

## How do Brintons carpets help with thermal insulation

The thermal resistance or insulation value of a carpet is important for both comfort and economic reasons. Rooms fitted with wall to wall carpeting not only feel warmer they look warmer too. Heat loss through flooring is reduced by the use of carpet and, when a good quality underlay is fitted as well the heat loss is reduced even further. This means that less heat is required to maintain the required room temperature. In fact, controlled experiments by IWS in Japan, measuring heat consumption of identical houses with and without fitted all wool carpeting, showed heat savings contributable to between 8.6% and 12.8%.

### Factors which influence the thermal resistance of carpet

- A number of different factors influence the thermal resistance (insulation) of carpet; the type of pile fibre, the density of the pile fibre, the backing materials used in the construction and the total thickness of the carpet.
  - Wool carpets and wool rich carpets are generally better insulators than man made carpets due to the natural scaly structure of the wool fibre which traps air.
  - The density of the pile fibre is also important, the best insulation properties are achieved with a carpet which has a reasonably dense pile surface, but one which still retains a good proportion of air between the fibres.
  - Carpets with a good dense backing also perform better because air does not penetrate and circulate through the fibres and still air is actually a very good thermal insulator. For these reasons a medium density wool rich carpet generally provides the best insulation. The thermal insulation will be greater with a thicker carpet than with a thinner one of similar construction and density. Usually 8 to 12mm thickness would be recommended.
  - Because drafts of air circulating round the room cause the occupants to feel colder, it is important to ensure that the carpet is fitted right to the edge of the skirting boards as well as under the doors and that a good draft excluder is also fitted. Where carpet is to be fitted over suspended wooden flooring, a special paper lining inserted beneath the underlay will help ensure a draft proof system.
- Measurements of thermal resistance
- Although there are a number of different measurements of thermal resistance used in the carpet industry, the most commonly used and easily understood measurement is the tog.
  - The higher the tog value, the greater the thermal resistance. 1 tog is the equivalent of a light summer suit or a moderate quality blanket and 4.5 togs is a typical value of the thermal resistance of a summer weight bed duvet. The higher the tog value, the greater the thermal resistance/insulation property of the carpet. The tog value is normally measured by testing in accordance with BS 4745 / ISO 5085, thermal transmission apparatus.

# Brintons

## Tog Values of Brintons Carpet

Typical Brintons 80%/20% wool/nylon carpets have Tog value between 1.0 and 2.2. We can offer the following information, which has been taken from test reports in accordance with BS 4745 from BTTG Shirley, Manchester. Actual copies of these reports are available on request.

<b>Carpet Quality</b>	<b>Name</b>	<b>Tog Value (BS 4745)</b>
Wilton	Bell Twist	1.43*
Wilton	Finepoint	1.56*
Wilton	Majestic	1.69*
Tufted	Duet	1.54*
Life	Wicker	1.60*
Life	Calico	1.6 approx
Life	Rattan	1.6 approx
Life	Twill	1.6 approx
Axminster 7528	@ Play	2.02*
Axminster 748	Focal Point	2.16 *
Axminster 748	Regina International	2.16*
Axminster 818	Performing Art	1.79*
Axminster 868	Renaissance	2.23*
Axminster 928	Galleria	1.62*
Axminster 928	Abbotsford	1.62*
Axminster 1028	Marquis	2.03*

\* Actual reports for Generic Axminster quality are available on request

Another test method for Thermal resistance of carpet is the ISO 8302 which gives the thermal resistance in m<sup>2</sup>K/W. We have tested Brintons Axminster 748 carpet quality as one of the thickest of our ranges. The result was 0.189 m<sup>2</sup> K/W. A copy of the test report is available on request.

## Effects of using underlay

- The thermal resistance properties of underlay can vary considerably.
- Wool or hair felts and Cloud 9 products usually provide the best insulation, followed by crumb rubber and blown rubber and then latex foam rubber as the worst. We always suggest that the manufacturer is consulted for insulation information, particularly where underfloor heating is used.

Typical Values:

- Cloud 9 Range (Ball & Young) vary from 1.0 to 3.1 Togs
  - Felts vary from 2.5 to 3.1 Togs
  - System Ten (Duralay) is 1.55 Togs
  - Durafit (Duralay) is 1.09 Togs
  - Gates Technics varies from 0.28 to 0.65 Togs
- (Information taken from Manufacturers specification sheets)

## Underfloor Heating Systems

- Thermal insulation figures are particularly important where carpet is to be fitted over underfloor heating systems and a separate information leaflet on this subject is available.