January 2022

GD38 OVER-ROOFING GUIDANCE DOCUMENT

Read all the information provided. When you are ready to take the CPD test, click the link at the end of the document.

1.0 INTRODUCTION

Older buildings with roof systems or assemblies which are showing the test of time, are underperforming or in need of modernising can be refurbished to meet current and updated performance standards. This guide from the Metal Cladding and Roofing Manufacturers Association (MCRMA) is to provide information relating to over roofing.

The guidance contained in this document should be read in conjunction with the information contained in BS 5427:2016+A1:2017 *Code of practice for the use of profiled sheet for roof and wall cladding on buildings* and individual manufacturer's information and recommendations.

1.1 Background

Roofs are overlaid for a variety of reasons. They may have long-term issues with water ingress, external sheet failure, have poor thermal and acoustic performance or to extend the life of the building and in the case of leased buildings to offer a better return on investment.

1.2 Suitability

Before any over roof is considered it is important to ensure that the existing structure is suitable and that perimeter details can accommodate the additional height of the over roof. Roof penetrations such as flues, extract units etc are likely to need to be extended by the depth of the over roof. It is also important to check the purlin spacings are suitable in order to accommodate the new roof sheets and rooflights.

It is important to establish that the existing roof and any roof lights are non-fragile as they will form the working platform for the new works. The existing roof lights should have adequate, temporary protection fitted for the duration of the works.

Fig 1: Single skin fragile roof covering before over roofing

Where the roof and/or rooflights are found to be fragile, then consideration needs to be made to provide a safe working platform to enable the over-roof works to proceed.

1.3 Statutory considerations

Building Regulations and a planning application are likely to be required, as the appearance of the new roof and the overall height will be different. A competent person, such as a structural engineer should confirm that the weight of the over-roof can be accommodated by the existing structure.

Insulation is likely to need to be increased to suit Building Regulations requirements, currently 0.18 W/m^2 (this information is correct at the time of first publication of this guidance document).

Over-roofs can be applied over single skin or built-up asbestos/fibre cement, built up metal systems or composite panels systems.

1.4 General

It is important that those tendering for the work visit the site to familiarise themselves with the building and the requirements of those owning and occupying the building in terms of storage areas and to ascertain if there are any restrictions on working hours, storage etc. The life expectancy of the materials being used should be agreed and documented.

2.0 DRAWINGS

Drawings should be prepared and offered for comment before any fabrication work takes place. They should show the system being used, fastener and sealant types and positioning, as well as interface details.

2.1 Calculations

Calculations should be prepared to include the following:

- Wind loadings, fastener, and spacer suitability to withstand additional weights or loads.
- Additional construction weight.
- Additional Insulation value.
- Rainfall rate, gutter size and outlet distribution.
- A condensation forecast to ensure that the over roof does not adversely affect the current performance of the building.

3.0 PROVISION OF DOCUMENTATION

The following documents should be provided:

- Method statements.
- Risk assessment
- Details of fire and test certificates
- COSHH assessments for the products used.
- The weight of the over roof should be established to confirm that the existing structure is capable of accepting the additional loads.
- Manufacturer's system warranties and coating warranties following registration of the building within the manufacturer's stipulated time periods.
- A fully documented maintenance manual should be prepared at the end of the project, identifying the materials used and any maintenance required to them.
- Safe methods of access onto the roof should also be prepared including safety line systems if required.

4.0 LOADINGS

The purlin spacing should be established by survey. The tenderer is to ensure that the profile selected by them can accommodate all loadings relating to access, wind and snow as defined below:
BS EN 1991-1-7:2006+A1:2014 Eurocode 1. Actions on structures. General actions. Accidental actions
BS EN 1991-1-4:2005+A1:2010 Eurocode 1. Actions on structures. General actions. Wind actions
BS EN 1991-1-3:2003+A1:2015 Eurocode 1. Actions on structures. General actions. Snow loads

5.0 COMPLIANCE

The works must comply with the minimum requirements of this specification, current Building Regulations and all relevant British or European Standards. They must highlight in their tender any elements which do not comply with any of these.

5.1 Life expectancy

The additional design life of the remedial work is likely to be at least 25 years, depending upon both the external and internal environments. Any components that will not achieve this life expectancy should be identified and any maintenance or replacement required to achieve this life should be stipulated.

5.2 Safety line and access

Consideration should be given to access following the works and consideration should be given for a suitable safety line system for consideration by the client. Tenderers are to provide the details of suitable access methods onto the roof required to carry out the work.

6.0 COMPONENTS

This section is based on a single skin sheet being used as the new over-roof weather skin. Composite panels could also be used. The basic principle is to secure spacers, via top hat sections through the existing roof into the existing purlins into which insulation can be laid and fitting a new external roof sheet to them.

6.1 Vapour control layer

The assessment for a reinforced vapour control layer should be carried out depending on the amount of insulation already installed and the position and effectiveness of the current vapour control layer. If, for example, the existing roof is damaged or leaking, a membrane should be used to ensure that any condensation forming within the cavity does not enter the building through any discontinuities in the existing roof.

6.2 Spacers

The spacers that should be used are conventional bracket and rail systems. Whilst it is possible over existing single skin roofs to secure the new spacer system into the existing purlins, this is not the recommended method on existing built-up or composite roofs as it assumes that the existing spacers are adequately secured to the purlins which may not be the case as they are not visible. Additionally, the bracket fixing may need to be installed at an angle which results in it missing the purlin. The recommended method is to fit onto a top hat cleat which, in turn, is fixed into the existing purlins.

6.3 Top hat cleats

A top hat cleat is a pressed, galvanised steel support to provide a base onto which to fit the brackets of a spacer system. They should ideally be fitted into the valleys of the existing roof to avoid fasteners for the new spacer system penetrating the roof sheet.

Top hat cleats are normally screwed through the whole existing roof construction whether built -up or composite, into the existing purlin. The top hats should be a minimum of 1.5 to 2mm thick and spaced to suit the calculated wind loads.

Top hats should have a butyl strip sealant under them and should be a minimum 150mm long. Longer cleats are often used to spread the load more, especially if the existing construction is less rigid such as a foam insulation board or asbestos/fibre cement which is brittle.

6.4 Insulation

Insulation should be installed between the existing roof and the over roof to reduce the amount of condensation forming and to achieve Local Authority requirements. The insulation should be non-combustible, fill the cavity, be tucked under and around the spacers and tightly butted at its ends and sides.

As noted above, the insulation needs to comply with local Building Regulations and is likely to be a minimum of 0.18 W/m^2 (this information is correct at the time of first publication of this guidance document).

7.0 EXTERNAL ROOF SHEET

Fig 2: Low pitched single skin fragile roof at the early stages of refurbishment prior to the installation of a profiled metal outer sheet and insulation to comply with current Building Regulations

The external roofing system proposed should reflect the slope of the existing roof, as defined in BS 5427:2016+A1:2017, roofs over 4 degrees after all considerations have been accounted for, may be a through fixed system and those below this will need to be a secret fixed or standing seam system.

7.1 Through fixed system

After taking the practical and safety aspects into account, use the longest roof sheet practicable reducing the number of end laps. Consideration of this must be taken in the method statement and safety plan to ensure correct procedures are employed.

The profile selected is to have the following properties, subject to other specific manufacturers' recommendations:

- The profile selected should have a minimum depth of 30 mm, have a pitch no greater than 250 mm and be a minimum of 0.70 mm thick plus coating.
- End laps are to be 150mm and fully sealed with a minimum of 2 runs of Class A cross-linked butyl sealant at least 6mm x 5mm.
- Side laps are to have a support bearing leg and be sealed and stitched at 450mm maximum centres.
- Steel Grade is to be a minimum S220 GD + ZA quality ZA255 Galvalloy to BS EN 10346:2015 Continuously hot dip coated steel flat products for cold forming.
- The coating to be suitable for the application and have warranties to achieve the design life required. An acceptable warranty covering life expectancy and period to first maintenance is to be provided to the client. Colour is to be as currently installed unless a planning application has been made.
- The reverse side coating is to be heat cured polyester, minimum 10 micron, applied to a corrosion resisting primer.
- The roofing system is to be designed and fitted in accordance with the manufacturer's recommendations. Any variance from this specification should be identified at tender stage.

Fig 3: Completed over roof using a profiled metal outer sheet and integrated rooflights

7.2 Secret fixed system

If the roof is of a low pitch (less than 4 degrees) and a secret fixed system is to be used it requires the roofing sheet to be installed in a single length from ridge to eaves unless the profile can be end lapped. It is preferable that end laps are avoided or minimised. Secret fixed systems are either installed over thermally broken concealed clips or mechanically fixed through one leg of the roof sheet and clipped over the other. No external fixings should be visible within the envelope of the building.

If steel is to be used the minimum thickness should be 0.70 mm thick and if aluminium, the external sheet is to be 0.90 mm thick either with either a stucco-embossed or a coated finish as required. The roofing system is to be designed and fitted in accordance with manufacturer's recommendations.

7.3 Standing seam system

If the roof is of a low pitch and a standing seam system is to be used it requires the roofing sheet to be installed in a single length from ridge to eaves. Where the roof slope sheet length exceeds what can be practically transported, then the sheets may be either rolled on site or site welded, (if not coated) as per manufacturer's recommendations.

Standing seam systems are installed over thermally broken halters and the standing seam side laps are rolled or over-locked on site.

If steel is to be used the minimum thickness should be 0.70 mm thick and if aluminium, the external sheet is to be 0.90 mm thick either with either a stucco-embossed or coated finish as required.

The roofing system is to be designed and fitted in accordance with manufacturer's recommendations.

8.0 ROOFLIGHTS

The specification is for GRP or polycarbonate over-roof rooflights to reflect the pattern of those currently installed. Costs are to be provided for removing the existing external skin and for leaving it in place, provided that it is in good condition. The specification for the new over-roof rooflight is to be as shown below.

Before work is carried out suitable precautions must be taken to prevent falls through the existing rooflight.

Fig 4: Single skin fragile roof covering with single skin integrated rooflights

8.1 General

Rooflights are to be non-fragile as defined by ACR[M]001 *Test for Non-Fragility of Large Element Roofing Assemblies*. They are to be non-fragile for the specified period of time. Rooflights shall comply with the U-value requirements of Building Regulations for existing buildings that are not exempt from Building Regulations. This will require three rooflight layers; consult the rooflight manufacturer or supplier for recommendations.

Rooflights shall comply with BS EN 1013:2012+A1:2014 and BS 5427:2016+A1:2017.
A white closer flashing is required to the rooflight perimeter to prevent insulation entering the cavity. Any damaged rooflights will not be accepted. An additional cost is to be provided for changing the existing external rooflight skin.
NOTE: The cover width of the over-roof rooflights should match the cover width of the existing rooflights to avoid loss of light levels whenever possible.
Rooflights should be laid over the metal sheets on both sides when it is possible to do so.

8.2 External rooflight sheet

The maximum deflection under the loading described above is to be L/30 to a maximum of 50mm. The GRP grade required is to be SAB or B_{ROOF}(t4) provided that there is another rooflight layer below it. If the existing rooflight layers have been removed and subject to Building Regulations requirements, the over-roof rooflight should have a Class 1 internal surface spread of flame classification.

The minimum weight grade is to be 3.0 kg/m^2 to provide a Class B non-fragile rating when fully fixed, when new and for an expected period of five to 20 years**,** depending on external factors as defined in the National Association of Rooflight Manufacturers (NARM) guidance document NTD03, *Application of ACR[M]001 'Test for non-fragility of large element roofing assemblies' to GRP profiled rooflight sheeting.*

For 25 years expected non-fragility, minimum 3.6kg/m^2 must be used.

NOTE: A new over-roof rooflight should be specified as for single skin, the impact resistance of any layers below it is unknown and cannot be tested. Alternatives will be considered if they achieve the same non-fragility or strength criteria. End laps are to be typically 150 mm. Confirmation is required from manufacturers or suppliers of the expected non-fragility period.

8.3 Primary rooflight fasteners

Rooflights should be valley fixed to the purlins by means of minimum 5.5mm diameter, self-drilling, self-tapping screws complete with minimum 29 mm diameter austenitic stainless steel bonded washers. A minimum of 5 fasteners per metre is required at maximum 200mm centres at every support. The external fastener head and washer is to be encapsulated with full integral factory-coloured Poppy Red heads and washers to help identity the perimeter of the rooflight areas

Fasteners are to be installed at right angles to the roof slope. At end laps the main fasteners should be installed through the centre of the lap joint or no less than 50mm from a sheet end. A purpose made screw gun with an adjustable depth locating nosepiece (unless the fastener design incorporates features to prevent over-driving) is to be used at all times to ensure that washers are correctly set. Impact drivers must not be used (refer to MCRMA guidance document GD 32 *Self drilling fastener installation tools*).

The stainless-steel washer is to be bonded with EPDM.

Rooflight fixings must be austenitic stainless steel with full integral factory coloured Poppy Red heads, not push-on caps, to help identify the perimeter of the rooflight areas.

8.4 Secondary rooflight fixings

Side laps should be fixed together with austenitic stainless steel stitch screws where a metal sheet underlaps a rooflight, or grommet type stitch bolts for rooflights should a rooflight be the underlapping element.

Install minimum diameter 6.3mm self-drilling / self-tapping stitch fasteners at a maximum of 450 mm centres or 300mm on exposed roofs or in high wind loads, on the non-weather side of the lap sealant.

8.5 Rooflight sealants

- Rooflight sealants have a particular importance in rooflight areas and must be installed with a high degree of care.
- Sealant types suitable for use with rooflights are 6mm x 5mm tape, 6mm or 8mm bead and 22mm x 5mm U-section, minimum Class A, cross-linked Polyisobutylene (PIB).
- End laps should be sealed with two continuous runs of tape or bead PIB sealant on either side of the main fixing line or a continuous run of U-section PIB sealant along the main fixing line.

  An optional continuous run of clear, gun applied silicone sealant to specification ISO 11600-F-25 LM may be applied within the lap joint, 15mm back from the edge of the overlapping sheet.
- Do not stretch sealant across the profile corrugations, carefully follow the contours of the rooflight.
- Side laps require a single strip of suitably sized cross-linked PIB sealant on the weather side of the stitch fasteners.
- Sealants should be light in colour to reduce solar heat gain.
- The side lap sealant tape is to be located within all lapping sheets at end laps, including three- and four-way lap joints. (Refer to MCRMA guidance document GD 37 *Sealing of end lap details in metal wall cladding constructions*)

9.0 FLASHINGS

- Flashings should be designed to fulfil the function for which they are intended and not display oil canning.
- Flashings should be made from a minimum of 0.70 mm thick coated steel if a steel roof is to be used and 0.90 mm thick aluminium if an aluminium roof is to be used. The finish should be coated and prepared to the same finish as the adjacent sheet.
- External horizontal flashings should have 150 mm sealed lap with 2 runs of 9 x 3- or 4-mm diameter cross-linked PIB sealant. The sealant sizes are the minimum requirements; if thicker seals are required then they should be used.
- External vertical or sloping flashings should have a 150 mm sealed lap or butt strap joints with 2 runs of 9 x 3- or 4-mm diameter cross-linked PIB sealant. See notes above concerning sizing.

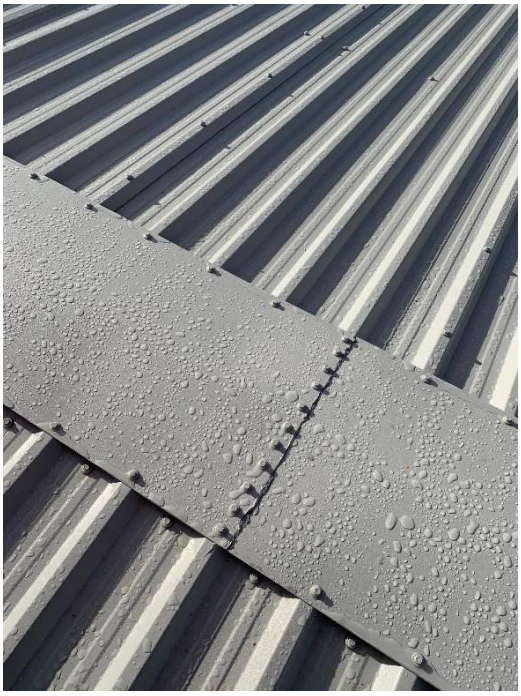

Fig 5: Fully integrated sealed flashing incorporating flute fillers

9.1 Flute fillers

All external sheets at both eaves and ridge are to have flute fillers with maximum ventilation to allow moisture vapour pressure release dependant on the profile used. Factory prepared, splayed fillers are to be used at rake cut locations.

9.2 External sheet flute fillers

- The function of the external sheet fillers is the exclusion of wind driven rain, snow, vermin and debris at the ridge and eaves.
- To be EPDM (not EPDM faced) and to have a PIB adhesive factory applied.
- Ridge, hip and eaves fillers are to be ventilated.
- Joints in adjacent filler blocks should be tight and located at the crown.
- They should be installed 75 mm inboard of the ridge flashing to reduce bird damage.
- Hip fillers are additionally to have a butyl point applied to the rear of the splayed filler prior to installing the hip flashing.
- Fasteners - through fixed systems are to be designed to resist all calculated load combinations as defined above and installed at centres not greater than noted below.

9.3 General

- All primary external sheet fixings are to be suitably protected carbon steel with an additional cost for austenitic stainless steel which is likely to be required to achieve the life expectancy requirements if they are for 25 years.
- Fixings are to be installed at right angles to the roof slope.
- A purpose made screw gun with an adjustable depth locating nosepiece (unless the fastener design incorporates features to prevent over-driving). Under no circumstances should impact drivers be used.

9.4 Primary fixings

- The external roofing sheets should be fixed to the spacers by means of self-drilling, self-tapping fasteners complete with minimum 15mm bonded washers for steel sheeting (19mm for aluminium sheeting) at a maximum distance of 150 mm at eaves ridge and lap joints and 300 mm at intermediate purlins.
- The stainless-steel washer is to be bonded with 3 mm EPDM.
- External fixings should have integral-coloured heads and washers to match the colour of the external sheeting, not push-on caps.

9.5 Secondary fixings

- Side laps should be fixed together at 450 mm maximum centres with specially threaded self-drilling, self-tapping screws complete with factory-coloured heads.
- Flashings subjected to high wind loads i.e., at ridges and eaves should be fastened as required by the loadings but at a maximum of 300 mm centres.

- The fixings must be placed either through sealants used at that location or on the dry side.
- All sealants must be designed to accommodate shrinkage, thermal movement and be capable of withstanding the temperatures that will occur.

9.6 Side and end laps

- For end laps there should be two runs of 6x5mm cross-linked PIB. The end lap sealant should be positioned 15mm back each end of the lap. Any surplus squeezing from the joints should be carefully removed without damage to the coating. Side laps require a single strip.
- All sealants are to be compressed by a minimum of 20% and be in full contact with both surfaces. Movement is to be achieved within the sealant, not by losing adhesion to either surface.
- Whenever practical lay side laps away from the prevailing wind.
- Sealant must be laid with backing strip in place to reduce stretching. The backing tape is to be removed in all locations.
- Care is to be taken to bed sealant tape into angles and not to bridge across.
- Joints are to be avoided and continuous runs used. Where absolutely necessary, joints should make allowance for shrinkage.
- Care is to be taken to ensure that the sheets tightly clamp the sealant to prevent any ‘wrapping around’ the fixing.

10.0 EXTERNAL EAVES GUTTERS

- The gutters and outlets should be designed to BS EN 12056:3-2000
- Gutters are designed to be a proprietary hung bracket type.
- Freeboard is to be allowed in all cases.
- Gutters, downpipes and fabricated items are to be double side coated as recommended by the manufacturer accepting that standing water is likely.
- The gutter shape is to avoid 90-degree angles due to sealing difficulties.
- Gutters should be laid nominally flat and therefore not permit excessive water to lie.

10.01 Outlets

Outlets are to be sole or hopper mounted. They are not to be side mounted. They are to be round edged as defined in the current Standard.

10.02 Gutter joints

- Assembly must only be carried out in dry conditions and joints are to be cleaned prior to assembly.
- Joggle joints are to be used if possible.
- Bolts are to be austenitic stainless steel hex headed bolts to EN 10088-1.
- Washers are to be stainless steel with 2mm neoprene BONDED.
- Joint sealant is to be Class A cross-linked butyl sealant – spacers are required to ensure the sealant is not over compressed.

10.03 Downpipes

The calculations will establish the frequency, positions and diameter to discharge the rainwater.

10.04 Membrane lining

Membrane lined gutters will reduce the likelihood of leaking gutter joints in the longer term and should be considered. Refer to MCRMA Guidance Document GD 31 *Pre-Laminated Membrane and Factory Assembled Insulated Pre-Laminated Membrane Gutters*

Fig 6: Completed profiled metal over roof incorporating membrane lined gutter system

11.0 BOUNDARY AND VALLEY GUTTERS

The gutters are to be cleared for assessments and calculations prepared to BS EN 12056:3-2000 *Gravity Drainage Systems Inside Buildings* based on them being boundary or valley gutters and copies of the calculations provided. Allowance is to be made for any modifications needed to comply with the design.

Where gutters are membrane lined, a new compatible membrane should be welded over and provision made for welding the new membrane to the outlets, upstands and stop ends. Where gutters are not membrane lined, they should be lined with an appropriate system, including sole boards.

The gutter liner should be installed below the roof liner rather than below the top sheet. A warranted system, corresponding to the design life of the building, should be used and specimen copies of warranties should be provided.

12.0 ROOF PENETRATIONS

Roof penetrations for fan units etc should be weathered by a preformed, welded soaker piece back flashed to the ridge. Insulation should be installed under the back flashing to reduce condensation caused by night sky radiation.

Any penetrations through the internal liner and the existing external roof sheet should be vapour sealed by means of combing rings, fillers and sealants.

The use of pipe flashings installed onto the external sheet must not dam the profiles causing water to build up behind. The must be installed to manufacturer's recommendations

13.0 SITE SAFETY AND SUPERVISION

13.01 Safety

- The sub-contractor is to comply in all aspects with the Health and Safety at Work Acts and CDM regulations.
- COSHH assessments must be provided for all materials used on site.
- Method statements and risk assessments are required for the aspects of work to be undertaken.

The above publications are available from the Advisory Committee for Roofsafety (ACR).

13.02 Supervision

- The sub-contractor should employ competent, experienced and safety trained site operatives to carry out the works.
- The sub-contractor should maintain records to demonstrate each operative's experience and any related training where applicable.
- There is to be an experienced representative on site at all times to be responsible for the works and to ensure compliance with safety procedures and this specification.

14.0 MAINTENANCE MANUAL

Copies of a detailed maintenance manual are to be submitted on completion of the works. This manual should contain the following:

- Name, address and telephone number of each firm and/or sub-contractor involved in the supply of materials, components, assemblies and finishes.
- Construction drawings updated to include any changes made up to the time of completion.
- The terms and conditions of any guarantees.
- Recommendations for required maintenance, cleaning and suitable cleaning agents.
- Certificates of conformity to the specification and British Standards.
- Decommissioning and disposal procedures.
- CDM Health and Safety file.

15.0 WHERE TO SEEK DETAILED ADVICE

Manufacturers are best placed to offer advice about their products and any variation from their published data during the design or construction process could result in the component or system failing prematurely or not complying with the guarantee or warranty conditions. Any uncertainty about the use or application of a product or system should be referred to the manufacturer for detailed written advice.

In addition, design information can be obtained from any of the independent roofing and cladding inspectors featured on the MCRMA web site.

16.0 REFERENCES

British Standards

BS EN 1991-1-1:2002 Eurocode 1. *Actions on structures. General actions. Densities, self-weight, imposed loads for buildings* (formerly BS 6399 Part 1:1996 Dead and imposed loads

BS EN 1991-1-4:2005+A1:2010 Eurocode 1. *Actions on structures. General actions. Wind actions* (formerly BS 6399 Part 2:1997 Wind loads)

BS EN 1991-1-3:2003+A1:2015 Eurocode 1. *Actions on structures. General actions. Snow loads* (formerly BS 6399 Part 3:1988 Imposed loads including snow build up and drifting)

BS EN 1013:2012+A1:2014 *Light transmitting single skin profiled plastics sheets for internal and external roofs, walls and ceilings. Requirements and test methods*

BS EN 10346:2015 *Continuously hot-dip coated steel flat products for cold forming. Technical delivery conditions*

BS 5427:2016+A1:2017 Code of practice for the use of profiled sheet for roof and wall cladding on buildings

BS EN 10088-1:2014 *Stainless steels. List of stainless steels*

BS EN 12056:3-2000 *Gravity Drainage Systems Inside Buildings*

Other publications

MCRMA Guidance Document GD 31 *Pre-Laminated Membrane and Factory Assembled Insulated Pre-Laminated Membrane Gutters*

MCRMA Guidance Document GD 32 *Self drilling fastener installation tools*

MCRMA Guidance Document GD 37 *Sealing of end lap details in metal wall cladding constructions*

ACR[M]001 *Test for Non-Fragility of Large Element Roofing Assemblies*

NARM NTD 03 *Application of ACR[M]001 'Test for non-fragility of large element roofing assemblies' to GRP profiled rooflight sheeting.*

Useful links

Advisory Committee for Roofsafety (ACR)
www.the-acr.org/about-acr

MCRMA
www.mcrma.co.uk

National Association of Rooflight Manufacturers (NARM)
www.narm.org.uk

MCRMA ONLINE CPD PROGRAMME

This guidance document is available as an online CPD and is accredited by the CPD Certification Service. MCRMA's online CPD programme is open to anyone seeking to develop their knowledge and skills within the metal building envelope sector. Each module also offers members of professional institutions an opportunity to earn credit toward their annual CPD requirement.

MCRMA provides informative self-study training, delivering good learning value with an online assessment to check knowledge. The course material is studied offline with an online assessment component to verify knowledge. It is a training with learning and CPD value accredited by the CPD Certification Service. This module has an anticipated CPD value of 60 minutes or equivalent.

You can take the module at GD38 CPD Test

NOTE:

We have made every effort to trace the rights holders and to obtain their permission for the use of copyright material. If there are any errors or omissions in the acknowledgements and credits, we would be grateful for notification of any corrections that should be incorporated in a future edition of this guidance document.

DISCLAIMER

Whilst the information contained in this publication is believed to be correct at the time of publication, the Metal Cladding and Roofing 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.

Information provided by the MCRMA or contained within publications and articles which are made available in any form (mechanical, electronic, photocopying or otherwise) cannot be used or cited as a means of ensuring that a material, product, system or assembly is compliant with Building Regulations.

This edition replaces the document published on 27/12/21 and 13/01/22