

# Appropriate Information, specific to MMC, to be included in CNs and requested from BCAs to promote compliance

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CPD Day  
Athlone  
31<sup>st</sup> January 2024

*Kevin Cooke*  
*Building Control*  
Mayo County Council



Comhairle Contae Mhaigh Eo  
Mayo County Council



# Commencement notice

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- 7. (1) Subject to *sub-article (2)* and *articles 3* and *6*, this Part applies to—**
- (a) the erection of a building,**
  - (b) the material alteration or extension of a building, and**
  - (c) a material change of use of a building,**
- to which the Building Regulations apply.**



# Commencement notice

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- ✓ Filed electronically
- ✓ Completion of an online assessment
- ✓ Preliminary inspection plan
- ✓ Certificates and Notices
- ✓ Fee



# Commencement notice

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accompanied by—

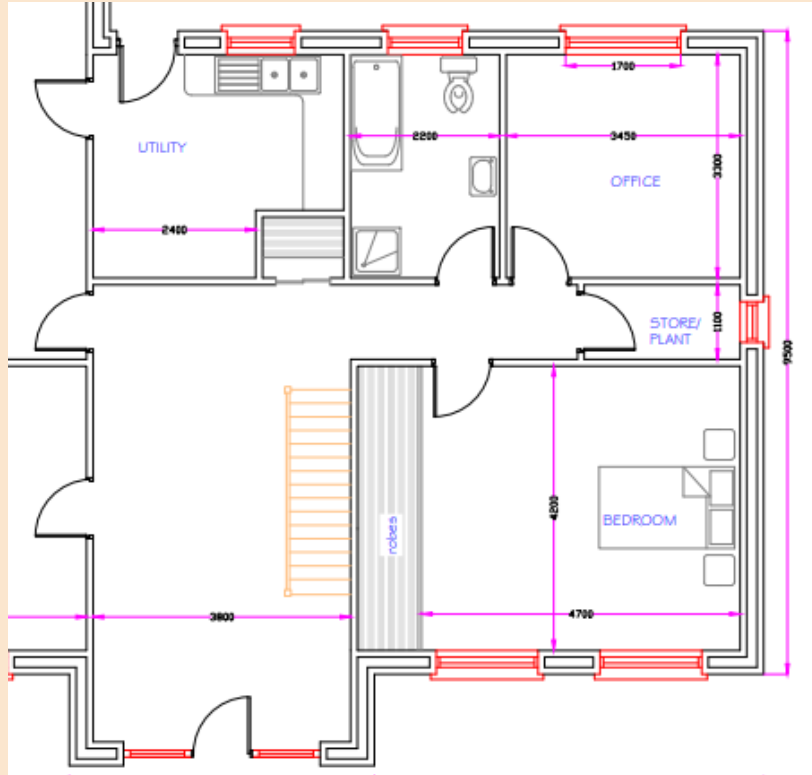
**such plans, calculations, specifications and particulars as are necessary to outline how the proposed works or building will comply**

with the requirements of the Second Schedule to the Building Regulations relevant to the works or building concerned, and including—

- (I) general arrangement drawings including plans, sections and elevations,
- (II) a schedule of such plans, calculations, specifications and particulars as are currently designed or as are to be prepared at a later date,



# Commencement notice



**4. THIS DRAWING TO BE USED FOR  
PLANNING PERMISSION PURPOSES ONLY**



# Commencement notice

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Structurally designed to specified load criteria?



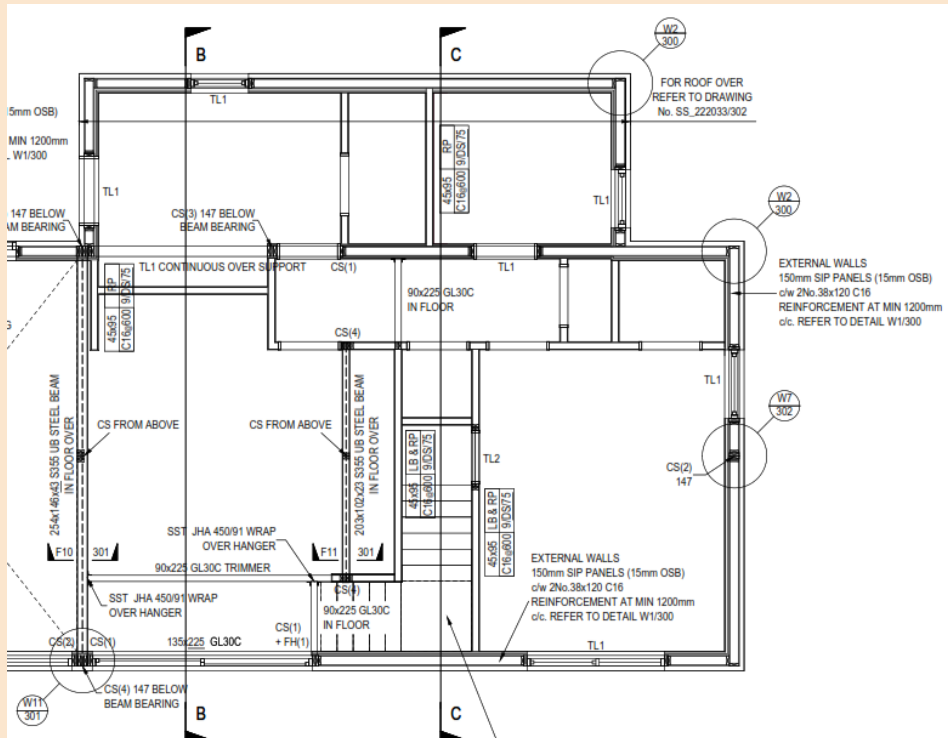
# Commencement notice

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CONSTRUCTION Purposes Only



# Commencement notice

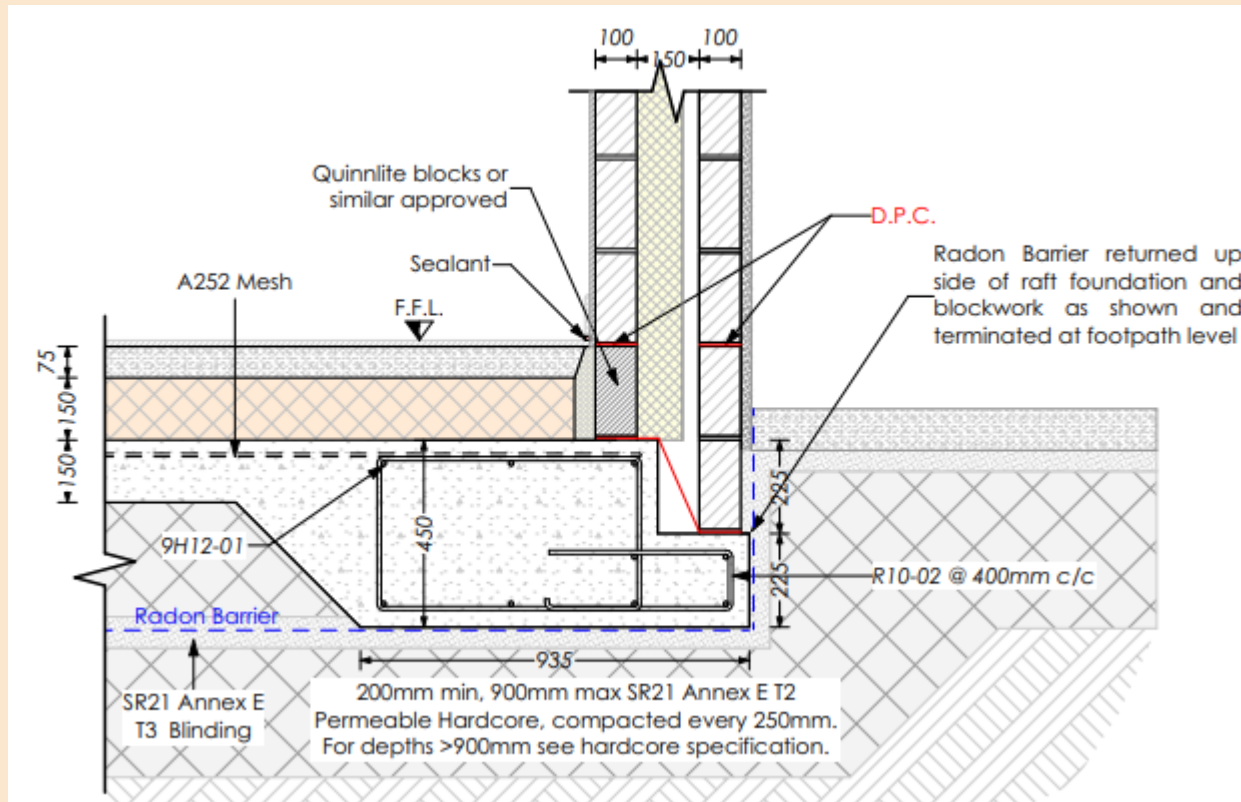


CONSTRUCTION Purposes Only





# Commencement notice



# Commencement notice

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## **Hardcore Fill**

**T3 Blinding:** Used in all cases to blind off the top layer of the hardcore and so is used immediately below the radon barrier/DPM, to mitigate the risk of puncture.

**T2 Permeable:** Gas permeable material and must be used beneath the blinding layer and wherever a radon sump is present. The layer must not be less than 200mm in depth. For residential loading, 'T2 Perm' may be used as the sole fill material up to a maximum depth of 900mm or 'T1 Struc' may be used beneath it.

**T1 Structure:** Can be used beneath blinding layer where a gas permeable layer (T2 Perm) is not required or can be used under 200mm of T2 Perm' to any depth.

**T0 Structure:** May be used up to a level not closer than 900mm below the radon barrier/DPM. Thereafter 'T1 Struc' and/or 'T2 Perm' is used to make up the 900mm to radon barrier/DPM.

(Note: All hardcore to be in accordance with SR21 Annex E)



# Commencement notice

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Has sufficient detail been provided to show BR compliance

- Foundation details including radon membrane & sump
- *Hardcore and blinding details and specification – SR21*
- *Wall details including ties, straps, lintels*
- *Window & door opening details*
- *First floor and Roof Details*
- *Structural supports such as RSJ's, resting pads, levelling shims*
- *Insulation details of floors, walls and roof*
- *Part L specification report*



# Modern Methods Of Construction (MMC)

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# Modern Methods Of Construction (MMC)

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An industry term used to describe a range of manufacturing and innovative alternatives to traditional construction and includes

- ❖ volumetric construction – 3D units made in factories and delivered to site
- ❖ panelised systems – flat panel units such as panelised walls
- ❖ sub-assemblies and components – partition wall systems, roofing assemblies
- ❖ pods – non-loadbearing volumetric assemblies such as kitchens and bathrooms
- ❖ site-based MMC – Insulated Concrete Formwork (ICF)



# Modern Methods Of Construction (MMC)

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MMC must comply with the Irish Building Regulations.

Part A - Structure	Part G - Hygiene
Part B - Fire	Part H – Drainage and Waste Disposal
Part C – Site preparation & Resistance to Moisture	Part J – Heat Producing Appliances
Part D – Materials and Workmanship	Part K- Stairs and Ladders, Ramps & Guards
Part E - Sound	Part L – Conservation of Fuel and Energy
Part F - Ventilation	Part M – Access and Use



# Commencement notice

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## How to show Building Regulation compliance

- **Agrément Certificate**

- The aim is to enhance the certification process for MMC and provide a clear pathway for system manufacturers on the assessment process for Agrément Certification.



**Guide to Agrément  
Certification for  
Modern Methods of  
Construction (MMC)**



# Agrément Certification

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- The process of applies to those products and processes which do not fall within the scope of existing construction standards, either because they are innovative or because they deviate from established norms.
- The NSAI assess for compliance with the Irish Building Regulations, and where appropriate, issue Agrément certificates.
- The certificate confirms that the building products, materials, techniques and equipment are safe and fit for purpose in accordance with the Irish Building Regulations and with the terms of the certificate.





# e.g. Agrément Certificate for an ICF System

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- Certificate covers aspects such as:
  - Specified use
  - Assessment
  - Technical specification such as walls, floors and roof
  - Design data such as strength and stability, structural fire safety, weathertightness
  - Technical Investigations such as behaviour in relation to fire, thermal insulation, Condensation, Sound and Durability



# Agrément Certificate - an ICF System

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## Specified use:

for use in the construction of buildings up to a maximum of

- ❑ six storeys in height in purpose groups 1(c), 2(a), 2(b), 3, 4(a) and 4(b), and
- ❑ up to five storeys in height in purpose groups 1(a), 1(b) and 1(d)



# Agrément Certificate - an ICF System

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## Technical Specification – Installation:

- Site construction is undertaken using approved/trained installers in accordance with the Installation Manual.



# Agrément Certificate - an ICF System

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## Technical Specification – External Walls:

- ❑ NSAI Agrément approved external render for use with EPS
- ❑ ICF EPS outer leaf of specified thickness
- ❑ Reinforced concrete core of specified thickness
- ❑ ICF EPS inner leaf of specified thickness
- ❑ 12.5mm plasterboard slabs fixed directly through the EPS into the concrete core
- ❑ 4mm gypsum skim coat plaster



# ICF Build - External Walls

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# ICF Build - External Walls



# Agrément Certificate - an ICF System

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## CN checks

- Specified use
- Trained installers
- Differences in technical specification details between Agrément Certificate/Commencement Notice submission



# No Agrément Certificate

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CN must be accompanied by—

**such plans, calculations, specifications and particulars as are necessary to outline how the proposed works or building will comply**

with the requirements of the Second Schedule to the Building Regulations

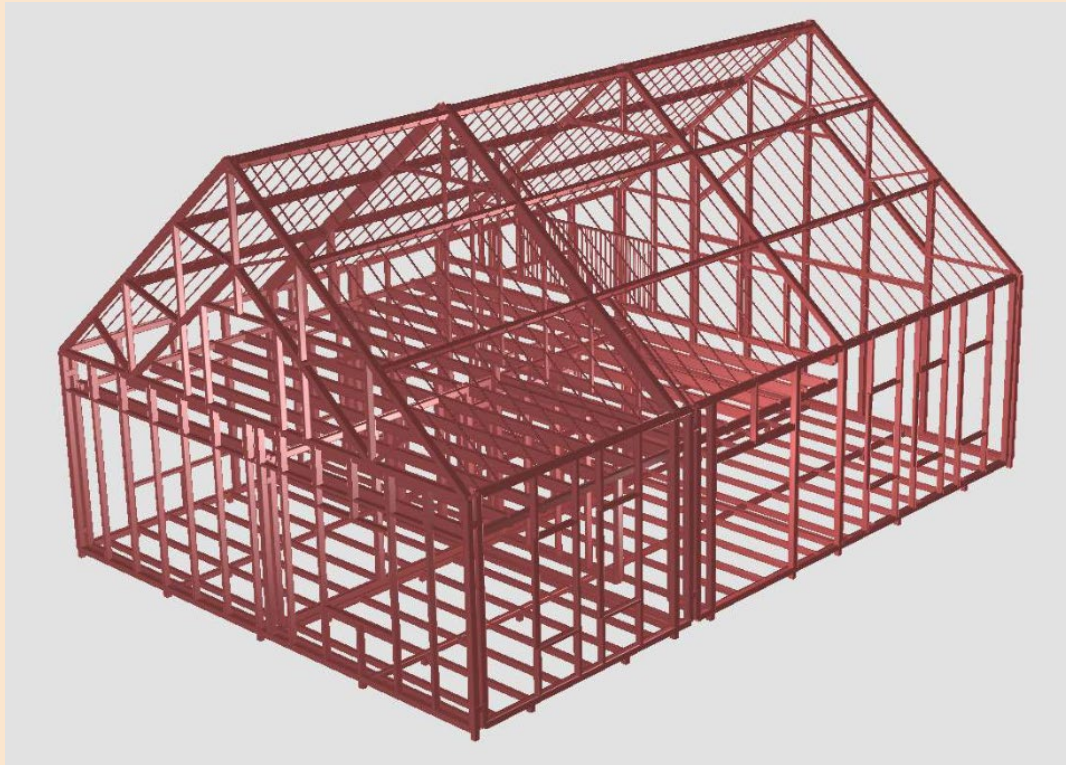
Technical Specification/System Manual ???





e.g. A steel frame System

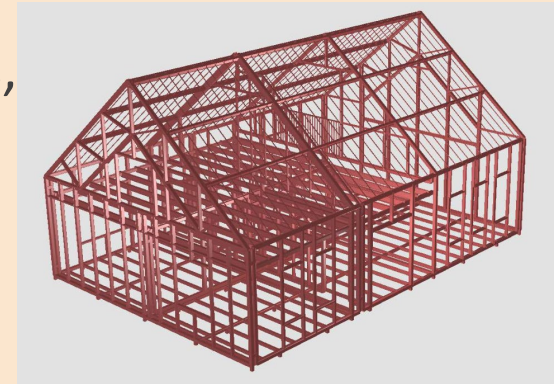
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# Part A

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Structural design of Foundations, Floors,  
Walls, Roof  
& between foundation and building



Steel frame - Designed to Eurocodes

EN 1991 (Eurocode 1) Actions on Structures

EN 1993 (Eurocode 3) Design of Steel Structures

Request calculations or certificate from Competent Person  
+ construction details



# Part A

				
<b>ANCILLARY CERTIFICATE OF COMPLIANCE: (DESIGN)</b>				
( COMMENCEMENT NOTICE / 7 DAY NOTICE )				
BUILDING CONTROL AUTHORITY : _____				
PRE-VALIDATION REF NO. : _____				

  
ACEI / EI - BCR 1401

3. We confirm that we have been commissioned by \_\_\_\_\_ (insert as appropriate) to provide professional design services in accordance with our Conditions of Engagement to carry out the \_\_\_\_\_ (insert as appropriate) design and/or specification of certain elements of the works, being those elements covered by our plans and specifications included in the documentation accompanying the Commencement / 7 Day Notice, and to certify our design. Our design has been carried out by or under the supervision and direction of Chartered Engineer(s) named on a register maintained pursuant to Section 7 of the Institution of Civil Engineers of Ireland (Charter Amendment) Act 1969, who are competent to carry out our design.

4. We confirm that our plans, calculations, specifications and particulars included in the Schedule to the Commencement/ 7 Day Notice to which this certificate is relevant, and which have been prepared exercising reasonable skill, care and diligence, have been prepared to demonstrate compliance with the requirements of the Second Schedule of the Building Regulations in so far as they apply to the building works concerned.



# Part B

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Structural fire resistance performance &  
Behaviour in relation to fire

Fire test IS EN 1364, IS EN 1365, IS EN 1366, IS EN 1636

Penetrations for downlighters, extract fans, detectors, etc

Accredited for testing in EU

Copy of fire test report



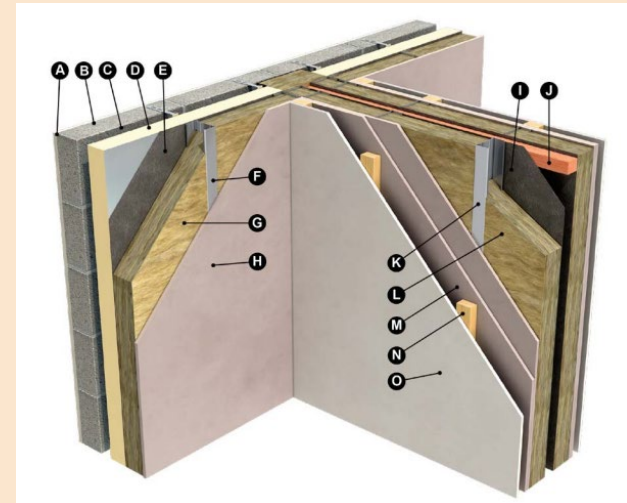
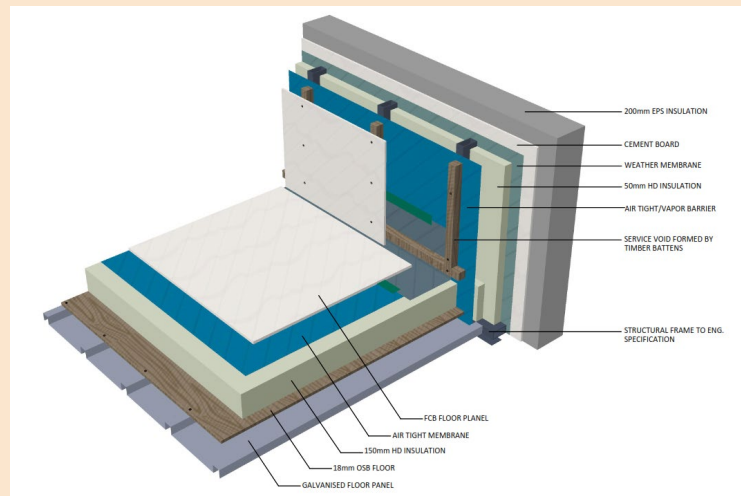
# Part B

Table A1 Specific provisions of test for fire resistance of elements of structure, etc in Dwelling Houses					
Part of building	Minimum provisions when tested to the relevant (7) European standard (minutes)	Minimum provisions when tested to relevant parts of BS 476 (1) (minutes)			Method of exposure
		Loadbearing capacity (2)	Integrity	Insulation	
1 Structural frame, beam or column	R30	30	No provision	No Provision	Exposed faces
2 Loadbearing wall (which is not also a wall described in any of the following items)	R30	30	No provision	No provision	each side separately
<b>Floors</b>					
(a) floor in upper storey of a 2 storey dwelling house (but not over a garage)	R 30, REI 15	30	15	15	from underside (3)
(b) any other floor including compartment or basement floors	REI 30	30	30	30	from underside (3)
4 Roofs Any part forming an escape route	REI 30	30	30	30	from underside (3)
5 External walls (a) any part less than 1 m from any point on relevant boundary (b) any part 1m or more from the relevant boundary	REI30 RE30 REI 15	30 30	30 30	30 15 (4)	each side separately from inside
6 Separating wall (5)	REI (min 60)	(min 60)	(min 60)	(min 60)	each side separately
7 Enclosure					
(a) protected stairway	REI 30(6)	30	30	30 (6)	Each side separately
8 Wall separating an attached or integral garage from a dwelling house	REI 30 (6)	30	30	30	from garage side
9 Fire-resisting construction not described elsewhere.	REI 30 (6)	30	30	30 (6)	each side separately
10 Cavity barrier	EI 15, E30	No provision	30	15	each side separately
11 Ceiling described in Diagram 9	EI 30	N/A	30	30	from underside
12 Duct described in Section 3, paragraph 3.7.3	E30	N/A	30	No provision	from outside
13 Flue walls described in 3.7.4 and Diagram 11	EI5	N/A	15	15	from outside
14 Fire doors	See Table B1 of Appendix B				



# Part B

Wall make up -  
 Load bearing  
 Non-load bearing  
 Party Wall construction



- |   |   |
|---|---|
| <b>A</b> - 20mm Plaster                                   | <b>I</b> - Airtightness Membrane                          |
| <b>B</b> - 100mm External Block/Brick Wall                | <b>J</b> - Fire Stop at Floor Level                       |
| <b>C</b> - Cavity   | <b>K</b> - MFC Steel Stud                                 |
| <b>D</b> - PIR Insulation to Specification                | <b>L</b> - Stone Mineral Wool Insulation to specification |
| <b>E</b> - Air and Vapour Control Layer (AVCL)            | <b>M</b> - 2no. 15mm Type F Plasterboard                  |
| <b>F</b> - MFC Steel Stud                                 | <b>N</b> - Timber Battens                                 |
| <b>G</b> - Stone Mineral Wool Insulation to specification | <b>O</b> - 1no Layer of 12.5mm Type A Plasterboard        |
| <b>H</b> - Plasterboard to Specification                  |   |



# Part B

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## Fire stopping

Timber battens around openings

Cavity barriers

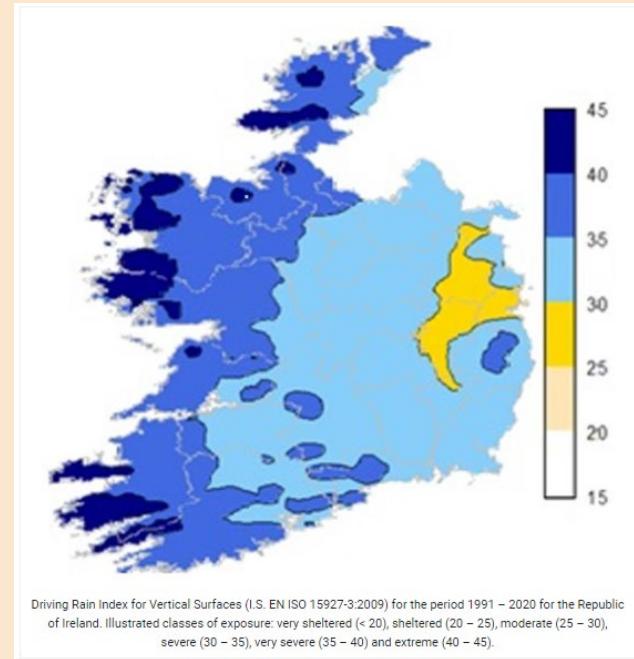
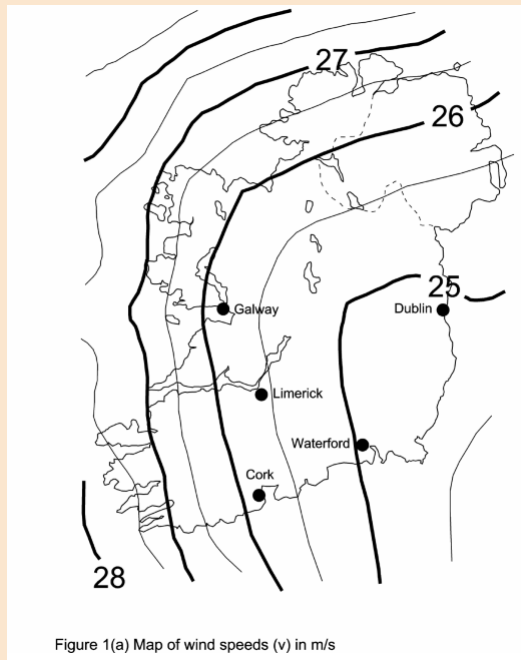
Electrical back boxes

Putty pads



# Part C

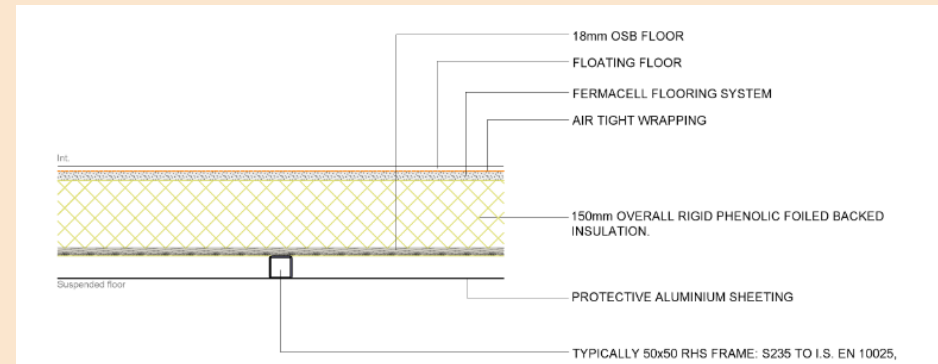
## Exposure conditions for Ireland



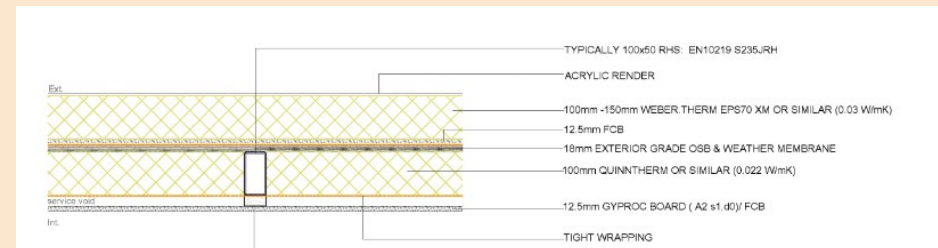


# Part C

- Radon
- Moisture from the ground



- Drainage cavity at least 50mm wide
- Cladding system - below DPC, above DPC



# Part D

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## ➤ CE & DoP of products

- Steel frame to IS EN 10346 & galvanised with min 275g/m<sup>2</sup>
- Vapour Control Layer
- Wall breather membranes
- Sheating Board
- Floor decking
- Insulation
- Roof trusses, underlays, coverings
- Cladding - below DPC, above DPC



# Part D

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## ➤ Durability

- Structural & key elements must have minimum 60 years
- Non-structural individual components must have minimum 25 years

## ➤ Delivery to site

## ➤ Storage both off-site & on-site



# Part D

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- Factory production control process & method of demonstrating compliance – proofs



# Part L

## ➤ Part L specification report

Summary for Part L Conformance (Applies to TGD L 2008/2011/2019 for new dwellings only)

BER Number		Building Regulations	2019 TGD L
BER Result	A2	Energy Value kWh/m <sup>2</sup> /yr	35.78
CO <sub>2</sub> emissions [kg/m <sup>2</sup> /yr]	7.04		
EPC	0,275	EPC Pass/Fail	Pass
CPC	0,263	CPC Pass/Fail	Pass

Part L Conformance - Fabric

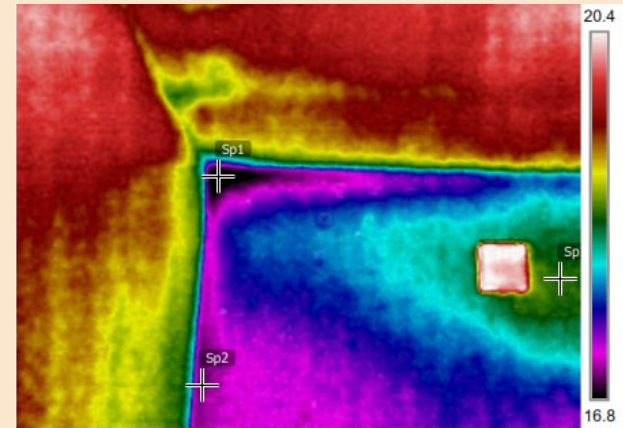
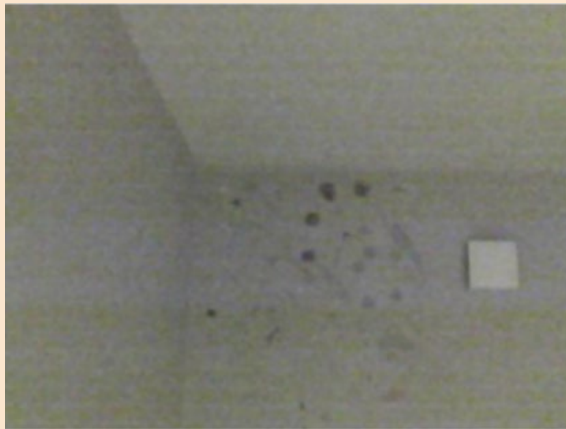
Conformity with Maximum avg U-value requirements	U-value [W/m <sup>2</sup> K]	Pass/Fail	Conformity with Maximum U-value requirements	U-Value [W/m <sup>2</sup> K]	Pass/Fail
Pitched roof insulated on ceiling	0,15	Pass	Roofs	0,15	Pass
Pitched roof insulated on slope	0	Pass	Walls	0,17	Pass
Flat Roof	0	Pass	Floors	0,1	Pass
Floors with no underfloor heat	0,10	Pass	External doors / windows / rooflights	1,40	Pass
Floors with underfloor heat	0,00	Pass			
Walls	0,17	Pass			
Percentage of opening areas [%]	12,28				
Average U value of openings	1,24	Pass			

Permeability test carried out and meets guidelines in TGD L

0.15 | Pass



# Part L



- ACDs
- Thermal modelling of junctions
  - Condensation risk analysis
- Interstitial condensation assessment
- Assessments to I.S. EN ISO 13788 or I.S. EN ISO 15026



# Thank You

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