

R-Value Practice Problems

- Using the R-Value Lookup Table determine the U-Factor for the 2x4 Wall Assemblies below. Use Winter Conditions.

R-VALUE for 2x4 WALL at STUD AREAS	
Component	R-Value
Inside Air Film	0.68
5/8" Gypsum Board	0.56
2x4 Nominal (3 1/2") Stud Framing	4.38
1x4 Nominal (3/4") Horizontal Sheathing Boards	0.94
1/2" Plywood Sheathing	0.63
60 Min. Building Paper	0.06
1/2" Cedar Bevel Lapped Siding	0.80
Exterior Air Film	0.17
TOTAL R-VALUE (STUD WALL AREA)	8.22
U-FACTOR	0.121655

R-VALUE for 2x4 WALL at CAVITY AREAS	
Component	R-Value
Inside Air Film	0.68
5/8" Gypsum Board	0.56
Cellulose Blown Insulation 3.80-3.90	13.65
1x4 Nominal (3/4") Horizontal Sheathing Boards	0.94
1/2" Plywood Sheathing	0.63
60 Min. Building Paper	0.06
1/2" Cedar Bevel Lapped Siding	0.80
Exterior Air Film	0.17
TOTAL R-VALUE (STUD WALL AREA)	17.49
U-FACTOR	0.057118

R-VALUE for 2x4 WALL at CAVITY AREAS	
Component	R-Value
Inside Air Film	0.68
5/8" Gypsum Board	0.56
Fiberglass Blown Insulation 3.70-4.30	15.05
1x4 Nominal (3/4") Horizontal Sheathing Boards	0.94
1/2" Plywood Sheathing	0.63
60 Min. Building Paper	0.06
1/2" Cedar Bevel Lapped Siding	0.80
Exterior Air Film	0.17
TOTAL R-VALUE (STUD WALL AREA)	18.89
U-FACTOR	0.052938