Innovative patching products (IPP) are specially designed and manufactured cold lay asphalts offering highway authorities an alternative to conventional asphalt patching products. They have the following characteristics:

- Relatively low operational cost
- Fast installation
- Minimal disruption to the road user
- Low carbon footprint
- Dependent on the type of repair may not require saw cutting and jack hammering so reduced risk of hand arm vibration and less waste produced
- Unlimited availability in bags and tubs with prolonged shelf life
- Available in bulk bags and open bulk loads

These products offer a fast, efficient and cost-effective way of repairing surface course defects (e.g. potholes) and safety hazards. To obtain the best results it is necessary to give careful consideration to a wide range of detail, to plan and design the work carefully. The speed of the patching operation and the short duration of time during which motorists are inconvenienced is also an important consideration and advantage on roads carrying high volumes of traffic during peak periods.

Cold lay asphalts are essentially asphalt mixtures manufactured using standard aggregates and bituminous binders mixed at elevated temperatures then allowed to cool to ambient prior to packaging in tubs or bags where required. They are cold applied materials used for temporary and permanent repairs. The new repairs can then be trafficked immediately after laying.

Quality assurance

All manufacturers of IPP are certificated to BSEN ISO 9001 Quality Management Systems by a UKAS accredited certification body and have a HAPAS certificate for their product.

All current IPP HAPAS certificates can be obtained from the BBA website www.bbacerts.co.uk

Determining the specification

All IPP’s can be specified in accordance with clause 946 in the MCHW Specification for Highway Works Volume 1 www.dft.gov.uk/ha/standards/mchw/index.htm and also the HMEP Clause 946SP in Guidance for the Development of Standard Specification and Standard Details for Local Highway Maintenance Contracts published by the DfT.

Product selection is mainly determined by the contractor based on the depth and the type of defect. Each site must be considered in the light of its unique characteristics, including nature of surface, geography, volume/speed of commercial vehicles and other traffic using the section of road. Some local authorities may decide to select a preferred product particularly on heavily trafficked roads where end performance is deemed to be a high priority. It should be noted these products are proprietary, should not be confused with traditional deferred set macadam and each product is supplied with adequate guidance to ensure appropriate installation on appropriate sites.

The required site information, planning and execution and traffic management is the same as for other surface treatments.
Product description
IPP’s or cold lay asphalts are available in different aggregate grades typically 3mm, 6mm, 8mm and 10mm to accommodate the need for varying repair layer thicknesses. These products contain a proprietary bituminous binder and graded aggregates to BS EN 13043: 2002.

Cold lay asphalts are generally supplied in pre-packed, ready to use, polythene bags or plastic tubs, one ton bulk bags and bulk open loads. The product packaging is stamped with the product name and aggregate size, weight, storage information, handling and usage instructions plus health and safety information. In addition, there is a batch number for traceability to the date of production. When stored correctly in the sealed container the product will have a storage life of at least three months in bags or six months in plastic tubs and in some cases in bulk open loads and one ton bags.

PSV requirement is site specific and is normally specified by the local authority as determined from the Design Manual for Roads and Bridges volume 7, section 5, HD36/06 Table 3.1. Cold lay asphalt products usually contain aggregate with a PSV above 60.

Site suitability
Cold lay asphalts can be used for temporary repairs and also as a permanent cold-lay surfacing material when formulated to give a performance equivalent to hot-lay materials. Cold lay asphalts are particularly suitable for reactive (Category 1 within 24 hours) or planned maintenance (Category 2 within 28 days) small works such as pothole repairs, street ironwork, repairs to footways, access covers and link boxes.

Manufacture quality control
Cold lay asphalt manufacture is regulated under HAPAS and manufacturers should also be registered to BS EN ISO 9001.

The manufacture details are as shown on the product’s HAPAS certificate.

On site storage
Cold lay asphalts, bond coats including sprays and skid resistant over-banding tape, must be stored in cool, well-ventilated, dry conditions, protected from frost and high temperatures.

Climatic considerations and surface preparation
Cold lay asphalt repairs can be applied when air and road temperatures are between -5°C and 40°C.

The damaged area to be repaired should be marked out and the edges normally saw cut back to sound material. The prepared area should be regular in shape. For high-speed roads BS 434-2:2006 recommends a diamond shape. Note some product manufacturers claim saw cutting is not always required for their products.

Prior to patching the area should be cleaned and free from debris and contaminants such as loose materials and standing water.

In accordance with the Specification for the Reinstatement of Openings in Highways (SROH) some manufacturers recommend applying a bond coat to the vertical edge of the repair prior to compaction to ensure good bond is achieved when the cold lay asphalt is fully compacted. For ease of use, bond coats are now available in spray cans and brush pouring grades.

Prior to patching an area should be cleaned and free from debris.
The manufacturer will advise the contractor regarding how best to compact the cold lay asphalt, including surcharge, to ensure it is well compacted achieving a durable dense finish.

The material is compacted to the surrounding level using a suitable compactor/roller in accordance with the certificate holder’s instructions or Section S10 and Appendix A8 compaction requirements of the SROH.

The product must be fully compacted. Compaction must cease before migration of binder to the surface or crushing of aggregates is observed.

Installation of a HAPAS approved anti-skid thermoplastic over-banding system to the edges of the reinstatement is recommended by some manufacturers to seal and waterproof the joints.

On completion the installer should visually inspect the finished surface for uniformity and any discernible faults and remedy these if necessary.