



ANNUAL REPORT 2018

NSAI TECHNICAL COMMITTEE – NSAI/TC 015

NATIONAL EUROCODES CONSULTATIVE
COMMITTEE

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1 Chairman's Statement

The Eurocodes, an aspiration through the 1990's and 2000's, are now an established part of Structural Engineering design and construction both here in Ireland and throughout Europe including the UK. They are part of the harmonised standards complying with European Mandates and the Construction Products Regulations. They are referred to in the Technical Guidance Document (TGD) A of the Building Regulations and are the prima facie method of design compliance with those regulations. These standards are also used in many other parts of the world outside the EU, either directly or indirectly as a basis for the codes of different countries. Current UK policy is that they will retain using the Eurocodes after Brexit.

The current standards include Basis of Design, Actions on Structures and Geotechnical design as material independent standards while there are material standards for the most common building materials, concrete, steel, composite design, masonry, timber and aluminium.

In addition, horizontal groups, dealing with bridges and fire, connect across the Eurocode standards so that equivalent levels of safety apply right across the board.

At present the European Committee for Standardization Technical Committee, CEN/TC 250 'Structural Eurocodes', and its sub-committees, are responding to European Commission (EC) Mandate M/515 and the second generation of Eurocodes are being developed. These will include updates to the current standards and the provision of new documents for materials such as glass used as a structural material. There will also be additional Actions on structures standards such as 'Current and Waves' and 'Icing of Structures'. EN1990, 'Basis of Design', is being substantially re-written and updated and this affects the whole industry.

Our Technical Committee, and its sub-committees, are monitoring these and other codes and standards such as the execution standards for construction. Our group, in conjunction with the Department of Housing, Planning and Local Government (DHPLG) and Met Éireann also carried out a review of Climatic Actions, which can have an impact on buildings. Volunteers are welcome to apply to take part in our work.

I thank all the members and convenors for their help in this work. I also acknowledge the great support we receive from NSAI.

Jim Mansfield

Chairman TC015

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 (EU). 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. 2018 saw the EC mandated project to develop the 2nd generation of Eurocodes continue its steady progress with the completion of Phase 1 of the project, the progression of Phase 2 and the commencement of Phases 3 & 4.



The industry currently has 35 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. To do this, there are 8 sub-committees under the remit of NSAI/TC 015, each with its own specific section of the Eurocode to monitor. The Eurocodes Consultative Committee and its sub-committees also develop and update Eurocode National Annexes for Ireland which allow for a national choice or nationally determined

parameter (NDP), where such choices/parameters are left open in the Eurocodes (i.e. in the areas of safety of works and environmental conditions).

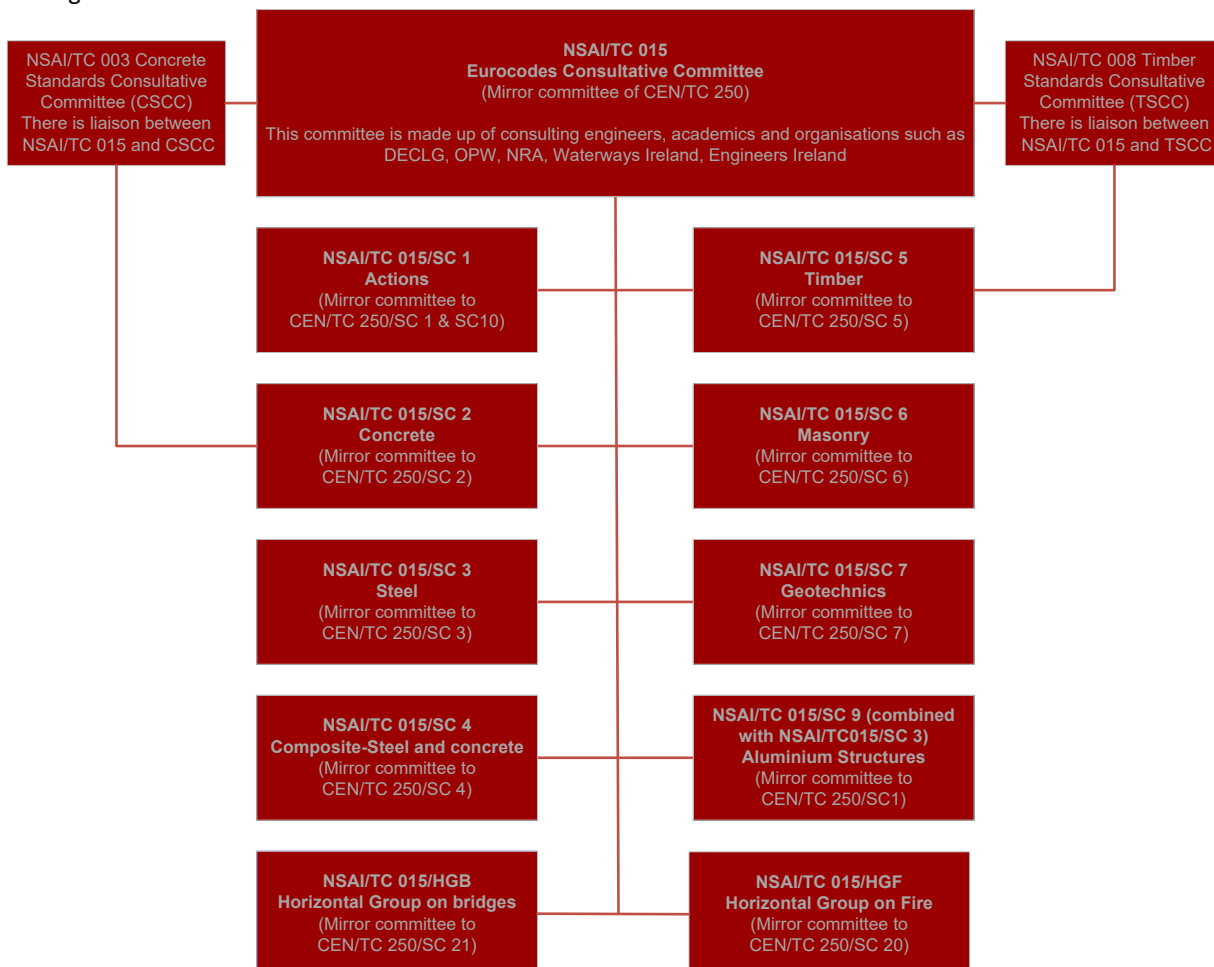
The committee and its sub-committees mirror the following international committees:

Committee Name	Committee Title
CEN/TC 250	Structural Eurocodes
CEN/TC 250 WG1	Policy, procedures and links with other standards
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
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

2018 saw several new members join and contribute to the committee. The current members are listed below:

Organisation	Name	Role
Kavanagh Mansfield & Partners	Jim Mansfield	NSAI/TC 015 Committee Chair & NSAI/TC 015 SC1 Chair
Trinity College Dublin	Brian Broderick	National committee member
TII	Fergal Cahill	National committee member & NSAI/TC 015 HBG Chair
Cork Institute of Technology	Donogh Coleman	National committee member
DHPLG	Simon Dolphin	National committee member
Engineers Ireland	Ken D'Arcy	National committee member
O'Connor Sutton Cronin	Paul Devine	National committee member & NSAI/TC 015 SC4 Chair
AGL	Eric Farrell	National committee member & NSAI/TC 015 SC7 Chair
Private Consultant	Malcolm Jacob	National committee member & NSAI/TC 015 SC5 Chair
Garland Consultancy	Noel Kane	National committee member & NSAI/TC 015 SC 6 Chair
Private Consultant	Michael P Lyons	National committee member & NSAI/TC 015 HGF Chair
ARUP	Reamonn Mac Reamoinn	National committee member
Cork Institute of Technology	Ted McKenna	National committee member
Dublin Institute of Technology	Henry Mullen	National committee member & NSAI/TC 015 SC2 Chair
ARUP	Par Moore	National committee member
Trinity College Dublin	Alan O'Connor	National committee member
Trinity College Dublin	Trevor Orr	National committee member
VCL	Eddie Phelan	National committee member
Cork Institute of Technology	Kieran Ruane	National committee member
Private Consultant	Wanan Sheng	National committee member
Private Consultant	Colin Short	National committee member & NSAI/TC 015 SC3 Chair
Banagher Precast Concrete	Eamon Stack	National committee member
OPW	Kieran Walsh	National committee member
DHPLG	John Wickham	National committee member

5 Summary of 2018 Activities

5.1 National

A new working group (WG) was set up in 2018 to review the EN1993 steel codes related to towers and masts. The members of this WG have also become involved in reviewing the draft 2nd generation EN1991 climatic actions (wind, snow & thermal) codes which are being developed.

A review of the committee in its entirety was also undertaken in 2018 to highlight the risks and resources required to complete the committee's work programme over the next three years which will see a significant increase in the work of the revisions to the Eurocode parts.

5.1.1 Meetings

Committee members attended the following national meetings in NSAI as follows:

Meeting	Date
11th Meeting of NSAI/TC 015	10th May 2018
12th Meeting of NSAI/TC 015	29th November 2018

5.1.2 National Work

The committee submitted comments on the public enquiry draft of the BSI amendment to the NA to BS EN 1991-1-3: Actions on structures: General actions - snow loads in relation to snow loading map which included snow loads for the Republic of Ireland. These comments were accepted and a change to the map was made.

The committee met with Met Éireann to continue the review of the current weather maps included in the Eurocode National Annexes related to climatic actions on structures due to snow, wind and temperature. The snow and wind maps currently used were considered current while it was agreed to review the Minimum and Maximum shade temperature maps as well as develop a new wind driven rain map. A business plan to resource this work is required to develop these maps, which the DHPLG has taken the lead on.

Amendments to the NA to I.S. EN 1993-1-4 Design of steel structures - General rules - supplementary rules for stainless steel and the NA to I.S. EN 1993-1-6:2007 A1:2017: Design of Steel Structures - Strength and Stability of Shell Structures were approved for publication and are due to be published in Q1 of 2019.

As the development of the 2nd generation of Eurocodes (under mandate M/515) progressed the activity at national committee and sub-committee level remained high monitoring the developments of the new Eurocode drafts. This was reflected in the level of attendance at International meetings by committee members which is further detailed in section 5.2. Work at national level will increase further in 2019 with the finalisation of phase 1 draft codes to be issued for enquiry and the circulation of phase 2 drafts for comment.

5.2 International

5.2.1 Meetings

Committee members attended the following international meetings:

COMMITTEE NAME	LOCATION	DATE
TC 250 SC1	Berlin	February 2018
TC 250 SC5	Madrid	March 2018
TC 250 SC3	Berlin	March 2018
TC 135	Prague	April 2018
TC 250 SC7 WG1 & 3	Aarhus	May 2018
TC 250 SC2 & WG1	Berlin	June 2018
TC 250 SC1	Berlin	June 2018
TC 250 SC5	Boras	September 2018
TC 250 SC3	Stockholm	October 2018
BSI B525/1	London	October 2018
TC 250 SC6	Italy	October 2018
TC 250 SC2 & WG1	Berlin	October 2018
TC 250 SC7 WG1 & 3	Naples	November 2018

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 significance as CEN/TC 250 look to reduce the number of National Choices/Nationally Determined Parameters (NDPs) in the 2nd generation of Eurocodes which will have a significant impact upon the National Annexes which accompany the Eurocodes.

NSAI TC015 National Committee members are also actively involved in the development of the 2nd generation Eurocode standards. In 2018 NSAI/TC 015 National Committee member Prof. Alan O'Connor was selected and accepted the position of Project Team Leader of CEN/TC 250 WG6 T2 focusing on incorporating robustness rules into material related Eurocode parts while also being selected to be a project team member of CEN/TC 250 WG2 T2 to develop general rules for assessment of existing structures.

NSAI/TC 015 and NSAI/TC 015/SC 7 committee member, Trevor Orr, is currently a member of the Eurocode 7 M/515 Phase 2 Project Team 4 which is tasked with developing text on the topics of foundations, slopes, and ground improvement for inclusion in a new Geotechnical Design Eurocode standard, EN1997-3.

5.2.3 International Standards Reviewed

EN1992-4:2018 was a new Eurocode which was published and reviewed. It was determined that the recommended values be adopted for the NDPs identified in the new code. Therefore, it was agreed that a National Annex did not need to be developed.

Several 'Informal Enquiry' draft Eurocode standards (working drafts) were circulated to the committee members to review at the end of 2017. The most pertinent of those was the draft of EN1990 which is being substantially re-written, as well as EN1992-1-1, EN1995-1-1, EN1996-1-1 and EN1997-1. Several sub-committee meetings were held in Q1 of 2018 to discuss and achieve consensus on the comments which were submitted in respect to these drafts. Further TC015 sub-committee meetings were had during the course of the year, in particular SC1 – Actions on structures to discuss and review the 1st drafts of the climatic (snow, wind & thermal) actions codes and in particular establish the work required to develop and revise the national annex to EN1991-1-4 Wind actions.

5.2.4 International Voting Results

Reference	Vote	Result	Closed on
prEN 13031-1 Commercial production greenhouses	1 vote	Disapproved	16/02/2018
Appointment CEN/TC 250/WG 6 Convenor	3 votes	Approved	09/04/2018
Adoption of a preliminary work item to revise EN 1993-1-12	1 vote	Approved	18/04/2018
Amendment to EN 1993-1-5:2006 + A1:2017	1 vote	Approved	18/04/2018
Adoption of a preliminary work item EN 1993-1-12:2007	1 vote	Approved	24/04/2018
Adoption of a preliminary work item EN 1993-7	1 vote	Approved	14/06/2018
Appointment of CEN/TC 250/WG 2 Convenor Thomas Lang	2 votes	Approved	25/06/2018
Participation of Standards Institution of Israel (SII)	2 votes	Abstention	25/06/2018
Re-appointment of CEN/TC 250/HG-Fire Convenor Bin Zhao	1 vote	Approved	03/07/2018
SC 8 request to split EN 1998-1 into two parts	1 vote	Abstention	03/07/2018
Re-appointment of Convenor to CEN/TC 250/WG 4		Approved	13/08/2018
Adoption of a preliminary work item EN 1993-1-7	1 vote	Approved	30/10/2018
Adoption of a preliminary work item EN 1993-3	1 vote	Approved	30/10/2018
Adoption of a preliminary work item EN 1993-4-1	1 vote	Approved	30/10/2018
Adoption of a preliminary work item EN 1993-4-2	1 vote	Approved	30/10/2018
Adoption of a preliminary work item EN 1993-5	1 vote	Approved	30/10/2018
Adoption of a preliminary work item EN 1993-6	1 vote	Approved	30/10/2018
Adoption of a preliminary work item EN_1993-1-6	1 vote	Approved	30/10/2018
Reappointment of CEN/TC 250 Chairperson	1 vote	Approved	30/10/2018
Reappointment of CEN/TC 250 Vice Chairperson	1 vote	Approved	30/10/2018
Adoption PWI CEN/TS Design rules for composite columns	1 vote	Approved	16/11/2018

Adoption PWI CEN/TS Design rules for steel-concrete-steel co	1 vote	Approved	16/11/2018
PWI CEN/TS Design rules for the use of Composite Dowels	1 vote	Approved	16/11/2018
Reference to non-contradictory complementary information (NC	1 vote	Approved	16/11/2018
Appointment CEN/TC 250/SC 3 liaison officer to ECISS/TC 103		Approved	04/12/2018
Appointment of CEN/TC 250/SC 3 Liaison officer to CEN/TC 53		Approved	04/12/2018
Reappointment of CEN/TC 250/WG 5 Convenor		Approved	07/12/2018

5.3 Regulatory Development/Update

As the work carried out by the committee in 2018 predominantly related to the review of the 'Informal Enquiry' drafts (working drafts) of the 2nd generation Eurocodes there was no impact on Irish Building Regulations in 2018. It should be noted that it is currently estimated that publication of the new codes will not commence until 2020, at which point the building regulations technical guidance documents may need to be updated or amended.

6 Irish Publications/Reviews

6.1 Publications

The committee did not publish any deliverables this year.

6.2 Reviews

The committee reviewed the following Irish national deliverables:

NA to I.S. EN 1991-1-3: Actions on structures: General actions - snow loads

7 Work programme for 2019 onwards

2019 will see NSAI/TC 015 members continue their dedicated work of monitoring and reviewing 'Informal Enquiry' drafts of the 2nd generation Eurocodes as they become available. The approach being taken by CEN/TC 250 in the development of the new Eurocodes by releasing 'Informal Enquiry' drafts to National Standards Bodies (NSBs) has been to minimise the number of technical issues which might arise at Formal CEN Enquiry stage and to develop a consensus on the content of the new codes. It is hoped that this will limit the development work needed after the formal CEN enquiry stage.

Therefore, as the CEN enquiry drafts start to become available from Q1 2019, serious consideration will need to be given to the development of new National Annexes which will accompany the 2nd generation Eurocodes. In some cases, this will require a significant revision of the current National Annexes as the number of NDPs within the Eurocodes is due to be reduced, while there will also be a need to develop new National Annexes with the introduction of new Eurocode standards within Eurocode 1, Actions on structures and Eurocode 7, Geotechnical design. To manage this work, a National Annex work program will need to be developed as commencement of CEN enquiry of the 2nd generation Eurocodes drafts will begin in 2019. The draft publication plan below details the enquiry drafts and approximate dates of issue between 2019 and 2021.

DATE OF ISSUE FOR CEN ENQUIRY	NUMBER OF DRAFTS ISSUED	CEN ENQUIRY DRAFT
01/03/2019	1	EN 1991-1-2
01/09/2019	1	EN 1996-1-1
01/03/2020	3	EN 1991-2
		EN 1993-1-1
		EN 1993-1-8
01/09/2020	1	EN 1990 (Package 1, option a)
01/03/2021	2	EN 1990 (Package 2a - annex on bridges only)
		EN 1996-1-2
01/09/2021	16	EN 1991-1-8
		EN 1991-4
		EN 1992-1-1
		EN 1992-1-2
		EN 1993-1-13
		EN 1993-1-14
		EN 1993-1-2
		EN 1993-1-3
		EN 1993-1-5
		EN 1993-1-6
		EN 1993-1-7
		EN 1999-1-1
		EN 1999-1-2
		EN 1999-1-3
EN 1999-1-4		
EN 1999-1-5		

National work in Q1 of 2019 includes the publication of the amendments to the Eurocode National Annexes to:

I.S. EN 1994-1-4: Design of steel structures. General rules - supplementary rules for stainless steel; and,

I.S. EN 1993-1-6:2007 A1:2017: Design of Steel Structures. General rules -strength and stability of shell structures.

Further development of amendments to the following Eurocode National Annexes will also take place during 2019:

I.S. EN 1991-1-3: Actions on structures. General actions - snow loads;

I.S. EN 1993-1-5: Design of steel structures. Plated structural elements; and,

I.S. EN 1993-3-1: Design of steel structures. Towers, masts and chimneys – towers and masts

8 Additional Information

Several Engineers Ireland CPD accredited training courses on various Eurocode parts, presented by NSAI TC015 committee members were held in 2018 with more due to take place in 2019.