

# US Department of Energy National Laboratory System Science and Technology Information

The following shows the equivalent "R" values of the most common types of insulation. When insulation collects moisture or any air is allowed to pass through it, the "R" value goes to zero.

Fiberglass insulation.....R 3.2 per inch

32% Efficiency Rating

3 ½ inches in a 2X4 wall with a 32% ER is equivalent to R11.2

Collects moisture

Cellulose insulation.....R 3.5 per inch

36% Efficiency Rating

3 ½ inches in a 2X4 wall with a 34% ER is equivalent to R 12.74

Collects moisture

Open cell foam insulation.....R 3.5 per inch

44% Efficiency Rating

3 ½ inches in a 2X4 wall with a 44% ER is equivalent to R 13.72

Collects moisture

Closed cell foam insulation.....R 7 per inch

92% Efficiency Rating

3½ inches in a 2X4 wall with a 92% ER is equivalent to R 63.7

2 inches in a 2X4 wall with a 92% ER is equivalent to R 40.18

1 inch in a 2X4 wall with a 92% ER is equivalent to R 20.09

Does not collect moisture