



"Heated carpets are great for learning to read on." says Tom, aged 6.

## Carpet and underfloor heating systems

The issue of the suitability of carpet over underfloor heating systems has increasingly become a concern of both retailers and manufacturers as the popularity of underfloor systems has grown. Conventional wisdom has been that a tog rating greater than 1.5 would impede the performance of an underfloor heating system – and seeing as most UK carpets had been tested to have thermal resistance values of 1.6 tog upwards, it was a problem for the industry.

What is all too often forgotten, however, is that the previous requirement (which was, in fact, based on a little known German standard) did not specify whether the tog rating applied to just the carpet or the carpet and underlay.

**New research, however, by the Carpet Foundation in conjunction with the Underfloor Heating Manufacturers Association (UHMA) has proved conclusively that most carpets can be used over underfloor heating systems without impairing the performance of the system. Carpet is much more suitable than previously thought.**

The work, which used a room sized test chamber as opposed to the traditional laboratory double plate test, showed that the 'real life' thermal resistance

of most carpet styles is less than 1 tog and that carpet and underlay with a combined thermal resistance of less than approximately 2.5 tog (on the single plate test) allows the underfloor heating system to operate efficiently. **The findings show that the former maximum 1.6 tog is invalid.**

The jointly funded project used the extensive testing facilities of BSRIA in Bracknell. Five different carpet types (a wool rich Axminster; wool rich cut pile Tufted; synthetic cut pile Tufted; all wool loop pile Tufted; synthetic loop pile Tufted) and two different underlays (waffle sponge rubber and crumb rubber) were tested over an underfloor heating system in a 4m square by 3m high test chamber. The results showed that:

❶ **None of the carpet/underlay**

**combinations interfered with the efficient warming of the airspace in the room above**

- ❷ **The tested tog values of the carpets (using the test chamber as a life size 'tog' meter) were significantly lower than the previous laboratory test values**
- ❸ **The traditional double plate test was of no value when it came to underfloor heating**
- ❹ **A single plate test gives a more accurate and reliable result for use with underfloor heating but the double plate test is valid when conventional heating, such as radiators, are used**

The results showed that even a high quality Axminster carpet on a sponge rubber underlay formerly deemed to have a combined thermal resistance of 3.47 tog had an actual combined thermal resistance of only 2.2 tog, so enabling the underfloor heating system to perform perfectly well.

**These findings should be well received by the industry at large and you can now reliably and confidently reassure your customers that carpet and underfloor heating systems can operate effectively and efficiently together.**



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# technical EDGE

Information from the Carpet Foundation giving  
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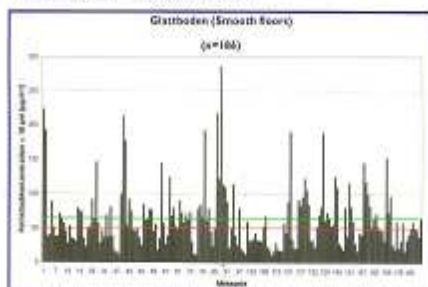
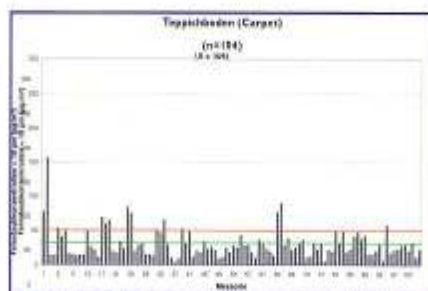
## Indoor Air Quality

In the last few years, the industry has been dogged by intermittent bursts of anti-carpet propaganda. Much of this was merely sensationalism and scaremongering and was not based on any hard scientific evidence.

I have spent a lot of time rebuffing these allegations but one of the problems we faced was the lack of independent third party support for our views. **Imagine our delight then at the findings of a study conducted independently of the carpet industry that proved conclusively that the indoor air in a carpeted room was of much better quality than that in rooms with smooth floors.**

The study, which used advanced dust collection and measurement techniques, was

undertaken by the German asthma and allergy federation (DAAB) and the German society for environment and indoor analysis. It looked at the content of fine dust particles in the air over smooth floors in 186 rooms and over carpet in 104 rooms. **The findings showed that the indoor air in a carpeted room contained less than half the amount of fine particulate dust than in rooms with smooth floors.** Indeed, the dust level over a smooth floor at 62.9 micrograms per cubic metre was found to be higher than the recommended European Standard.



The findings come on the back of other recent independent research which has supported the industry's claims that carpet is the healthy flooring option. Both a Pan European study and one conducted in New Jersey independently showed that **people with carpeted bedrooms required less medication for respiratory problems** than others. They also revealed that absenteeism levels were lower for children with carpeted bedrooms.

This flies in the face of the so called advice given to asthma sufferers to 'rip up carpets'. **The message you can tell anxious consumers is that new independent scientific research has proved that carpet is the healthy flooring option.**



*Welcome to the first of what I hope you will find useful pieces of communication on 'hot topics' affecting both the industry and consumers. This time I am pleased to be the bearer of good news on 2 fronts – indoor air quality and underfloor heating.*

*If there are any particular issues that you would like aired or help with, please do not hesitate to contact me on 01568 755 568 or davidwhitefoot@carpetfoundation.com.*

