



European Construction Sector Observatory

Policy measure fact sheet

Latvia

National Plan for Eurocode Standards 2013-2014

Thematic Objective 4

January 2018



In a nutshell

Implementing body:	Ministry of Economy
Key features & objectives:	National plan to implement Eurocode standards in Latvia's construction regulatory framework and enactments to improve Latvia's national construction standardisation system.
Implementation date:	2014
Targeted beneficiaries:	Industry and design professionals
Targeted sub-sectors:	Construction/engineering services and products
Budget (EUR):	116,173 (including 7,684 for the adaptation of design standards)

During the pre-accession process to the European Union, Latvia aligned almost all construction-related legislation with EU directives. Prior to the National Implementation Plan for Eurocode Standards, Latvian Building regulations and requirements and Latvian Building Codes (LBN) did not fully correspond with the classes used in Eurocodes¹.

In December 2003, the European Commission issued recommendation² on the implementation and use of Eurocodes³ for construction works and structural building products. Between

2005 and 2007, Latvia introduced design requirements for the construction sector in compliance with Eurocode Standards. This was done by issuing a number of Cabinet regulations and by launching a 'dual approach to design' involving parallel operations to comply with LBN/Soviet Construction Codes (SNiP) and Eurocode Standards^{4,5}.

The dual approach to standards application created a number of conflicts between both sets of standards^{6,7}. The conflicts ultimately caused confusion and problems at industry level in Latvia. Cabinet realised that it would be more beneficial to industry to adopt a single set of standards – Eurocode Standards⁸. To achieve this aim, the Cabinet of Ministers issued Order No. 224 'On the National Implementation Plan for Eurocode Standards 2013-2014'.

The Ministry of Economy was assigned responsibility for managing the implementation of the plan⁹.

The majority of Eurocode Standards have been successfully implemented and a continuation plan is targeting full implementation of all Eurocode Standards. A range of awareness raising activities have been organised but more are needed, particularly to introduce Eurocodes to the older construction design workforce. Work is also needed to address problems with the new terminology used by Eurocode and issues with translated standards.

1

General description

The purpose of the National Implementation Plan for Eurocode Standards 2013-2014 was to establish measures to ensure full adaptation of the Eurocode standards and to improve the national standardisation system in Latvia, in compliance with the EC Recommendation 2003/887/EC

The National Implementation Plan for Eurocode Standards 2013-2014 was a short-term policy planning document¹⁰. Its purpose was to establish measures to ensure full adaptation of the Eurocode standards and to improve the national standardisation system in Latvia, in compliance with the EC Recommendation 2003/887/EC¹¹. The National Plan for Eurocode Standards was prepared and implemented by the Ministry of Economy.

The National Plan for Eurocode Standards 2013-2014 defines four main objectives:

- 1) To adapt Eurocode standards by translating them into Latvian and developing National Annexes for Eurocode standards;
- 2) To prepare amendments to legislation, to ensure that design standards fully comply with Eurocode standards;
- 3) To fulfil the European Commission's Recommendation 2003/887/EC on the implementation and use of Eurocodes in buildings and load-bearing structures;
- 4) To raise awareness about the design features of the Eurocode standards.

The implementation plan aimed to translate and register 17 standards, 31 standard revisions and 5 standard supplements in the Latvian National Standard System by the end of 2014¹².

In addition, the Ministry of Economy aimed to develop National Annexes to the 26 standards, and to draft amendments to regulations and laws to ensure that they are aligned with Eurocode standards¹³. The plan also included funding for a public awareness campaign to inform building design professionals about the specific features of the Eurocodes design standards¹⁴.

The Ministry of Economy allocated EUR 116,173 to finance implementation, including EUR 7,684 to adapt the design standards. EUR 46,790 was allocated to implementation in 2013, and EUR 65,164 was assigned to 2014 activities. Additionally, EUR 19,517 was allocated to set-up a state-level unit for standardisation, accreditation and metrology¹⁷.

The National Implementation Plan had three stages of implementation¹⁸:

- **Stage 1:** implementation of Eurocode (Basis of structural design); Eurocode 1 (Actions on structures); Eurocode 3 (Design of steel structures); Eurocode 5 (Design of timber constructions); and Eurocode 7 (Geotechnical design);
- **Stage 2:** implementation of Eurocode 2 (Design of concrete structures); Eurocode 4 (Design of composite steel and concrete structures); and Eurocode 6 (Design of masonry structures);
- **Stage 3:** implementation of Eurocode 8 (Design of structures for earthquake resistance) and Eurocode 9 (Design of aluminium structures).

Each of the ten separate Eurocodes comprises a number 'Parts', which are published as separate documents. Eurocode Parts contain two distinct types of statement: 'Principles' and 'Application Rules'. 'Principles' must be followed to achieve compliance. 'Application Rules' are rules that underpin compliance with the 'Principles', but it is permissible to use alternative design rules, provided that they accord with the 'Principles'.

The Implementation Plan established the Eurocodes Technical Committee LVS/TC30 for the Latvian national standardisation office. This Technical Committee was in charge of drafting National Annexes to the Eurocode standards and reviewing Latvian text, which then were translated in Eurocode¹⁹.

Figure 1: Eurocodes implemented before the plan (2010-2011).



Source: Liga Gaile, 2015²⁰

Figure 1 shows the status of work done in 2010-11 to implement Eurocode standards in Latvia before the implementation plan was launched. Figure 1 shows the number of Eurocode 'Parts' that were implemented in 2010-11 (highlighted in green) and the number of 'Parts' that were planned but not yet implemented (highlighted in purple). When comparing implementation in both 2010 and 2011, the only progress that had been made was the implementation of one 'Part' of Eurocode 1 (EN 1991 – Actions on structures) was implemented in that timeframe. As Figure 1 shows, many 'Parts' remained to be implemented.

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Achieved or expected results

According to the Ministry of Economy, the following objectives have been achieved²¹:

- 1) Adaptation of Eurocode standards by translating them into Latvian and developing National Annexes to the Eurocode Standards²²;
- 2) Finalisation of amendments to legislation, providing design in accordance with Eurocode Standards²³;
- 3) Raising public awareness (especially among design professionals) about the design features of the Eurocode Standards²⁴.

The National Implementation Plan achieved its objectives by implementing all three stages as planned. Stage 1 implementation was completed by 1st September 2013, Stage 2 was completed by 1st February 2014 and Stage 3 was completed by 31st December 2014.

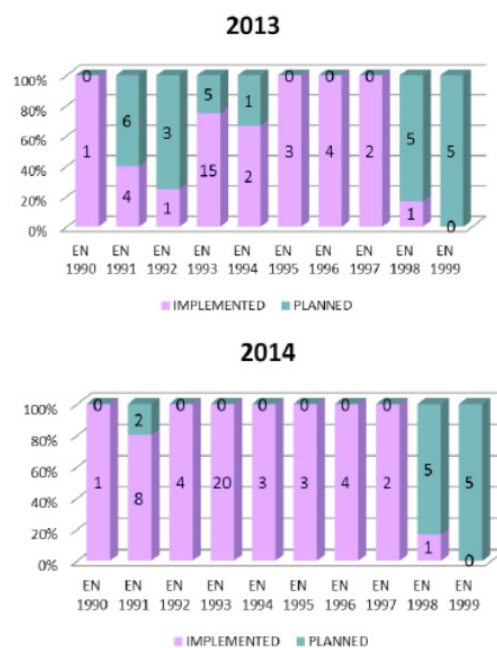
The National Implementation Plan achieved its objectives by implementing all three stages as planned.

As Figure 2 shows, the implementation plan has successfully integrated almost all Eurocode standards in Latvia.

Compared to the 2010-2011 statistics (Figure 1), there was a noticeable jump in 2013-2014 in terms of the number of Eurocode Standards and their constituent Parts that were successfully implemented. In 2013 (Figure 2), 15 Parts of Eurocode 3 (EN 1993 – Design of steel structures) were implemented, compared to none in 2011. In addition, both Parts of Eurocode 7 (EN 1997 – Geotechnical design) were fully implemented in 2013.

Further success was then achieved in 2014, with the implementation of 13 additional Eurocode parts which ensured the full implementation of Eurocode 2 (EN 1992 – Design of concrete structures), 3 (EN 1993 – Design of steel structures) and 4 (EN 1994 – Design of composite steel and concrete structures), as well as the nearly complete implementation of Eurocode 1 (EN 1991 – Actions on structures).

Figure 2: Eurocodes implemented following the plan (2013-2014)



Source: Liga Gaile, 2015²⁵

Another success of implementation of the Eurocodes is that the Technical Committee has published all Eurocode Parts as National Standards, of which 48 have been translated into Latvian.

All Parts of EN 1993, EN 1997, EN 1998 and EN 1999 and 7 Parts belonging to EN 1991, EN 1992, EN 1994 and EN 1995 were introduced into the legislation in 2015²⁶.

In November 2013, the Ministry of Economy organised free seminars on the application of Eurocode standards for the design of steel and timber structures and bases in order to ensure that construction design professionals are informed about Eurocode design standards. The first seminar was held in November 2013 on the 'Geotechnical design' (Eurocode 7), the second was on 'Design of steel structures' (Eurocode 3), and the third was on 'Design of timber constructions' (Eurocode 5)²⁷.

In 2013, the Ministry of Economics organized three seminars following small group workshops for design professionals, in cooperation with Riga Technical University (RTU) and the Latvian Building Designers Association. Four additional workshops were organised in 2014 on reinforced concrete, masonry, aluminium design and on the design of structures for earthquake resistant structures²⁸. Most of the seminar participants were young students. There was lack of older generation professionals in the seminars.

In addition to the seminars, other workshops were organised in Latvia during the implementation phase:

- Workshop on Eurocode 3 (Design of steel structures)²⁹;
- Workshop on Eurocode 5 (Design of timber structures);
- Workshop on Eurocode 7 (Geotechnical Design) – the themes of the workshop included³⁰:
 - Eurocode standard development;
 - Eurocode 7 usability and development. EN1997 geographical design;
 - Eurocode 7 usability development. Transition from LBN and SiPS to Eurocode Design Standards;
 - Eurocode 7 requirements for geotechnical research.

Another result is that academic institutions such as Riga Technical University (RTU) and Latvia University of Agriculture (LLU) have started to integrate Eurocode Standards and procedures into the construction-related courses that they are providing to their students³¹.

Professors from different EU countries (e.g. Germany, the United Kingdom, etc.) have been invited to train Latvian university students and to share their practical experience in Eurocodes Standards and their application. Latvian universities have also organised two study visits to Germany for Latvian students³². In total, 16 international professors have conducted training seminars. The courses in RTU and LLU follow books used in European universities to train students in structural design subjects³³.

The key success of the implementation plan is that a new generation of students have been educated about Eurocode Standards and procedures and are now equipped to take that knowledge into professional design work in Latvia and abroad. Unfortunately, older generation professionals still prefer to work with the old procedures due to the lack of knowledge about Eurocode.

Due to the complexity of technical terminology and the short Eurocode implementation period, the Cabinet of Ministries approved an extension of the plan in December 2015. It was developed by the Ministry of Economy to improve and complete the implementation of Eurocode Standards, to maintain existing Eurocode Standards and to adopt new Eurocode standards. It also aimed to ensure the participation of the national standardisation body in the development of the second generation of Eurocode Standards. The implementation phase for the continuation plan is 2016-2018.

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Perspectives and lessons learned

From a **government perspective**, a Senior Officer at the Construction Policy Department at the Ministry of Economy says that the National Implementation Plan for Eurocode Standards for 2013-2014 was successfully developed with the strong support of Latvian construction professionals and designers³⁴.

However, the Senior Officer also says that implementation was delayed due to the lack of financing required to translate the standards. Full integration of the Eurocode Standards into the Latvian construction regulatory framework was envisaged for the end of 2014; however, work on improving the Eurocode Standards is now expected to continue until 2019. It is necessary to ensure the adoption of amendments and revisions of new standards and existing standards³⁵.

From an **academic perspective**, there are a number of issues affecting students and teachers/professors.

According to a Professor at Riga Technical University (RTU), the first issue relates to difficulties in interpreting the new standards. Some of the terms used are unfamiliar and/or cannot be translated into Latvian because they refer to certain structures and technologies that have not yet been used in the Latvian construction industry³⁶. Some terms need additional clarification or illustration, for example, there are no terms for 'cavity wall' or 'shell bedded wall'³⁷.

The second issue is that Eurocodes 3 and 9 are difficult to implement in Latvia because there are no applicable Latvian standards that cover the design of steel and aluminium structures³⁸.

The third issue is that the lengthy Eurocode implementation period and the continued existence of the dual standards approach during the transition phase are not helping the learning process. The new standards are not considered useful

or practical until they can be put into practice. Until they can be applied, the old system will remain dominant. National institutions in Latvia should provide more funding to fully integrate Eurocode Standards and procedures in Latvia, and to provide Eurocode training workshops for older generations of specialists that remain unaware of the new design standards³⁹.

From a Technical Committee (TC) perspective, the aim is to develop a better glossary of technical Eurocode terms in Latvian⁴⁰.

The TC is aware of the issues that industry and academia face when trying to translate and/or understand many of the new Eurocode terms, which often do not exist in Latvian dictionaries. To ensure that translations into the Latvian language is as close to the original text as possible, the TC must expand the terminology in Latvian and compile a glossary of terms that includes the new terms used in Eurocodes⁴¹. Translation work should also be subjected to technical editing by a design professional. All of this work will require more funding from Latvian public institutions. It is expected to be provided to support the 2016-2018 implementation plan⁴².

To continue to develop the National Annex, the TC needs to make sure that they collaborate closely with industry representatives. Close collaboration will ensure that industry can provide important feedback and practical experience, enabling the TC to understand the challenges that industry and design professionals face when implementing Eurocodes in their daily work.

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Endnotes

- 1 Feedback from Senior Officer of Ministry of Economy (29/09/2017).
- 2 The Commission Recommendation of 11 December 2003 (2003/887/EC) on the implementation and use of Eurocodes for construction works and structural construction products recommends: "Member states should adopt the Eurocodes as a suitable tool for designing construction works, checking the mechanical resistance of the components, or checking the stability of structures". The Recommendation is addressed to Member states in order to promote implementation and real action of the Construction Products Directive 89/106/EEC and to fasten real free movement of construction products.
- 3 The set of Eurocode standards consists of ten families of standards – the first one EN 1990 is a general instruction called "Basis of design", and eight families from EN 1991 up to EN 1997 and EN 1999 for different types of structures and one standard EN 1998 for estimation of seismic actions. The set of Eurocode standards is a tool to eliminate technical barriers to trade within EU because there will be unified essential requirements and classes of requirements for main structural products used by EU Member States.
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<https://likumi.lv/ta/id/247907-par-eirokodeksa-standartu-nacionalo-ieviesanas-planu-2013-2014-gadam>.
- 16 Ibid
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- 18 Likumu um Valsti digital newspaper: <http://www.lvportals.lv/m/preses-relizes.php?id=258581>
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- 37 L. Pakrastinsh, L. Gaile, B. Gjunsburgs. Implementation of the Eurocodes in Teaching Process and Design Practice in Latvia, In Proceedings of International Scientific Conference People, Buildings and Environment, Vol. 2. Pp. 805-815, ISSN: 1805-6784.
- 38 Feedback from Head of Building Construction Department at RTU (28/09/2017).
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- 40 Feedback from Member of Technical Committee LVS/TC 30 (25/09/2017).
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