



Reduce rolling stock carbon footprints with tinted LLumar® Anti-Graffiti Coating

LLumar's innovative Anti-Graffiti Film is designed to provide train operators and leasing companies with a cost-effective solution to vandalism to glass. Already proving a success with transport companies and operators across the UK and the continent, the product is also being specified because of its solar control properties – which can help reduce operators' carbon footprints.

Llumar Anti-Graffiti Film is the most cost-effective answer to glass etching problems on rail rolling stock. Applied to glass, the coating will protect it from vandals who etch or mark the glass leaving a vandalised train carriage – and an expensive glass replacement problem for the train operators. The film provides an invisible barrier. Vandals etch or mark what they think is glass, but they will only be damaging the film. The coating can then simply be removed and replaced by technicians or LLumar-accredited installers. This leaves the glass looking like new – at a fraction of the cost of replacement glazing

and a fraction of the downtime. Rolling stock need not be taken out of operation for long periods of time. Plus, in the event of glass being broken, the LLumar coating will also hold the shards of glass in place until it can be safely replaced, preventing injury to staff and customers.

While the majority of LLumar sacrificial coatings applied are clear – so vandals don't know they have been applied – CPFilms produces tinted films that have very effective solar control properties. CPFilms is the world's largest manufacturer of window film and produces a number of solar control and glare reduction films for glass – in homes, offices and cars. By combining this

technology with anti-graffiti characteristics, the films prevent damage from vandalism as well as reducing overheating and glare within the train carriage from summer sunshine. Glare can be a problem for passengers and can make reading information screens, newspapers or books difficult, and with the new generation of trains equipped with WiFi technology so laptops can be used while travelling, glare will make this computer use difficult too. Glare reduces visibility, causes eye strain and impairs colour perception – but an application of LLumar film can reduce glare by up to 94 per cent.

The aim of solar control films is to limit the amount of solar energy that enters a train compartment causing excessive heat gain and putting pressure on air conditioning. The provision of air-conditioning significantly increases the energy load of each train, and consequently the carbon footprint of the train operator. With climate change now so high on the political agenda, it is becoming a commercial imperative for businesses to



carbon footprint.

The film should be applied to the glass in each carriage prior to the vehicle going into service, but it can be applied retrospectively. The coating is therefore very appropriate and cost effective for operators who lease their rolling stock and who have to return the carriages in the condition they received them.

LLumar Anti-Graffiti Film complies with the Railway Group Standards required for application on passenger rolling stock. Detailed information is available on request. ■

For more information about LLumar Anti-Graffiti sacrificial coatings, please contact the CPFilms technical helpline:

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take steps to minimise energy usage and reduce their carbon footprints.

It is recognised that swapping plane or car travel with train journeys is one way for consumers to reduce their individual carbon footprints. Trains are ten times more energy efficient than plane travel (according to the DEFRA, rail journeys in the UK typically emit only 0.04kg of CO₂ per person for each kilometre travelled), but train operators can go further and reduce their energy consumption with the application of solar control film to their rolling stock. As well as minimising



energy consumption and subsequent costs, flagging up this commitment can be an effective marketing tool.

The application of a tinted LLumar Anti-Graffiti film is a simple and cost-effective solution. Temperature reductions when using a LLumar solar control film can be as much as 8°C. This will produce a significantly more comfortable environment for passengers and reduce the load on air-conditioning plant – which means lower energy consumption and a smaller

Graffiti problems?



...the solution is clear

LLumar Anti-Graffiti Film is a cost-effective solution to vandalism of glass. Forming an invisible barrier, the film protects glass from marks and etching. The coating can then simply be removed and replaced – at a fraction of the cost and downtime of replacement glazing.

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