



Putting new life into tired surfacings

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Chief Executive

www.rsta-uk.org

Firstly...

- Thanks to Alan for covering the first part of my presentation this morning



Secondly...

- Thanks also to Jeff Farrington for stating the case for Surface Dressing which covers the second half of my presentation!



Jeff's webcam!

This morning we have had lots of context...



Extreme Winter Conditions



Exposing the poor winter resilience of local roads

Pothole Plague



ALARM Survey

£10Bn Maintenance Backlog

The treasury takes
c.£45Bn in road
taxation each year but
the government only
spends c.£4.5Bn on
roads

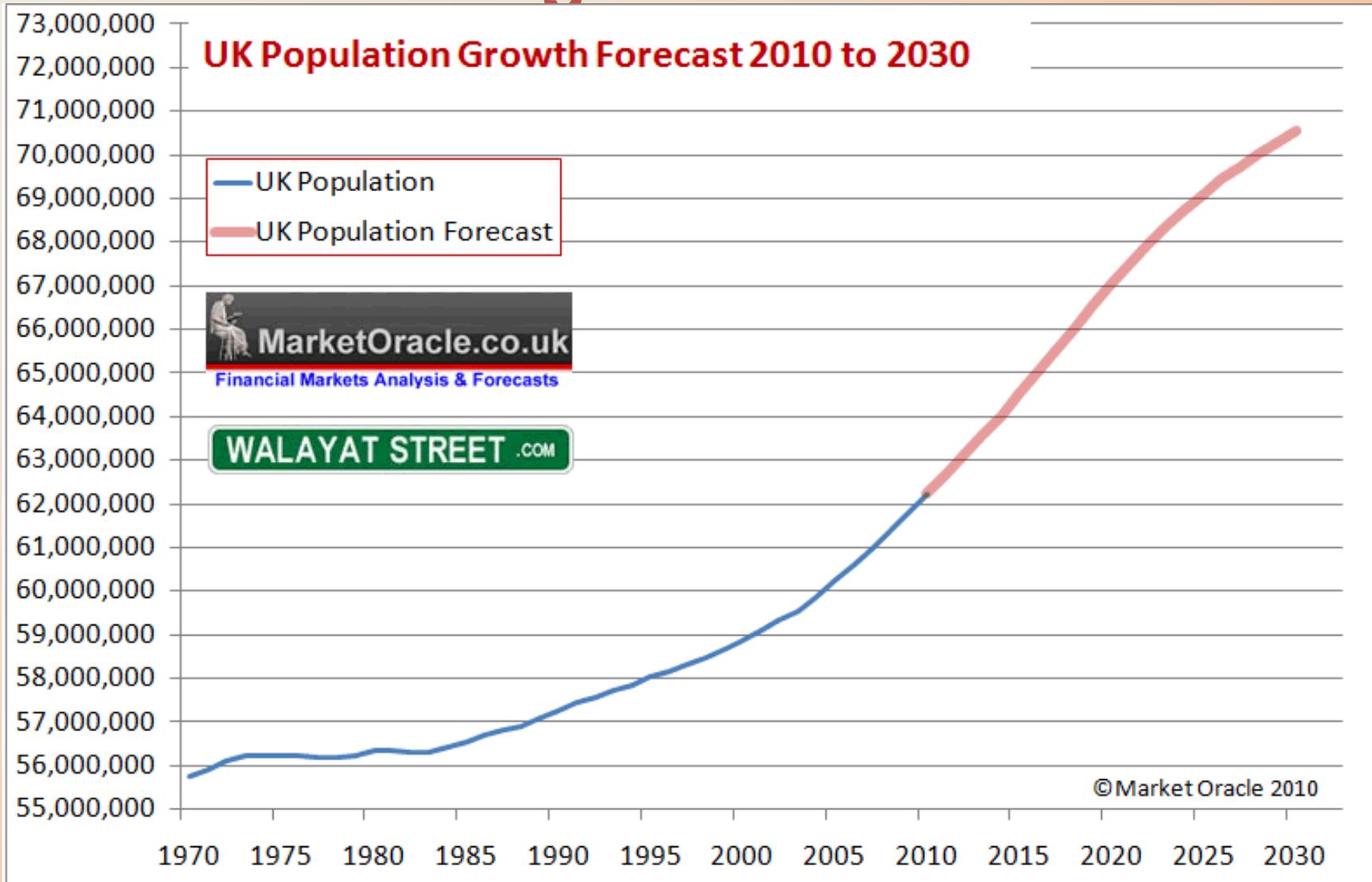


Reducing Highway Budgets



Councils need to save 30% over next 4 years

Increasing traffic levels in UK



Increasing Input Costs



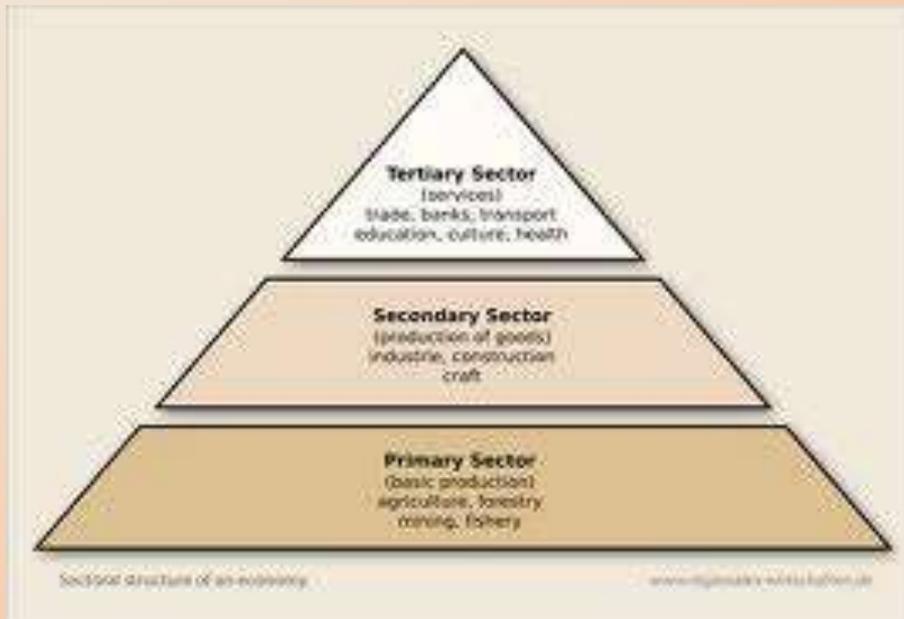
Whole of Government Accounting



Councils need to report the value of assets under their control and roads make up 50% !

Wider Context

- **But** – despite these issues we need well maintained, longer lasting roads to protect public safety and help the economy to start growing again



Context

- **Surface treatments have a significant role to play...**
 - Helping highway authorities to adopt a preventative maintenance approach
 - Putting new life into tired road surfacing's – stretching budgets
 - Improving the winter resilience of local roads by sealing the surface preventing potholes
 - Maintaining public safety (skid resistance)
 - Helping local authorities meet Carbon reduction targets



Road Surface Treatments



Surface Treatments Market Size



80+ Million m² used per annum mainly on local roads

Comparative Costs and Life

Type	Application	£ / m ² +/-10%	Expected Life years
Surface Dressing	Estate roads, rural areas, urban routes	1.50 – 2.50	10-15 *
Slurry-surfacing	Footways	2.50	10 *
Micro-surfacing	Urban roads	3-4	10 *
High Friction Surfacing	High Stress areas	12	4-8*
Re-texturing – bush hammer	Almost anywhere	3	3 - 5
Asphalt Sealants	Anywhere	2-3	3 - 5
Geosynthetics & Steel Meshes	Major roads	7	3-7 fold increase in pavement life

* Service life agreed with ADEPT

Surface Dressing



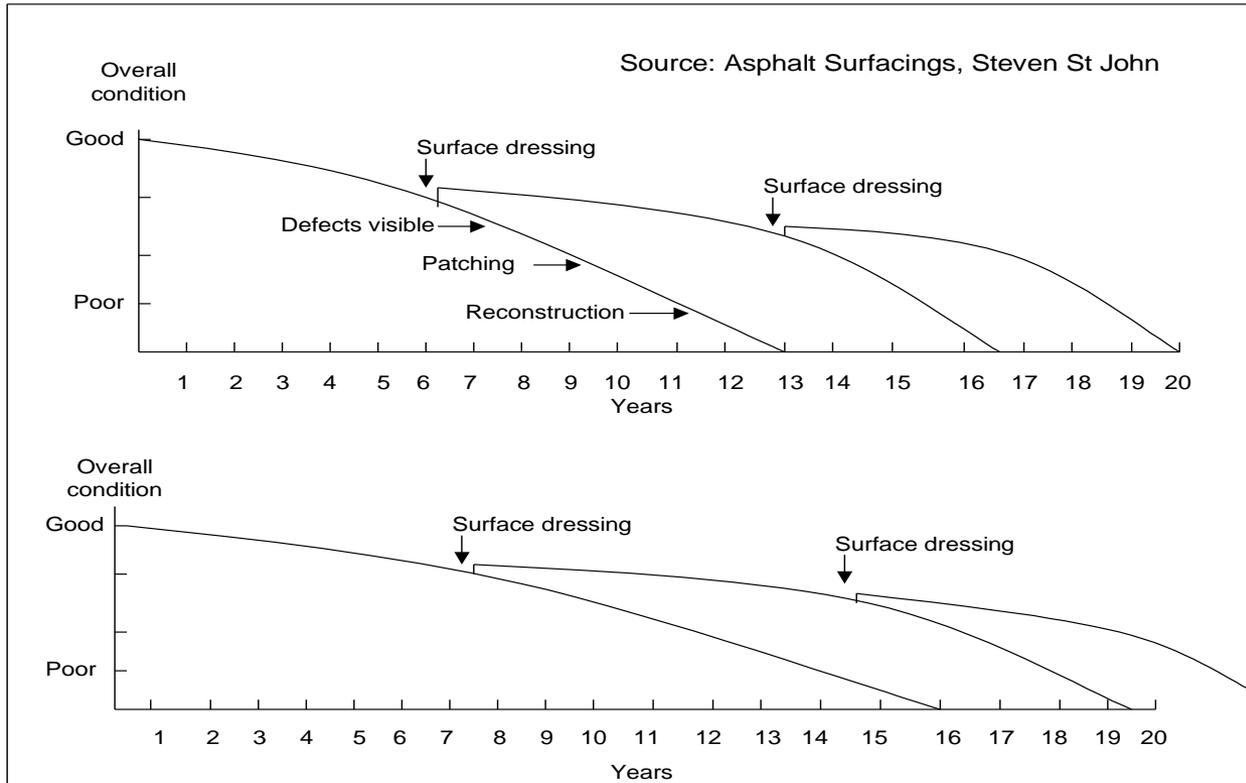
Surface Dressing

- Restores Skid Resistance
- Seals the surface, helps prevent potholes
- Economic option and delays major spend
- Cost Life Index = 20p M² per annum
- Fast installation, high daily outputs, minimum disruption
- Low carbon footprint



Surface Dressing

Extending time to structural maintenance



Surface Dressing Applications

- Carriageways
- Footways
- Cycleways
- Car parks



Regulation



- Product Standard
- Design
- Installation
- Code of Practice
- Carbon footprint

Product Standard



BS EN 12271 came into effect in UK in January 2011 and CE marking is mandatory from July 2013. Some contractors and many clients are unaware!

Design Guide



DESIGN GUIDE FOR ROAD SURFACE DRESSING

By C Roberts

With the advice of a panel representing the Industry and the
Clients under the Chairmanship of J C Nicholls, TRL Limited

Road Note 39 (Sixth Edition)



Workforce Training



Contractors should be registered to National Highway Sector Scheme 13

This ensures operatives/supervisors have relevant NVQ's and CSCS cards endorsed by RSTA

Also means they maintain competency by attending RSTA Training courses

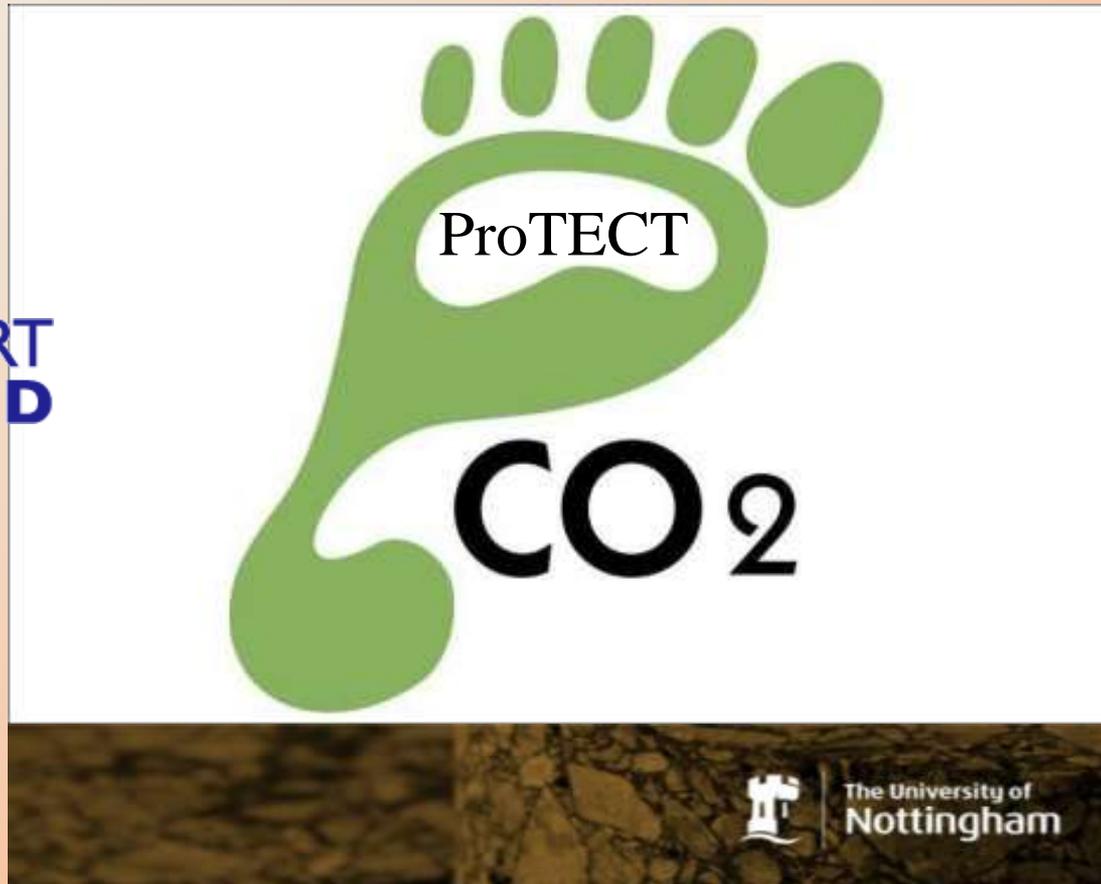


Carbon Foot-printing

ADEPT

TRANSPORT
SCOTLAND

mpa
essential materials
sustainable solutions



Pavement Treatment Embodied Carbon Tool

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Surface Dressing Market Size



c.60 Million m² in 2011

Overall market c.35% lower than 1995



Slurry Surfacing

- A cold mix asphalt – ideal urban solution
- Relatively low cost per square metre
- Seals substrate and improves wear/skid resistance
- Regulates surface profile
- Fast, open to traffic in 20 minutes
- No waste



Applied by hand or machine



Slurry Surfacing



Micro Surfacing

Slurry Surfacing Applications



- Carriageways
- Footways
- Cycleways
- Car parks
- Playgrounds
- Airfields
- Reservations and Islands



A Potential Micro-Surfacing Site

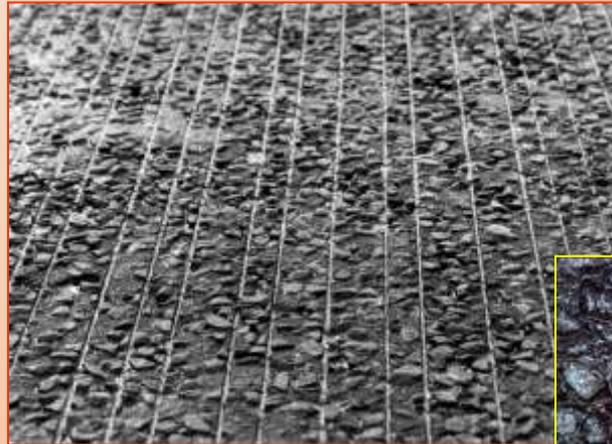


Product Standard



BS EN 12273 came into effect in UK in January 2011 and CE marking is mandatory from July 2013.

Re-texturing



Water Jetting

Transverse grooving



Bush hammering

Re-Texturing Benefits

- Restores the necessary level of skid resistance to the road surface, it does not improve pavement condition
- Roads can be treated even in wet conditions
- Rapid treatment minimising congestion
- Uses no aggregates or binders
- **Low carbon footprint solution**
- Generates minimal waste
- **Guidance in HD37/99**



Re-Texturing Methods

Fluid Action



Cutting

Scabbling

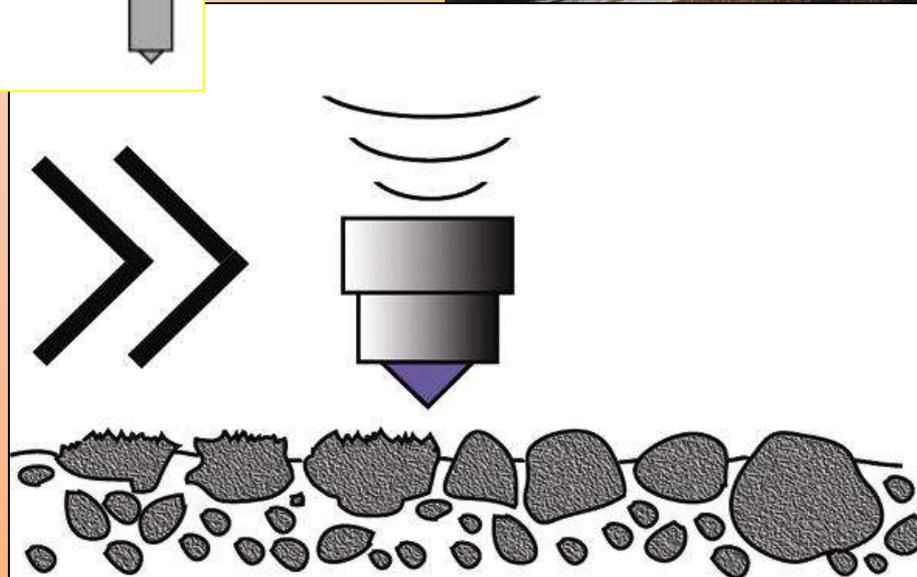
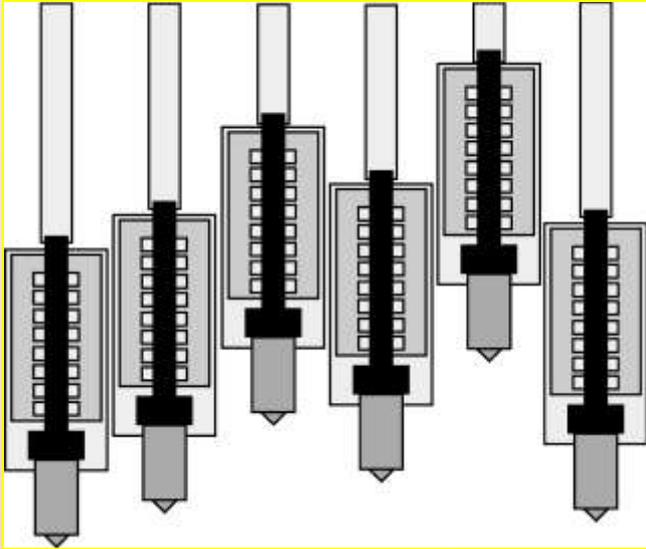
Flailing



Impact Methods

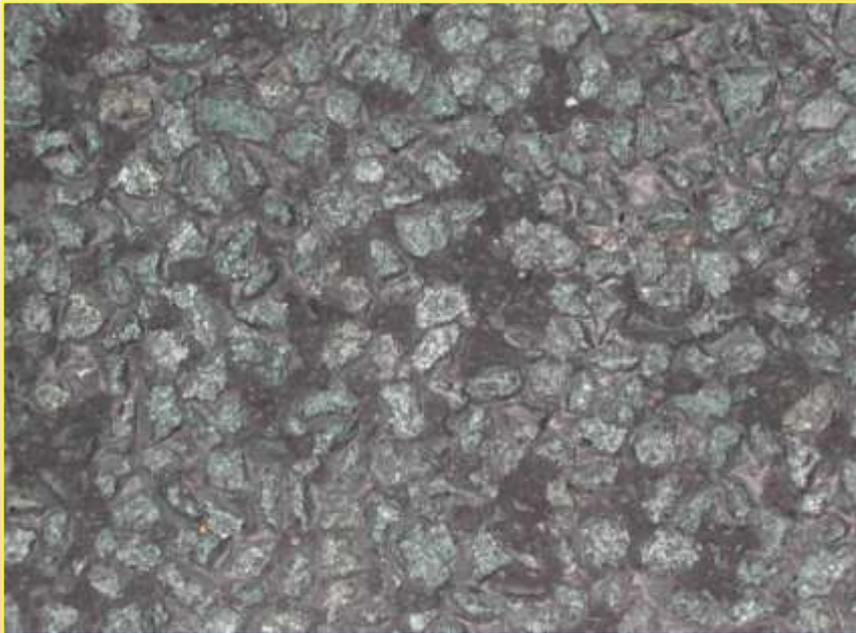


Bush Hammering



Bush Hammering

Before



After



Thermal Road Repairs



Heating and rejuvenation

- Controlled temperature **650°C** - 8 min cycle
- 100mm heat penetration without carbonising bitumen binder
- Softens the surface to enable re-work
- Bitumen emulsion and aggregates then added and mixed in



Many Applications

Reactive Maintenance / Cat 1 Defects

Planned Defects

Potholes

Joint Failures

Metal work

Utility tracks

Cracks & Crazing

Crowning / Depressions

Footpaths



Thermal Road Repair

Safer to use

90% CO₂ reduction

No EXCAVATION or WASTE

No DUST or NOISE

No MULTIPLE VEHICLES

No LANDFILL - Everything

RECYCLED



**Best New Product
2008 Winner**



**Best Environment Process
2008 Winner**



**Fife Council
Green Business Award
Innovation 2009**



Velocity Patching



Velocity Patching Road Repair Machine



Self contained, 2 man operation – Repairs c.200 Potholes before refilling

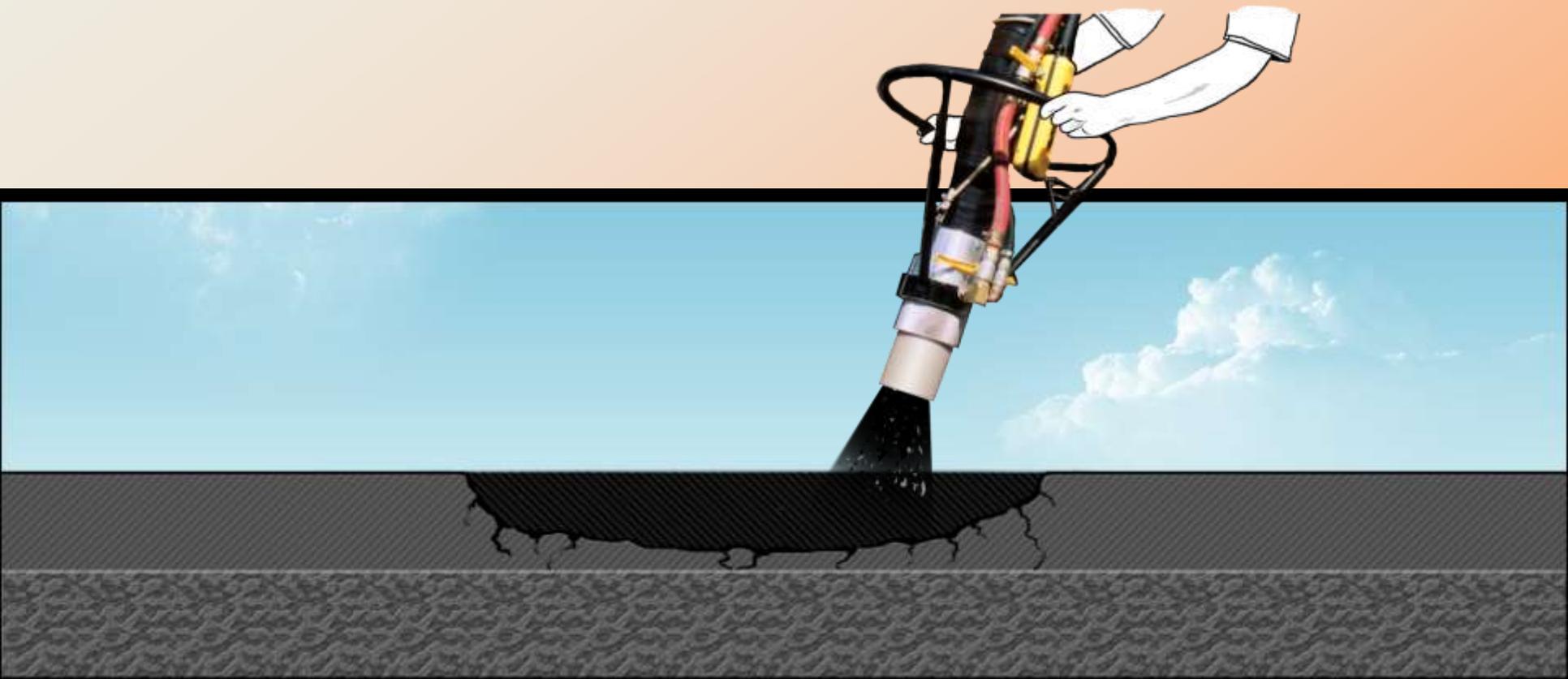
Operator Controls

All of the key functions are at the Operator's finger tips

- Driver / Operator communication system
- Emulsion
- Aggregate
- Output
- Electronic Defect Reporting
- Sand for use in urban areas



Velocity Patching 3 Stage Process



1. High Volume Low Pressure Air Cleans the hole
2. Bond coat applied
3. Coated aggregate applied



Velocity Patching



3 potholes in 3
minutes

Preventative Maintenance



Before



7 Months After

Repairing crazing can prevent the site becoming a major defect

Velocity Patching Benefits

- Can **save up to 80%** cost compared to conventional repairs
- **Low Carbon Footprint**
- Fast installation, minimal disruption to road users – reduced traffic management costs
- Minimal waste generated
- Can receive traffic immediately
- No noise, no dust, no hand arm vibration issues



Sealants



Sealants

- Seals the surface, stops water getting in
- Helps reduce potholes, extends pavement life
- Gritted initially to protect SCRIM
- Needs re-applying after 3-5 years
- Works on all asphalt surface types
- Long season (March – November)
- Can be applied at night
- More than 2 Million m² applied in UK
- BBA HAPAS Certificate
- Code of Practice



Crack Repair Systems

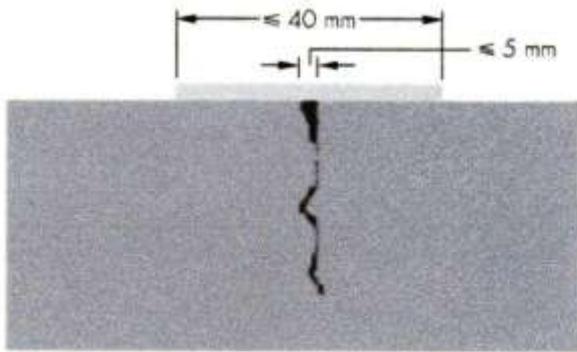


Figure 1 Overband

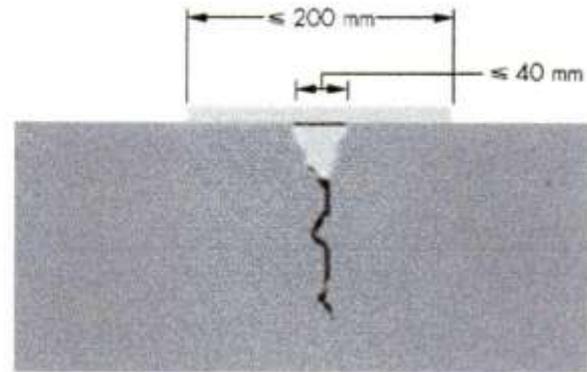


Figure 2 Fill and overband

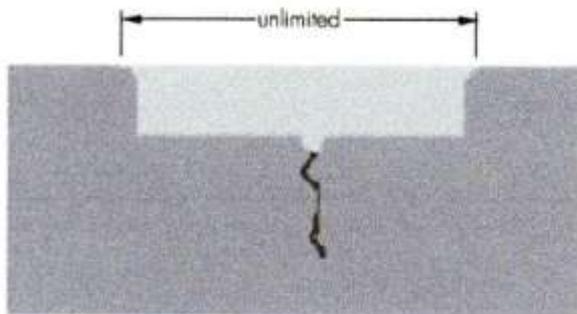


Figure 3 Inlaid single crack

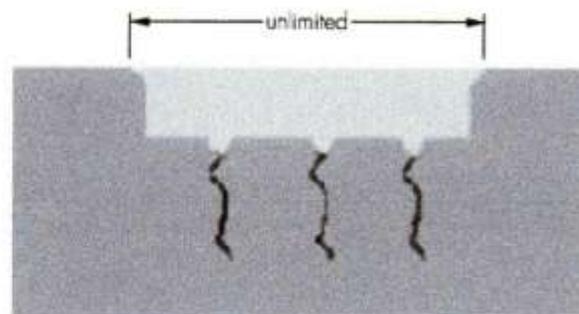


Figure 4 Inlaid multiple cracks

Inla id System

A recess 200mm x 20mm is cold-milled. Requires extra plant and labour including a HGV to transport the planer



Inlaid System

The recess is filled with bituminous compound and dressed with 1-3mm high PSV aggregate.



Typical Applications

Repairs cracks, open seams and joints in all Asphalt road surfaces



Versatile



Benefits



- **Low environmental impact**
- **Economic**
- **Minimal waste**
- **Fast installation**
- **Versatile**
- **Not seasonal**
- **Lower carbon footprint**
- **High Skid Resistance**

Geosynthetics & Steel Meshes



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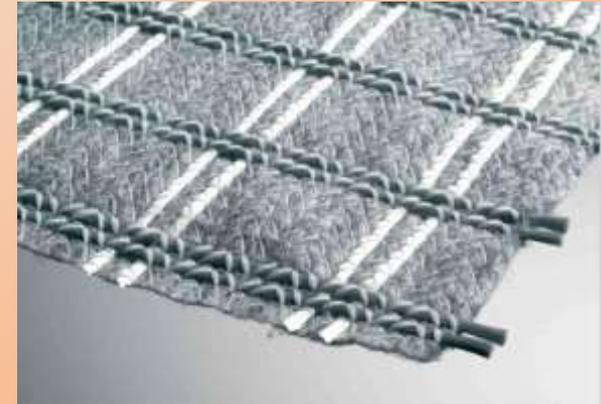
Geosynthetics & Steel Meshes



Steel Mesh



Polymer Grids



Composites



Glass Grids



Non-woven
Fabrics

Geosynthetics & Steel Meshes



Reflective Cracking on
Concrete Bays



Thermal movement



Cracking from expansion
joints



Surface failure from
underlying Setts



Alligator cracking due to
structural failure



Utility trenches

Geosynthetics & Steel Meshes



Geosynthetics & Steel Meshes



Geosynthetics & Steel Meshes



Geosynthetics & Steel Meshes used in Surface Dressing



What Next?

-   working closely to raise awareness of what is available
- **7** New RSTA-ADEPT Codes of Practice published in 2011-12 and now available on RSTA website.
- ADEPT product selection guide to be developed in 2012
- RSTA CPD Training courses and a new Diploma for anyone who needs educating



Thankyou for listening

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