Use, maintenance and inspection of waterproof roofing systems

Polymer-Modified Distilled Bitumen Membranes

CONTENTS

1. INTRODUCTION - FOREWORD

Roofs require regular maintenance to ensure the waterproofing system keeps performing at its peak and retains its properties in the long term.

Generally, each country has its own standards and rules for the correct maintenance of roof waterproofing systems and you must refer to these standards/rules to ensure the correct ongoing management of your roof system. In Italy, for example, a specific technical standard has been introduced, attesting to the importance of maintenance: UNI 11540:2014 *"Guideline for the drafting and right implementation of the maintenance program of continuous roofing made with flexible sheets for waterproofing"*.

This standard provides useful information on drawing up and implementing a routine maintenance plan for continuous roofing produced using flexible waterproofing membranes.
The standard comprises a number of parts:

a) Roof user guide. This contains information aimed at users to help them understand how best to use the roof.
b) Maintenance manual. This contains the information needed to maintain the roof correctly.
c) Maintenance schedule. This contains information on the maintenance inspection stages and relevant intervals in order to manage the roof correctly over the course of its service life.

The roofing system Designer is tasked with drawing up the maintenance manuals and schedule.

This document prepared by Polyglass SpA provides information to help you use and maintain POLYGLASS modified polymer distilled bitumen membranes (MBDP) and roofing systems correctly. This information can be used as a foundation for preparing a more comprehensive and specific inspection and maintenance schedule to be drawn up by the Designer.

The technical properties/performance of any product inevitably deteriorate over time as a result of stress and environmental factors, such as temperature (especially high temperatures during the summer months), the harmful effects of freeze/thaw cycles, snow, hail, etc..
Critical factors will be indicated herein along with the resulting action to be taken to avoid problems and boost the waterproofing system's service life and performance.

2. MAINTENANCE AGREEMENT

The job of installing continuous roofing with MBDP membranes involves specialist work, meaning suitable expertise and equipment are required to lay and maintain the membranes correctly. Consequently, we advise the Owner and/or Manager of the building to take out a roof inspection and scheduled maintenance agreement directly with the Specialist Waterproofing Company.

Maintenance performed by non-specialist personnel, in addition to not producing the desired outcome, can actually damage the roofing and put their and others' safety at risk.

3. ROOF ACCESS

Roof access must be granted only to authorized personnel who have received suitable training and instruction and have been advised on the hazards and risks encountered on the roof.

The roof must always be accessed in full safety, in compliance with all current accident-prevention regulations. To avoid falls from heights, suitable collective protective equipment must be provided (parapets, scaffolding, etc.) and/or, as an alternative, personal protective equipment (anchor points, life lines, safety harnesses, etc.) must be used.

All personnel accessing the roof must be issued with suitable PPE for the task at hand.

EXPOSED ROOFS AND BALLASTED/PROTECTED ROOFS

Waterproof roofing systems produced with polymer distilled bitumen membranes (MBDP) can be classified into the following categories:
- Exposed roofs
- Ballasted and protected roofs.

EXPOSED ROOFS
On exposed roofs, the waterproofing membrane is left exposed to the effects of UV rays and resulting high temperatures during the warmer months. In order to ensure the membrane offers lengthy service life and lasting performance, it must therefore be protected from this kind of stress.

This protection consists in:
- Surfacing with mineral slate chippings (operation performed at the manufacturing facility), producing what are commonly referred to as "mineral-surfaced membranes"

or

- Coating with protective or reflective paints (operation to be performed on site), producing what are commonly referred to as “smooth membranes” or “black membranes”.

Specific maintenance for this kind of roofing generally consists in standard cleaning and inspection work, with special attention paid to the efficiency of the protective coating.

BALLASTED AND PROTECTED ROOFS
MBDP waterproofing membranes are used to produce ballasted and protected roofs and are formulated to withstand the stress encountered under the ballast (gravel, slabs, concrete screed, paving, roof gardens, etc.); in this type of application, they are not directly exposed to the elements and UV rays.

The areas of the waterproofing membrane covered and protected with ballast are no longer accessible, while areas that are left directly exposed (generally, vertical turn-ups) are in need of protective treatments like those required for exposed roofs.

Specific maintenance for this kind of roofing generally consists in standard cleaning and inspection work, with special attention paid to the efficiency of the protective coating in areas left exposed.

5. COATING AND MAINTENANCE OF A NON-SURFACED BITUMEN COVERING

The coating is usually applied to the surface of a polymer bitumen membrane that is directly exposed (exposed roofs): this membrane must be an APP (plastomeric) membrane as SBS (elastomeric) products cannot be left directly exposed to the harmful effects of UV rays and hence require mineral surfacing (mineral-surfaced membranes) or ballasting (concrete covering or other ballast).

In the case of traditional or APP-modified Reoxthene membranes, they must be coated with special protective or reflective paints, which are part of the POLYGLASS range (for instance, POLYVER ALU, POLYSINT SUN REFLECT, etc.) and must be compatible with the product’s bituminous matrix: choose a coating to suit the individual case’s specific traits and requirements.

The paints are generally highly reflective coatings and often have mineral or aluminium pigments added to keep the membrane’s temperature down as much as possible. We recommend, wherever possible, that you refrain from using overly dark colours.

To apply and maintain the coating, we recommend you proceed as follows:
A) Before coating, leave the membrane to dry long enough to allow any oily residues in the bitumen material to evaporate (approx. 2 to 3 months): when installing the roofing with very high temperatures (summer months),

this may take longer. Sometimes, before coating, you may find it best to wash down the bitumen membrane first.

WARNING: Failure to comply with the above-mentioned time restrictions can result in rapid deterioration of the paint.

B) You will normally need to apply two coats of protective paint, leaving a few hours between coats and, in any case, waiting until the first coat has dried completely.

C) The life of the coating will vary depending on such factors as latitude, the product's exposure, environmental conditions, proper roof pitch and the amount of paint applied. Protective paints can be expected to provide effective protection for approx. 2 - 4 years, after which the membrane will require recoating. It is good practice to inspect the painted membrane at least once a year to check its state of repair and, where necessary, take appropriate action on any areas where it has deteriorated.

WARNING: Ponding can occur on flat roofs with an incorrect or insufficient pitch. Pooling water results in the premature ageing of paints, the first sign of which is "crazing" on the surface, eventually culminating in the paint coming off.

D) Check that drains and gutters are clean and working properly to stop water ponding on the roof.

E) Check that seals produced with silicone mastic on metal trims or flashing used to finish off the waterproofing membrane at vertical turn-ups (perimeters, chimneys, skylights, etc.) are watertight.

F) Where building services (chillers, air ducting, equipment, etc.) are installed on the roof, make sure their supports do not damage the bitumen membranes (tearing, support incorporated in the membrane, etc.). Reapply protection, if any, and perform any necessary repairs.

G) You will need to check that vents, if any, are in proper working order: they must not be blocked by dust or any other material (e.g. wasp nests).

6. MAINTENANCE OF A SURFACED BITUMEN COVERING (Mineral-surfaced membrane)

For exposed waterproof roofing systems, membranes surfaced with mineral slate (granules) are often chosen to avoid the periodic maintenance associated with paint coatings.

With a layer of mineral slate on their surface, these membranes are protected from the harmful effects of UV rays and hence do not require a protective coating of paint.

The mineral surfacing usually consists in natural slate chippings, meaning that there is likely to be a slight difference in colour, which is acceptable given the nature of the product.

The quantity of slate applied can range from around 800 to 1,000 grammes per m2. It is entirely normal for some of these chippings to come away when the waterproofing membrane is first put into service. A loss of up to 30% is acceptable according to the standards and occurs because not all the slate chippings penetrate the bitumen material during the manufacturing process and these are likely to come loose during the membrane's installation.

To minimize the loss of granules, a specific granule sealer (Polyglass MINERAL FIX) can be applied once the mineral-surfaced membrane has been laid.

We recommend the following maintenance procedures for these mineral-surfaced membranes:

A) Oily stains can appear on the mineral surface immediately after the membranes are laid, especially during very warm weather, due to normal migration from the bitumen material. These stains are usually washed off the surface the first few times it rains. However, should the stains persist - while they do not affect the product's efficiency - you can always wash the surface down with water, even using a medium pressure washer, being careful not to aim the jet of water against the lay of the lap selvedges, instead spraying in the same direction (to avoid the risk of them accidentally coming unstuck).

B) As mentioned above, it is normal for a certain percentage of mineral granules to come off the membrane's surface, however you should check at regular intervals that granules coming off the roof do not reduce the efficiency of the roof's drains. In addition, you should check that the bitumen material is not exposed directly to sunlight as a result of the mineral surface layer thinning; if you find balding patches, you will need to coat them with relevant protective or reflective paints.

C) When dealing with an exposed mineral-surfaced membrane, you will need to check sealing at overlaps at regular intervals, especially at points where the structure is subjected to the greatest stress (corners, expansion joints, fixed points, etc.). Over time, some overlaps or parts of them can tend to come unstuck if they are put under tensile stress. In such a case, even the slightest amount of water - though not resulting in leaking immediately - could cause the selvedge to detach completely if the water freezes overnight, resulting in the risk of water penetration.
WARNING: The waterproof roofing system comprises several overlapping membranes with both side and end laps. Stress as a result of movements and stretching as a result of thermal expansion and movements of the actual building structure or insulation can cause the overlaps to come unstuck at certain points. This is one of the reasons why regular maintenance of waterproofing membranes is both recommended and necessary.

D) You will need to check that vents, if any, are in proper working order: they must not be blocked by dust or any other material (e.g. wasp nests).

E) Check that drains and gutters are clean and working properly to stop water ponding on the roof.

F) Check that seals produced with silicone mastic on metal trims or flashing used to finish off the waterproofing membrane at vertical turn-ups (perimeters, chimneys, skylights, etc.) are watertight.

G) Where building services (chillers, air ducting, equipment, etc.) are installed on the roof, make sure their supports do not damage the bitumen membranes (tearing, support incorporated in the membrane, etc.). Reapply protection, if any, and perform any necessary repairs.

7. PACCESSIBILITY/WALKABILITY - EXPOSED ROOFS

MBDP waterproofing membranes - whether mineral surfaced or smooth - used in fully exposed systems can take foot traffic and be accessed for maintenance purposes only, either to be performed on the membranes in question and/or on any machinery and building services that might be found on the roof.

In summer, the bitumen material tends to soften with heat, making it more susceptible to surface damage, especially on sloped roofs. Membranes can nonetheless still be walked on for the purpose of performing maintenance on the roof itself or on machinery/building services, provided the following precautions are taken.

A) If roofs are home to building services and machinery that require periodic maintenance or cleaning, we recommend producing walkways using concrete pavers laid on supports, or a concrete screed, to give all operators a safe preferential access route to follow. Before installing walkways, a suitable separating layer must be placed between the membrane and the in-situ concrete deck.

B) When walking directly on the waterproofing membrane, special footwear must be worn, both for your own safety and to avoid damaging the membrane in question.

C) If you need to walk on the waterproofing membranes, we recommend you avoid the hottest part of the day in summer and, similarly, the coldest part of the day in winter. To avoid putting membranes under particularly high mechanical stress, we advise against using footwear with very thick soles (cleated sole footwear) and instead recommend the use of footwear with smooth soles. When using cleated sole footwear, we strongly advise you always to check that no fine gravel or other abrasive material has accidentally stuck to or become lodged in the sole before walking on the waterproofing membrane to avoid the risk of scraping or piercing the membrane in question.

D) If you are gaining access to a roof in driving rain or if the roof has pooling water or is icy, exercise extreme care to avoid the risk of slipping.

E) Never place anything heavy or sharp directly on the waterproofing membrane unless you have prepared a suitable protective surface first to set the object down on and distribute the load (such as wooden planks or other suitable devices).

8. ACCESSIBILITY/WALKABILITY - BALLASTED/PROTECTED ROOFS

Depending on the type of ballast or paving, MBDP waterproofing membranes may be suitable for foot traffic or accessible only for maintenance purposes, as specified below.

- Gravel ballast:
  accessible only for maintenance purposes, either to be performed on the actual roof and/or on any machinery or building systems found on the roof

- Ballast comprising pavers on supports (floating paving):
  accessible for maintenance purposes and walkable

- Paving designed to take foot traffic (tiles laid on concrete substrate):
  accessible for maintenance purposes and walkable

- Paving required to take vehicle loads (concrete screed, loose-laid paving blocks, laid stone slabs):
  accessible for maintenance purposes, suitable for light traffic <2 tonnes/axle
  accessible for maintenance purposes, suitable for heavy vehicle traffic ≥2 tonnes/axle

- Soil ballast (roof garden or green roof):
  accessible for maintenance of extensive green roof
  accessible for maintenance of intensive green roof

If roofs ballasted with gravel are home to building services and machinery that require periodic maintenance or cleaning, we recommend producing walkways using concrete pavers laid on supports to give all operators a safe preferential access route to follow.

Until the ballast layer has been laid, when walking directly on the waterproofing membrane, special footwear must be worn, both for your own safety and to avoid damaging the membrane in question, taking all the precautions and measures given above in the chapter entitled “ACCESSIBILITY/WALKABILITY - EXPOSED ROOFS”.

9. BUILDING SERVICES AND MACHINERY

Building services and machinery installed on the roof must be suitably positioned on the roof and integrated/connected with the waterproofing membrane (plinths, supporting beams, etc.).

Building services and machinery must not sit directly on the waterproofing build-up system and should instead be placed on bases with a suitable supporting surface designed to distribute the load correctly. In addition, the shape and material of the bases must be designed so that they do not damage the waterproofing membrane.
WARNING: Check and size bases based on the compressive strength of any thermal insulation included in the roof build-up.

Building services and machinery must not release or leak aggressive, polluting or damaging substances (liquids, solids or fumes) that might compromise the waterproofing membrane’s performance.
In the event maintenance is performed on building services and on machinery, all work carried out while on the roof must be performed with extreme care so as not to damage the waterproofing membrane and suitable temporary

protective structures must be in place. Be careful not to spill substances or materials on the roof that could damage the waterproofing membrane In the event of accidental spills, all debris and/or leachate must be removed without delay and the waterproofing membrane must be suitably cleaned, where necessary using running water, and always acting in compliance with current safety and environmental standards.

If in any doubt, seek the advice of the Specialist Waterproofing Company, who will be able to provide you with any information and support you may need.

When placing new building services or new machinery on the roof, you are advised to call the Specialist Waterproofing Company first to avoid damaging the existing waterproofing membrane and ensure correct connection and sealing systems are put in place.

10. SNOW LOADING ON ROOFS

Generally speaking, snow sitting directly on MBDP waterproofing membranes does not cause damage and does not require any action.

In certain cases, though, it might be advisable to go up on the roof to clear drains to encourage water generated as the snow thaws to drain off the roof.

Or you may want to check that snow has not built up so much that it reaches the top edge of skylights, vents, chimneys and other openings, if any, in the roof, in which case there is a risk of snow spilling over and getting inside the roof; or if there are overloading issues linked to the building's load capacity.

In certain situations of this kind, you may need to reduce the thickness of the blanket of snow in specific points or areas of the roof.

When accessing the roof, always exercise the utmost care and caution, using suitable personal and collective protective equipment, taking into account the added difficulty of accessing a roof covered in snow and/or ice.

Snow must be removed using manual tools that will not damage the waterproofing membrane and/or ballast layers and paving. Do not use metal spades and shovels: use plastic shovels with rounded edges instead. Remove surface layers of snow, being careful not to remove layers underneath in direct contact with the waterproofing membrane and/or ballast layers and paving to avoid accidental mechanical damage.

Before winter comes, it is advisable to check overlaps as snow could cause water to go against the lay of the roof, thus generating the risk of water penetrating inside the building.

When the show melts, it is best to check the condition of the waterproof build-up system so that prompt action can be taken if maintenance is required.

11. WATERPROOFING MEMBRANE REPAIR AND/OR ALTERATION WORK

In the event the waterproofing membranes are damaged accidentally, do not attempt makeshift repairs: always contact the Specialist Waterproofing Company.

In the event of an emergency requiring urgent action, you can perform quick and simple repairs using Polyglass POLYSEAL mastic, cleaning the waterproofing membrane first. Please note that these are temporary emergency measures that are not designed to last, meaning you will still need to contact the Specialist Waterproofing Company to have proper long-lasting repairs made.

In the event you are altering or extending the waterproofing membrane (e.g. to accommodate new chimneys, changes to building services, etc.), do not attempt makeshift measures and instead contact the Specialist Waterproofing Company in good time.

12. WATERPROOFING MEMBRANE RIDGING - BUCKLING EFFECTS

Traditionally applied polymer distilled bitumen membranes (torched on using a propane gas torch) can be installed in different ways depending on the substrate.

They can be:
“loose laid” (not attached anywhere);
“partially-adhered” (partially glued onto the substrate at various points);
“full adhered” (glued on across the whole surface).

Depending on the installation method, the membrane will be free, to a varying extent, to move under external stresses, such as movements due to the building’s structural settling, changing temperatures (of the building, insulating layers and the actual membrane), deflection and stability/behaviour of thermal insulation, if any, etc..

In any case, the roof features fixed points - such as roof edges, corners, skylights, chimneys, outlets, etc. - and, in some cases, the combination of the waterproof build-up system’s movement and the presence of fixed points can cause ridges to form in the waterproofing membrane, an issue known as “buckling”.

With regard to this buckling issue, it is worth noting that:
A) In summer and winter alike, both during the day and at night, it is normal to see a certain amount of movement in the substrate, thermal insulation and waterproofing membranes as a result of differences in temperature.
If excessive, this movement translates into the formation of ridges in the waterproofing membrane, starting at the corners of the roof.

B) Fully-adhered membranes that are correctly secured to the layers underneath are less likely to be affected by the

buckling issue. If a membrane is not correctly stabilized/secured to the substrate, it is more likely to be affected by buckling and the negative pressure generated by wind.

C) What often happens is that it's not the waterproofing membrane that moves, rather the insulating panel underneath it. In addition to being affected by pressure generated by wind, some insulation - even at relatively low temperatures (70°C) - can experience dimensional stability problems, so it's essential that the insulating panels be perfectly stable and secured to the substrate by means of mechanical fixing or gluing systems. Check that mechanical fixings are present and that they are holding securely.

D) MBDP membranes with a polyester nonwoven carrier feature good strength and ultimate elongation properties. What can happen with buckling, therefore, is that the heat-welded overlaps fail before the waterproofing membrane does if they have not been done correctly.

E) Failure to use the vapour barrier, apart from creating possible interstitial condensation problems, can encourage movement in certain insulating materials as a result of damp and thus also compound the buckling problem (movement in the membranes) as a result of the membrane detaching from the insulation.

In the event you encounter tension, ridging or buckling issues in the waterproofing roofing membranes, you are strongly advised to call in the Specialist Waterproofing Company without delay to have them analyse the causes and perform whatever maintenance or repair work might be required.

13. WATER OR AIR BUBBLES FOUND ON ROOFING

You may see air or water bubbles in the waterproofing membranes: they can form under certain circumstances, such as in the case of buildings with thermal insulation but no suitable vapour barrier.

In such a case, water vapour that migrates from inside the building to the outside can rise - in the absence of an effective vapour barrier - through to the waterproofing membrane (known for its low water vapour permeability), causing pressure to build up under the membrane, which then translates into the formation of bubbles and blisters varying in size. In a worst-case scenario, you could be faced with condensation problems.

Another critical factor that can translate into the formation of bubbles and blisters in the waterproofing membrane is failing to wait the required time for the concrete substrate to cure. The moisture in the cast concrete is unable to escape through the upper surface of the slab if it has been waterproofed too soon and hence this moisture “pushes” up against the waterproofing membrane in question.

In such cases, the recommended procedure is to:
A) Check that there is a vapour barrier and ensure it is suitable and working properly.

B) Check that vents are installed and are working properly as they constitute a useful device regardless of whether

there is a thermal insulation panel or not.

C) When dealing with bubbles, cut a cross in them and, after leaving enough time for the moisture trapped inside to evaporate/dry, apply a patch using material with suitable properties.

D) Bubbles can be more evident during the hottest part of the day as the water volume increases in volume.

E) Check inside the building for patches of damp that can be attributed to moisture present in the concrete structure rather than to water getting inside. This moisture, being unable to evaporate out due to the membrane's low permeability, tends to be released inside the building.

F) Condensation problems are usually only encountered in certain periods of the year, i.e. when certain humidity and temperature conditions arise. Hence, if the problem recurs cyclically over the course of the year, it can often be attributed to factors relating to temperature and humidity rather than to water getting inside.

In the event you encounter bubbles or blistering issues in the waterproofing roofing membranes, you are strongly advised to call in the Specialist Waterproofing Company without delay to have them analyse the causes and perform whatever maintenance or repair work might be required.

14. PERIODIC WATERPROOFING MEMBRANE INSPECTION AND CLEANING

To ensure the waterproofing system keeps performing at its peak and retains its properties in the long term, it is good practice to inspect and clean the roof at regular intervals.

Said work is summarized in the list below, divided up into:
- General inspections
- Specialist inspections

Other kinds of inspections and cleaning/maintenance work may be helpful/required depending on the specific case, or you may need to perform the listed work at shorter intervals. Consequently, the Designer or specialist will need to add to our guidelines accordingly.

15. GENERAL INSPECTIONS

General inspections	Interval	Performed by:	Notes
Clean leaf guards on drains	Six-monthly	Owner/manager (*)	To avoid them becoming clogged and limiting or compromising drain performance
Clean and eliminate any dirt (soil, sand, etc.) on the roof and waterproofing membrane	Six-monthly	Owner/manager (*)	To stop a culture bed being created and promoting the growth of vegetation or micro-organisms
Clean and eliminate any debris or rubbish on the roof	As required	Owner/manager (*)	To stop foreign materials and rubbish damaging the waterproofing membrane
General visual inspection of the roof and equipment installed on it to detect any evident issues (waterproofing, skylights, building services, etc.)	Six-monthly	Owner/manager (*)	To ensure any issues are reported promptly to the party tasked with performing the work
Clean and remove any vegetation growing on the roof	Six-monthly	Owner/manager (*)	It is advisable to stop vegetation growing and spreading

(*) This job can be delegated to the Specialist Company by taking out an inspection and maintenance agreement

16. SPECIALIST INSPECTIONS

General inspections	Interval	Performed by:	Notes
Visual inspection of trims and metal flashing	Yearly	Specialist Waterproofing Company	Check fixings and check for leaks and corrosion
Visual inspection of silicone sealing	Yearly	Specialist Waterproofing Company	Check for leaks and check adhesion
Visual inspection of waterproofing membrane and of details and accessories connected to it	Yearly	Specialist Waterproofing Company	To detect any issues that might limit or compromise its performance
Visual inspection of underside of roof deck	Yearly	Specialist Waterproofing Company	To detect any traces of water infiltration or other issues

All these jobs must be delegated to the Specialist Company by taking out an inspection and maintenance agreement

17. EXAMPLE OF INSPECTION AND MAINTENANCE CHECKLIST POLYGLASS MBDP MEMBRANES

INSPECTION AND MAINTENANCE CHECKLIST - POLYGLASS MBDP MEMBRANES

RE:
ADDRESS:

OWNER:
CONTACT PERSON:

MAINTENANCE MANAGER:
CONTACT PERSON:

SPECIALIST COMPANY:
CONTACT PERSON:

YEAR OF COMPLETION:

REFERENCES AND ATTACHED DOCUMENTS:

ROOF BUILD-UP: (indicate all layers making up the roof system)

OTHER USEFUL INFORMATION:

Note:
We have compiled this draft inspection and maintenance checklist for MBDP membranes by drawing on our knowledge and experience. Nonetheless, please understand that the instructions are given as a rough guide only. It is up to the Designer and Specialist Company to assess actual site conditions and determine what inspection and maintenance work is required.

GENERAL INSPECTIONS

PERFORMED BY:
CARRIED OUT ON: NEXT INSPECTION DUE:

Checks and work carried out	Pass	Fail (see notes)	Monitor (see notes)	Notes
Clean grates on drains				
Clean roof surface				
Clean and remove debris and rubbish				
Clean and remove vegetation				
Other work carried out				
Visual inspections:				
General state of roof				
General state of waterproofing membrane				
Building services 1				
Building services 2				
Building services 3				
Trims/flashing 1				
Trims/flashing 2				
Trims/flashing 3				
Skylights/domes				
Walkways				
Other				
Other				

SIGNATURE OF PERSON PERFORMING WORK:
SIGNATURE OF MAINTENANCE MANAGER:

GENERAL INSPECTIONS

PERFORMED BY:
CARRIED OUT ON: NEXT INSPECTION DUE:

Checks and work carried out	Pass	Fail (see notes)	Monitor (see notes)	Notes
Clean grates on drains				
Clean roof surface				
Clean and remove debris and rubbish				
Clean and remove vegetation				
Other work carried out				
Visual inspections:				
General state of roof				
Waterproofing membrane flat				
Waterprf. membrane edge turn-ups				
Waterprf. membrane wall turn-ups				
Waterprf. membrane skylight turn-ups				
Mechanical fixing system				
Thermal insulation panels				
Roof edge trim				
Wall junction trim				
Trim				
Drains				
Junctions between roof and pipes/vents				
Junctions between roof and uprights				
Skylights/domes				
Walkways				
Silicone sealing 1				
Silicone sealing 2				
Building services 1				
Building services 2				
Building services 3				
Other				
Altro				

SIGNATURE OF PERSON PERFORMING WORK:
SIGNATURE OF MAINTENANCE MANAGER:

We have compiled this document on the use, inspection and maintenance of POLYGLASS modified polymer distilled bitumen membranes by drawing on our knowledge and experience to date. Nonetheless, please understand that all instructions given are meant as general guidelines and feature only the most basic work prescribed. If you are planning to put together a maintenance plan for the waterproofing system, you will need to assess actual site conditions and, where necessary, supplement and add to the inspections and work featured.

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