ICF Firewall / Fire Separations

Insulated Concrete Form (ICF) walls are becoming increasingly popular for their use in vertical fire separations and firewalls over traditional concrete masonry units (CMU). While meeting or exceeding the fire resistance ratings required in standard construction these wall systems present challenges not associated with CMU construction. Some of these code compliance challenges are identified here.

ICF Wall Ratings

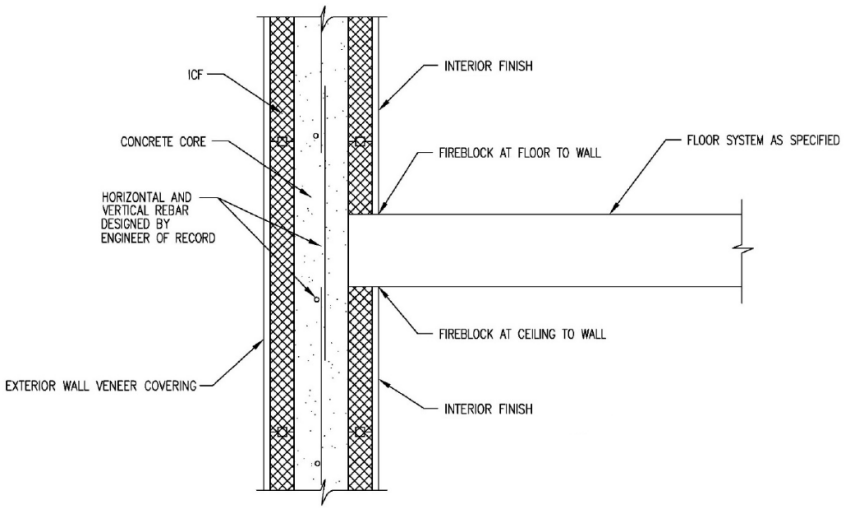
When constructed in accordance with CAN/ULC S-101 and the manufacturer's recommendations, ICF wall assemblies have proven to achieve the example ratings for the prescribed wall thicknesses in the chart below*

FORMED WALL THICKNESS	MAX FIRE RATING
4 in. (102 mm)	2 Hour
6 in. (152 mm)	4 Hour
8 in. (203 mm)	4 Hour
10 in. (254 mm)	4 Hour
12 in. (305 mm)	4 Hour

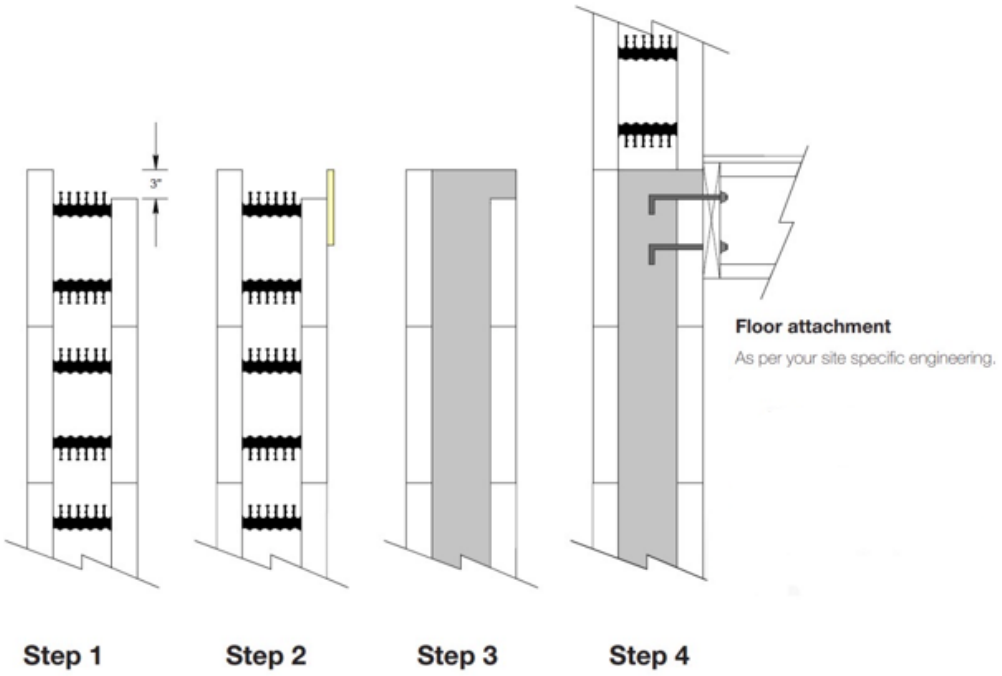
* Provided for reference only, consult with your product manufacturer for ratings and testing specific information.

Fire Separations

When ICF wall construction is used in conjunction with wood framed horizontal fire separations, additional consideration may need to be employed to ensure code compliance for continuity of the fire separations at the floors. As the ICF element providing the fire resistance rating is the vertical concrete central layer blocking or increased concrete width may be necessary at wall and floor intersections.



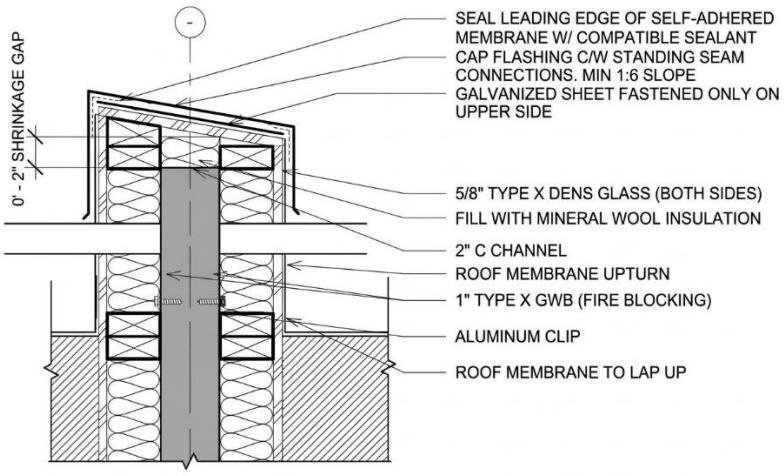
TYPICAL WALL-TO-FLOOR INTERSECTION



Alternative Wall-to-Floor Intersection

Firewalls

ICF use for firewalls needs to comply with the same requirements as typical fire separations but must also account for unique aspects including, prevention of fire wall collapse when adjacent/connected construction is compromised, vertical firewall continuity through all storeys / roofs, parapets, and building shrinkage.



ICF Parapet Example