



NSAI

ANNUAL REPORT 2021

NSAI TECHNICAL COMMITTEE
TC 15 - NATIONAL EUROCODES
CONSULTATIVE COMMITTEE

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1 Executive Summary of 2021 activity

2021 was a very busy and productive year for NSAI/TC 015. The issuing of CEN Enquiry and Formal vote drafts which started in 2019 continued and 2021 saw the launch of important bridge and fire design specific parts as well as prEN 1992-1-1 Eurocode 2: Design of Concrete structures which proposed the introduction of a new approach to durability.

CEN/TC 250's publication plan for the 2nd generation Eurocodes as also approved in 2021. The plan will allow each country to determine when it wishes to adopt the new standards which brings the realisation of the 2nd Generation Eurocodes into sharp focus.

2021 saw the reestablishment of NSAI/TC 15/SC 21, the horizontal group on Fire design and also the establishment of a new horizontal subcommittee (NSAI/TC 15/SC 22) to specifically monitor the development of a new Eurocode on the Assessment and retrofitting of existing structures.

Covid restrictions facilitated an increase in the number and participation in meetings both at National and International level.

2 Introduction

The Eurocodes are a set of harmonised structural design codes for building and civil engineering works specifying how structural design should be conducted within the European Union and EFTA countries. The National Eurocodes Consultative Committee (NSAI/TC 015) was established in 2013 to monitor work being carried out on Eurocodes at European level. Since its establishment, the work of the committee has increased year on year. As mentioned in the Chairman's statement, 2021 saw the project to develop the 2nd generation Eurocodes continue its steady progress with the penultimate phase of their development/revision nearing completion, continuation of the 4th and final phase, and the launch of further formal CEN Enquiry (public consultation) drafts for the public to review including prEN 1992-1-1 – Eurocode 2 – Design of concrete structures – General rules as well as a number of important bridge and fire design parts.



The industry currently has 12 experts involved in international work

3 Scope of TC

NSAI/TC 015 is responsible for monitoring the work of CEN/TC 250 and how the 'Structural Eurocodes' design standards are to be implemented in Ireland. In order to do this, there are 9 sub-committees under the remit of NSAI/TC 015, each with its own specific section of the Eurocode suite to monitor, see section 4.1 - Structure.

The Eurocodes Consultative Committee and its subcommittees also develop and update Eurocode National Annexes for Ireland which allow for national choice or nationally determined parameters (NDP), where such choices/parameters are left open in the Eurocodes (i.e. in the areas of safety of works and environmental conditions).

The committee also mirrors other CEN technical committees involved in the development of execution standards for steel (CEN/TC 135) as well as geotechnical matters related to earthworks and testing (CEN/TC 396 and ISO/TC 182).

The committee and its subcommittees mirror the following international committees:

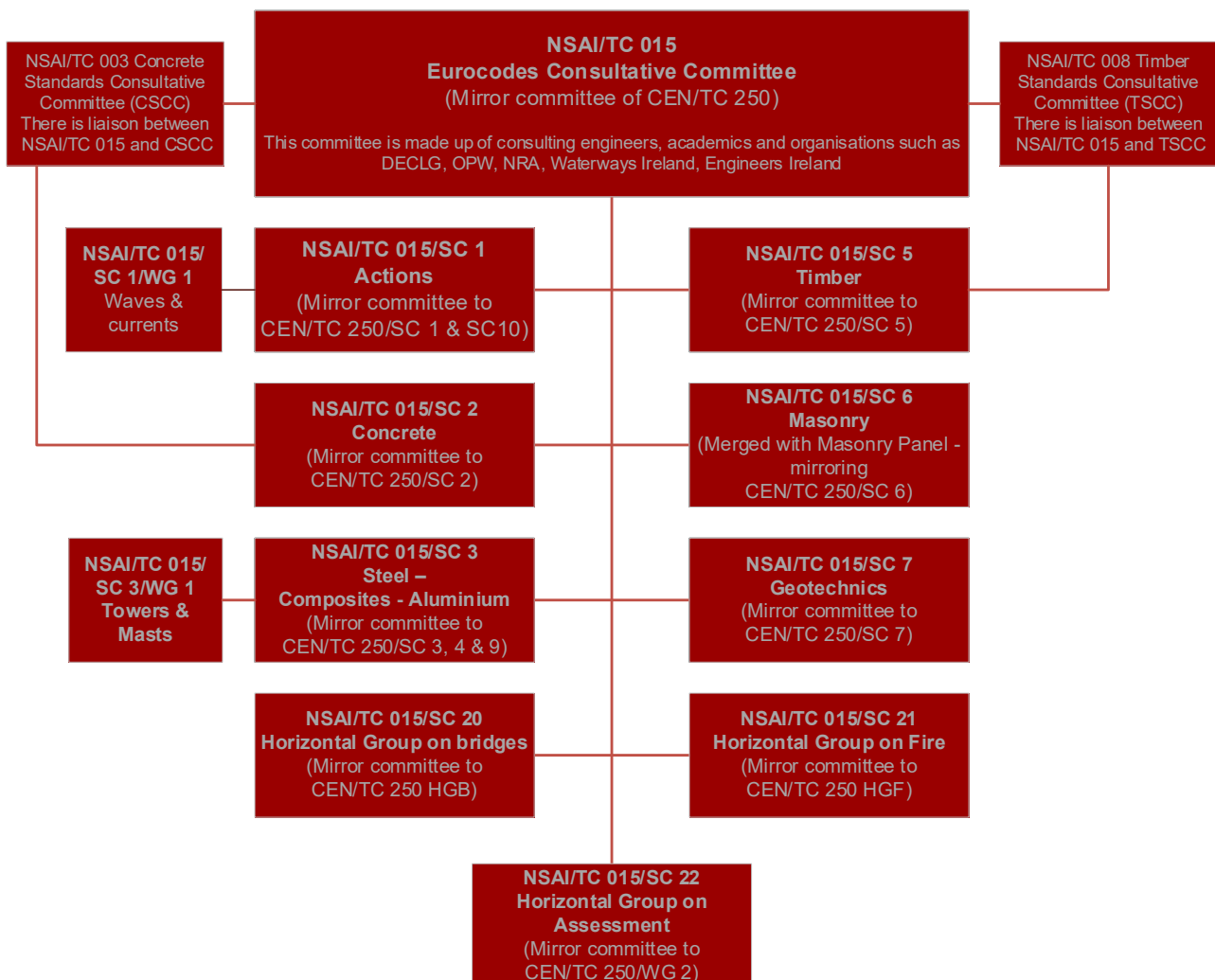
Committee Name	Committee Title
CEN/TC 250	Structural Eurocodes
CEN/TC 250 WG 1	Policy, procedures and links with other standards
CEN/TC 250 WG 2	Assessment and retrofitting of existing structures
CEN/TC 250/SC 10	EN 1990 Basis of structural design
CEN/TC 250/SC 1	Eurocode 1: Actions on Structures
CEN/TC 250/SC 2	Eurocode 2: Design of concrete structures

CEN/TC 250/SC 3	Eurocode 3: Design of steel structures
CEN/TC 135	Execution of steel structures and aluminium structures
CEN/TC 250/SC 4	Eurocode 4: Design of composite steel and concrete structures
CEN/TC 250/SC 5	Eurocode 5: Design of timber structures
CEN/TC 250/SC 6	Eurocode 6: Design of masonry structures
CEN/TC 250/SC 7	Eurocode 7: Geotechnical design
CEN/TC 396	Earthworks
ISO/TC 182	Geotechnics
CEN/TC 250/SC 9	Eurocode 9: Design of aluminium structures
CEN/TC 250 Horizontal Group Bridges	
CEN/TC 250 Horizontal Group Fire	

4 Structure and Membership

4.1 Structure

The Figure below illustrates the structure of the Committee:



4.2 Members

2021 saw a significant increase in membership across all NSAI/TC 015 sub committees. This was in part to the increased awareness that the 2nd generation Eurocodes are being finalised and a well-attended joint ICE and EI webinar in March 2021.

There are currently in excess of 75 subject matter experts representing all relevant stakeholders within the structural, civil and geotechnical design industries participating and monitoring the work on NSAI/TC 015.

The membership of the overarching NSAI/TC 015 committee consists of individuals from the following organisations:

Organisation	Roles
Kavanagh Mansfield & Partners/ACEI	NSAI/TC 015 Committee Chair & NSAI/TC 015 SC1 Chair
DHLGH	National committee members
TII	National committee member & NSAI/TC 015 HBG Chair
Waterways Ireland	National committee member
OPW	National committee member
Trinity College Dublin	National committee members
Munster Technological University	National committee members
TU Dublin	National committee member & NSAI/TC 015 SC2 Chair
AGL	National committee member & NSAI/TC 015 SC7 Chair
ARUP	National committee member
Banagher Precast Concrete	National committee member
Engineers Ireland	National committee member
Private Consultants	National committee member & NSAI/TC 015 HGF Chair National committee member & NSAI/TC 015 SC3 Chair National committee member & NSAI/TC 015 SC5 Chair

5 Summary of 2021 Activities

5.1 National

2021 saw the establishment of a new horizontal subcommittee (NSAI/TC 15/SC 22) to specifically monitor the development of a new Eurocode on the Assessment and retrofitting of existing structures. This new Eurocode will provide guidance on assessing the robustness of existing structures in line with the requirements of the Eurocodes while being mindful of existing National approaches to such assessments. Thus, a new National Annex will be necessary to give guidance on National requirements.

2021 also saw the reestablishment of NSAI/TC 15/SC 21, the horizontal group on Fire design with new members coming forward to review and advise the NSAI on the Eurocode fire design CEN Enquiry (public consultation) drafts.

The committee members and sub-committee members reviewed a number of 2nd generation Eurocode CEN Enquiry and Formal Vote drafts. This work will increase further in 2022 with the circulation of the final Phase 4 working drafts, the launch of a further 9 CEN Enquiry drafts for comment and 10 Formal Vote drafts for ratification.

As the initial development work to revise the Eurocodes draws to a close with the penultimate phase (Phase 3) being nearing completion in 2021, activity at national committee and sub-committee level remained high, monitoring the developments of the new Eurocode drafts. This was reflected in the submission of comments on various working drafts which took place throughout 2021.

In March 2021 the NSAI/TC 015 was invited to take part in a Joint IEC and EI webinar on the 2nd Generation Eurocodes. The event provided a general overview of the 2nd Generation Eurocodes and discussed some of the changes and innovations that are being proposed along with ways that designers and other stakeholders can get involved and stay up to date with the changes being made. Presentations were given by Dr Ken Murphy from NSAI and Jim Mansfield, Chairperson of the NSAI/TC 015. This was an extremely well attended on-line event with, in excess of 400 attendees. A recording of the webinar can be viewed on the Engineers Ireland You Tube channel at:

[The 2nd Generation Eurocodes - a preview of what is happening and what to expect - YouTube](#)

5.1.1 Meetings

Committee members attended the following National NSAI/ TC 015 meetings on-line (due to Covid-19 restrictions) in 2021:

Meeting	Date
15th Meeting of NSAI/TC 015	29 th March 2021
16th Meeting of NSAI/TC 015	12 th May 2021
17th Meeting of NSAI/TC 015	21 st October 2021

An extraordinary meeting of NSAI/TC 015 held on the 12th May 2021, which was open to all NSAI/TC 015 sub-committee members as well as other interested parties. The meeting was to establish if consensus could be reached on how to address the topic of experience and qualifications in the Eurocodes. This arose as a topic of debate at European level during 2021 with countries holding differing views on how or if these topics should be addressed in the Eurocode suite of standards. Further discussions on this topic will be required at a National level during the development of the Irish National Annex to EN 1990 as the new Annex B of prEN 1990 entitled "Technical management measures for design and execution" could be viewed as extending into the area of national regulation in Ireland.

There were an additional 11 meetings of the sub-committees and working groups dealing with work on the Eurocodes in 2021.

- NSAI/TC 015/SC 1 Actions on structures met to discuss potential changes to prEN 1991-1-4 and impacts on wind loading model used in Ireland and UK
- NSAI/TC 015/SC 2 Concrete held a joint committee with the NSAI/TC 003 Concrete Panel to discuss and establish a way forward in addressing the introduction of new Exposure Resistance Classes which will impact on the approach used in respect to Durability. The subcommittee also met to discuss and approve comments which were submitted on the CEN Enquiry draft of prEN 1992-1-1.
- NSAI/TC 015/SC 3 met to discuss a number of informal enquiry working drafts and comments which were to be submitted on the CEN Enquiry draft of prEN 1993-1-8. The subcommittee received an update on the CPR Acquis process which is in place to advise on the requirements related to structural metallic products which need to be addressed by a revised Construction Products Regulation.
- NSAI/TC 015/SC 5 met to establish a work programme to review of the comprehensive EN 1995 working drafts issued in 2021.
- The NSAI Masonry Panel established a small Ad-hoc group for designers to review the NDPs for EN 1996-1-1 and ratify final version and review prEN 1996-3. This ad-hoc group met on 3 occasions during 2021.
- NSAI/TC 015/SC 7 met to discuss and develop comments on final informal enquiry drafts of all 3 parts of prEN 1997.
- 2021 saw the reestablishment of NSAI/TC 015/SC 21, the horizontal group on fire design. The group met twice to brief new committee members and review and approve comments which were submitted on the CEN Enquiry drafts of prEN 1991-1-2 and prEN 1992-1-2.

5.2 International

Despite Covid-19 restrictions attendance of Irish experts at "virtual/on-line" International meetings was in line with previous years. Following an extremely busy meeting schedule in 2020 for Irish experts on CEN/TC 250/SC 2 this committee returned to its usual biannual meeting schedule. Irish experts involved in CEN/TC 250/SC 1, and SC 7 did attend an increased number of working and technical group meetings related to Eurocode climatic actions documents and the preparation of the EN 1997 parts for formal CEN Enquiry in 2022.

The Irish expert for CEN/TC 250/SC 3 on steel, SC 9 on Aluminium and CEN/TC 135 for execution of steel & aluminium structures attended 8 meetings in 2021 and represented Ireland during the preparation of the EN 1993-1-1 and EN 1999 (all parts) documents for formal vote in 2022.

5.2.1 Meetings

Committee members attended the following international meetings in 2021:

Committee name	Location	Dates
CEN TC 250 SC 9 (X3)	On-line	January, September & December 2021
CEN TC 250 SC 1 (X2)	On-line	February & May 2021
CEN TC 250 SC 5 (X2)	On-line	March & September 2021
CEN TC 250 SC 3 (X2)	On-line	March & October 2021
CEN TC 250 SC 7	On-line	June 2021
CEN TC 250 SC 2 & WG1 (X2)	On-line	June & November 2021
Joint TC 135 & TC 250/SC 3	On-line	September 2021
CEN TC 135 (X2)	On-line	September & December 2021
BSI B252/1	On-line	September 2021
CEN TC 250/SC 1/WG 1 TG MEETINGS (X3)	On-line	October 2021
TC250/SC7 TG MEETINGS	On-line	December 2021

5.2.2 International Work

NSAI/TC 015 committee members have been monitoring the development of the 2nd generation Eurocode drafts closely with a significant number of members attending international meetings to discuss the drafts and present Ireland's position while also reporting back to the National committee and its sub-committees on developments and raise potential issues with these drafts. The work of the committee and sub-committees in this regard is of particular importance as CEN/TC 250 look to amend the number of National Choices/Nationally Determined Parameters (NDPs) in the 2nd generation Eurocodes which will have a significant impact upon the National Annexes which accompany the Eurocodes.

NSAI/TC 015 National Committee member Alan O'Connor was actively involved in the development of the 2nd generation Eurocode standards in 2021. Alan is the Project Team Leader of CEN/TC 250 WG6 T2 focusing on incorporating robustness rules into material related Eurocode parts while also being a project team member of CEN/TC 250 WG2 T2 converting CEN TS 17440 for the assessment of existing structures (published in 2020) into a European standard (EN).

5.2.3 International Standards Reviewed

A number of CEN Enquiry (prEN) draft Eurocode standards and Formal vote (Fpr) drafts were launched in 2021. There were a number of sub-committee meetings held to discuss and achieve consensus on the comments on these drafts. The CEN Enquiry drafts and Formal vote drafts which were reviewed, commented and voted upon in 2021 were:

1. prEN 1990 – Eurocode 0. Basis of design. Bridge specific annexes only
2. prEN 1991-1-2 - Eurocode 1. Actions on structures. General actions. Actions on structures exposed to fire
3. prEN 1991-2 - Eurocode 1. Actions on structures. Traffic loads on bridges
4. prEN 1992-1-1 - Eurocode 2: Design of concrete structures. General rules
5. prEN 1992-1-2 - Eurocode 2: Design of concrete structures. Structural fire design
6. prEN 1993-1-8 - Eurocode 3. Design of steel structures. Design of joints
7. prEN 1996-3 - Eurocode 6. Design of masonry structures. Simplified calculation
8. prEN 1999-1-1 - Eurocode 9. Design of aluminium structures. General Rules
9. prEN 1999-1-2 - Eurocode 9. Design of aluminium structures. Structural fire design
10. FprEN 1996-1-1 - Eurocode 6. Design of masonry structures. General rules
11. Fpr CEN/TS 19103 - Eurocode 5. Timber Concrete Composites

There were also significant informal enquiry drafts (working drafts) in the area of Eurocode 5 on timber, in particular a consolidated version of prEN 1995-1-1 for general rules and prEN 1995-1-2 for fire design.

5.2.4 International Voting Results

The following CEN/TC 250 ballots and a National ballot were voted on by NSAI/TC 15 members during 2021.

Reference	Vote Result	Closed on
Activation of preliminary work item CEN/TS 1993-1-1	Approved	28/05/2021
Activation of preliminary work item prEN 1993-3	Approved	19/07/2021
Activation of preliminary work item prEN 1993-4-2	Approved	19/07/2021
Activation of preliminary work item prEN 1993-5	Approved	19/07/2021
Activation of preliminary work item prEN 1993-6	Approved	19/07/2021
Activation of preliminary work item prEN 1993-1-6	Approved	19/07/2021
Activation of preliminary work item prEN 1993-1-7	Approved	19/07/2021
Activation of preliminary work item prEN 1993-4-1	Approved	19/07/2021
Adoption PWI CEN/TS 19100-4 Glass	Approved	03/08/2021
Appointment of CEN/TC 250 Liaison officer to CEN/TC 467	Approved	23/03/2021
FprCEN/TS 19100-1	Approved	22/06/2021
FprCEN/TS 19100-2	Abstention	22/06/2021
FprCEN/TS 19100-3	Abstention	22/06/2021
FprCEN/TS 19103	Approved	22/06/2021
FprEN 1996-1-1	Approved	29/11/2021
National Ballot - Future of Annex D in prEN 1997-1-1	Abstention	12/04/2021
Guidance on drafting National Annexes for NSBs	Approved	21/12/2021
M/515 WG2.T2 Final draft of prEN 1990-2 subtask 1 and 2	Approved	30/06/2021
New work item proposal EN 1998-1-1	Approved	04/06/2021
New work item proposal EN 1998-5	Approved	04/06/2021
New work item proposal to amend EN 1992-4:2018	Approved	28/05/2021
Options for Qualifications and personal experience content	Approved	08/11/2021
Participation of EuroStruct	Approved	21/05/2021
prCEN/TS 19101 proceeding to Formal Vote	Approved	08/11/2021
prEN 1990	Approved	22/12/2021
prEN 1991-1-2	Approved	22/12/2021
prEN 1991-2	Approved	22/12/2021
prEN 1992-1-1	Approved	23/12/2021
prEN 1992-1-2	Approved	22/12/2021
prEN 1993-1-8	Approved	23/06/2021
prEN 1996-3	Approved	22/12/2021
prEN 1999-1-1	Abstention	23/06/2021
prEN 1999-1-2	Abstention	23/06/2021
Re-appointment CEN/TC 250/SC 10 Chairperson	Approved	15/12/2021
Re-appointment Chair to CEN/TC 250	Approved	26/07/2021
Re-appointment Chair to CEN/TC 250/SC 6	Approved	24/11/2021
Re-appointment Convenor to CEN/TC 250 AHG Interface	Approved	18/02/2021
Re-appointment Convenor to CEN/TC 250/WG 2	Approved	13/04/2021
Re-appointment Convenor to CEN/TC 250/WG 5	Approved	15/07/2021
Re-appointment Vice Chair to CEN/TC 250	Approved	26/07/2021
Reappointment of CEN/TC 250/SC 11 Chairperson	Approved	09/12/2021
Reappointment of Convenor to CEN/TC 250/WG 4	Approved	13/05/2021
Tolerance request 00250274 EN 1992-4:2018/prA1	Approved	06/01/2022

5.3 Regulatory Development/Update

As CEN/TC 250's proposed publication plan was approved by the CEN Technical Board (CEN BT) in 2021, discussion on how Ireland implements the 2nd Generation Eurocodes began. Agreement on a suitable date of publication (DoP) and co-existence period is required with the target date of withdrawal (DoW) of the 1st Generation Eurocodes by the end of Q1 in 2028. Coordination with relevant Government departments, bodies and state agencies will be required to ensure relevant technical guidance documents are updated and adequately refer out to the 2nd generation Eurocodes when it is necessary to do so.

Significant bridge specific parts which impact on Government agencies such as TII, Waterways Ireland, the OPW and Iarnród Éireann were issued in 2021. A review of these parts indicated that there are no major significant changes to the design philosophy in the new generation of Eurocodes which would impact bridge design in Ireland.

6 Irish Publications/Reviews

6.1 Publications

The committee did not publish any new documents, amendments or corrigenda in 2021.

6.2 Reviews

The committee and its sub-committees initiated a review of a number of National Annexes in-line with the launch of formal CEN Enquiry drafts which were issued during the course of 2021, see 5.2.3.

7 Work programme for 2022 onwards

2022 will see NSAI/TC 015 members continue their dedicated work of monitoring and reviewing 'Informal Enquiry' working drafts of the 2nd generation Eurocodes as they become available.

2022 will also see the continued release of formal CEN Enquiry Eurocode part drafts. The number of 2nd Generation Eurocode enquiry and formal vote drafts to be issued in 2022 are listed below. Reviews of the existing Irish National Annexes to the Eurocode parts listed below will also commence in 2022 to assess the work needed to revise them, to take account of the changes in national choices and NDPs which may arise.

Date of issue	Number of drafts issued	CEN Enquiry & Formal vote draft
03/03/2022 (CEN Enquiry)	4	prEN 1993-1-2
		prEN 1993-1-3
		prEN 1993-1-5
		prEN 1993-1-13
07/4/2022 (Formal Vote)	3	FprEN 1993-1-1
		CEN/TS 1993-1-101 Alternative interaction method for members in bending and compression
		CEN/TS 19102 Design of Tensioned Membrane Structures
2/09/2022 (CEN Enquiry)	5	prEN 1996-1-2
		prEN 1996-2
		prEN 1997-1
		prEN 1997-2
		prEN 1997-3
6/10/2022 (Formal vote)	7	FprEN 1990 incl Annex A2
		FprEN 1993-1-8
		FprEN 1999 (all 5 parts)

The work programme for the development of future National Annexes and business cases in support of calibration and research studies to advise on National choices/values in the coming years will be further refined in 2022.

The implementation timeline for the 2nd generation Eurocodes, in particular establishing a Date of Publication (DoP) of the new standards in Ireland will also need to be finalised in 2022 so sufficient time is available to plan for their introduction, establishment of a co-existence period and the subsequent withdrawal of the 1st generation standards.

NSAI/TC 015/SC 3 – Steel also has additional work in 2022 as the sub-committee will be monitoring the CPR Acquis process which formally got underway in 2021. The CPR Acquis process is an initiative of the European Commission which is seeking advice from Member States and National experts on how best to capture the suitable and relevant essential characteristics of products that will be addressed in future Standardization Requests. The CPR Acquis process will have an impact on the revision of the Construction Products Regulation, future harmonised standards (hENs), CE marking and the single market over the coming years.

8 Additional Information

A free 2-part webinar on the Eurocodes in Ireland is available on the NSAI website - [NSAI Construction Standards - The Eurocodes](#). The NSAI website has been updated to include new content related to the Eurocodes, highlighting the move towards the 2nd Generation Eurocodes.