniture.
- Placing of stanchion posts.
- Roadway rapid repairs.

Preparation

Laitance and all loose material including dust, oil and grease should be removed in order to produce a sound substrate. The work area should be pre-wetted taking care to remove any standing water before placing the **Colas HSC6**.

Application

To achieve the most consistent concrete mix, mechanical mixing is recommended. If hand mixing care should be taken to ensure that the mix is fully wetted out without the use of excess water. Mechanical mixing may be carried out in a suitable vessel using a slow speed high torque drill and concrete stirrer. Thorough hand mixing may be carried out using a clean spot board or wheelbarrow.

Each 25kg bag of **Colas HSC6** requires 2.5 to 3.0 litres of water to give a medium workability concrete consistency. Excess water should not be added. Once setting of the concrete has commenced, further mixing should not be used to re-work the mix. The concrete should be placed within approximately 10 minutes of mixing. The working time may be extended in cold ambient conditions and may be slightly shortened in hot ambient conditions.

Mixed **Colas HSC6** should be placed onto the dampened prepared surface as soon as mixing is complete. Once placed fully compact the concrete to obtain maximum strength development. The bed thickness applied in a single application should be between 20 to 200mm. Thicker support beds can be achieved by applying further material as soon as the lower bed has hardened sufficiently not to distort under the additional work. The placed concrete will have hardened sufficiently to carry out further work within 20 minutes depending on the surrounding ambient conditions and the grade being applied.

Curing: No special curing is required at temperatures between 5°C and 35°C. For placing at temperatures outside this range contact the Technical Service Department.

Coverage

The volume yield of each 25kg bag/tub of **Colas HSC6** is approximately 12 litres.

Packaging

Colas HSC6 is supplied in 25kg bags (50 x 25kg bags per pallet) and 25kg buckets (40 x 25kg per pallet).

Storage

Colas HSC6 will have a shelf life of 6 months when kept unopened, clear of the ground, in dry conditions, protected from excessive draught, between temperatures of 5°C and 35°C. Storage at higher temperatures and high humidity may reduce the shelf life.

Standards

Colas HSC6 has been tested in accordance with appropriate pats of EN 12390.

Performance

Typical Mortar Properties @ 20°C		
Compressive strength	2hrs	22MPa
	1 day	35MPa
	7 days	45MPa
	28 days	55MPa
Particle size	0 – 6.0mm	
Density	2250kg/m ³	
Approx. working life @ 20°C	10 mins	

Variations in water content and ambient temperature for particular applications may alter concrete consistency and compressive strength achieved.

Safety

For full safety information, please download the **Colas HSC6** Safety Data Sheet 123 from our website www.colas.co.uk

Colas Postset is a pre-packaged cement based concrete containing graded aggregates and non-shrink additives. It is supplied to site ready to use, only requiring the addition of mixing water to produce a stiff rapid hardening concrete. The mixed concrete, when placed, will harden in approximately 5 minutes and reach initial set in approximately 10 minutes, depending upon climatic conditions.

Colas Postset can be placed in a single pass from 30mm to 500mm. Thicker sections can be achieved by placing additional layers once the preceding layer has reached initial set. The rapid setting assists the fixing of highway furniture and fence posts. The product is chloride free and can be safely used with cast iron and steel units. After placement, no special curing is required in moderate ambient conditions.

Where to use?

- Concrete placing road signs
- Support for fence posts, minor installations and haunchings
- Backfill or non-structural void filling

Preparation

Laitance and all loose material including dust, oil and grease should be removed in order to produce a sound substrate. The work area should be pre-wetted taking care to remove any standing water before placing the **Colas Postset** concrete. To achieve the most consistent concrete mix, mechanical mixing is recommended.

Thorough hand mixing is suitable but care should be taken to ensure that the mix is fully wetted out without the use of excess water. Mechanical mixing may be carried out in a suitable vessel using a slow speed high torque drill and paddle. Hand mixing may be carried out using a clean spot board or wheelbarrow. Each 25kg tub or bag of **Colas Postset** requires 1.0 to 1.75 litres of water to give a stiff concrete. Excess water should not be added. Combine the aggregate and cement portions and gradually add water until a stiff concrete consistency is achieved.

Once setting of the concrete has commenced, further mixing should not be used to re-work the mix. The concrete should be placed within approximately 5 minutes of mixing. The working time may be extended in cold ambient conditions and may be slightly shortened in hot ambient conditions.

Application

Place mixed concrete onto dampened prepared substrate as soon as possible after mixing. Compact concrete into place using a suitable tamp or float. Tools and mixers should be cleaned with water before the **Colas Postset** has hardened.

Curing: No special curing is required at temperatures between 5°C and 35°C.

Coverage

The volume yield of each 25kg bag of **Colas Postset** is approximately 12 litres.

Packaging

Colas Postset is supplied in 25kg bags (50 x 25kg bags per pallet) and 25kg buckets (40 x 25kg per pallet).

Storage

Colas Postset will have a shelf life of 6 months when kept in unopened packaging. In dry conditions in a temperature range of 5°C to 35°C. Storage at higher temperatures or high humidity may reduce the shelf life.

Standards

Manufactured in accordance to BS EN ISO 9001:2015.

Performance

Typical Mortar Properties @ 20°C		
Compressive strength	60mins	5 – 10MPa
	1 day	20MPa
	28 days	40MPa
Particle size	0 – 10.0mm	
Density	2300 – 2400kg/m³	
Approx. working life @ 20°C	10 mins	

Required mixing water is 1.0 to 1.75 litres. Aggregates as supplied contain moisture. Do not add excessive water for mixing. Variations in water content for particular applications may alter concrete consistency and compressive strength achieved.

Safety

For full safety information, please download the **Colas Postset** Safety Data Sheet 124 from our website www.colas.co.uk

COLAS RESIN 4

COLAS RESIN 4

Colas Resin 4 is a polyester resin-based mortar designed for bedding and levelling of all types of frames in road surfaces subjected to vehicular traffic. It displays rapid strength gain and cures quickly to allow road opening in the shortest time possible, usually within 1 hour.

It reaches a typical strength of 50N/mm² in one hour under normal conditions.

Where to use?

- Re-bedding of raised manholes
- Support of road furniture
- Bedding of frames in new roads
- Most rapid opening of newly placed frames and road furniture

Preparation

Laitance and all loose material including dust, oil and grease should be removed in order to produce a sound substrate. Any loose brickwork should be re-bedded using a slightly resin rich mortar mix.

Application

To achieve the most consistent mortar mix, mechanical mixing is recommended. Mixing may be carried out in the plastic package pail or a similar suitable mixing vessel. Suitable mixers include a slow speed high torque drill and mortar stirrer. For full pack mixing of **Colas Resin 4**, pour all of the resin contained in the two tins within the pack into the mixing pail. Slowly add the catalysed filler while continually mixing. Continue mixing after all the catalysed filler has been added until the mix is powder free and uniform. The chemical reaction of setting is rapid. The mixed mortar should be placed immediately after mixing. The working time may be extended in cold ambient conditions and may be shortened in hot ambient conditions.

Set suitable levelling shims onto the working surface ready to receive the frame or unit. Place the mixed mortar onto the prepared surface and lower the frame or unit onto the mortar and knock down onto the pre-set shims to line and level.

The bed thickness applied in a single application should be between 5mm to 50mm. Thicker support beds can be achieved by applying further material as soon as the lower bed has hardened sufficiently not to distort under the additional work. The placed mortar will have hardened sufficiently to carry out further work, such as haunching, within 20 to 30 minutes depending on the surrounding ambient conditions and product grade. Clean tools with solvent before mortar has started to harden.

Curing: No special curing is required at temperatures between 5°C and 35°C. For placing temperatures outside this range contact our National Sales Office.

Coverage

The volume yield of each 25kg pack of **Colas Resin 4** is approximately 12.75 litres of mixed mortar.

Packaging

Colas Resin 4 is supplied in 25kg Packs (24 x 25kg per pallet).

Storage

Colas Resin 4 will have a shelf life of 6 months in unopened containers when kept in dry conditions in a temperature range of 5°C to 25°C. Storage at higher temperatures and high humidity may reduce shelf life.

Standards

Colas Resin 4 complies with Highways England Advise Note 104/09 that has been tested in accordance with the relevant parts of BS 6319, HA104/09.

Performance

Typical Mortar Properties @ 20°C		
Compressive strength	60mins	40MPa
	120mins	60MPa
	1 day	70MPa
Compressive modulus	15GPa	
Particle size	0 – 2.0mm	
Density	2050 – 2100kg/m ³	
Approx. working life @ 20°C	10 – 20 mins	
Flexural strength	60mins	40MPa
	120mins	60MPa
	1 day	70MPa
Tensile strength @ 2hrs	7.5MPa	

Safety

For full safety information, please download the **Colas Resin 4** Safety Data Sheet 156 & 157 from our website www.colas.co.uk

COLAS RESIN 5

Colas Resin 5 is a polyester resin based material used for grouting where rapid early strength development is required. Uses include all types of support for steel and concrete units examples of which would include grout feeder boxes for steel plate supports, beneath all types of frames in vehicular road surfaces during bedding and levelling operations. The product is supplied as a two pack system ready for onsite mixing consisting of two tins of base resin and two bags of catalysed filler.

The mixed grout will harden to give rapid strength gain reaching 60N/mm² in 1 hour allowing road opening to vehicular traffic within ¾ to 1 hour. The placed frames will resist compressive and high impact loads. The chemical mechanism will continue at temperatures down to 0°C with only a small increase in hardening time. The hardened grout is resistant to chemical attack from petroleum products and road salt.

Where to use?

- Filling of grout feeder boxes in steel support placement.
- Re-bedding of raised manholes.
- Support of road furniture.
- Bedding of frames in new roads.
- Most rapid opening of newly placed frames and road furniture.

Preparation

Laitance and all loose material including dust, oil and grease should be removed in order to produce a sound substrate. Any loose brickwork should be re-bedded using a slightly resin rich **Colas Resin 4** mix.

Application

To achieve the most consistent grout mix, mechanical mixing is recommended. Hand mixing is suitable for small mixes but care should be taken to ensure that the mix is fully wetted out with resin. Mixing may be carried out in the plastic package pail or a similar suitable mixing vessel. Suitable mixers include a slow speed high torque drill and grout stirrer. For full pack

mixing of **Colas Resin 5** pour all of the resin contained in the two tins within the pack into the mixing pail. Slowly add the catalysed filler while continually mixing. Continue mixing after all the catalysed filler has been added until the mix is powder free and uniform. The chemical reaction of setting is rapid. The mixed grout should be placed immediately after mixing. The working time may be extended in cold ambient conditions and may be shortened in hot ambient conditions.

Grout Feeder Boxes

Mixed **Colas Resin 5** should be poured into grout feeder boxes allowing the gap between lower steel plates to be completely filled with **Colas Resin 5**. **Colas Resin 5** should be brought up to a level within the box such that any small degree of volume change will be accommodated by further ingress of the grout.

Frame Setting Using Colas Resin 4

For bedding and levelling using **Colas Resin 4** set suitable levelling shims onto the working surface ready to receive the frame or unit. Place the mixed mortar onto the prepared surface and lower the frame or unit onto the mortar and knock down onto the pre-set shims to line and level. The bed thickness applied in a single application should be between 10mm to 50mm. Thicker support beds can be achieved by applying further material as soon as the lower bed has hardened sufficiently not to distort under the additional work. The placed mortar will have hardened sufficiently to carry out further work within some 20 to 30 minutes depending on the surrounding ambient conditions.

COLAS RESIN 5

Frame Grouting Using Colas Resin 5

Unfilled areas beneath and surrounding the frame or unit may now be filled by pouring **Colas Resin 5** into place. The placed mortar will act as a restraining formwork during the grouting operation. The combination of the Colas Resin 4 plus the **Colas Resin 5** will ensure complete support for the frame or unit. Clean tools with Solvent before **Colas Resin 5** has started to harden.

Curing: No special curing is required at temperatures between 5°C and 35°C. For placing temperatures outside this range contact National Sales Office.

Coverage

The volume yield of each 25kg pack of **Colas Resin 5** is approximately 12.5 litres of mixed grout.

Storage

Colas Resin 5 will have a shelf life of 6 months when kept in dry conditions at a temperature of 5°C to 25°C. Storage at higher temperatures or high humidity may reduce the shelf life.

Packaging

Colas Resin 5 is supplied in 25kg packs (24 x 25kg per pallet).

Standards

Colas Resin 5 complies with Highways England Advise Note 104/09 has been tested in accordance with the relevant parts of BS 6319, HA104/09.

Typical Grout Properties @ 20°C.

Working Time @ 20°C is 10 – 20 minutes (above 20°C setting will be faster).

Performance

Typical Mortar Properties @ 20°C		
Compressive strength	60mins	60MPa
	120mins	70MPa
	1 day	85MPa
Compressive modulus	15GPa	
Particle size	0 – 2.0mm	
Density	2050 – 2100kg/m ³	
Approx. working life @ 20°C	10 – 20 mins	
Flexural strength	60mins	15MPa
	120mins	20MPa
	1 day	20MPa
Tensile strength @ 2hrs	7.5MPa	

Safety

For full safety information, please download the **Colas Resin 5 Safety Data Sheet 125 & 126** from our website www.colas.co.uk

ANCILLIARY PRODUCTS

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LEOSEAL R



Leoseal R is an economical flexible waterproofer and crack sealant designed for easy hand application. It is a specially formulated combination of bitumen emulsion modified with an elastomer which together form a tough and long-lasting barrier against the entry of water.

Leoseal R has excellent adhesive properties and can be applied to green concrete or damp surfaces.

Where to use?

- Waterproofing below ground concrete structures
- Crack sealant for roads and footways

Preparation

Work should not be carried out in wet or frosty weather.

Surfaces must be dry or damp (no standing or running water), as well as clean and free from dust, oil and fuel spillage.

Application

Stir contents of the bucket prior to use.

Waterproofing

Step 1 – Apply **Leoseal R** in two coats using a turks head brush. The first coat should be at a rate of 0.55L/m² with the second applied at right angles at a rate of 0.45L/m². If the surface is hot, very dry or absorbent it may be helpful to first prime the surface with a thin coat of **Leoseal R** diluted in a ratio of 1 part water to 8 parts **Leoseal R**.

Step 2 – When finished, wash brushes with **Leoclean** immediately followed by soapy water.

Step 3 – When backfilling is necessary the **Leoseal R** treatment should not be left longer than 3-4 weeks before this is undertaken.

Crack Sealing

Cracks up to 3mm.

Step 1 – Pour **Leoseal R** into the crack using a spouted can.

Step 2 – Any surplus on the surface should be brushed or squeegeed out to a thin film and dusted over after drying with cement or very fine sand to remove the tack.

Cracks >3mm and up to 25mm

Step 1 – Prime the sides of the crack with a brush coat of **Leoseal R**.

Step 2 – Mix **Leoseal R** with damp sand in the ratio of 1:1 by volume to produce a mortar.

Step 3 – Fill crack with the mortar mix.

Step 4 – Compact the material into the crack and smooth off the surface with a trowel.

N.B: **Leoseal R** sets by the evaporation of water from the product. Application should only be carried out in good drying conditions. A rain resistant set will be delayed if the weather is cold, damp or humid.

LEOSEAL R



Coverage

Waterproofing: 1lt per m²

Crack Sealing: this cannot be quantified as it depends on the depth of the crack.

Packaging

Leoseal R is supplied in 200kg drums or 15kg re-sealable plastic buckets.

Storage

Protect from frost.

Standards

Leoseal R is a proprietary product manufactured to ISO9001 quality system which covers all Colas manufactured products.

Safety

For full safety information, please download the **Leoseal R** Safety Data Sheet 10 from our website www.colas.co.uk

TPF MASTERBATCH



TPF Masterbatch is a fluxing agent developed to enable more flexibility in the manufacture of a storage macadam.

Where to use?

TPF Masterbatch is used for the manufacture of deferred set macadam.

Application

Why use **TPF Masterbatch**

- No evolution of diluents in storage ensuring consistency of viscosity
- No heating costs during storage
- Storage temperature is approximately 80°C below flashpoint
- Ability to compensate for dense mixes and seasonal changes and varying storage temperature requirements in order to optimise costs
- Uses normal plant bitumens

For further information please contact the National Sales Office.

Packaging

Supplied in Bulk or IBCs.

Storage

Store at ambient temperature.

Standards

Properties

TPF Masterbatch is a proprietary product manufactured to ISO9001 quality system which covers all Colas manufactured products.

Flash point.	>105°C (PMCC BS2000-34)
Storage/pumping temperature.	Ambient
Recommended aggregate mixing temperature.	70 – 105°C
Solubility in CH ₂ Cl ₂ .	100%wt
Density at 15°C.	0.86 - 0.875g/ml

Safety

For full safety information, please download the **TPF Masterbatch** Safety Data Sheet 17 from our website www.colas.co.uk

CP PRIMER



CP Primer is a high quality, low viscosity resin/ rubber solution for priming surfaces prior to the application of Colas **Preformed Surface Dressing** and **Colasgrip**. It should also be used for the priming of joints prior to the application of **Colas Jointfill A2**, **Jointfill N1** and **Jointfill N2** sealant.

Where to use?

See above.

Preparation

Surfaces must be clean and free from dust, oil and fuel spillage.

Application

CP Primer can be applied by either brush or roller to damp but not wet surfaces. It should be applied at ambient temperatures of between 2°C and 30°C.

Preformed Surface Dressing

Apply **CP Primer** as thinly and evenly as possible and allow to become touch dry before applying the **Preformed Surface Dressing**. Applying too much could result in the primer bleeding through or the de-bonding of the **Preformed Surface Dressing**.

Colasgrip

For concrete surfaces apply **CP Primer** as thinly and evenly as possible and allow to become touch dry before applying Colasgrip.

Joint Sealing

Allow the **CP Primer** to dry completely, allowing a minimum of 30 minutes on a dry surface or 90 minutes on a damp surface before applying sealant. Apply sealant within 6 hours. A spread rate of 0.1 – 0.2L/m² should be achieved depending on the porosity of the base. Cellulose thinners should be used to clean tools.

Coverage

CP Primer should be applied as thinly and evenly as possible to achieve a coverage rate of 0.1 – 0.2Lts/m².

Packaging

CP Primer is available in 5 litre metal containers (4 per box).

Storage

CP Primer has a 12 month storage life in original unopened containers. Protect from frost and direct sunlight.

Standards

CP Primer is produced to a manufacturing system accredited to ISO9001.

Safety

For full safety information, please download the **CP Primer** Safety Data Sheet 05 from our website www.colas.co.uk

LEOCLEAN INDUSTRIAL



Leoclean Industrial is a heavy duty cleaner designed to remove bitumen and asphalt grease from all types of equipment used by Highways Contractors. It has been formulated so that when applied it will leave a non-slip coating that will help prevent material from adhering to the surface of the equipment used.

Leoclean Industrial is formulated from derivatives of vegetable oil and has a flash point in excess of 90°C.

Where to use?

Leoclean Industrial can replace red diesel as well as chlorinated and paraffin based solvents in most applications.

Leoclean Industrial is suitable for most surfaces. It is completely safe on all metals, most composite plastics, ceramics, most acrylics, concretes, brick, stone, glass, wood and painted surfaces. It will also not affect any cured resins or vulcanized rubber. Care must be taken on porous surfaces as **Leoclean Industrial** will tend to allow absorption of the contaminant into the surface.

Application

Leoclean Industrial should be applied sparingly onto the affected area and allowed to soak into the contaminant. The softened or dissolved residue should then be removed with absorbent material. Repeat the process if necessary. Remove softened residue off porous surfaces as soon as possible to reduce the risk of any absorption and wash with soapy water.

Leoclean Industrial has a slower evaporation rate than chlorinated solvent. Where production processes require speed, drying can be enhanced by heat and/or hot air (but not naked flames) and/or vacuum.

Packaging

Leoclean Industrial is available in 5 and 25 litre plastic containers as well as 200 litre drums.

Storage

Store in original container wherever possible. Protect from direct sunlight. Do not spray on naked flame or any incandescent material. Keep out of reach of children.

Standards

Leoclean Industrial is manufactured on a purpose-built plant to an ISO 9001 quality system which covers all Colas manufactured products.

Safety

For full safety information, please download the **Leoclean Standard/Industrial** Safety Data Sheet 75 from our website www.colas.co.uk

LEOCLEAN STANDARD



Leoclean Standard is ideal as a heavy duty cleaner for removing mineral oil based marks such as bitumen, asphalt, grease and carbon. It will remove waxes, adhesives, uncured paint and varnish, and also oil based inks.

Leoclean Standard is a cleaner and degreaser, formulated from derivatives of vegetable oils with a flash point in excess of 90°C.

Where to use?

Leoclean Standard can replace red diesel as well as chlorinated and paraffin based solvents in most applications, thus offering a safer alternative for effective cleaning and degreasing.

Leoclean Standard will help clean up creosote, chewing gum, sealants and other mastics. It is ideal for cleaning oil spills off hard surfaces, cleaning combustion engines, parts washing, tank cleaning and adhesive residue removal.

Leoclean Standard is suitable for most surfaces. It is completely safe on all metals, ceramics, concrete, brick, stone, glass, wood and painted surfaces. It will not affect any cured resins and is safe on most fabrics. However, care should be taken when using on silk, leather and some plastics, acrylics and rubbers. Vulcanised rubber is unaffected. On porous surfaces **Leoclean Standard** will tend to allow absorption of the contaminant into the surface.

Application

Apply **Leoclean Standard** sparingly onto affected area, and allow it to soak into the contaminant. The softened or dissolved residue should then be removed with absorbent material. Repeat the process if necessary. Remove softened residue off porous surfaces as soon as possible to reduce absorption and wash with soapy water. Where production processes require speed, drying can be enhanced by heat and/or hot air (but not naked flames) and/or vacuum. **Leoclean Standard** should be washed from the skin using soap and water.

Coverage

The concentrated nature of **Leoclean Standard** means that it should be used sparingly.

Packaging

Leoclean Standard is available in 500ml trigger bottles, 5 litre and 25 litre plastic containers and, on request, 200kg drums.

Storage

Store in original container wherever possible. Protect from direct sunlight. Do not spray on naked flame or any incandescent material. Keep out of reach of children.

Standards

Leoclean Standard is manufactured on a purpose-built plant to an ISO 9001 quality system which covers all Colas manufactured products.

Safety

For full safety information, please download the **Leoclean Standard/Industrial** Safety Data Sheet 75 from our website www.colas.co.uk

OXIDISED BITUMEN



Oxidised Bitumen is a hot applied bitumen complying with BS EN 13304.

Where to use?

Oxidised Bitumen is approved for use as components for the manufacture of roofing, flooring, water-proofing, adhesive, sealing and anti-corrosion products.

Preparation

Ensure area to be treated is clean and free from dust, fuel and oil spillage.

Application

For best results use a heating kettle with an indirect heating system such as hot oil. Ensure that the heating temperature doesn't exceed 200°C and that the oil does not exceed 230°C. When hot, pour either from a melter pourer or galvanised bucket with a 'V' lip.

Coverage

Varies depending on the application.

Packaging

Oxidised Bitumen is available in 25kg silicone coated paper cylinders.

Storage

Oxidised Bitumen should be kept under cover and away from direct sunlight.

Standards

Oxidised Bitumen comply with BS EN 13304 (Bitumen and Bituminous Binders Framework for Specification of **Oxidised Bitumen**'s).

Safety

SAFETY HANDLING PRECAUTIONS (when hot)

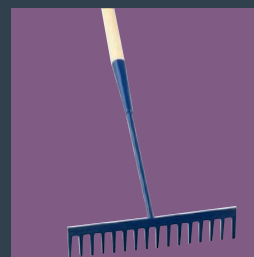
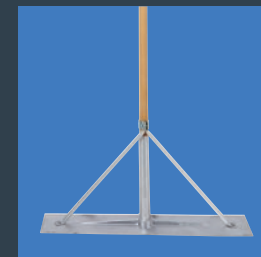
- Wear suitable protective clothing (heat resistant gauntlet gloves, overalls, protective footwear, face visor)
- DO NOT allow water to contact hot material
- DO NOT exceed maximum safe heating temperature
- If molten material contacts skin:
 - DO NOT attempt to remove
 - Immerse affected area in cold running water for at least 10 minutes
 - Seek medical advice without delay

This product is hazardous for transportation when carried at temperatures above 100°C.

For full safety information, please download the **Oxidised Bitumen** Safety Data Sheet 12A from our website www.colas.co.uk

A range of tools is also available through our network of depots.

Please contact your local depot for more information.





UNITED KINGDOM

Contact information

National Sales Office
Colas Limited
Loushers Lane
Warrington
Cheshire
WA4 6RZ
T: 01925 632616

Colas Limited
7 Glenfield Road
East Kilbride
G75 0RA
T: 01355 241242

Colas Limited
c/o Osbourne Motor
Transport Limited
Commercial Road
South Shields
Newcastle
Tyne & Wear
NE33 1RQ
T: 0191 414 7674

Colas Limited
Outgang Lane
Osbaldwick
York
YO19 5UP
T: 01904 431787

Colas Limited
Cakemore Road
Rowley Regis
Birmingham
B65 0QU
T: 0121 561 4332

Colas Limited
Wallage Lane
Rowfant
Crawley
West Sussex
RH10 4NF
T: 01342 711184

Colas Limited
Tan Lane
Exeter
EX2 8EG
T: 01392 207201

Information correct as of 6/12/18