



INDUSTRIAL RAINWATER GUTTER SYSTEMS: INSPECTION AND MAINTENANCE

INTRODUCTION

Industrial rainwater gutter systems are designed to give many years of reliable service but to achieve this, a regular inspection and routine maintenance programme should be undertaken. Prevention is always better than cure and establishing a regular maintenance programme is the most effective way of ensuring that serious problems do not arise. (Examples of poorly maintained gutters can be found in the Appendix of this document).

1.0 INSPECTION

Coated gutters must be inspected at least annually (more frequently if in coastal/heavy industrial areas or near trees) by a competent person/body*.

MGMA recommends that the gutter inspection is carried out at the same time as the roof inspection. Details of the inspectorate, inspection, findings, repair and maintenance work undertaken must be recorded as described in the product guarantee documentation.

Industrial rainwater gutter systems require more frequent inspections than the roof and wall cladding systems. The first inspection is required on practical completion and then at a maximum of 12 monthly intervals.

*Competent person/body

A person with sufficient training, experience, knowledge and other qualities in respect of the mechanical and physical properties of the material, structure, installation or assembly under inspection, repair and maintenance. A thorough knowledge of safe working practices and statutory requirements is essential.

The inspection method will vary depending on the type of system the gutters are connected to:

Gravity drainage system:

Ensure all pipework is inspected in accordance with BS EN 12056-3:2000. Section NE.5.1 states; “Gutters, rainwater pipes, outlets and gratings should be inspected and thoroughly cleaned once a year, or more often if the building is in or near to an industrial area or is near trees or may be subjected to extremes of temperature.”

Siphonic drainage system:

Ensure the system (outlets, tailpipes, horizontal carrier pipes, etc.) is inspected in accordance with BS EN 8490:2007. Section 12.1 states; “During the first year of operation, it is recommended that inspection, etc. should be carried out four times a year in order to establish an appropriate maintenance regime. The regime should take account of autumn leaf fall and the fact that intense rainfall tends to occur during summer storms.”

2.0 MAINTENANCE

When cleaning out gutters any build-up of detritus should be collected using non-metallic tools, i.e. soft bristled brushes/brooms, PVC shovels (preferably snow shovels), etc. Ensure that all detritus is bagged and removed from gutters and roof area. When carrying out maintenance the following points should be observed:

- General coating and galvanised material damage – repair as set out in Section 3.
- Debris – any build-up of debris including debris remaining after the roof installation for example, drilling swarf, loose fixings, and rivets – should be cleared from the gutters taking care not to scratch or damage the protective surface.
- Dirt – areas of dirt compaction and any other vegetable matter i.e. soil, twigs, weeds, should be carefully removed and contaminated areas hosed down and cleaned with fresh water (*Note: only use a hose, with normal tap pressure, (5.5 bar [80psi], at no point should pressure washers be used as water pressure being delivered which could be greater than 138 bars [2,000psi]).*)

- Gravity outlets – check outlets are clear and re-protect welds if necessary as set out in Section 3. Ensure the gravity drainage system has been designed and installed in accordance with BS EN 12056-3:2000.
- Siphonic outlets – check outlets are clear and re-protect welds if necessary as set out in Section 3. Ensure the siphonic drainage system has been designed and installed in accordance with BS EN 8490:2007.
- Fixings – check fixings are sound and installed to the recommended torque setting, if damaged or in need of replacement, contact MGMA for further advice.

3.0 GUTTER REPAIR

3.1 Coating

It is a mandatory requirement that the gutters are inspected after unloading at site and after gutter installation is completed. All mechanical damage etc. occurring during gutter transport, unloading and installation must be repaired immediately before or after installation (whichever is practical). The recommended method of repair is as follows:

- Sweep gutters clean of debris.
- In the area of damage, dry surface and remove any loose coating particles of protective paint by gently scraping.
- Remove any zinc salts or rust on exposed galvanised surface by abrasive cleaning using a non-metallic media. Brush off all contamination and loose coating particles.
- Abrade the galvanising and 50-75 mm of the protective coating around the damaged area to produce a sound, flake free surface. Degrease thoroughly using solvent wipe.
- Apply product by stiff bristled brush to bring back protective coating to the original 150µms thickness overlapping the prepared area by 50-75 mm to ensure the whole area of treatment is fully covered and re-protected.
- Abrasions and scratches penetrating the galvanised protection in areas not protected should be thoroughly cleaned and de-greased using an organic solvent such as paint thinners; the damaged area dried and coated with paint overlapping the damaged area 100 mm all round.
- If the white paint coating to the inner gutter lining enamel is scratched or damaged, clean using a non-metallic media. Brush off all contamination and loose coating particles and repair by painting with a good quality gloss paint.

3.2 Membrane

It is a mandatory requirement that the gutters are inspected after unloading at site and after gutter installation is completed. All mechanical damage etc. occurring during gutter transport, unloading and installation must be repaired immediately before or after installation (whichever is practical). The recommended method of repair is as follows:

- Sweep gutters clean of debris.
- In the area of damage, dry surface and remove any loose coating particles by gently scraping.
- Remove any zinc salts or rust on exposed galvanised surface by abrasive cleaning using a non-metallic media.
- Supplies of membrane patches can be obtained from the gutter manufacture.
- Wash damaged area with water and washing up liquid, rinse off and dry thoroughly before commencing any repair work.
- Where the membrane is badly scuffed, torn, ripped or damaged exposing the galvanised metal; heat weld a membrane patch to an area covering plus 50mm all around the damaged section (refer to the manufacturer's installation instructions).
- If the white paint coating to the inner gutter lining enamel is scratched or damaged, clean using a non-metallic media and repair by painting with a good quality gloss paint.

3.3 Bolted maintenance and repair

Should isolated or intermittent water ingress occur, the installer and/or gutter manufacturer must be notified as soon as the problem is identified and a written record **must** be kept in respect of all repair work undertaken. The recommended method of joint maintenance is as follows:

- Tighten bolts with torque wrench (preferably hand operated) to 52.25N/m (40lb/ft.), starting at the middle of the gutter sole, working outwards to the sides of the gutter; tightening alternative bolts one side of the gutter sole centre to the other, until complete.
- Should any bolts that had originally been installed have been cross threaded or spinning; removal and replacement to be in accordance with MGMA recommendations.

3.4 Membrane joint repair

Should isolated or intermittent water ingress occur, the installer and/or gutter manufacture must be notified as soon as identified and a written record **must** be kept in respect of all repair work undertaken. The recommended method of joint repair is as follows:

- Where the membrane is badly scuffed, torn, ripped or damaged exposing the galvanised metal, heat weld a membrane patch to an area covering plus 50mm all around the damaged section (refer to the manufacturer's installation instructions).

3.5 Problematic joints

For problematic joints, the recommended method of joint repair should be sought from the gutter manufacturer. All reparation details should be a mechanical/membrane solution that will allow future maintenance of the gutter system.

4.0 GUARANTEE RECORDS

A written record **must** be kept in respect of all inspections, maintenance, cleaning and repair work stating the following information:

- Name and details of inspector/inspection body/competent person
- Date of inspection
- Inspection report findings
- Details of all cleaning replacement, repair and maintenance work
- Date the cleaning replacement, repair and maintenance work was undertaken
- Name and details of persons/bodies undertaking cleaning replacement, repair and maintenance work

5.0 SAFETY

The summary of routine maintenance advice (within the inspection and maintenance requirements for the systems) makes no recommendations in respect of site safety requirements to access and traverse the roof safely during maintenance inspections and working procedures. Proper and adequate risk assessments and method statements should be prepared for each maintenance inspection and working procedure by competent persons/bodies undertaking such maintenance inspections and working procedures.

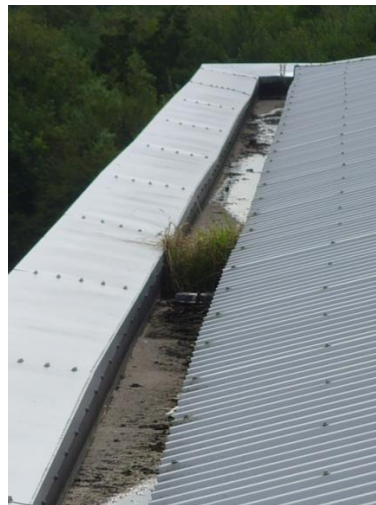
MGMA recommends that all inspections and any work undertaken on buildings are only carried out by competent persons trained for such a purpose and that adequate and appropriate safe access is provided at all times. Safety precautions must be taken for the whole duration of inspections and works. HSG 33 'Health & Safety in Roofwork', available from the HSE, provides detailed advice in this subject.

When using proprietary cleaning, maintenance and repair product, in the interests of personal safety, health and hygiene, the product manufacturer's advice and instructions on the use of their products must be strictly followed.

Further advice and guidance is available from any MGMA member company whose details can be found on the MGMA website at www.mgma.co.uk.

APPENDIX

Inspection and maintenance are mandatory requirements of the system guarantees available for industrial gutters. Neglected gutters may lead to premature degradation of the system and poor maintenance as highlighted in the images below will impact on the drainage of the roof, leading to water entering the building.



REFERENCES

BS EN 8490:2007- Guide to siphonic roof drainage systems

BS EN 12056-3:2000 - Gravity drainage systems inside buildings. Roof drainage, layout and calculation

Health & Safety Executive - HSG 33 Health & Safety in Roofwork
<http://www.hse.gov.uk/pubns/books/hsg33.htm>

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Whilst the information contained in this bulletin is believed to be correct at the time of publication, the Metal Gutter Manufacturers Association Limited and its member companies cannot be held responsible for any errors or inaccuracies and, in particular, the specification for any application must be checked with the individual manufacturer concerned for a given installation.

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