

TECHNOTE

C O M M E R C I A L



DATE 10 99

Insulating with Fiberglass Batts Alone Leaves a Home Underinsulated

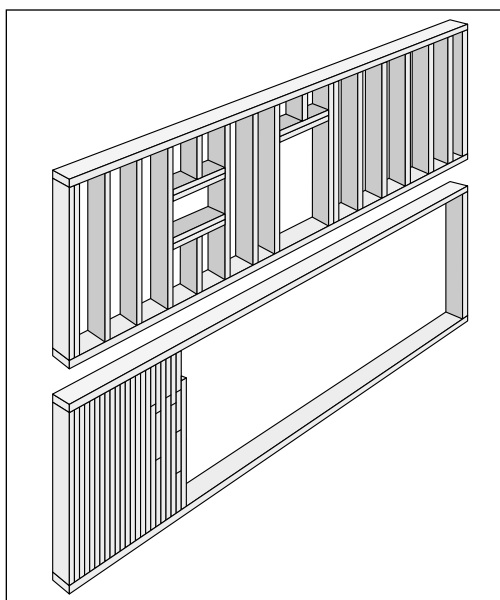
STYROFOAM* brand insulation in frame wall sheathing applications

Wood Framing Makes up One Fourth of the Wall Area of a Home.

So One Fourth of the Wall is not insulated with fiberglass.

Over 40% of Wall Heat Loss Escapes Through this Framing.

1" STYROFOAM Brand Sheathing Can Cut This Loss by 32%



If all the framing in a typical wall were placed side by side, it would take up 25% or more of the wall area, as shown here.

So 25% of your walls are uninsulated.

As Proof, NAHB Builds Houses and Counts Every Stud!

A joint study by the National Association of Home Builders (NAHB), Stanley Works, and Bob Schmitt Homes, Inc. was conducted years ago with the goal of identifying methods for controlling costs in residential construction. A plain, rectangular house was built using strict cost control. Every piece of material was scrutinized so that absolutely no unnecessary material was used. (In case you're interested, 37,721

mechanical fasteners were used!) After completion, the total square foot area of studs, headers, sills, and plates used in the exterior walls was calculated. Even after removing all unnecessary lumber, the exterior walls of the house still contained 23% solid lumber! The walls of an identical house built using standard construction practices contained over 25% solid lumber! The framing calculation on the reverse side shows you why that's true.

Consequently, fiberglass batts can insulate the wall cavity, but they can't insulate the framing.

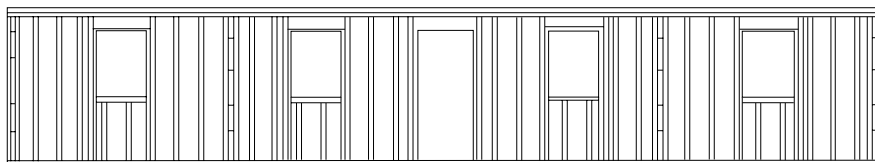
STYROFOAM* brand sheathing does insulate the framing – and also the cavity. And STYROFOAM brand sheathing reduces air infiltration, as well.

That's why STYROFOAM brand insulation should be considered the primary insulation for a wall, and cavity insulation as the secondary insulation.

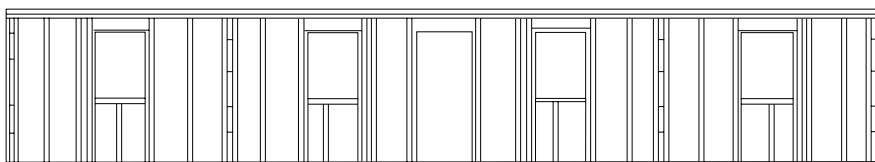


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Below are two typical walls, one framed on 16" centers and one on 24" centers. **Note that the 24" spacing reduces the framing area by only 3 percentage points.**



With Framing 16" o.c., The Wall is 25% Wood.



With Framing 24" o.c. The Wall is 22% Wood.

Gross Wall Area:

Total Wall Area = 389 sq. ft.
(48' x 8'-1.2")

Less 4 Windows = -48 sq. ft.
(4 x 3 ft. x 4 ft.)

Less 1 Door = -20 sq. ft.
(6.67 x 3 ft.)

Net Opaque Wall Area = 321 sq. ft.

Framing Area:

FRAMING COMPONENT		COMPONENT AREA (SQ. FT.)	
		16" O.C.	24" O.C.
2 Top Plates	(2 x 1.5 in. x 576 in. ÷ 144 sq. in./sq. ft.)	12.0	12.0
1 Sole Plate	(1 x 1.5 in. x 576 in. ÷ 144 sq. in./sq. ft.)	6.0	6.0
Plywood Subfloor	(0.5 in. x 576 in. ÷ 144 sq. in./sq. ft.)	2.0	2.0
Wall Studs			
16" o.c.	(8 x 1.5 in. x 92.6 in. ÷ 144 sq. in./sq. ft.)	34.7	-
24"	(28 x 1.5 in. x 92.6 in. ÷ 144 sq. in./sq. ft.)	-	27.0
Cripples			
16" o.c.	(8 x 1.5 in. x 34.0 in. ÷ 144 sq. in./sq. ft.)	2.8	-
24"	(4 x 1.5 in. x 34.0 in. ÷ 144 sq. in./sq. ft.)	-	1.4
10 Jack Studs	(10 x 1.5 in. x 83.5 in. ÷ 144 sq. in./sq. ft.)	8.7	8.7
5 Headers	(5 x 9.25 in. x 39 in. ÷ 144 sq. in./sq. ft.)	12.5	12.5
4 Window Sills	(4 x 1.5 in. x 36 in. ÷ 144 sq. in./sq. ft.)	1.5	1.5
Total Area of Framing		80.2	71.1
Percent of Opaque Wall Area (Framing Area ÷ 321 sq. ft.)		25.0%	22.1%

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For technical information, call 1-800-441-4369

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