



Failure of Reinforced Autoclaved Aerated Concrete (RAAC) Planks

What is RAAC?

Reinforced autoclaved aerated concrete (RAAC) is a form of lightweight concrete sometimes referred to as panels. It was used primarily in roof planks of some public buildings built between the mid-1950s and mid-1990s.

It is a highly aerated, lightweight, concrete based material, with different material properties than conventional concrete.

IStructE statement and FAQ's on RAAC



Please read the [IStructE statement and FAQ's on RAAC](#)

Why was this study group formed?

Following failures in reinforced autoclaved aerated concrete (RAAC) planks/ panels, SCOSS issued an alert along with reports of failures to CROSS. This led to the Institution setting up this study group to provide a place for information and guidance on RAAC.

[Failure of reinforced autoclaved aerated concrete \(RAAC\) planks \(cross-safety.org\)](#)

Managing structures with RAACs

The following are suggested steps that building owners/ and our managers who are responsible for the safety of buildings should follow. This will enable building owners/ managers to address any issues relating to reinforced autoclaved aerated concrete (RAAC) that may be present in their structures:

1. Identification – Not all buildings built between 1950 to mid-90s will have RAAC. It is therefore important to establish if they are present in your building. Identification can be undertaken by an experienced estate/ maintenance manager/ or building surveyor or engineer. A [guide](#) has been created to enable managers of existing buildings to identify if their buildings have RAAC. However, if you are unsure then you can contact a professionally registered structural engineer or surveyor to identify if RAAC are present. To note they do not need to be an expert in RAAC to identify if the building has RAAC.

2. Assessment – Once you have established that RAAC has been used, your building will need to be assessed to understand what, if any, risk there is and if any immediate temporary remedial work is required. IStructE Chartered and Incorporated-Members would be competent to assess your structures. However, the Institution has created a [list](#) IStructE Chartered and Incorporated-Members who have self-declared that they have experience of RAAC to make it a little easier to find experienced structural engineers

Where RAAC becomes exposed, became wet or saturated, be aware that the RAAC concrete will soak the water into the multitude of voids in the structure of the concrete. The result of this saturation in the RAAC is that it will become heavier and a reduction of up to 30% of its strength. Professor Chris Goodier of Loughborough University who carried out a detailed review of saturated RAAC and he advises that the weight increase can be to 50% and often unevenly distributed along the length of the plank (his research paper can be found in below link) -

<https://www.lboro.ac.uk/research/experts/chris-goodier/>

3. Solutions - Competent structural engineers will need to evaluate all the information (which will include a detailed site inspection) and propose any remedial works to be completed. The list of IStructE Chartered and Incorporated-Members who have experience of RAAC can be accessed below.

[Reinforced Autoclaved Aerated Concrete planks - The Institution of Structural Engineers \(istructe.org\)](#)

This advice should be used, where the above is applicable, and the information discussed with your team highlighting the following points:

- Establish whether RAAC is within any existing building through undertaking a building survey utilising professional engineers or building surveyors
- Ensure a risk assessment is carried out including any temporary works are designed and installed as deemed appropriate by a qualified engineer
- Ensure existing structures is excluded from our contractual liabilities



Everyone has the right to be

100% Safe