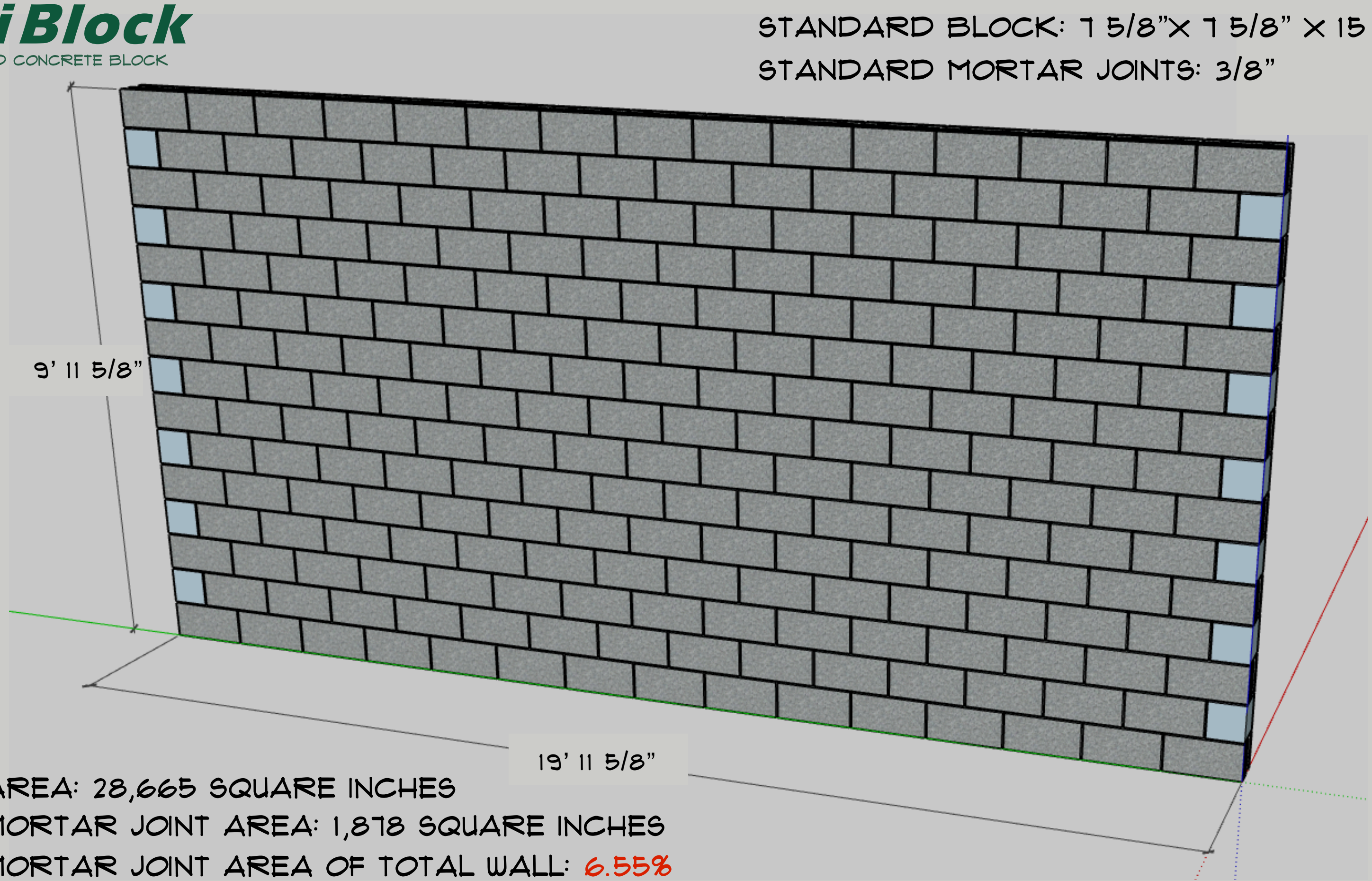
OmniBlock
AN INSULATED CONCRETE BLOCK

STANDARD BLOCK: 7 5/8"x 7 5/8" x 15 5/8"
STANDARD MORTAR JOINTS: 3/8"



GROSS WALL AREA: 28,665 SQUARE INCHES
UNINSULATED MORTAR JOINT AREA: 1,878 SQUARE INCHES
UNINSULATED MORTAR JOINT AREA OF TOTAL WALL: 6.55%

A 5% INSULATION VOID REDUCES R-VALUE BY 50%*

OMNI BLOCK TOTALLY INSULATES ALL BLOCK AND ALL MORTAR JOINTS

• SOURCE: ARIZONA ENERGY OFFICE

There are insulated block systems on the market that make claims of continuous insulation within their block and upon close examination, they do. However, that examination also reveals that there is no insulation spanning the mortar joints in a total wall assembly. Since mortar joints account for at least 6% of the total wall, this would not be considered continuous insulation.

Omni Block does not claim to have continuous insulation. Continuous insulation is not required in the IECC, specifically the Performance Path section of the code. Omni Block does have two independent layers of insulation inserts for the System 8 and 3 independent layers of insulation included in the System 12. Additionally, the insulation in both Systems span the mortar joints (vertically and horizontally). For more information visit www.omniblock.com.

Calculations:

Wall Area: 9’ 11 5/8” x 19’ 11 5/8” or 119.625” x 239.625” = 28,665.14 square inches

Horizontal joints: 3/8” or 0.375”
Length: 19’ 11 5/8” or 239.625”
Quantity: 14
Therefore: 14 x (0.375” x 239.625”) = 1,258.03 square inches

Vertical joints: 3/8” or 0.375”
Number of odd courses: 8
Length of odd courses: 7 5/8” or 7.625”
Quantity of vertical joints in odd courses: 14
Therefore: 8 x ((0.375” x 7.625”) x 14) = 320.25 square inches

Vertical joints: 3/8” or 0.375”
Number of even courses: 7
Length of even courses: 7 5/8” or 7.625”
Quantity of vertical joints in even courses: 15
Therefore: 7 x ((0.375” x 7.625”) x 15) = 300.195 square inches

Results: 1,258.03 + 320.25 + 300.195 = 1,878.475 total square inches
1,878.475 ÷ 28,665.14 = 0.0655

R-Value Diminishing Returns

Livable SQ FT		Delta T (degrees)		R-Value (U-Value 1/R)		BTU/HR
2500	X	20°	X	R-1 (U=1)	=	50,000
2500	X	20°	X	R-10 (U=.1)	=	5,000
2500	X	20°	X	R-20 (U=.05)	=	2,500
2500	X	20°	X	R-30 (U=.033)	=	1,650
2500	X	20°	X	R-40 (U=.024)	=	1,200

Source; Arizona Energy Office

Assume an Insulation Void of 5%

	Livable SQ FT		Delta T (degrees)		R-Value (U-Value 1/R)		BTU/HR
95%	2375	X	20°	X	R-30(U=.033)	=	1,568
5%	125	X	20°	X	R-1 (U=1)	=	2,500
	= 2500						= 4,068

Source: Arizona Energy Office

Table shows 95% of the wall insulated with an R-30 and what a change in temperature of 20° uses in energy (Btu/hr) to maintain the starting temperature.

Table shows 5% of the wall insulated with an R-1 (not really a total void) and what a change in temperature of 20° uses in energy (Btu/hr) to maintain the starting temperature.

Conclusion of an Insulation Void of 5%

Livable SQ FT		Delta T (degrees)		R-Value (U-Value 1/R)		BTU/HR
2500	X	20°	X	R-1 (U=1)	=	50,000
2500	X	20°	X	R-10 (U=.1)	=	5,000
2500				R-12	=	4,068
2500	X	20°	X	R-20 (U=.05)	=	2,500
2500	X	20°	X	R-30 (U=.033)	=	1,650
2500	X	20°	X	R-40 (U=.024)	=	1,200

Source: Arizona Energy Office

Table shows where the total Btu/hr usage with the 5% void would be placed within Graph 1 and what that corresponding R-Value would equate to.