



BRIDGE DECK WATERPROOFING

Elmigator<sup>®</sup>

**MMA**  
TECHNOLOGY

**stirling lloyd**

THE TECHNOLOGY OF PROTECTION

# 100% EFFECTIVE WATERPROOFING



*Bridges are vulnerable.*

*They are subject to attack by water, chlorides and atmospheric gases leading to deterioration and the compromising of their designed structural integrity.*

*Findings from many research studies around the world confirm that conventional bridge deck waterproofing systems have failed to offer the protection required.*

Several thousand structures successfully waterproofed to date

*However, since the development of Eliminator the problem of inadequate waterproofing is an avoidable one.*



## Purpose Designed by Engineers

Eliminator is the result of an independent 8 year research programme to develop the ideal bridge deck waterproofing membrane.

In the mid 1970's British Rail's bridge committee launched an investigation into the deterioration of bridge decks.

All existing systems were found to be inadequate.

A specification for the ideal membrane was drawn up by leading civil engineers and a systematic development programme to achieve this goal was initiated.



**The first fact to emerge from the extensive laboratory and site trials was that a seamless membrane was the most effective method of waterproofing.**

Systems based on several polymers were developed and evaluated. But it became clear that only the system based on methacrylate could meet the physical and chemical properties required under site conditions.

Nothing else offered so many advantages or was as user friendly.

The methacrylate system ultimately developed became known as 'Eliminator'.





# QUITE SIMPLY ELIMINATOR PROTECTS

*A rapid cure, cold liquid spray applied system based on methacrylate monomers, Eliminator forms a tough, flexible seamless membrane with no vulnerable joints and is resistant to chemical attack by oil, fuels, brine and dilute mineral acids.*

## Proven Cost Effective Long Term Protection for Road and Rail Bridges

Eliminator has an unparalleled track record of over 20 years with the first applications showing no signs of deterioration.

Eliminator is designed to outlast the design life of the structure and results in large savings both in current contract and future maintenance costs.

It offers an effective, cost-efficient solution to the problem of bridge deck waterproofing



## Approvals.

Being based on engineering criteria rather than commercial criteria it is no surprise that Eliminator became the first spray applied bridge deck waterproofing membrane to gain formal approval from the UK Department of Transport (DTp) and the British Board of Agrément (BBA).

Further approvals from institutional bodies world-wide have followed:



# FAST TRACK WATER PROOFING

*Eliminator can offer the rail engineer  
several distinct advantages:*

- Tough enough to receive ballast directly onto the membrane.
- The speed of application and weather tolerance is often vital to successful completion of waterproofing on overnight possessions.
- Waterproofing of new decks can take place on site or at the fabricators yard, with rapid and effective application to weld and fixing areas between plates once the bridge has been assembled on site.



UBAtc



SNCF



# ALL THE EXPERIENCE

*Since the introduction of the system, structures on every continent have been successfully waterproofed with Eliminator.*

*Used on concrete or steel, road or rail, new or existing structures, Eliminator can be applied in climates ranging from the sub-zero to the high humidity tropics, allowing all year application virtually anywhere.*

*Our depth of experience of projects world-wide has led to the development of a range of fully compatible primers and tack coats, enabling Eliminator to accommodate the various types of steel and concrete substrates and surfacing encountered.*



## No Contest

*Eliminator offers distinct advantages to owner/specifiers, engineers and contractors alike:*

### Owner/Specifier:

- 100% effective protection.
- 20 year plus unparalleled track record.
- far longer service life, reducing life cycle costs.

### Engineer:

- seamless with no vulnerable joints.
- accommodates all surface contours, profiles and verticals.
- unique on-site QA programme

### Contractor:

- rapid application, up to 2000m<sup>2</sup> per day.
- tough and durable, no protection or sand asphalt carpet required.
- applied in the widest range of climatic conditions.

## Faster All Weather Application

Due to its unique formulation Eliminator cures rapidly whatever the weather, is far more tolerant of difficult conditions than other membranes and can be readily applied in sub zero temperatures.

Even in the depths of winter, Eliminator will cure and be ready for the next element of the system or the surfacing within one hour.

Applied to dry surfaces Eliminator is unaffected by moisture, rain or high humidity offering the widest weather window of application.

Simple to use, specifically developed spray units give high daily application rates. No heated lines are necessary and spraying can take place up to 60m from the mixing head, including 15m vertically.



# IN THE WORLD



## Outstanding Durability

As well as being resistant to damage during the surfacing operation, a key to the performance of the Eliminator system is its unsurpassed cohesive strength and its adhesive bond strength to the deck and surfacing.

Up to ten times greater than those of sheet systems, Eliminator's excellent bond prolongs service life, aids composite action on steel orthotropic decks and ensures it is the ideal membrane where design criteria allows for only a thin layer of surfacing.



# SAFER TO APPLY

Eliminator is based on resins that have been in widespread industrial use for over 50 years in which time there has been no evidence to suggest that they represent any risk.

The system is fully compliant with USA Volatile Organic Compound (VOC) regulations and independent risk assessments, carried out in accordance with the UK Control of Substances Hazardous to Health (COSHH) regulations, indicate the application of Eliminator to be a low risk process.

As a result the risks to operatives and public alike are minimised, with a corresponding reduction in safety related expenditure.



## THE SYSTEM

- a) **PRIMER** - used to penetrate and seal the substrate enhancing the system's intimate bond to the deck.
- b) **MEMBRANE** - methylmethacrylate resin membrane that provides the 100% effective waterproofing.
- c) **TACK COAT/BOND COAT** - helps enhance the bond between the membrane and the subsequent surfacing.



Eliminator was specifically developed to produce the ideal physical properties required of a bridge deck waterproofing system.

Working environment variables, such as operating temperature and the nature of the structure, may necessitate a system to meet local demands.



Stirling Lloyd have addressed this by being able to offer the Eliminator System in a range of grades.

These, coupled with our world-wide, on-site technical support and development and testing services help ensure the selection of a system fully compatible with the local environment and materials. As a result Eliminator systems are available to accommodate a wide variety of climate, design and performance criteria.

# DESIGNED TO MEET YOUR NEEDS



# ANCILLARY

# PRODUCTS



*Stirling Lloyd offers a full range of ancillary products that are also methacrylate based and fully compatible with the Eliminator system and each other.*

*They also offer rapid curing - irrespective of temperature and can be overcoated within an hour.*

- **Eliminator HG** - Two component waterproofing compound for application by brush or trowel where spraying is impracticable.
- **Metaset** - A range of high strength mortars for repairing decks and for filling and bonding concrete elements.
- **MSL Mastics** - Developed for filling joints and gaps particularly where restricted thermal movements occur.
- **Sentinel Joints** - A range of buried and expansion joint systems.



# A COMPREHENSIVE PRODUCT RANGE FOR THE CONSTRUCTION INDUSTRY

## WATERPROOFING MEMBRANES

*Bridge decks*  
*Tunnels*  
*Structural Waterproofing*  
*Secondary Containment*  
*Roofing*

## EXPANSION JOINTS

*Road*  
*Rail*  
*Car Parks*  
*Buildings*  
*Sealants*

## SKID/SLIP RESISTANT SURFACING

*High Friction Surfacing*  
*Cycle Tracks*  
*Slip Resistant Coatings*  
*Traffic Calming*  
*Road Markings/Demarcation*

## WATERPROOFING AND WEARING COURSES

*Car Parks*  
*Footbridges*  
*Bridge Decks*

## ROOFING SYSTEMS

*Membranes*  
*Insulation*  
*Drainage Layers*

## CONCRETE REPAIR AND PROTECTION

*Rapid Setting Mortars*  
*Protective and Decorative Coatings*







## A WORLD WIDE NETWORK OF AGENTS, REPRESENTATIVES AND APPLICATORS



# **stirling lloyd**

THE TECHNOLOGY OF PROTECTION

[www.stirlinglloyd.com](http://www.stirlinglloyd.com)

Stirling Lloyd Group plc, Union Bank, King Street, Knutsford, Cheshire, WA16 6EF, UK. Tel: +44 1565 633111 Fax: +44 1565 633555.

Stirling Lloyd Products Inc., 152 Rockwell Road, Building A, Newington, CT 06111 USA. Tel: +1 860 666 5008 Fax: +1 860 666 5106.

Stirling Lloyd Asia Pacific, 26B The Manhattan, 33 Tai Tam Road, Hong Kong. Tel: +852 3197 0221 Fax: +852 3197 0421.

E-mail:

Group Headquarters: [info@stirlinglloyd.com](mailto:info@stirlinglloyd.com)

North America Division: [northamerica@stirlinglloyd.com](mailto:northamerica@stirlinglloyd.com)

Asia Pacific Division: [asiapacific@stirlinglloyd.com](mailto:asiapacific@stirlinglloyd.com)