

## The Advisory Committee for Roofwork (ACR)

by Chris Pearce - Chairman of ACR

The ACR is an industry wide committee, involved in the construction of roofing, with the prime purpose of reducing the hazards and dangers of working at roof level.

### The Beginning

Back in the early 90s, the Construction, Design and Management Regulations were introduced by the HSE. A major piece of legislation that affected all aspects of building design and construction.

For roofwork safety, one of the key statements was that roofs should be designed and build to be non-fragile for the life of the building. For the manufacturers of roofing products, this was a very commendable statement but gave little or no guidance as to how they should design their products to meet the Regulations. Nowhere in CDM does it define what is a fragile roof nor what is the life of a building. The problem is further exacerbated by the fact that all roofing products, no matter how strong they may be, will rely on the method of fix and whether they have been fixed correctly by the contractor and that all such products, together with the fixings used, will be subject to the vagaries of the weather, wind and chemical corrosion.

Specifically, the rooflight industry was very concerned since it had always described its products as "fragile" and as such, CDM negated their further use unless something was done to the product to make it less fragile. The question was - "how strong should they make them?"

Prior to CDM, the HSE had done some work on roof fragility and the work had been written up in Special Inspectors Report No. 30. In this report they set out to define a simple drop test on to a roof sheet and if the load was retained, then the roof sheet was deemed to be non-fragile. The rooflight industry initially adopted this test as being the only authoritative definition of what was non-fragile in order to achieve CDM compliance.

It was recognised by the HSE and by others in roofing that the SIR 30 Test was not rigorous enough, did not include for the full roof assembly and was subject to user variation in the interpretation of the results. The HSE felt that they needed to seek a better test than SIR 30. Initially they did some work on electronic load beds to simulate the effect of a human falling on to a roof assembly and recording the impact loads that are applied. With this data they determined that a sand bag weighing 45 kg and dropped from a height of 1.2m on to the assembly was typical of a human tripping and falling on to a roof.

The next task was to get industry to consider these findings and to determine what the prescribed test rig should be to simulate a typical roof construction. An initial meeting was called of all Trade Associations involved in industrial roof construction and after a number of meetings, agreement was finally reached to produce our first document :

### ACR(M)001:2000 Test for Fragility of Roofing Assemblies (Red Book)

ACR was up and running. Within weeks the industry became very aware of the definition of Fragility and manufacturers started testing their products, in many cases modifying their products and giving guidance to industry and fixers how the products should be fixed to give compliance to CDM.

For the rooflight industry, steps had already been taken to increase the thickness (strength) of the rooflight sheeting when CDM first came out to satisfy SIR 30 requirements. Under the new test requirements, sheets had to be tested in the worst case scenario, and that meant hundreds of test to determine where the weakest point of the sheet was and whether that varied in single span and multi-span sheeting. Tests were also done on lining systems and, on the basis that assembly is usually by lining out first, the lining system also needed to be non-fragile. Thereafter there was an industry upgrade in the thickness of lining panel rooflights so that this assembly is non-fragile in its own right.

Not only the rooflight industry, but all manufacturers of roofing products, were made aware of the new approved test and started their own programme of testing, often resulting in a strengthening of products and increasing the number, size and quality in the fixings. The fibre cement industry even changed its method of manufacture so that it could incorporate a strengthening strip contained within the body of the sheet.

### ACR Today

From its early days of resolving the issue of 'fragility', the committee has grown in considerable strength. All aspects of roof safety are now considered as being part of our remit. This includes domestic work involving tiles and slates, flat roofs using single ply and built up felts, edge protection, safety net design and fixed safety lines. In addition the committee will look at future legislation and provide advisory comment to such legislation. A good example of this was the lengthy discussion and submission to the new proposed Working at Height Regulations.

Whereas the committee at conception was driven by the HSE, this has now changed. Industry now runs the committee and it is chaired by a delegated member. The HSE remains involved and provides guidance, data and technical input plus the Secretariat.

Following on from the Drop Test document described above, the ACR now have a programme of Guidance Documents that they want to produce. The first of these has now been issued :

### ACR(CP)001:2003 Recommended Practice for Work on Profiled Sheeted Roofs (orange book)

Other documents well on in their writing phase relate to Working on Fragile Roofs, The Use of Nets, Good Design of Edge Protection and Competence to Work At Height.

To facilitate the distribution of these documents so that they may be widely read and generally available, the ACR has set up its own web site [www.roofworkadvice.info](http://www.roofworkadvice.info) and from this all publications may be downloaded free of charge.

### Importance and Standing

The Drop Test document is now recognised by Industry and by the HSE as being the authoritative definition to determine non-fragility. The HSE will now use it in legal argument and

manufacturers have developed their products and market their products subject to compliance to the Drop Test. As a result, almost all roof construction today is now considered to be non-fragile at the build stage. This is a massive leap forward from roofs designed and built in the early 90s.

The Construction and Design industries now recognise that ACR is an umbrella group of considerable importance, integrity and competence. The HSE see ACR as a way forward to get the industry involved in good practice, safe working conditions and implementation of Regulations by agreement rather than by enforcement.

## Future Work for ACR

Having determined our own drop test requirements, the ACR recognises that it is vital for the industry to adopt and implement the requirements of the test and ensure that manufacturers offer their products in compliance with the test. With this in mind, the ACR has set up its own enforcement procedure whereby it will notify companies that it believes may be non compliant and seek assurance that products and/or methods are modified so that they will become compliant.

One issue that will take a lot of discussion is to determine how the industry meets the requirements of CDM to provide non-fragility for the life of the building. Every product used in building construction will be subject to a reduction in strength and performance as the products are exposed to the wind, rain and chemical attack provided by our British weather. Rates of decay will vary according to the products used and the fixings used. There are no simple answers but the ACR will hope to provide some advice and recommendations that will provide better assurances when maintenance work is to be carried out at roof level.

What is certain is that with time, non-fragile roofs will become fragile at some point; it is just a matter of when. ACR will seek to direct manufacturers of roofing products and systems to provide better guidance on design life which will include non-fragility. It is of interest that the rooflight industry, which was seen as the fragile element of the roof prior to CDM, is now leading the way to describe rooflight products and systems that will achieve 25 years non-fragility and longer.

In addition to the two publications already referred to, the following documents will be prepared over the next 18 months or so :-

- ACR(CP) 002:2004** Guidance Note for Safe Working on Fragile Roofs (Green Book)
- ACR(CP)** The use of Nets in Roofwork (Blue Book)
- ACR(CP)** A Clients Guide to Selecting Competent Contractors and Suppliers (Yellow Book)
- ACR(CP)** Fitness Standards and Competence for Roofwork (Black Book)
- ACR(CP)** Edge Protection for Roofwork (Purple Book)

## Who We Are

The ACR is made up of a group of dedicated people, all with a wealth of many years experience of working within the roofing industry and dedicated to making the roofing industry safer. They represent the following Trade Organisations :

<b>BSI</b>	British Standards Institute
<b>CTMA</b>	Concrete Tile Manufacturers Assoc.
<b>FASET</b>	Fall Arrest & Safety Equipment Training
<b>FCMA</b>	Fibre Cement Manufacturers Assoc.
<b>FRA</b>	Flat Roofing Alliance
<b>HSE</b>	Health and Safety Executive
<b>MCRMA</b>	Metal Cladding & Roofing Manufacturers Assoc.
<b>NARM</b>	National Association of Rooflight Manufacturers
<b>NFRC</b>	National Federation of Roofing Contractors
<b>RIDBA</b>	Rural & Industrial Design & Building Assoc.
<b>SPRA</b>	Single Ply Roofing Assoc.

Those involved with ACR at the outset back in the mid 90s deserve much credit for their foresight to assemble a body of experts that, by their combined efforts, has created an industry that now far exceeds the standards of the early 90s. Roof design and roof construction has improved beyond everyone's expectations. Manufacturers provide products that are far stronger, roofing contractors have safety systems that are considerably improved and virtually every contract has safety nets in place where virtually none were used before. Over the next few years statistics will show that new build accidents at roof level will have dramatically declined. The target now for ACR is to focus on roof maintenance - those roofs that were not built to be non-fragile and to remind everyone that even newer roofs that are currently non-fragile, will become fragile sometime in the future. One of our major concerns is that as our industry gets better, there is a risk that complacency will set in and accidents occur by lack of care. The industry must never take its eye off the ball. Safety is our prime concern.

More can be learnt about the ACR on their Web site at [www.roofingadvice.info](http://www.roofingadvice.info)  
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