NiteSite®
LEIGHS ROADMARKINGS

LEIGHS PAINTS®

# The IHT/Atkins ***Road Safety*** Award - 2008

*NiteSite gives reproducible structured road markings allowing excellent wet night visibility to assist design engineers in the reduction of accidents on the roads, which contributes greatly to the safety of all road users.*

An integral part of the 10 year plan for transport (produced by the Department for Transport in 2000) is a need to improve safety. The aim is to reduce the number of people killed and seriously injured by 40% by the year 2010.

County Councils throughout the United Kingdom are keen to improve safety on the roads and road markings offer easy to understand information for guidance and safety. During the night, both in the dry and wet, this level of safety reduces. But, 50% of all accidents happen during the night when it rains, even though these conditions only occur 10% of the time - interesting, considering there are less vehicles on the road at this time.

Less than 1% of the UK's current roadmarkings are suitable for wet night visibility. Conventional thermoplastic flat lines disappear when wet as water ponds on the surface and the reflective glass beads are submerged - causing the vehicles headlights to ricochet away from the eyes of the driver.

Graham Harper of Cheshire County Council states:

*"Since the early 90's we have had major problems with performance flat lines, which has involved us in many contract disputes. It has become clear from speaking to Managers / Directors in the road marking field that they can't guarantee the retroreflectivity and skid resistance of performance flat lines……"*

*"The other important point to note is that 'flat' lines achieve between 0-10mcd/m$^2$/lux in the wet making them virtually invisible."*

NiteSite is a highly reflective road marking. In the wet, it is 10 times brighter than conventional flat lines and 3 times as bright in the dry.

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A solvent free, reactive methacrylate, 2 component material, formulated for application by plural component airless spray or 2 component extrusion machines. Applied at approximately 1.5 micrometers dry film thickness.

Retroreflective and anti-skid properties are achieved by dispensing a glass bead/flint mixture into the film surface (optimum properties are achieved by approximately 60% impregnation into the film surface), immediately after application of the wet paint. In practice, this is carried out by an automated spray process at a rate of 0.4kg/$m^2$.

The distinctive appearance (discontinuous film) of the NiteSite brand, is achieved by modifying this automated spray process, allowing the wet paint to cascade over a revolving cylinder, prior to landing on the substrate. The surface also allows water to disperse rather than pond on top of the road marking so that the road marking remains visible.

Unlike conventional thermoplastics that are hot applied, NiteSite is a COLD applied product, which helps in improving operator safety.

The outstanding durability will enable users to significantly reduce costs by greatly increasing the intervals between line renewal.

Using technology new to the UK, NiteSite is a methylmethacrylate material that is also known as MMA or cold plastic. Applied using a spiked roller, NiteSite creates a white line that has peaks and troughs. This type of structure allows water to be easily dispersed, allowing the vehicles headlights to reflect back to the eyes of the driver.

After 5 years of challenging the mindset of industry, NiteSite is beginning to have an effect on road safety. Over the past 4 years, the improved visibility is proving to significantly reduce accidents in Cheshire and other areas.

After 4 years exposure NiteSite is still achieving values over 230 mcd in the dry and 118 mcd in the wet. On the stretch of roads where NiteSite is applied Cheshire County Council (CCC) have calculated their

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first year rate of return at 600%. Graham Harper (Senior Technical Advisor) from CCC quote:

"*At the four year evaluation point, NiteSite is exceeding Cheshire's two year performance requirements, with retro-reflectivity values of over 230, mcd/m$^2$/lux dry and 118 mcd/m$^2$/lux in the wet, which is very impressive compared to traditional thermoplastic markings.*

*In my mind the true test of a road marking is its ability to make the highway safer for road users, whilst providing value for money. In both respects I am pleased to say NiteSite has done just that. In the 3 year post application, we have seen personal injury accident figures drop from 16 to 6, with no wet-dark accidents, providing a first year rate of return of 550%! In view of this I would have no hesitation in using this product in the future*."

These results are solely due to the application of NiteSite, no other safety measure was put into place.

In addition the following case study also provides evidence of accident reduction:

- Hampshire County Council - 2004

  Previous 3 years (prior to NiteSite)
  - 3 recorded wet night personal injury accidents

  After 2 years (no other safety measure was put into place)
  - 0 recorded wet night personal injury accidents

Other projects include:

- Cheshire County Council - A556, A559, A500
- Lancashire County Council - A683
- Durham County Council - C96, A689
- Essex County Council - A11, A414
- Hampshire County Council - Poles Lane, B3049
- Shropshire County Council - A528
- Derbyshire County Council - A57
- Shetland Islands Council - A968, A970

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- The State of Jersey Transport and Technical Services - Beaumont Hill
- Department for Transport (near Stonehenge) - A303
- Cornwall County Council - Leedstown

and further discussions have been held with Devon, Staffordshire, Surrey, Lincolnshire, Northumberland, Highways Agency Area 3, Highways Agency Area 7, Highways Agency Area 8, Highways Agency Area 10.

The long term benefits of NiteSite (i.e. high retroreflectivity, excellent durability and superior colour retention) gives highways engineers a best value solution whilst most importantly saving lives.

Supporting information includes:

- Case Studies
- Testimonials
- Monitoring Studies
- Marketing Literature

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