

Welcome



Cracking & Seating

The Environmentally Friendly Way

Treating failing concrete roads.

12/12/2011

Introduction.



Dear Engineer,

Welcome to our journey into learning why Cracking & Seating can play a significant role in the repair of failing, poorly maintained and overstressed concrete carriageways, and why today Crack & Seat is one of the most popular concrete carriageway repair systems in the U.K and Ireland for reducing the likelihood of reflective cracking in new overlays.

Engineers Criteria



Projects to be
completed
quickly

Cost
effective &
competitive

No future reflective
cracking.
Long term durability

Traffic must have
immediate access

Minimise disruption

Keep road open



Analysis of a Failed Concrete Road.



- Determine the condition of the materials.
- Investigate the reasons of failure.
- Collate the findings.
- Identify the various remedial options.
- Determine the preferred repair option.
- Carry out the works efficiently and cost effectively.

With Cracking & Seating analysis is simple.



- Is the concrete slab failing or already failed?
- Is the slab a minimum of 100mm thick?
- Is the concrete slab Pavement Quality Strength?
- Do you need to significantly reduce future reflective cracking?
- Is cost a factor?
- Is time a factor?
- Do you need to save money?

Causes of Pavement Failure.



- Excessive wheel loading beyond original design.
- Ingress of water.
- Failure of the expansion joints.
- Rocking slabs.
- Voids or undermining from utility companies works.
- Temporary reinstatements.
- Subsidence of sub grade / sub base.



- Note: Any one or a combination of these factors will cause reflective cracking in any new overlay without remedial treatment.

Typical Sites for Crack & Seat.(1)



12/12/2011

Typical Sites cont.(2)



12/12/2011

Deciding on a maintenance option.



- What are Engineers real maintenance options?
- Overlay with 180mm?.....No to many level restrictions!
- Reconstruction?.....No to expensive!
- Seal the joints?.....No cannot stop movement!
- Grouting?.....No cannot treat stress cracking!
- Cracking & Seating?.....Yes! Why?
- It treats the complete concrete slab, finds voids and soft spots and reseats the concrete base back down onto the sub-base, re-establishing sub-base support!

What is Crack & Seat?



- The treatment of badly cracked & moving concrete road slabs.
- Converting a rigid concrete road into a flexible road base.
- The generation of multi-random hairline fractures.
- Creating 45 degree cracks.
- The diminution of reflective cracking.
- Reseating the concrete back onto the sub base.
- Reconstruction without excavation.



Specification.



- Minimum thickness of concrete base 100mm
- Concrete should be P.Q. and a minimum of 20kN/m².
- Machine is a single multi stroke pneumatic hammer with variable impact pressure.
- Cracks to be induced at 45°.
- Cracks to be fine <0.5mm wide and full depth.



The Process.



- Recycles existing concrete.
- Induces multi hairline fractures.
- Creates a mechanically bonded interlocked block.
- Distributes wheel loading evenly.
- No puncturing or pulverisation!
- Minimum vibration.

The Benefits.



- An average of 1500m² treated daily!
- Stops rocking and moving road slabs!
- Stops traffic vibration transmission to dwellings!
- Eliminates differential settlement!
- Time saving!
- Established process!
- No need for road closure!



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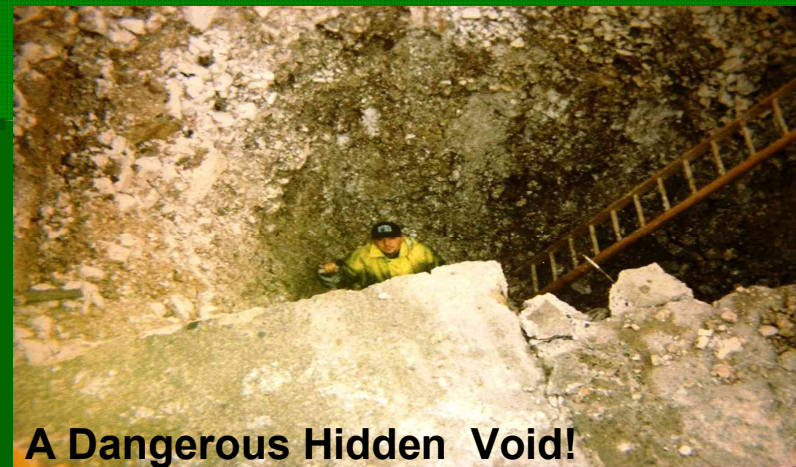
13

Note: The protective guards have been removed to allow these picture to be taken.

The Benefits (cont)



- Environmentally friendly!
- Site can be trafficked immediately for up to several weeks safely!.
- Reduces overlay requirements!
- Needs only minimum supervision!
- Treats all of the concrete, not just the joints!
- Finds hidden voids!
- Don't let voids catch you out!



A Dangerous Hidden Void!

Overlays.



- *Most overlays are suitable, except micro asphalts, surface dressing or S.M.A.
- A minimum of 40mm for light to moderately trafficked roads.
- A minimum 70mm for busier roads & industrial estates.
- Did you Know:
The D.Tp. recommends that around 150mm of bituminous overlay is usually needed to prevent reflective cracking, as long as all the existing defects and failure mechanisms in the concrete are rectified before resurfacing!

Note: Each site must be assessed to its specific requirements.

Advantages of Cracking & Seating a Rigid Pavement with an existing overlay.



- No adjustments of:
- Kerb lines
- Footways
- Thresholds
- Height restraints
- Barriers
- Street furniture



Plane off existing surfaces



Note: All bituminous surfaces except surface dressing / slurry seal must be removed before treatment. On occasions it is possible to Crack & Seat through some thicker overlays.

12/12/2011

Advantages of Cracking & Sealing a Rigid Pavement which has had no previous overlay.



- Although some original features will need to be raised to accommodate a first ever overlay+for example: manholes gullies etc. it is possible to crown+the overlay in the centre of the carriageway and taper down thicknesses at the edges or plane out at channels to maintain an adequate kerb face without renewing the footpaths or kerbs.



History Photo Album (1)



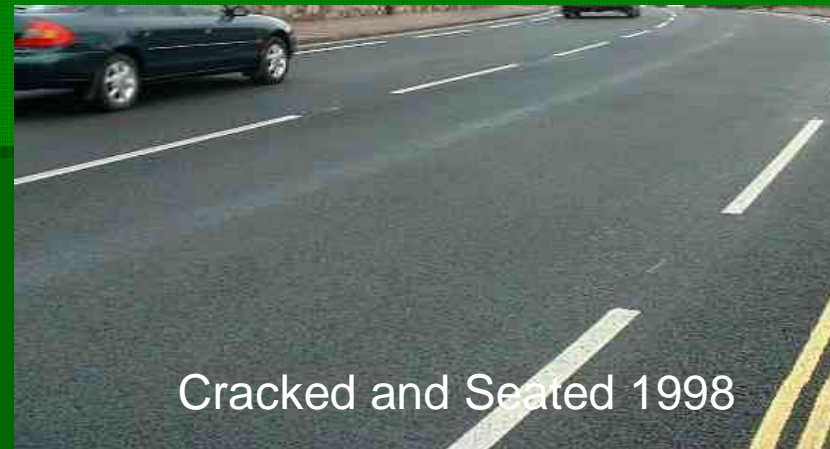
Cracked & Seated 1998



Cracked & Seated 1992



Cracked & Seated 1997



Cracked and Seated 1998

History Photo Album (2)



Cracked & Seated 1995



Cracked & Seated 1996



Cracked & Seated 1999



Cracked & Seated 1996

Cost Analysis.



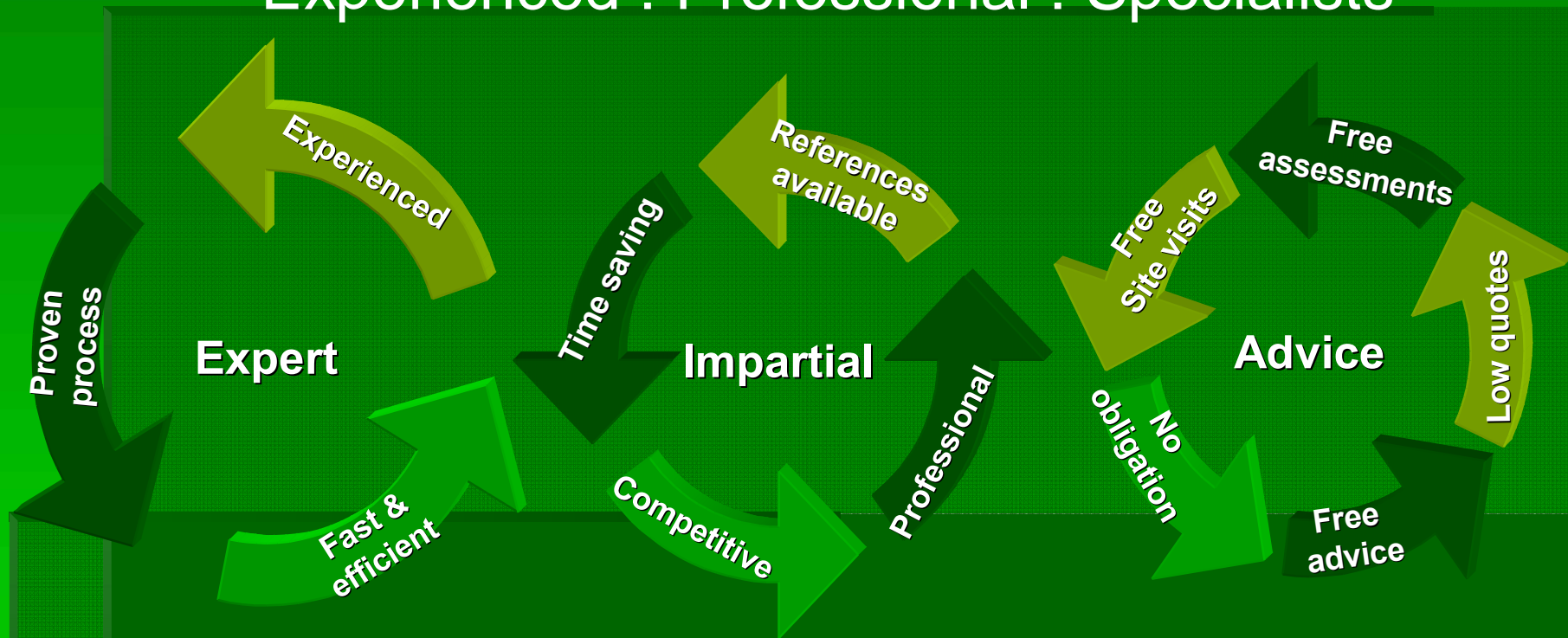
- 80% cheaper than reconstruction.
- Requires minimal supervision.
- Uses existing material.
- No importation of costly new materials.
- Exceptionally competitive process.

Note: Minimum area required for treatment - 1500m²

Our Strengths.



Experienced : Professional : Specialists



Reminder of the Key Benefits.



- Established process in U.K. & Ireland!
- Reduces disruption!
- Environmentally friendly!
- 1500m² treated daily!
- Cost effective!
- Road can remain open!
- Simple but wholly effective treatment!
- Rejuvenates old and badly cracked roads!
- We specialise **only** in Cracking & Sealing!
- Personal overseeing throughout the contract!
- Free no obligation site visits and quotes!



Next Step.



- If you have a site which you would like some free advice on regarding our process of Cracking & Seating, then please contact us at the U.K. & Ireland's only Cracking & Seating Specialists, Highway Systems, for expert, experienced and specialist advice on..

Cracking & Seating+

Quotation.



- Site assessment visits without obligation!
- Competitive quotation that has no hidden costs!
- Cheaper than all other processes!
- Please contact us now!



Contact us @



- Highway Systems @ D-Drill Ltd.

- Shilton Industrial Estate
- Bulkington Rd
- Shilton
- Coventry
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25



**Thank You,
For Your Time and Interest in our
Company and its Process of
Environmentally Friendly Concrete
Carriageway Rehabilitation.**

