2 articles from C-therm:

<https://ctherm.com/resources/newsroom/blog/characterizing-thermal-conductivity-fruit-honey/>

<https://ctherm.com/resources/newsroom/blog/characterizing-the-thermal-conductivity-of-honey-influence-of-temperature/>

Notes:

* First article notes :
  + “The thermal conductivity of honey is 0.377 measured with the MTPS.  While some older published reports place the value for honey to be as high as 0.493 W/(m·K), honey contains only 15 – 18 wt% of water, so its thermal conductivity is dominated by the carbohydrates.  The thermal conductivity of various sugars are in the range of 0.2-0.3 W/(m·K). “
* 2nd notes that Thermal conductivity is a function of temperature
  + “In this work, a no name honey was tested from 5 to 55ºC and the thermal conductivity was found to range from 0.569 to 0.362 W/mK, respectively.”
    - Units are Watts per meter-Kelvin
  + From the graph in the article it looks like at ~5C (~41F), the conductivity is the highest so we’ll use 0.569 in the calculation.
* Remember - All of these calculations (above and below) are in metric.. so at the end we need to convert to imperial..
  + Typically **square-metre kelvin per watt or m2·K/W** (or equally, m2·°C/W). In the United States, R-values are given in units of ft2·°F·hr/Btu.
* Now convert to US Unitsal.. Using this calculator:
  + <https://www.translatorscafe.com/unit-converter/en-US/thermal-conductivity/>
  + 0.569 watt/meter/K = **0.328762121113 Btu (IT) foot/hour/foot²/°F**

To convert this info to an R-value:

<https://www.hunker.com/12250006/how-to-convert-thermal-conductivity-to-r-value>

Notes:

* R-value = 1/C where C is the conductance of the material
* From the article: “A piece of material with a conductivity K and thickness L has a conductance of C = K/L, which indicates how well heat can flow through a specific piece of that material such as a wall. In buildings, you are often concerned with stopping heat flow, or insulating. The insulating value of an object is called the R-value and can be calculated as R = 1/C = L/K.”
  + L is in meters
  + K is in Watts per meter-Kelvin
* Let’s assume a drawn out frame filled with Honey is 1” thick = 0.083 ft
  + Using K = 0.32876 BTU/ft-F-h
  + R = 0.083/0.32876
  + We get R-value: 0.25 **ft2·°F·h/BTU**

Misc Notes:

* The R-Value is an imperial system unit of measurement (**ft2·°F·h/BTU**) and the RSI Value is a metric system unit of measurement (m2·K/W)