

NSAI Certification and Modern Methods of Construction

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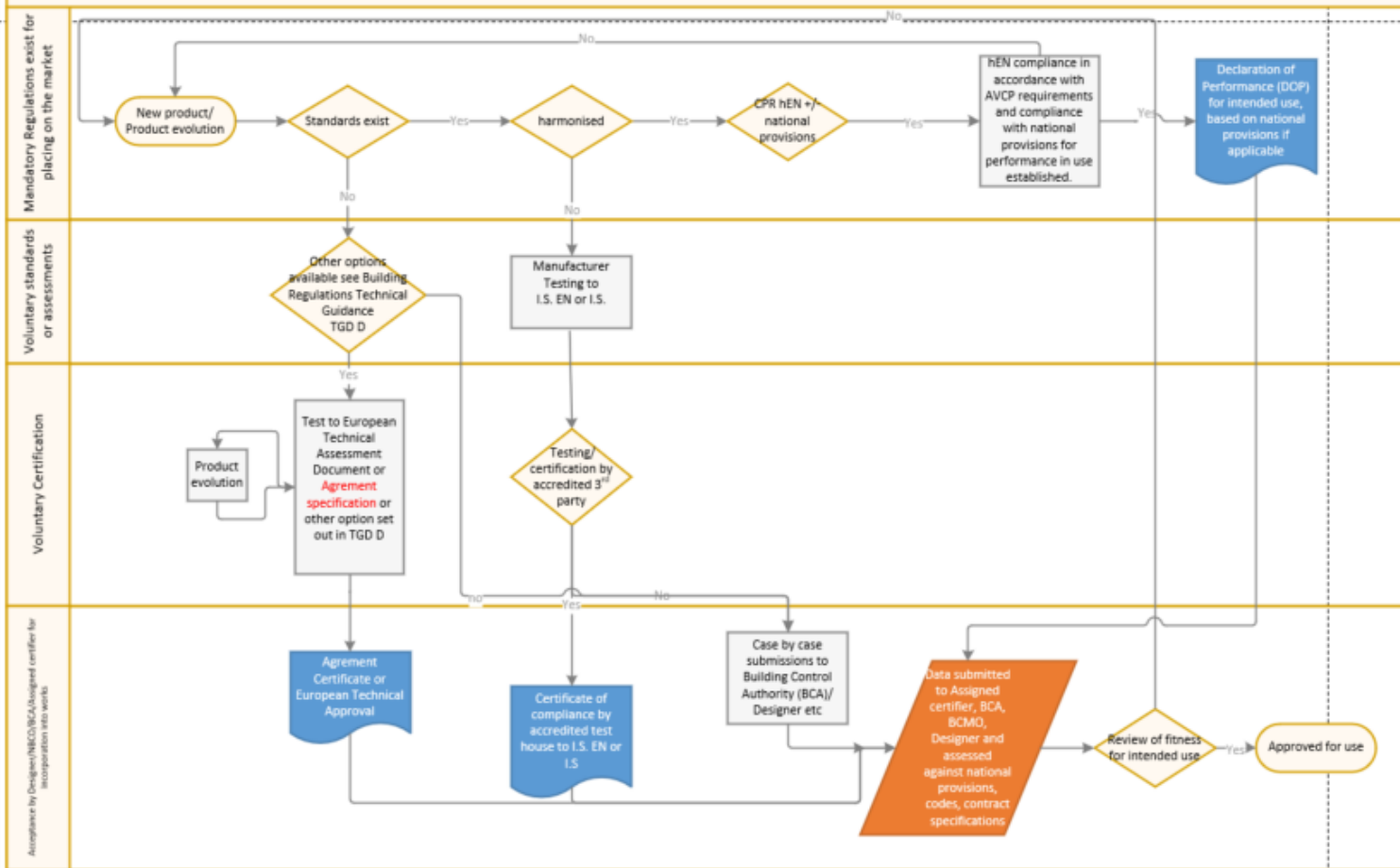


Part D of the Second Schedule of the Building Regulations

Materials and workmanship	D1	All works to which these Regulations apply shall be carried out with proper materials and in a workmanlike manner.
Definition for this Part	D3	<p>In this Part, "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:</p> <ul style="list-style-type: none">(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; or(c) comply with an appropriate Irish Standard or Irish Agrément Certificate or with an alternative national technical specification of any State which is a contracting party to the Agreement on the European Economic Area, which provides in use an equivalent level of safety and suitability.

Construction standards and technical assessments for innovative construction products

Note: Product requirements arising from other directives are not addressed



NSAI Certification and MMC

- European Technical Assessments (ETA)
 - No harmonised standard for the product/system.
 - Provide information on performance of product/system.
 - An alternative way to draw up DoP and affix CE marking.
 - Assessment based on European Technical Documents (EADs).
 - Does not provide information on compliance with Irish Building Regulations.
 - Manufacturer of the product does not need to declare all characteristics stated in EADs.
 - Not an evidence of compliance itself. It is a declaration by the manufacturer.
 - Does not necessarily indicate that product satisfied any pass/fail criteria.

NSAI Certification and MMC

- European Technical Assessments (ETA) – examples for MMC



CLT



modular timber system



structural insulated panels



insulating concrete formwork

NSAI Certification and MMC

- Agrément Certificate
 - No harmonised standard for the product/system.
 - Designed for new and innovative products and processes in building and materials technology.
 - Used for materials, products and processes for which national standards do not yet exist.
 - Assessment based on Technical Assessment Specification (TAS) designed specifically for that product/system by NSAI Agrément.
 - Provide information on **compliance with Irish Building Regulations.**

NSAI Certification and MMC

- Agrément Certificate
 - NSAI Agrément assesses, specifies testing, and where appropriate, issues Agrément certificates confirming that new 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.**
 - analyse key risks in use of innovative product/system.
 - identify specific product/system characteristics to be assessed in relation to regulated requirements.
 - develop and issue assessment procedure in consultation with all stakeholders i.e. manufacturer, specifier, regulator, user.
 - assess and approve product/system against this procedure taking account of requirements (regulation, climatic conditions, site practices).
 - evaluate and monitor the production process to ensure consistency.

Agrément Certificate and MMC

- Agrément Certificate assessment of the product/system may include the following:
 - Irish Building Regulations and European standards compliance verification
 - Laboratory tests results checks
 - On-site evaluations of as constructed product/system
 - Factory production inspection
 - Quality management system verification
 - Installation procedures and on-site inspection plan check
 - Post construction maintenance program

Agrément Certificate assessment procedure

- Durability
- Structure
- Behaviour in relation to fire
- Thermal Performance
- Interstitial condensation
- Sound
- Weathertightness and damp proofing
- Airtightness
- Construction
- Maintenance
- Consequences of Failure

Fire testing – walls & floors

- Loaded walls tested to *EN 1365-1 Fire resistance tests for loadbearing elements. Walls*
- Loaded floors tested to *EN 1365-2 Fire resistance tests for loadbearing elements. Floors and roofs*



Fire testing – external cladding

- External cladding systems tested to *BS 8414 Fire performance of external cladding systems*
- Standards cover external cladding applied to masonry substrate or structural steel frame



Acoustic performance

- For new dwellings, where the relevant walls and floors are:
 - designed and constructed using acceptable construction as per TGD Part E, and
 - demonstrated by testing in accordance with TGD Part E to meet performance levels as per Table 1

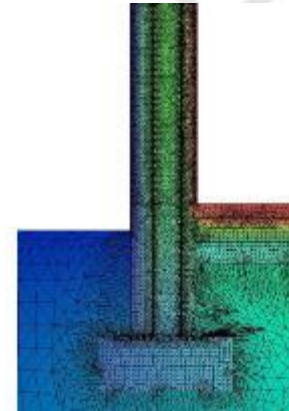
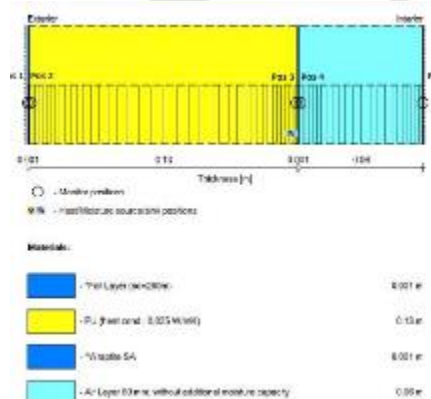
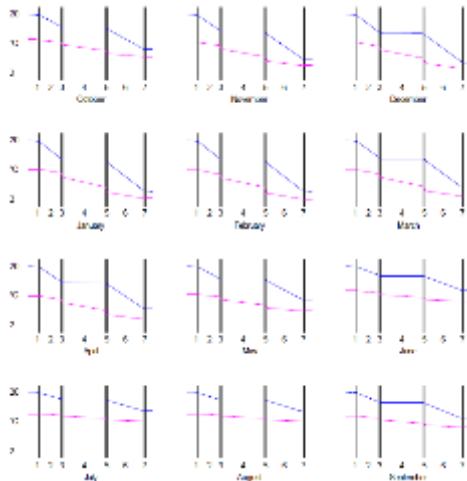
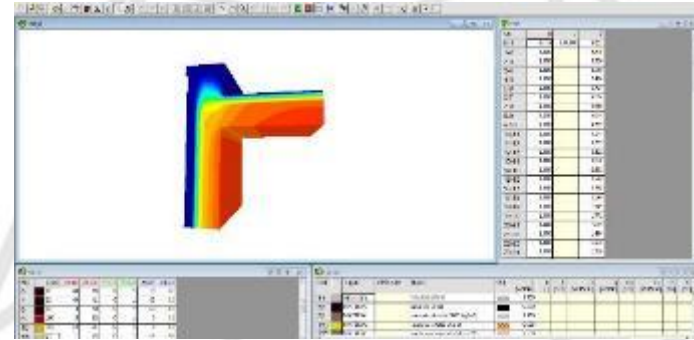


Separating construction	Airborne sound insulation $D_{nT,w}$ dB	Impact sound insulation $L'_{nT,w}$ dB
Walls	53 (min)	-
Floors (including stairs with a separating function)	53 (min)	58 (max)

NOTE: For works to protected structures, refer to paragraph 1.1.3

Thermal performance & interstitial condensation

- U-values
- Thermal bridging
- Interstitial condensation risk analysis (Glaser method, Hygrothermal method, WUFI method)



Weathertightness testing

Centre Window Cladding Technology (CWCT) Standard for systemised building envelopes

- Air permeability
- Wind resistance
- Water penetration
- Water resistance
- Static test method
- Dynamic test method



Production

- Competencies
- Material Specifications
- Traceability
- FPC Records
- Testing and measuring equipment
- Maintenance records
- Inspection points
- Final release
- Packaging and transportation



Design/Construction

- Project specific design
- Competencies (Structure, thermal, safety, etc.)
- Method Statements
- Erection (stability, H&S, weather...)
- Inspection plan/ Check points
- Final sign off
- Maintain records
- Training



Agrément Certificate and MMC

- Agrément Certificate
 - 'Guide to Agrément Certification for Modern Methods of Construction' is published on NSAI website



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Agrément Certificate and MMC

- Agrément Certificate – examples of published certificates



prefabricated ICF



panelised LGS



panelised timber/OSB



insulated raft system

Certification in MMC

- The National Standards Authority of Ireland is now offering Certifications on the construction stage and sign-off on Modern Methods of Construction products and building system installation compliance under Building Regulations.
- This will improve residential construction product assessment processes, including expanding the current NSAI Agrément approach, to ease certification of new building methods, the introduction of sustainable construction materials, and oversight of on-site installation.
- NSAI Certification ensures certified products are 'proper materials' suitable for their intended use under Irish site conditions, and per the Building Regulations
- This action falls under "Housing for All" government policy.



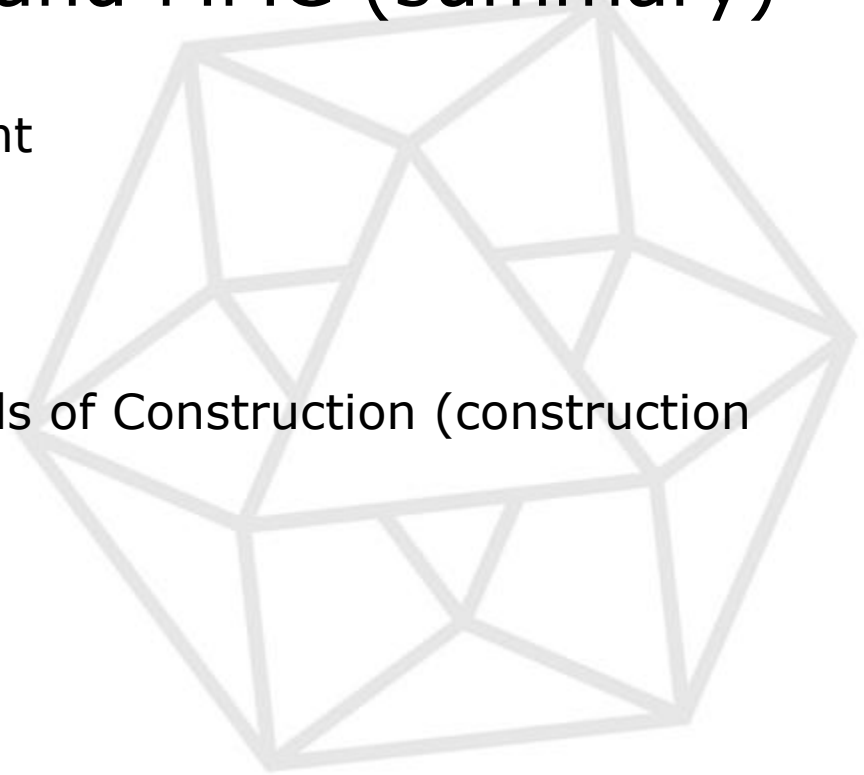
Certification in MMC

- To apply, a Company must already have completed Agrément Certification or be at advanced stage of Agrément Certification assessment, provided by NSAI. This is designed specifically for recently developed building materials, products and processes for which published national standards do not yet exist.
- NSAI certifies innovative offsite construction products through the application of rigorous standards looking at all aspects of the process – from components, manufacturing processes, onsite visits, to final sign-off.



NSAI Certification and MMC (summary)

- European Technical Assessment
- Agrément Certificate
- Certification in Modern Methods of Construction (construction stage and sign off)



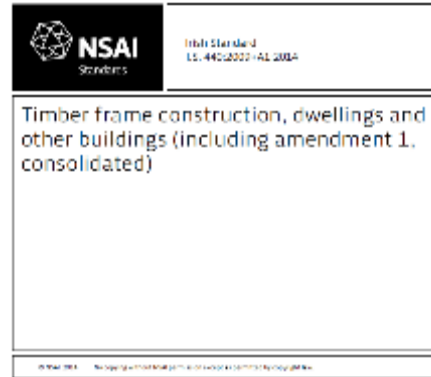
Standards for MMC

NSAI/TC 8 Timber
Committee



NSAI/TC 8/WG 23
Timber Frame
Construction

- National Timber Committee
- Monitors work of CEN/TC 124 & ISO/TC 165
- Working Groups focused on specific topics



- WG 23 carrying out revision of I.S. 440 Timber frame construction, dwellings and other buildings
- Task Group formed looking at preservative treatment requirement.
- Revised Standard expected Q4 2023

Prefabricated Buildings Committee

NSAI/TC 150
Prefabricated Building

Scope of the committee:

monitor the work of recently formed ISO/TC 59/SC 19 Prefabricated Buildings

- International Work at early stages – Currently reviewing existing dated standards and developing key definitions and work programmes
- NSAI/TC 150 – currently consists of members from key industry players
- Engage and react to the needs of industry
- Liaising with Construction Technology Centre to identify gaps in standardisation relating to MMC
- Contact pat.carolan@nsai.ie to join committee

Thank you.

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