

The Building Regulations (Amendment) Regulations 2007 require a 40% reduction in energy use and CO₂ emissions for new dwellings (and flats) compared to the 2005 building regulations (implementation date is 1st July 2008 except where a Planning Application is made on or before 30th June 2008). Refer to **TGD Part L of the Building Regulations (Amendment) 2007 for comprehensive information.**

TGD Part L states “A dwelling shall be designed and constructed so as to ensure that the energy performance of the building is such as to limit the amount of energy required for the operation of the dwelling and the amount of CO₂ emissions associated with this energy use insofar as is reasonably practicable”.

Carbon emissions arise from the fuel energy used to provide heating, cooking, lighting and cooling for a dwelling.

NOTE 1. Walls 1 & 2 contribute to a 40% reduction in energy consumption and CO₂ emissions when combined with a range of other improvements, many of which are listed in table 1 below. Floor/wall junction, cill, head and jamb details will vary depending on insulation type used – refer to relevant insulation manufacturers details.

NOTE 2. Walls 3 – 7 contribute to a 60% reduction in energy consumption and CO₂ emissions when combined with a range of other improvements, many of which are listed in table 1 below.

Floor/wall junction, cill, head and jamb details will vary depending on insulation type used – refer to relevant insulation manufacturers details.

Rising walls can be formed using a 350mm wide block or a standard 440mm long block turned to suit.

A 60% reduction in energy and CO₂ emissions requires a significant number of improvements. Table 1 lists some of these together with the likely % saving.

All walls shown contribute to an **“A” rating** as part of the overall energy saving. It is easier to achieve an **“A” rated** dwelling by using walls 3 – 7, due to their improved **“U”** values, which far exceed the 0.27 Wm²K requirements of Part **“L”** of the TGD.

AIR TIGHTNESS

The effective way to draught-proof the walls of a home is to finish internally in traditional sand/cement render and skim. This will utilise the thermal mass of the dwelling. Ensure windows, door jambs and all service outlets are draught proofed.

TECHNICAL INFORMATION

Thermal resistance “R” value of 100mm Solid Block.....0.075 W/mK
Thermal resistance “R” value of 215mm Cavity Block.....0.210 W/mK

As every dwelling is site specific consult a BER assessor for detailed information.

THE BENEFITS OF CONCRETE BLOCK CONSTRUCTION:

- Energy Efficient
- Fire resistant
- Sound Resistant
- Structurally sound
- Strong • Durable • Versatile
- Safe • Secure • Robust
- Economical
- Will not Warp, Twist or Rot
- Traditional
- 100% Recyclable

Table 1	CATEGORIES WHICH IMPROVE ENERGY EFFICIENCY	TYPICAL % ENERGY SAVING
	Lighting – change lamps from incandescent to CFLs	3%
	Improve ground floor, external walls and roof insulation	4.5%
	Reduce thermal bridging in external fabric	3%
	Improve air tightness and carry out pressurisation test	2.5%
	Use condensing boiler instead of standard	10.5%
	Remove open fireplace, install wood stove and balanced flue	8%
	Improve window and door U-values	8%
	Improve window orientation	4%
	Increase hot water cylinder insulation	1%
	Insulate primary circuit pipework	1%
	The use of Renewable Energy Technologies e.g. solar panels	8%
	Build draught lobby	1%
	Install heat-recovery ventilation	5.5%
	Total energy reduction better than 2005 regulations	60%

Wall “U” values better than 0.20 W/m²K can be achieved by using insulation with improved thermal conductivity, greater thickness of insulation, or both.
All work must be carried out to relevant standards.

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Concrete Built is Better Built



MEETING AND SURPASSING PART 'L' AMENDED REGULATIONS 2007

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Conforming with
new government
regulations using
traditional
construction

Proof that concrete
built is better built

ROADSTONE CONCRETE BLOCKS

 **roadstone**

WHAT OUR NATION'S BUILT ON



Semi Detached homes, Westmeath (110 m²)
Internally Insulated Single Leaf Cavity Block Wall.
Similar to **Wall 3**.



"A"rated homes, Cork (154 m²)
Full fill cavity insulation. Similar to **Wall 5**.

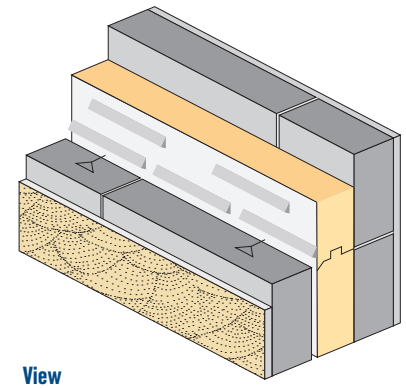
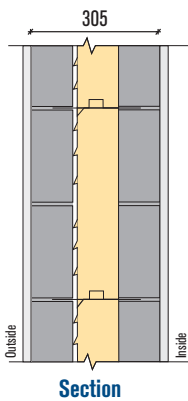


"A"rated homes, Roscommon (220 m²)
Partial fill cavity insulation. Similar to **Wall 6**.

Wall 1. - Cavity Fill Insulation

105 mm Cavity - "U" value 0.27 W/m²K - elemental (see note 1)

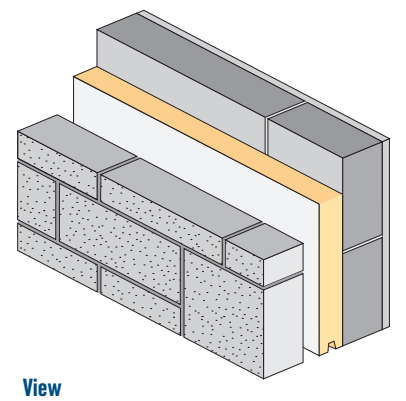
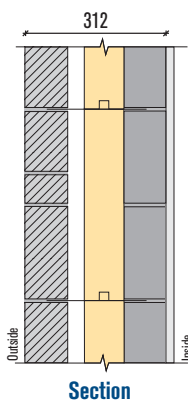
- 19 mm External render
- 100 mm Concrete block
- 10 mm Air Gap
- 95 mm Aerobord Platinum Cavity-Fill insulation (IAB Approved)
- 100 mm Concrete block
- 15 mm Plaster & skim finish



Wall 2. - Partial Fill Cavity

100 mm Cavity - "U" value 0.27 W/m²K - elemental (see note 1)

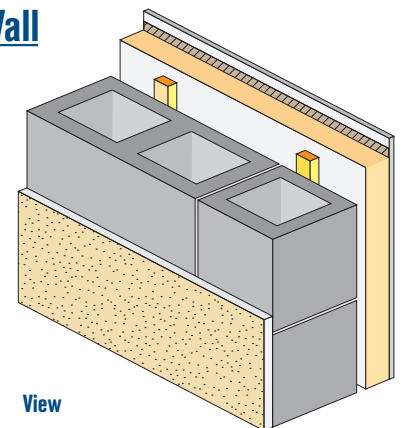
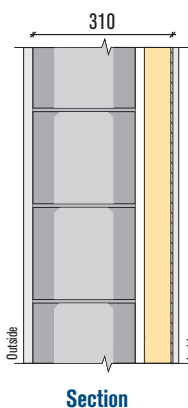
- 107 mm Hallmark Walling / Brick / Block rendered
- 40 mm Clear cavity
- 65 mm PIR insulation
- 100 mm Concrete block
- 15 mm Plaster & skim finish

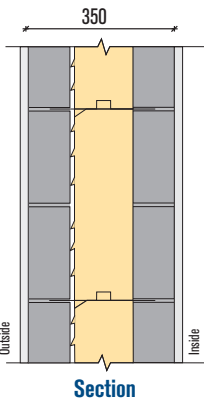


Wall 3. - Internally Insulated Single Leaf Wall

"U" value 0.22 W/m²K - elemental (see note 2)

- 22 mm External render
- 215 mm Cavity concrete block
- 82.5 mm Phenolic composite board on 50 x 25mm pre-treated battens

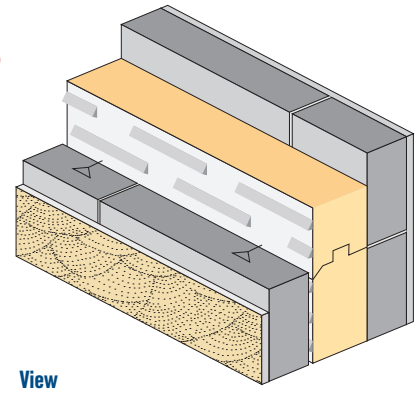




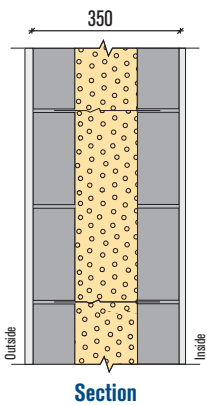
Wall 4. - Cavity Fill

150 mm Cavity - "U" value 0.20 W/m²K - elemental (see note 2)

- 19 mm External render
- 100 mm Concrete block / brick / stone
- 10 mm Air Gap
- 140 mm Aerobord Platinum Cavity-Fill insulation (IAB Approved)
- 100 mm Concrete block
- 15 mm Plaster & skim finish



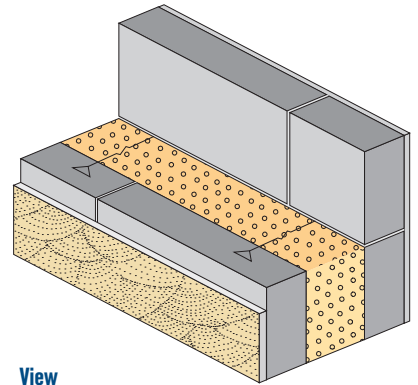
View



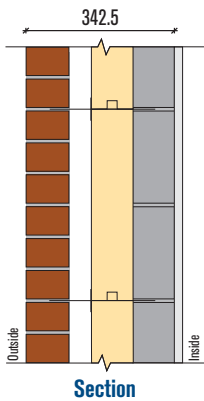
Wall 5. - Full-Fill Cavity

150 mm Cavity - "U" value 0.20 W/m²K - elemental (see note 2)

- 19 mm External render
- 100 mm Concrete block
- 150 mm Aerobord Platinum Blown Bead Insulation (IAB approved)
- 100 mm Concrete block
- 15 mm Plaster and skim



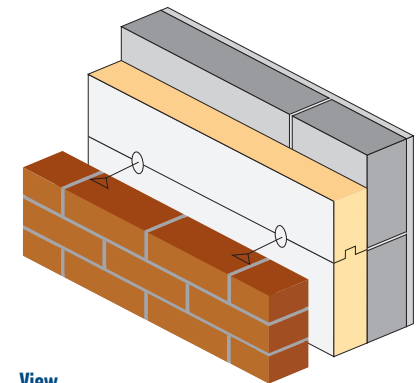
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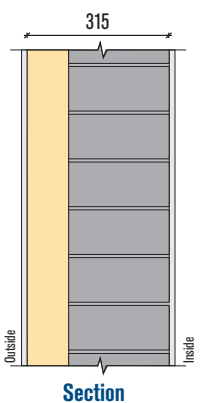
Wall 6. - Partial Fill Cavity

140 mm Cavity - "U" value 0.21 W/m²K - elemental (see note 2)

- 102.5 mm Brick / Block Rendered / Stone / Masonry / Hallmark
- 50 mm Cavity
- 90 mm PIR Insulation
- 100 mm Concrete block
- 15 mm Plaster & skim finish



View

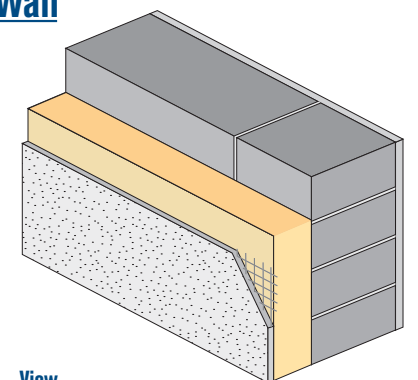


Wall 7. - Externally Insulated Single Leaf Wall

"U" value 0.20 W/m²K - elemental (see note 2)

- 12 mm External render fibre mesh reinforced
- 100 mm Phenolic board fixed to manufacturers' instructions
- 215 mm Concrete block
- 13 mm Lightweight plaster

Blockwork should be lined to the outside face, with tolerances to the inside



View