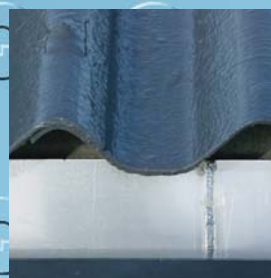


# The Garland Asbestos Roof Renovation System



since 1895



The Garland Company is a business steeped in the history and traditions of a worldwide waterproofing industry. Customer care is a phrase used repeatedly throughout this profile. This is no coincidence as it continually defines the philosophy and strategy of the Garland Company in the UK and internationally.

## The Garland Company and RAMP®



Founded by J.B. Wise in 1895 as a supplier of refining products, The Garland Company has developed from a local manufacturer and distributor of oils, greases and paints into one of the industry's worldwide leaders of high performance roofing and building maintenance systems specialising in the architectural, local authority, commercial and industrial markets.

By listening and remaining dedicated to its clients needs, The Garland Company has succeeded by providing innovative solutions in a demanding and ever changing market. Its range of membranes, standing seam systems, liquid coatings, and flooring solutions have gained worldwide recognition for their quality and longevity.

The Garland Company has completed many projects throughout the UK. From industrial complexes, to local authority educational and social housing contracts and commercial buildings.



Like all assets you cannot afford to have an "out of sight, out of mind" mentality with your building envelope, especially the roof. Roofing is one of the most expensive investments that a building owner can make; so it pays to keep track of its performance.

The Garland Roof Asset Management Program (RAMP®) with its integrated package of professional roof management services is designed to extend the longevity of your roofs, while increasing the value of your properties.

Lost guarantees, inconsistent documentation from one facility to the next, neglected maintenance, lack of timely communication during work-in-progress and unanticipated loss of revenue related to emergency repairs. All these become problems of the past after organising your roofing records in the RAMP customised database. You can document periodic maintenance, verify roof conditions and manage your roofing assets proactively.

*The Garland Company offers a truly nationwide service. To talk to your nearest Regional Technical Manager or to find out more information please contact us on*

Telephone: 01452 330646 or 0800 3285560

Fax: 01452 330657

Email: [info@garlandukltd.co.uk](mailto:info@garlandukltd.co.uk)

[www.garlandukltd.co.uk](http://www.garlandukltd.co.uk)

# Garland Asbestos Roof Renovation System



The Garland Asbestos Roof Renovation System (GARRS) is an innovative system for the renovation of asbestos roofs that are reaching or have reached end-of-life and are being considered to be replaced with a new roof covering. The system uses a new proven, safe and partially automated cleaning process, to clean asbestos roofs and the subsequent application of White Knight, a liquid waterproofing membrane to restore rejuvenate and upgrade the surface. The process requires no mechanical fixings and provides a means of extending the service life of the existing roof covering that would otherwise require expensive removal and replacement or over-cladding.

## System Overview

1

### Survey and Report

The process of renovation begins with a full survey to record the condition, make records of the roof, establish the extent of any repairs and write a report and specification for GARRS and the application of the White Knight finish.



2

### Safety

All work is carried out strictly in accordance with the guidelines laid down by the Health & Safety Executive. The operation is closely monitored by trained operatives experienced in the process to ensure all aspects of the process are carried out safely.



3

### Preparation

Any roof sheets that are badly cracked or damaged are replaced with sheets of a similar profile. Fixing bolts that are damaged are replaced, bolts that are loose are tightened. Gutters and downpipes are checked and cleaned to ensure they are free-flowing.

4

### Specialist Asbestos Strip Cleaning

Garland are business partners with the world leader in safe asbestos removal who have developed a dedicated process to clean and prepare asbestos sheeting roofing in a safe, streamlined and thorough manner.



5

### White Knight™ Application

The final stage of the process is the application of White Knight used in conjunction with fibreglass matting to provide additional reinforcement. White Knight has a BBA British Board of Agrément Certificate and carries the Energy Star accreditation.

6

### RAMP™

Your technical representative will be pleased to assist you in registering your completed GARRS project on the Garland RAMP database to assist you with your roofing programme and to help you plan for eventual replacement.



# Specialist Asbestos Cleaning

As with all finishes, preparation is key to their success and the application of White Knight is no exception. A high standard of surface preparation is necessary to ensure a high level of adhesion of White Knight to the substrate to ensure a long trouble-free life. Garland have worked with a specialist in the cleaning of asbestos to develop a Roof Cleaning System that semi-automates the cleaning process and achieves an impeccable standard of preparation safely and efficiently.



## Preparation

Close attention is given to both the condition of the existing sheets, fixings, penetrations and rooflights. Any asbestos cement sheets that are badly cracked or damaged are repaired using a compatible material or replaced with sheets of a similar profile. All fixings/fixing bolts are inspected and those damaged or badly corroded or missing are replaced. Surface lying water, mould growths, moss or other vegetation and loose debris are removed from areas to be coated. All rainwater outlets and down pipes are cleaned and checked to ensure free flowing water. The surface is then high pressure cleaned with the specialist asbestos Roof Cleaning System.

## Specialist Asbestos Cleaning

The Roof Cleaning System's (RCS) service process is based on an innovative technology developed during 2002 for remediation of 1940's constructed buildings at UKAEA Harwell, Oxfordshire. Due to the age the buildings would not support more than a few kilos per square metre. The method of cleaning is high pressure water through a one metre width head designed for whichever roof cladding sheet profile is in-situ. The cleaning head is fully shrouded eliminating overspray and asbestos fibre release.

The waste residue is collected by a hopper with sufficient capacity to cope with light rainfall. The waste is then passed through a series of filters.

The remaining filtered water is disposed into a storm or foul reticulated water disposal system. Remaining concentrated waste is then securely double bagged and removed from site for correct disposal. A biocide is applied to surfaces that have been thoroughly cleaned to guard against subsequent infection.

An RCS supervisor attends during all cleaning operations. Contractor's employees are trained to use the equipment in accordance with Health & Safety Executive requirements. They will also be trained wherever necessary in asbestos awareness, decontamination, use of personal protective equipment (P.P.E) and working at heights.

A detailed method statement is written for each contract.

# Garland White Knight Application



G A R R S

The Garland Company have manufactured and supplied a range of tried and tested Liquid Roof Waterproofing solutions for over three decades. These coatings, based on the latest plastics-based technology, allow safe, fast to install, cost effective and seamless roof protection. Fully guaranteed for 10, 15 or 20 years, the specialist preparation of the asbestos roof is finished in White Knight liquid roofing, Garland's definitive liquid roofing product.

## Application Process

The application of White Knight is accomplished in five steps:

1. All-Knight Primer
2. Reinforcement
3. Base Coat
4. Finish Coat
5. Inspection

### All-Knight Primer™

Following thorough cleaning of the roof sheets a coat of All-Knight Primer is applied to the Asbestos Cement Roof Sheet Surfaces. All-Knight Primer is a copolymer sealant formulated to prevent staining and degradation of surface coatings with its unique bleed blocking characteristics.



**Provides Maximum Surface Adhesion** - All-Knight Primer ensures a long lasting flexible bond between the existing roof surface and the Garland White Knight Base Coat and Finish Coat.

**Dries Quickly, Reduces Total Job Time** - All-Knight Primer is formulated to dry tack-free within 1-2 hours at 77°F (25°C).

**Environmentally Friendly** - All-Knight Primer eliminates the flammability and toxicity hazards associated with solvent based primers.

## Reinforcement

Particular attention is paid to joints in the roof including penetrations such as flues, pipes, upstands, roof lights, all bolt heads, side laps and end laps of asbestos cement roof sheets. An embedment coat of White Knight is applied to joints and GARMAT glass fibre matting tamped or brushed into the area until the mat is completely embedded and thoroughly saturated. Reinforcement areas are left to dry thoroughly before application of the basecoat.

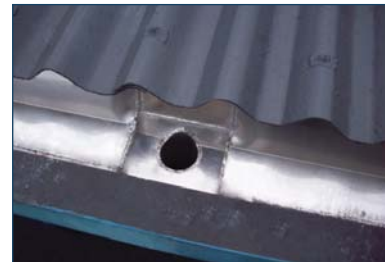


## Basecoat

A basecoat of White Knight is then applied to the primed and reinforced asbestos cement roof sheet.



At this stage the roof is thoroughly checked to ensure that there has been a 100% coating of all surfaces. The roof is then left to completely dry before adding the finishing coat.



## Finish Coat

The final coat of White Knight finish is then applied over the whole roof, covering the basecoat. Checks are made to ensure that the correct coverage is applied to all areas.

## Inspection

Following a final inspection by your Garland Regional Technical Manager a guarantee certificate is issued.





Versatile, energy saving and chemically resistant, White Knight is the ultimate liquid membrane refurbishment solution to provide additional reinforcement and weatherproofing to your roofing system. White Knight's reflective eggshell finish reduces roof temperatures more than traditional dark EPDM, CSPE, and PVC single ply membranes. This dramatically lowers the aging process of the product and the energy required to cool the interior of the building.

# White Knight™



White Knight is a multi purpose single component polyurethane liquid waterproofing membrane, designed for new build and to maintain, restore and upgrade the performance of existing, aged, BUR, single ply and asbestos cement roofs.

It is uniquely formulated to provide additional waterproofing protection to BUR, single ply membranes and asbestos cement roofs. This versatile product can be used as a coating or it can be utilised in conjunction with fibreglass matting to provide additional reinforcement.

**Energy Saving** - This dramatically lowers the energy required to cool the interior of the building. In addition, white ENERGY STAR roofs help reduce smog and the urban heat island effect that is prevalent in many UK metropolitan areas.

**Chemical Resistant** - The White Knight system is uniquely formulated to provide superior chemical resistance to many oils, acids and other contaminants.

## About ENERGY STAR



ENERGY STAR® is a registered trademark of the USA Government and represents a collaboration between

the United States Department of Energy, the United States Environmental Protection Agency and influential manufacturers such as The Garland Company.

The ENERGY STAR Programme represents a voluntary partnership between businesses, organisations and the USA Federal Government to promote energy efficiency and environmental activities.

ENERGY STAR labelled roof products are reflective and can reduce roof surface temperature by up to 20°F decreasing the amount of heat transferred into a building.

Whilst ENERGY STAR is a US initiative, UK specifiers can benefit from Garland's adherence to these rigorous standards.

## Product Benefits

### No fixings or drilling -

In refurbishment situations liquid roofing systems are usually applied over the existing waterproofing, therefore removal of the existing system is avoided. There is no need for any form of temporary roof, and contract time is faster than most conventional systems.

White Knight has a British Board of Agrément certificate that includes an independently verified specification.

### Waterproofing protection -

White Knight without reinforcement will provide up to 2500 microns (2.5mm) of additional waterproofing protection to an existing roof surface. This process will extend the life of the existing roofing system and allow reasonable time to budget for eventual replacement.

**UV Resistant** - This high performance polyurethane coating protects roofing components from the harmful effects of UV.

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**BBA** BRITISH BOARD OF AGREEMENT  
 Agreement Certificate No 07/4473

**PRODUCT SHEET 1 - WHITE KNIGHT ROOF WATERPROOFING SYSTEM**

**PRODUCT NAME AND SUMMARY OF DESCRIPTION**  
 This Certificate relates to the White Knight Roof Waterproofing System for use on flat and sloping roofs with limited slopes.

**KEY CERTIFICATE INCLUDES**

- Access relating to compliance with UK Building Regulations where applicable
- Factors relating to additional non-regulatory information where applicable
- Independently verified technical specification
- Assessment of third party technical investigations
- Design considerations
- Installation guidance
- Regular surveillance of production
- Formal third-party review

**KEY FACTORS ASSURED**

**Weathering/leakage** - The system will resist the passage of moisture into the building (see section 4).  
**Resistance to delamination** - In the case of the system in flat construction use and/or on roof to be connected under the Building Regulations. The use of the system in a sloping construction will be subject to a restriction of at least 0.5m from a parapet boundary under the Building Regulations (see section 5).  
**Adhesion** - The adhesion of the system is sufficient to resist the effects of any likely wind suction acting on the roof (see section 6).  
**Resistance to mechanical damage** - The system will accept the limited foot traffic and loads associated with the condition and maintenance of the system and the effects of thermal or other minor movement due to floor in practice without damage (see section 7).  
**Durability** - Under normal service conditions the system should provide a durable waterproof covering with a service life of at least 10 years (see section 8).

**The BBA has awarded this Agreement Certificate for the White Knight Roof Waterproofing System to:**  
 Garland Company UK Ltd as far as it relates to use provided it is installed, used and maintained as set out in this Agreement Certificate.  
 On behalf of the British Board of Agrément

Date of first issue: 18 September 2007  
 Oleg Cooper: Chief Executive

**British Board of Agrément**  
 Building use: Commercial  
 Location: Walsby  
 Product: 00007

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 email: info@bba.org.uk  
 website: www.bba.org.uk

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# Garland Approved Contractors

To achieve long-term performance from any BUR system it is vital that strict criteria is adhered to at the installation stage. Garland will only recommend contracting companies whose attitudes towards site performance and client care are in line with the same high principles as their own.



**APPROVED CONTRACTOR**

The quality of your planning and specification demands the services of a like minded contracting organisation. The Garland Company will provide you with a list of approved partnered companies who have met the criteria set down in our stringent approval process.

We strive to partner with companies possessing only the highest standards of workmanship at this critical stage of your project. We insist on competent pricing, proficient site practice and effective contract management from all our approved contractors.

But assigning a contractor is not the end of our involvement in the project. Your Garland Regional Technical Manager will monitor the performance of the contractor over the course of the project and ensure that all works are being carried out in line with the specification, to codes of practise and that they also meet all aesthetic considerations. Once work is completed a thorough inspection of the project will ensure that the contractor has met all the considerations laid down in the original specification and that all works are completed to the full satisfaction of The Garland Company and the specifying client.

The workmanship of our approved contractor network is approved and guaranteed against failure under the terms and conditions of the subsequent Garland guarantee.



## The Garland Guarantee

All Garland high performance roofing systems come with the commitment of a long-term guarantee so your building stays dry and leak free. Garland stands behind that commitment, knowing that each application comprises of a uniquely engineered roofing system that was installed by a highly proficient Garland Approved Contractor.

Depending upon product and criteria, guarantees of up to a thirty year duration are available to our UK clients. Your Garland Regional Technical Manager will discuss your guarantee requirements and provide a proposal based on system choice and duration available. Full details of guarantees and criteria are available on request.

Clients can take comfort from the guarantee being issued following stringent inspections that ensure all criteria have been met.

Garland are confident that, owing to the provision of a complete roofing service that is second to none in the UK roofing industry, your guarantee certificate will stay in the project file for the duration of the roof's long and unblemished life. It is reassuring, however, to know that a guarantee of integrity is in place should it be required.

Along with Garland long-term guarantees, specifying clients can take comfort from the existence of British Board of Agrément (BBA) accreditation and the FM approval certification for certain products in the Garland range of systems.





since 1895

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