

Continuous Insulation for Code-Compliant, High-Performance Walls in Type V and Residential Construction

Module 2: Applications

Revised 10/31/2016



Applications of Continuous Insulation

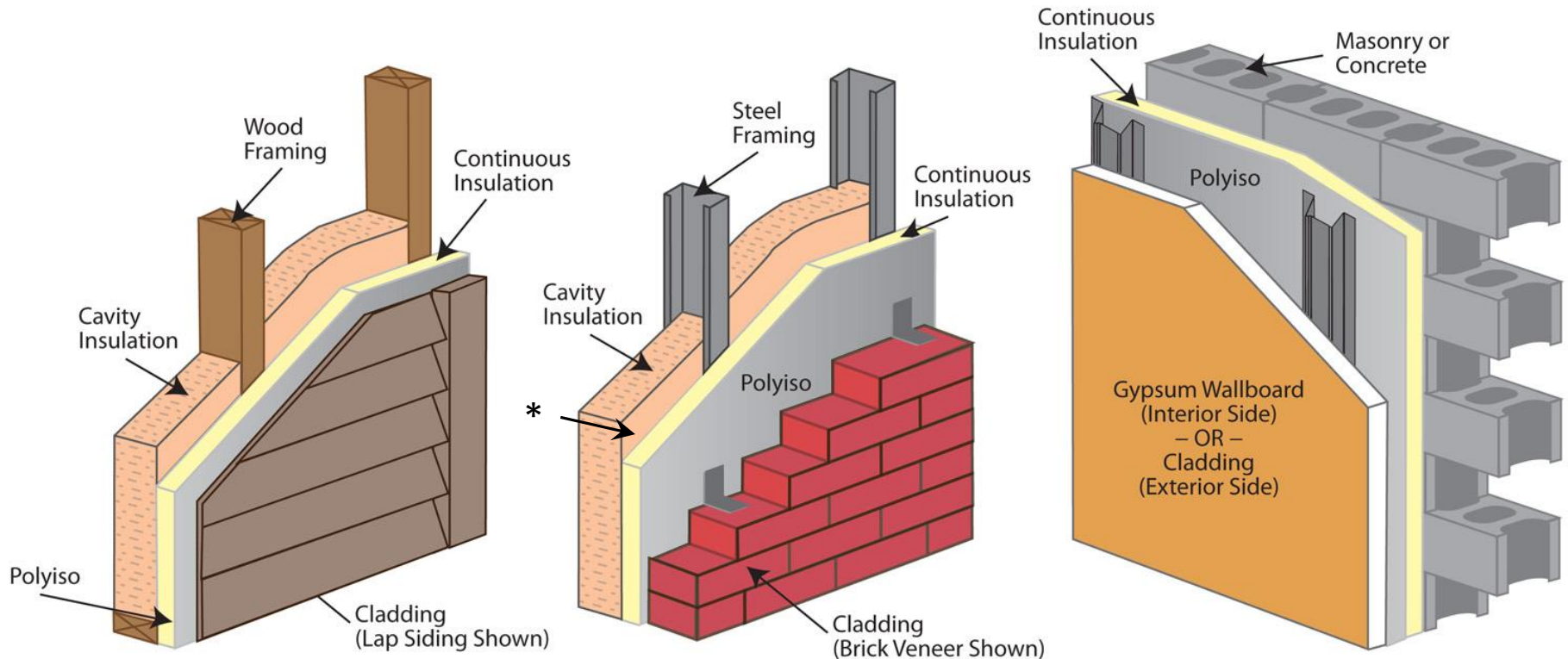
- Exterior Insulation – Residential
 - Minimum R5 CI for climate zones 4 marine, 5 and above in the 2009 IECC
 - Minimum R5 CI for climate zones 3 and above in the 2012 IECC
- CI meets energy code R-values or U-factors

Continuous Insulation in the Codes

- Prescriptive requirement in [IRC Table N1102.1.1](#) has increased in most climate zones

WOOD FRAME WALL R-VALUE			
CLIMATE ZONE	IRC 2006	IRC 2009	IRC 2012
1	13	13	13
2	13	13	13
3	13	13	20 or 13 + 5 ^h
4 except Marine	13	13	20 or 13 + 5 ^h
5 and Marine 4	19 or 13 + 5 ^g	20 or 13 + 5 ^h	20 or 13 + 5 ^h
6	19 or 13 + 5 ^g	20 or 13 + 5 ^h	20 + 5 or 13 + 10 ^h
7 and 8	21	21	20 + 5 or 13 + 10 ^h

Applicable to Various Wall Types



* Gypsum board typically added between steel stud and polyiso where fire resistance properties are needed

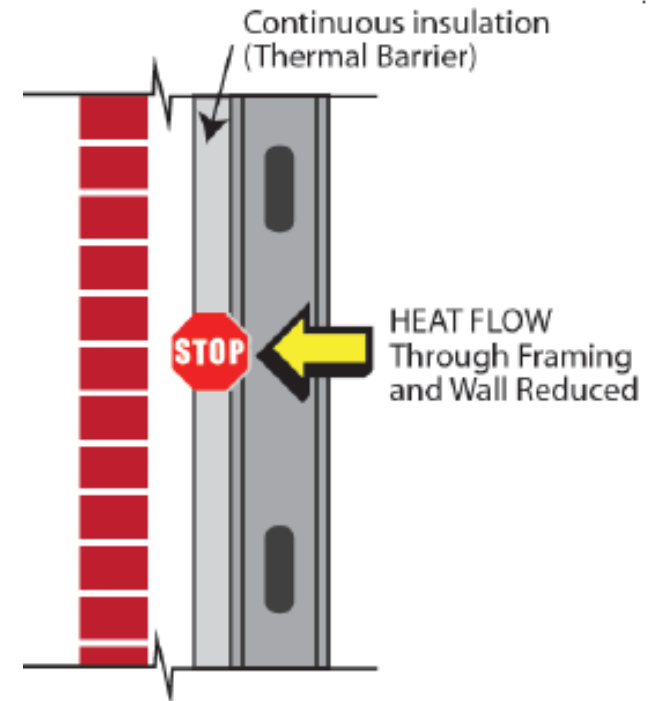
Thermal Bridging



Before
OSB and R-13
batts



After
½" rigid foam CI
added



Applications of Continuous Insulation

- Air Barrier (AB)
 - Most foam sheathing meets AB material requirements
 - Key to seal joints
 - Though code requires AB only on one side of wall, both is ideal
 - Know the difference between AB and vapor barrier
 - Do not use low perm AB (vapor barrier) on both sides of wall

Applications of Continuous Insulation

- Water-Resistive Barrier (WRB)
 - Only applies to approved products
 - Must be approved by building official
 - For foam sheathings, approved flashing tape required
 - Quality installations = durable
 - Rigorous code compliance testing
 - Very water- and air-infiltration resistant