



Innovating for a safer, better, and sustainable future

MMC Certification overview updates

2nd April 2025 NBCO&MS – CPD event





MMC Certification update

6M's + I&C Approach

MMC Documentation















MMC Updates







Why Agrément Certification?

Agrément Certification is designed specifically for new innovative building materials, products and systems that do not yet have a long history of use.



Part D of the Second Schedule to the **Building Regulations** states: **Materials and workmanship** D1- All works to which these Regulations apply shall be carried out with **proper materials and in a workmanlike manner.** "Proper materials" means materials which are fit for the use for which they are intended and for the conditions in which they are to be used, and includes materials which:

(a) bear a CE Marking in accordance with the provisions of the Construction Products Regulation; (b) **comply with an appropriate harmonised standard or European Technical Assessment** in accordance with the provisions of the Construction Products Regulation; (c) comply with an appropriate Irish Standard or Irish Agrément Certificate or with an alternative national technical specification contracting party to the Agreement of the European Economic Area (EEA), which provides in use an equivalent level of safety and suitability.

Company	Material type	Date of Application	Agrément status	Notes		
MMC Client #1	Timberframe / CLT	Jan 2024	Tech Review	2nd Offsite Factory visit carried out. Technical Assessment stage ongoing.		
MMC Client #2	Welded steel frame	Nov 2021	Tech Review	Technical Assessment stage ongoing – final supporting documentation under review.		
MMC Client #3	Steel frame	Feb 2023	Tech Review	Currently in Technical Assessment stage – 2 module type solutions submitted to NSAI.		
MMC Client #4	Light Guage Steel	May 2024	Tech Review	Three applications in process with NSAI – 2D panelised and 3D volumetric solutions.		
MMC Client #5	Steel frame	Feb 2024	Tech Review	MMC Manufacturer providing additional supporting documents to NSAI, for review.		
MMC Client #6	Welded steel frame	Feb 2024	Tech Review	A NSAI FPC Audit report issued for follow-up / action by MMC Manufacturer.		
MMC Client #7	Steel frame	Feb 2023	ON HOLD	No MMC correspondence since Sept 2024.		
MMC Client #8	Welded steel frame	Nov 2022	ON HOLD	No MMC correspondence since Nov 2024.		
MMC Client #9	Welded steel frame	Oct 2024	Application received	Previous Application received in 2021. A new Revision Application has been requested. Technical Pack submitted 16th October 2024.		
MMC Client #10	Welded steel frame	July 2024	Application received	A NSAI Gap Analysis report issued for follow- up / action by MMC Manufacturer.		

Company	Material type	Date of Application	Agrément status	Notes		
MMC Client #11	Steel frame	Expected	Tech Review	Nearing final Draft Certificate stage.		
MMC Client #12	Welded / Composite	Oct 2024	Gap Analysis	Contract issued to MMC Client by NSAI.		
MMC Client #13	Light Guage Steel	March 2024	Gap Analysis	Contract signed in March. Client to proceed.		
MMC Client #14	Welded Steel frame	Oct 2024	Tech Review	No MMC correspondence since October 2024.		
MMC Client #15	ТВС	ТВС	PENDING	No MMC correspondence since May 2024.		
MMC Client #16	Welded Metal Post system	Nov 2024	Tech Review	At an advanced Technical Review stage.		
MMC Client #17	Mass Engineered Timber (MET)	May 2024	Tech Review	Contract Scope document issued to client. Client undertaking MMC value engineering.		
MMC Client #18	ICF	Feb 2022	Gap Analysis	No MMC correspondence since Oct 2024.		
MMC Client #19	Mass Engineered Timber (MET)	Withdrawn	CANCELLED	MMC Application withdrawn by the company.		
MMC Client #20	Structural Insulated Panel (SIP)	Nov 2022	Tech Review	Initial gap analysis has been completed by NSAI. Fire testing scheduled for March 2025.		
MMC Client #21	Precast Concrete	Feb 2024	Tech Review	At an advanced Technical Review stage.		
MMC Client #22	Not confirmed yet	Nov 2024	Application received	A more detailed Technical Pack to follow. Kick-off meeting held in Jan & March 2025.		

Company	Material type	Date of Application	Agrément status	Notes
MMC Client #23	Precast Concrete	March 2024	Gap Analysis	A more detailed Technical Pack to follow.
MMC Client #24	Structural Insulated Panel (SIP)	Nov 2024	Gap Analysis	A NSAI Gap Analysis report issued for follow- up / action by MMC Manufacturer.
MMC Client #25	Structural Insulated Panel (SIP)	Expected	PENDING	An initial Kick-off meeting held 6th Jan 2025.
MMC Client #26	Wood / Concrete Composite	Expected	PENDING	Currently hold an ETA certificate. Awaiting an Application to be submitted to NSAI or not.
MMC Client #27	ТВС	ТВС	ТВС	No MMC correspondence or enquiry received.
MMC Client #28	Hot Rolled Steel	Nov 2024	Gap Analysis	Contract Scope drawn up for MMC Client.
MMC Client #29	Light Guage Steel	Nov 2024	Application received	Kick-off meeting to follow. Awaiting further supporting technical documentation.
MMC Client #30	Light Guage Steel	March 2024	Tech Review	Technical Pack and associated documentation under technical assessment by NSAI.
MMC Client #31	Hot Rolled Steel	Jan 2025	Application received	Certificate revision application received (2D) and for a New 3D-Voluemtric application.
MMC Client #32	Light Guage Steel	Jan 2025	Certified	New Certificate revision application received.
MMC Client #33	Mass Engineered Timber (MET)	Nov 2024	Application received	Technical Pack and associated Certificates issued. Initial Gap Analysis completed.

Company	Material type	Date of Application	Agrément status	Notes
MMC Client #34	Light Guage Steel	Nov 2024	Application received	Initial kick-off meeting held in December 2024. A more detailed Technical Pack to follow, for NSAI to review.
MMC Client #35	Mass Engineered Timber (MET)	Nov 2024	PENDING	Currently hold an ETA certificate. Awaiting an Application to be submitted to NSAI or not.
MMC Client #36	ТВС	On Hold	ON HOLD	Awaiting Director approval within MMC organisation, if they wish to proceed or not.
MMC Client #37	Steel structure	On Hold	ON HOLD	Awaiting Director approval within MMC organisation, if they wish to proceed or not.
MMC Client #38	3DCP	ТВС	ТВС	TBC – If an application will be submitted to NSAI, or not.
MMC Client #40	ТВС	ТВС	PENDING	TBC – If an application will be submitted to NSAI, or not.
MMC Client #41	Perlite	Feb 2024	Gap Analysis	Application submitted to NSAI, and a gap analysis carried out, though does not comply with TGD Part A (2012) requirements, at present. Holds a CE marking certificate.
MMC Client #42	ТВС	ТВС	PENDING	TBC – If an application will be submitted to NSAI, or not.

MMC Building Systems

Key Findings:

- 1. Some MMC Clients do not engage with NSAI nor advise of any change in circumstances.
- 2. 60% of new 3D-Volumetric applications have only been received in 2024.
- 3. Each have different strategic directions and focussed on certain sectors, due to demand.
- 4. Factory Production Control (FPC) audits have commenced, for some clients [Stage 5].
- 5. Clients / Manufacturers are not fully utilising 3D-Volumetric building systems, at present.
- 6. 3D Volumetric systems are typically **Welded Steel Frames** predominantly used.







Apologies for the delay on this.

I have gone through the list of questions with the client a while back and we are missing a couple of items that are actually simple to sort out.

Apologies for the delay in coming back to you, I wanted to have all the queries addressed with supporting data in one submission, however I am still waiting on some information to be closed out.

Rather that delaying the submission any longer, it may be best to submit responses to the majority of the queries raised now. Apologies for the delay in coming back to you on this. Please find attached the signed outline contract scope I have been chasing up on this, I will come back when I get an update which hopefully should be within a day or so.

Thank you for reaching out, I note I also had a voicemail from Martin asking the same question.

We are currently **not in a position** to actively push forward with the Agrément Certification, as the business is focusing on the project pipeline in the UK, however this may change in a few months' time. Is it possible to keep our submission in a holding position?





	Table 1 Classification of Buildings by Purpose Group			Appendix H: Summary of Requirements at Height					
Rialtas na hÉireann	Use	Group	Purpose for which a building or compartment of a building is used						
Government of Ireland	Residential (Dwellings) – Dwelling House	1(a) 1(b) 1(d)	Dwelling House < 4.5m See Technical Guidance Document B - Fire Dwelling House > 4.5m Safety – Volume 2 – Dwelling Houses Community Dwelling House Safety – Volume 2 – Dwelling Houses			60 55			
Building Regu	Residential (Dwellings) – Flat (apartment)	1(c)	Separate and self-contained premises constructed or adapted for residential use and forming part of a building from some other part of which it is divided horizontally. ⁽¹⁾			50			
Technical Gui	Residential (Care Facility)	2(a)	 (i) Hospital, (ii) nursing home, home for old people or for children, school or other similar establishment used as living accommodation or for the treatment, care or maintenance of persons suffering from illness or mental or physical disability, where such persons sleep on the premises. 			40			
Fire Safety – Volume	Residentia (Other)	2(b)	Hotel, hostel, guest building, residential college, hall of residence, student accommodation, and any other residential purpose not described above.			25			
Buildings other than	Office	3	Premises used for the purpose of administration, clerical work (including writing, book keeping, sorting papers, filing, typing, duplicating, machine calculating, drawing and the editorial preparation of matter for publication; handling money (including banking and building society work), telephone system operation).			20 15 10			
Shop 4(a		4(a)	Premises used for a retail or wholesale trade or business (including retail sales by auction, self-selection and over-the-counter wholesale trading, the business of lending books or periodicals for gain and the business of a barber or hairdresser,) and premises to which the public is invited to deliver or to collect goods in connection with their hire, repair or other treatment, or where they themselves may carry out such repairs or other		Building Height	5 Single Storey	Topmost floor ≤ 5 m	Topmost floor > 5 m, ≤ 11 m	Topmost floor > 11 i ≤ 15 m
	Shopping Centre	4(b)	treatments. A building which comprises a number of individually occupied premises to which common access is provided principally for the benefit of shoppers.		Min. no of Stairways	N/A	PG 2(a):2 Stairways (i) All other PG's: 1 (i)	PG 2(a), 5(a), 5(b): 2 Stairways (i) All other PG's: 1 (i)	PG 2(a), 2(b), 3, 4, 5, 7, 8: 2 Stairways (i) PG 1(c): 1(i)
	Assembly and Recreation	5(a)	 "place of assembly" includes— (i) a theatre, public library, hall or other building of public resort used for social or recreational purposes. 		Compartment wall and floor RtF classification	A2-s3,d2 (walls only)	All other PG's: No requirement	All other PG's: No requirement	All PG's: A2-s3,d2 (v vii)
			 (ii) a non-residential school or other educational establishment. (iii) a place of public worship. (iv) a public house, restaurant or similar premises used for the sale to members of the public of food or drink for consumption on the premises. (v) a sports pavilion, stadium, grandstand, or other spectator accommodation. 		External wall < 1 m to Boundary RtF classification External wall > 1 m to	PG 2a, 2b, 3, 4, 5, 6, 7, 8: B- s3,d2 (ii) PG 1c: N/A PG 2a, 2b, 3, 4, 5, 6, 7, 8: No	PG 2a: Class B-s3,d2 (ii) PG 1c, 2b, 5: B-s3,d2 (ii) PG 3, 4, 6, 7, 8:B-s3,d2 (ii) PG 2a: B-s3,d2(ii) PG 1c, 2b, 5: C-s3,d2 (ii)	PG 2a: B-s3,d2(ii) PG 1c, 2b, 5: B-s3,d2(ii) PG 3, 4, 6, 7, 8: B-s3,d2(ii) PG 2a: B-s3,d2 (ii) PG 1c, 2b, 5: C-s3,d2(ii)	PG 2a: B-s3,d2(ii) PG 1c, 2b, 5: B-s3,d2 PG 3, 4, 6, 7, 8: B- s3,d2(ii) PG 2a: B-s3,d2(ii) PG 1c, 2b, 5: C-s3,d2
Day Centr (2)	Day Centre	5(b)	 (vi) a terminus, station or other facility for air, rail, road or sea travel. A building used for the provision of treatment or care to persons where such persons do not stay overnight, such as (i) a pre-school, a crèche, a day nursery, or similar facilities for children, or (ii) any other day centre, including a GP or dental surgery, primary care centre, facilities for medical treatment, or other similar facilities. 		Boundary RtF classification Firefighter access	Requirement PG 1c: N/A All PG's: Perimeter access based on floor area &	PG 3, 4, 6, 7, 8: C-s3,d2 (ii) All PG's: Perimeter access based on floor area & volume	PG 3, 4, 6, 7, 8: C-s3,d2(ii) All PG's: Perimeter access based on floor area & volume	PG 3, 4, 6, 7, 8: C- s3,d2(ii) PG 1(c), 2(a), 2(b), Protected stair and firefighting main All other PG's:
Prepared by the Department o	Industrial Normal Hazard ⁽³⁾	6(a)	Factories and other premises of normal hazard, used for manufacturing, altering, repairing, cleaning, washing, breaking-up, adapting or processing any article, generating power or		Ondektore	volume	D0.0(-) D0.4());	DO 0 (1) DO 1 (1)	Perimeter access bas on floor area & volum
Housing, Local Government ar gov.ie/housing	Industrial High Hazard ⁽³⁾	6(b)	Factories and other premises of high hazard, used for manufacturing, altering, repairing, cleaning, washing, breaking-up, adapting or processing any article, generating power or slaughtering livestock.		Sprinklers	PG 4(b): Throughout (iv) All other PG's: N/A(v)	All other PG's: N/A(v)	Throughout (iv) All other PG's: N/A(v)	All other PG's: N/A(v
	Storage Normal Hazard ⁽³⁾	7(a)	Place for storage or deposit of goods or materials of normal hazard other than those described under 7(c)		Other		External escape stairways permitted in limited circumstances	External escape stairways permitted in limited circumstances	External escape stairways not permitte (vi)
St H:	Storage High Hazard ⁽³⁾	7(b)	Place for storage or deposit of goods or materials of high hazard other than those described under 7(c)		 Additional stairways may be required to satisfy escape requirements for travel distance, occupant capacity, etc. Applicable only to the outermost wall element. Applicable to the whole well build up 				
NCAL	Car Park	7(c)	Car parks designed to admit or accommodate only cars, motorcycles passenger vehicles or other light goods vehicles, not more than 2,500 kilograms vehicle weight.	 (iv) Sprinklers are not required in sterile mall areas of a shopping centre (iv) Sprinklers may be required due to other provisions of this document 					
NSAI	Other non- residentia	8	Any other non-residential purpose not included in any other purpose group	(vi) For existing buildings, see Section 7 (vii) For certain walls and floors in a shopping centre, see Subsection 1.7					

Height

Topmost floor > 11 m,

PG 2(a), 2(b), 3, 4, 5, 6, 7, 8: 2 Stairways (i)

All PG's: A2-s3,d2 (vi,

PG 2a: B-s3,d2(ii) PG 1c, 2b, 5: B-s3,d2

PG 1c, 2b, 5: C-s3,d2(ii) PG 3, 4, 6, 7, 8: C-

All other PG's: Perimeter access based on floor area & volume

All other PG's: N/A(v)

stairways not permitted



6M's + I&C approach

What is Quality...?

"The **Totality** of features and characteristics of a Product or **Service** that bears on its ability to satisfy a customer's **stated** and/or **implied** needs."

(ANSI / ASQ 1978)



- Stated: i.e. Specifications, Drawings, Engineering requirements.
- Implied: i.e. Legislation, Standards, Building Regulations, Codes of Practice / CE Marking



QA vs QC

Quality Assurance (QA):

Any action or framework directed towards providing **assurance** that the **Project requirements** will be met.

Ref: ISO 9000: 2015 – Quality Management System standard

Quality Control (QC):

Is a part of quality management focused on fulfilling the **Project quality requirements**. The system used to maintain standards is by **inspecting or testing a sample** of the output against the specification(s).

Ref: ISO 9000: 2015 – Quality Management System standard

QUALITY SYSTEM

QUALITY ASSURANCE

QUALITY CONTROL



QA vs QC

Quality Assurance (QA):

NSAI Agremént Certification i.e. An 'end-to-end' technical assessment process and Factory Production Control (FPC) review.



Quality Control (QC):

BC(A)R 2014 i.e. a project-by-project sample inspection process, as per the PIP & INF documents.







QUALITY SYSTEM

QUALITY ASSURANCE

QUALITY CONTROL

Building Control Regulations 2014

Contestione, Priced agest Matters Athlia Intercontent Content-only and Local Inter

Construction issues

"Design errors and omissions, upstream, were deemed to be the primary causes of rework on construction projects."



Dr. PED. Love & H. Li (2000) Construction Management & Economics journal



Construction requirements



Ref: <u>https://typeset.io/papers/exploring-the-role-of-quantity-surveyors-in-mechanical-and-2xxcdwtwjm</u>

Construction Quality

Quality = f(people, processes, technology, leadership)

Quality = Expectations – Reality





6M's + I&C Approach



MMC Quality – 6M's + I&C



MMC Quality – 6M's + I&C



Materials:

- As per Specification
- Stored correctly / Weather protected / Protection of the works
- Over, Short or Damaged (OSD)
- CE marking required
- DoP certificates correct & valid to current EU Directives

Methods:

- As per Contract Scope of Works (incl. any Variations / Change requests)
- As per Specifications / Engineering standards
- Drawings / BIM model reviewed
- RFI's (Request for Information) / TQ's (Technical queries)
- Project Quality Plan SOP's / WI's
- Inspection & Testing activities as per PIP / INF

MMC Quality - 6M's + I&C



Manpower:

- Qualifications i.e. formal Education
- CSA and MEP knowledge / Training & Skills
- **Project Experience**
- Pride and Ownership of your work i.e. your outputs

Machinery:

- Right Plant, Equipment & Tools for the task
- IT Equipment and Software up-to-date
- **Calibrated Instruments / Test Equipment** -> INAB certified
- Calibrated gauges / measuring devices
- Test Equipment in good working order







MMC Quality – 6M's + I&C

Measurement:

- Offsite and Onsite Quality Control (QC) checklists
- Test Record sheets
- CSA and MEP Test Packs
- Offsite / System Walkdowns completed
- Mock-ups / Field Inspections / Quality Audits
- Inspection & Testing of Equipment / Commissioning

Mother Nature:

- Internal Environment & Team Culture
- External Areas subject to corrosion or weathering
- Programme Impacts affects output and time pressures
- Productivity drops → fatigue, lost labour hours





Cause & Effect Analysis





MMC Offsite & Onsite approaches





MMC Documentation issues



MMC Agrément service

The Technical Assessment Specification (TAS) overview

The system will be assessed against Parts A to M to the Irish Buildings Regulations and European standards compliance verification



Document issues



- DoP's
 - Specifications
- Drawings
- Data sheets
- Manufacturers' instructions
- Technical literature
- ETA's
 - Standard Operating Procedures (SOP's)







- Co-ordination
- Workmanship
- Weathering
- Lifting / Rigging
- Interfaces i.e.
- ō

C

Ô

ite

S

 ⇒ Points of connection
 ⇒ MEP system
 ⇒ Connection details



ocumentation

'Documented evidence' needs to match the proposed Building System.



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

MMC Certification 'Toolkit'

A **NSAI MMC Readiness scorecard** developed for MMC Certification evaluation assessment, plus Infographic supports.







MMC Quality Control (recent images)

-0-1-11

















In Summary

7-2

88 EN





Thank you.

WWW.NSAI.IE

martin.searson@nsai.ie

Search "NSAI"

