keder greenhouse

# Comparison details of Keder Cladding vs other materials typically used in greenhouse construction.

**To provide some technical data on Keder's energy saving properties, in comparison with other materials on the market, we have set out below relevant information on the heat saving properties. If you need more information please contact us on:**

**01386 49094 or email sales@kedergreenhouse.co.uk**

## R VALUE

**The R Value is the resistance to the flow of heat, therefore the higher the R Value number the better it is.**

**R-value – Thermal Resistance**

Thermal resistance is the temperature difference, at steady state, between two defined surfaces of a material or construction that induces a unit heat flow rate through a unit area, (K·m2)/W: Resistance, thermal, n: the quantity determined by the temperature difference, at steady state, between two defined surfaces of a material or construction that induces a unit heat flow through a unit area.

| Energy Savings Table | Product | R Value {(ft².◦F.h)/BTU} |
|---|---|---|
| **Keder Cladding** | Polydress LP-Keder Air Bubble Film | **1.7** |
| **Single glazing and sheeting** | Glass covered greenhouse (0.12'') | **0.7** |
| | PE- Film (5.9 mil) | **0.7** |
| | Polycarbonate covered greenhouse (0.2'') | **1.1** |
| **Double glazing combinations** | Polyethylene Double Layer inflated (w2'' air gap) | **1.5** |




Data as produced by RKW SE Polydress LP-Keder Germany

## U VALUE

**The U Value is the measure of the rate of heat loss or gain through a material, and the greater the products resistance to the heat flow the better its insulating value. Therefore the lower the U Value number the better it is.**

**U-value – Thermal Conductance**

Thermal conductance is the time rate of steady state heat flow through a unit area of a material or construction induced by a unit temperature difference between the body surfaces, in W/(m2·K). U-value, hence, is the reciprocal of the R-value: Conductance, thermal, n: the time rate of steady state heat flow through a unit area of a material or construction induced by a unit temperature difference between the body surfaces.

| Energy Savings Table | Product | U Value {BTU/(ft².◦F.h)} |
|---|---|---|
| **Keder Cladding** | Polydress LP-Keder Air Bubble Film | **0.5** |
| **Single glazing and sheeting** | Glass covered greenhouse (0.12'') | **1.4** |
| | PE- Film (5.9 mil) | **1.4** |
| | Polycarbonate covered greenhouse (0.2'') | **0.9** |
| **Double glazing combinations** | Polyethylene Double Layer inflated (w2'' air gap) | **0.7** |

## THERMAL

**Thermal resistance (R) and thermal conductance (U) of the materials are reciprocals of one another and can be derived from thermal conductivity (k) and the thickness of the materials.**

But one must remember that the given U and R values in the brochure are based on not only the measurement of heat conductivity of the material itself, but on the fact that the material is applied on the greenhouse. The difference is the situation that additional R(se) and R(si) are added to the total R value which will then give a lower U value in return. That why the given k-value cannot directly be translated into U value by doing the calculation U=k/L

**k-value – Thermal Conductivity**

Thermal conductivity is the time rate of steady state heat flow through a unit area of a homogeneous material induced by a unit temperature gradient in a direction perpendicular to that unit area, W/(m·k): Thermal conductivity, n: the time rate of steady state heat flow through a unit area of a homogeneous material induced by a unit temperature gradient in a direction perpendicular to that unit area.

| Energy Savings Table | Product | Thermal resistivity{(ft.h.◦F)/BTU} |
|---|---|---|
| **Keder Cladding** | Polydress LP-Keder Air Bubble Film | **27.0** |
| **Single glazing and sheeting** | Glass covered greenhouse (0.12'') | **2.3** |
| | PE- Film (5.9 mil) | **3.1** |
| | Polycarbonate covered greenhouse (0.2'') | **8.7** |
| **Double glazing combinations** | Polyethylene Double Layer inflated (w2'' air gap) | **4.9** |

Data as produced by RKW SE Polydress LP-Keder Germany