REGULATING THE AREA OF CONSTRUCTION AT EUROPEAN UNION LEVEL*

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ABSTRACT

The field of regulation of construction at the European Union level is complex and it encompasses standardisation at several levels by various stakeholders in the system. Namely, construction regulatory systems are the work of various European Union institutions and European standardisation organisations (European Committee for Standardization and European Committee for Electrotechnical Standardization). Precisely this fact may lead to specific misalignments of the system itself thereby jeopardizing legal certainty as well as physical safety of citizens. Therefore, this paper aims to present regulations in the field of construction at the European Union level, placing an emphasis on individual standards of the above standardisation organisations, and discuss problems attached to regulation at multiple levels.

The aforementioned instances and European standardisation organisations regulate construction products, works, professional qualifications of stakeholders in the system, occupational safety and health, environmental impact etc. and therefore the paper provides a review of sources of law which exist at the European Union level in the ambit of construction – regulations and decisions of appropriate European Union bodies – and significance of Eurocodes as standards. In terms of contents, these documents are related to regulation of the field of a technical nature and technical rules. Therefore, awareness and application of these sources of law is important because the general design itself and its components, as parts of documentation submitted in special administrative proceedings to obtain a construction licence, for instance in the Republic of Croatia, must be aligned with the aforementioned sources of law. Such alignment contributes to the principle of lawfulness and ultimately to legal certainty in the procedure to obtain a construction licence.

This paper employs, with the purpose of a scientific approach to this topic, analyses and syntheses as well as inductive and deductive methods to research the theoretical part of the paper.

* This paper, in its theoretical and empirical part stems from a research performed for the purpose of development of a doctoral thesis of the primary author of this paper.

A part of results obtained through an empirical research conducted for the purpose of development of a doctoral thesis is also analysed in this paper and descriptive statistical methods are used within the framework of this analysis. The analysis of the results reviews the degree of use of the European Union sources of law in procedures to obtain construction and operating licences in the Republic of Croatia. The discussion employs logical and teleological methods of interpretation. Recommendations for improvements to the system considering a part of the analysed empirical research results are provided accordingly within the concluding considerations.

***Keywords**: building regulations, sources of European Union law, European Union, European standardisation organisations, building licences,*

1. INTRODUCTION

Since the start of human history, people build, demolish and rebuild and adapt the natural environment their needs. Construction itself entails design development, construction[1], use, maintenance and removal of structures[2] which must not jeopardise human life and health, the environment, nature, other structures and possessions or stability of surrounding soil.[3] It is therefore among the most significant activities of any society, demanding thoughtful and systematic standardisation rendering regulations clear and foreseeable. This paper shall analyse how individual sources of law appear in the field of construction within the framework of European standardisation organisations (coordinating with the European Commission) and identify the sources of law in the field of construction at the level of the European Union (hereinafter "the EU"). Sources of the EU law, within the meaning of the primary and secondary sources of law, general legal principles and case-law as well as their impact and effects are known. The paper shall separately present specificities of systems of standards generated within the framework of the European standardisation organisations. There shall be a separate analysis of creation of EN Eurocodes and their implementation in national systems of the Member States. This actually gives rise to a complex regulatory action at multiple levels and by multiple stakeholders rendering application of the adopted regulations more difficult. Importance of the above sources of law in our national law is

1 Construction is execution of civil and other works (preparatory works, earthworks, construction, installation, and finishing works and installation of construction products, equipment and plant) building a new structure, rebuilding, maintaining or removing an existing structure. Construction Act, Official Gazette, 153/13, 20/17, 39/19 Article 3(1)(4)

2 Removal of a structure or a part of the structure is execution of works to remove a structure or a part of the structure from its site including disposal of debris found in the structure and the construction plot as well as construction material and construction waste generated through dismantling of the structure in compliance with regulations applicable to waste management and arrange the construction plot, i.e. the land previously occupied by the structure appropriately. *Ibid.*, Article 3(1)(23)

3 Radujković, M.; Izetbegović, J.; Nahod, M. M., *Osnove graditeljske regulative*, University of Zagreb, Faculty of Civil Engineering, Zagreb, 2008, p. 8

significant in procedures to obtain construction and operating licences because the sources of law are used in development of general designs enclosed to construction licence applications. It is therefore necessary that stakeholders in the process are familiar with the relevant sources of EU law and that the sources are available to them. The degrees of use and awareness of the above sources are presented in a part of the empirical research results used for the purposes of this paper.

In accordance with the above, a hypothesis is formulated that the field of construction is regulated at the EU level within the framework of the secondary law of the EU and by the European Standardisation Organizations and such existing regulations governing the activity leads to a large number of sources of law and difficulties in monitoring and application of the same. Recommendations for improvements to the system shall be provided in the concluding considerations depending on whether the hypothesis is proven or otherwise.

2. METHODOLOGY

The following research methods are used to prove the proposed hypothesis: analysis and synthesis, induction and deduction in the theoretical part of the paper analysing the primary sources of the European Union law and statistical presentation of data within the framework of the empirical portion of the paper. A portion of the results of an empirical research shall be used to achieve objectives of this paper. The research has been performed with the aim of confirming hypotheses formulated in the doctoral thesis of the primary author of this paper, whose fundamental objective was to determine defects in legislation and the procedure of obtaining construction and operating licences. The research was performed on two categories of subjects. Competent county and city-level administrative departments of local and regional self-government and their regional offices issuing construction and operating licences were selected as the first surveyed category, while architects, members of the Croatian Chamber of Architects were selected as the second survey category. The survey was performed on-line (using Google Drive) and two types of survey questionnaires were prepared for the two categories of survey subjects. The sample consisted of 116 competent county and city-level administrative departments of local and regional self-government and their regional offices as well as 1000 architects, members of the Croatian Chamber of Architects. Ultimately 41 competent offices and 104 architects have taken part in the survey. Considering the two categories of respondents, two types of survey questionnaires were prepared, but individual questions and claims were formulated identically in order to allow a comparison of the responses offered by the two groups of respondents in discussion of the thesis. 41 competent county and city-level administrative de-

partments or corresponding branch offices participated in the survey. Since the questionnaire was sent to 116 e-mail addresses, this corresponds to response rate of 35.35%. Also, 104 architects (members of the Croatian Chamber of Architects) took part. That questionnaire was sent to 1000 e-mail addresses and therefore the response rate was 10.4%. Those response rates are deemed appropriate and they are suitable for the following analysis. In the results analysis, tabular depiction of data and analysis of obtained results are relevant.

The discussion shall employ logical and teleological interpretation methods.

3. REGULATING CONSTRUCTION AND CREATION OF REGULATIONS IN THE FIELD OF CONSTRUCTION AT THE EU LEVEL

Regulations on construction have a long history. The most ancient provisions concerning regulation in the field of construction are related to the Code of Hammurabi, the oldest preserved document regulating legislative system of a state. It is thought to date to about 1780 BC. Provisions of the Code are related to *lex talionis* i.e. the principle of "an eye for an eye, a tooth for a tooth" and the above is particularly apparent in provisions concerning construction – specifically Articles 228–233. [4] In the Book of Deuteronomy and in the Leviticus[5] the Bible also provides the earliest evidence of regulation in the fields of design development and construction. Development of regulation of construction was spurred on by various circumstances, impact of nature or human activities which led to disasters (large-scale fires, floods, storms) contributing to formulation of regulations requiring defined framework for construction. In 1666, the Great Fire of London thus triggered enactment of the *London Building Act* and similar circumstances were the basis for regulation of construction on American soil from the 18th to the 20th century.

It should be emphasised that the regulatory systems tackling construction at the EU level are complex and this affects how they are studied, analysed and interpreted. Van der Heijden thus points out what is generally relevant in terms of regulation and regulatory documents as well as the method of application of the same in relation to regulations in the field of construction. He states that it is the quality of rules and regulations that is relevant, as well as a strategy for their implementation, methods of implementation of rules and participants in the implementation and

[4] According to: Harper, R. F., *The Code of Hammurabi, King of Babylon: About 2250 B.C.*, Second edition, The Lawbook Exchange, LTD. Union, New Jersey, 1999, pp. 82–83

[5] *Biblija, Stari i Novi zavjet,* Kršćanska sadašnjost, Zagreb, 2009, Deuteronomy 22:8 and Leviticus 14:37–45

therefore, taking this in consideration while interpreting construction regulations, he concludes that the field of construction should not be neglected in professional and scientific literature as it is at this time. This might be the case because nature of the the regulations in the field of construction is quite technical at the first glance and it is repulsive to scientists studying regulations while, on the other hand, specific professional and scientific papers dealing with regulations and design of rules may appear less applicable to scientists pursuing design development and construction technologies. However, regulation and subsequent interpretation of legal rules is necessary to guarantee public and individual interests and to render social actions and interactions predictable. Considering the fact that design development and construction are affected by modern technologies while becoming increasingly sophisticated, the volume of regulations and legal rules applicable specifically to contemporary trends in the field is also growing and the volume of regulations of the former is also increasing. This renders the intended deregulation concerning the rules on construction pointed out in previous works of this author actually impossible under influence of contemporary trends.[6]

The EU has established a complex legislative and regulatory framework for the construction sector. Within the framework of regulatory activities in the field of construction at the EU level, it may be said, from the present-day point of view, that an emphasis is placed on technical regulations and performance of works as well as on construction materials and construction products. Thus in accordance with the Directive (EU) 2015/1535 of the European Parliament and of the Council of 9 September 2015 laying down a procedure for the provision of information in the field of technical regulations and of rules on Information Society services (codification)[7], Article 1(f) determines a technical regulation as "...technical specifications and other requirements or rules on services, including the relevant administrative provisions, the observance of which is compulsory, *de jure* or *de facto*, in the case of marketing, provision of a service, establishment of a service operator or use in a Member State or a major part thereof, as well as laws, regulations or administrative provisions of Member States, except those provided for in Article 7,

6 According to: Van der Heijden, J., *Building regulatory enforcement regimes,* Delft University of Technology, the Netherlands, Delft, 2009 See also: Visscher, H.; Meijer F., *Dynamics of building regulations in Europe*, ENHR 2007 International Conference on Sustainable Urban Areas, Rotterdam, 2007, p. 3

7 Regarding to this area of regulation: Regulation on the procedure of official notification on technical regulations and information society services (Government of the Republic of Croatia), Official Gazette, 105/15 and the Law on Technical Requirements for Products and Conformity Assessment, Official Gazette 80/13, 14/14, 32/19

prohibiting the manufacture, importation, marketing or use of a product or prohibiting the provision or use of a service, or establishment as a service provider."[8]

The EU legislative framework less attention is paid to procedures for adoption of construction- and utilisation-related documents and this regulation remains in the ambit of competence of each Member State. Therefore, at the EU level, there are no specific administrative procedural rules pertaining to issuing of construction or operating licences. However, in compliance with applicable legal system, the rules of administrative procedure followed by EU institutions are derived from the sources of primary and secondary EU law as well as the general principles affirmed through the case-law of the European Court of Justice.[9] The same rules may serve as a model in shaping of a general and special administrative procedures including the procedure for obtaining construction and operating licences at the Member State level.[10]

Special administrative procedure for obtaining a building permit in the Republic of Croatia, in accordance with Article 108 of the Construction Law is initiated at the request of the investor, who, along with the said request, submits the necessary documentation, which also includes a main project. The main project, in accordance with Article 69 (1) and (2) of the Construction Act, depending on the type of building, contains architectural, construction, electrical engineering and engineering projects, and depending on the type of construction, the construction of the landscape, geomechanical, traffic, conservation and other necessary elaborations may be preceded. Important parts of the main project (especially the construction project) have to be aligned with individual sources of EU law and

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8 It should be mentioned here that so-called Building Codes are adopted elsewhere in the world with the aim of standardizing the field of construction. The purpose of these construction rules is to provide the minimum standards for safety, health and general well-being including structural design, mechanical engineering (including sanitation, water supply, lighting fixtures and ventilation), egress, fire protection and energy conservation control devices. Building Codes are largely separate from urban development rules, but external limitations may fall into both categories. According to: Hageman, J. M., *Contractor`s Guide to the Building Code*, Craftsman Book Company, Carlsbad, 2008, pp. 9–11

9 Đerđa, D., *Pravila upravnog postupka u europskom pravu*, Proceedings of the Faculty of Law in Rijeka, University of Rijeka, *Vol.* 33., no. 1, 2012, pp. 109–144. See: Ljubanović, B., *Pravo EU u upravnom pravu i postupku*, in: Procesno – pravni aspekti prava EU, Osijek, Faculty of Law Osijek, J. J. Strossmayer University of Osijek, 2016, pp. 173–208

10 In order to ultimately contribute to codification of the procedure at the European Union level, a draft Regulation "Proposal for a Regulation of the European Parliament and of the Council on the Administrative Procedure of the European Union's institutions, bodies, offices and agencies", developed by the *Research Network on EU Administrative Law (ReNEUAL)* workgroup appointed by the Legal Affairs Committee of the European Parliament. For more information see: Vitez Pandžić, M., *Reguliranje upravnog postupanja u pravu Europske unije,* 8th international conference Development of Public Administration, Lavoslav Ružička Polytechnic in Vukovar, Vukovar, 2018, pp. 258–266

European norms, which will be further discussed in the paper, all in order to meet the basic building requirements governed by Articles 8 to 15 of the Construction Law. Therefore, although the procedure for issuing building permits is the responsibility of EU member states by own, the assumptions that are important to fulfill in this process, concerning the main project and its constituent parts, include the mentioned sources of EU law. That is why this topic is a subject of study in this paper.

Regulating construction at the EU level in accordance with the above includes:

- rules on types of authorisation (licences) for construction and supervision;
- building Codes including regulatory requirements for design development and building construction;
- referential standards pertaining to testing, installation and maintenance of individual types of construction supervision;
- references to professional rules for design engineers originating from professional organisations;
- the minimum design engineer and contractor training requirements and the minimum requirements for their authorisation to perform activities;
- market mechanisms, especially in cases of public procurement or insurance systems;
- environmental protection rules;
- health and safety rules;
- energy efficiency rules;
- fire protection rules;
- spatial planning.[11]

Health and safety in construction itself and free movement of engineering/construction services and products are important development priorities of the sector. European legislation defines significant requirements applicable to construction products at the time of market placement and the European bodies tasked with standardization are tasked with designing appropriate technical specifications for individual construction products – which shall be elaborated below. Specifically, initiatives and drafts of proposed secondary sources of law pertaining to construction stem from the European Commission and/or its departments and services and the departments are known as the Directorates-General. The most important Directorates-General whose activities are related to construction are:

[11] Visscher, H. J.; Meijer, F., *The Impact of Climate Change on Building Regulatory Systems*, World SB14 Barcelona Conference, October 28/30th 2014, Session 93, pp. 1–2

- Energy (ENER) – dealing with issues related to energy policy, energy efficiency, implementation of the Energy Performance of Buildings Directive (EPBD), renewable energy sources etc.
- Internal Market, Industry, Entrepreneurship and SMEs (GROW) – dealing with issues related to general business relations
- Environment (ENV) – all issues related to the environment and building markings
- Research and Innovation (RTD) – issues related to research projects and development of research programmes
- Climate Action (CLIMA) – issues related to "F-gases"
- Informatics (DIGIT).[12]

These Directorates-General have tied their operations to the assigned field of work including required regulatory activities whose substance is also related to the construction sector. The above view of fragmentation of regulatory approach to construction is also supported by stratification in relation to proposed legislation within EU institutions. Therefore proposed secondary sources of law are generated in diverse Directorates-General of the European Commission. However, the construction sector and relevant information related to the sector are researched and examined within the aforementioned GROW Directorate-General – responsible for industry – which also generates specific proposals and initiatives concerning the regulatory framework applicable to construction in the EU. In accordance with determinations of the survey performed for the purposes of the doctoral thesis of the first author of this paper and considering the above, it may be said that this is a fragmented regulatory approach i.e. the construction regulatory systems are products of different EU institutions within the framework of production of the secondary law and European standardisation organisations and mostly European Committee for Standardisation – CEN[13] and partly European Committee for Electrotechnical Standardisation – CENELEC, and this may lead to mismatches of the system itself and it represents a risk for future users of completed structures as well as for people who must apply such regulatory framework in they work.

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12 According to: [http://www.rehva.eu/eu-regulations/eu-legislation.html] Accessed on 20.02.2019

13 CEN provides a platform for the development of European standards and other technical documents in relation to various kinds of products, materials, services and processes. Also, CEN supports standardisation in a range of fields and sectors: chemicals, construction, consumer products, defence and security, energy, the environment, food, health and safety, healthcare, ICT, services, transport etc. According to: [https://www.cen.eu/about/Pages/default.aspx] Accessed on 20.02.2019

3.1. Sources of EU law and the European standardisation system

One of important objectives of the EU is embodied in Article 26 of the Treaty on Functioning of the European Union and it pertains to the freedom of movement of services, persons, goods and capita.[14] In view of the above, according to the data concerning construction regulations found in the doctoral thesis of the first author of this paper, the secondary EU law provides 21 regulations, 27 directives and 158 decisions in the field of construction, stemming from the framework of standardisation procedures conducted by EU institutions. It is important to emphasise that their specification does not exhaust the list of relevant legislation, but it is certainly significant and this indicates regulatory complexity of the field of construction.[15] According to the content of these sources of law, it can be concluded that EU-level construction regulation, as mentioned above, is related to several different areas (for example construction products, works, professional qualifications, health and safety at work, impact on environment, etc.), and many aspects of construction are really within the competence of EU member states. Therefore, the legislation pertaining to the construction sector also applies to other areas of regulation and it does not directly regulate this sector, and thus also becomes a source of overburden and legal uncertainty.[16]

In order to fully implement provisions of the aforementioned Article 26 and Articles 14, 151, 152, 153, 165, 166, and 168 of the Treaty on Functioning of the European Union[17], the European standardisation system has been established at the EU level[18] whereby the Regulation (EU) no 1025/2012 directs the method of European standardisation and regulates mutual functioning of various organisations involved in the procedure. This Regulation therefore prescribes the rules:

- on cooperation between European standardisation organisations, national standardisation bodies, Member States and the Commission,

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14 Consolidated versions of the Treaty on European Union and the Treaty on Functioning of the European Union, Official Journal of the European Union, (2016/C 202/01), 07.06.2016

15 See: Vitez Pandžić, M., *Upravno pravni aspekti ishođenja dozvole za gradnju i uporabnu dozvolu, doctoral thesis*, Faculty of Law Osijek, J. J. Strossmayer University in Osijek, 2018, pp. 61–74

16 According to: [http://ec.europa.eu/DocsRoom/documents/16103/attachments/1/translations/] Accessed on 09.05.2019

17 Consolidated versions of the Treaty on European Union and the Treaty on Functioning of the European Union, *op.cit.* in note 14

18 Standardisation is an activity of establishment of provisions for general and repeated use concerning existing or potential problems to achieve the best degree of regulation in a given context and this activity consists of formulation, publication and application of standards. According to: Boljanović, A. M., *Normizacija u području kulturne baštine*, Yearbook of Protection of Cultural Heritage of Croatia, *Vol.* 35, No. 35, 2011, p. 51, and Croatian Standards Institute, *Internal Rules for Standardization – Part 1: Standardization in general, aims and general principles,* [https://www.hzn.hr/UserDocsImages/pdf/UPN_1_2014-02-20.pdf] Accessed on 11.04.2019

- on establishment of European standards and European standardisation deliverables for products and for services in support of Union legislation and policies,
- on the financing of European standardisation and stakeholder participation in European standardisation.[19]

Areas of standardisation are services, construction, chemicals, chemical engineering of agricultural and food products, machine engineering, metallic materials, non-metallic materials, the environment, health, information technology, transport, handling and packaging, household products, general electrical engineering, electronics, energy electrical engineering, telecommunications etc. European standardisation is regulated by a special legal framework pertaining to Directive 2015/1535 of the European Parliament and of the Council of 9 September 2015 laying down a procedure for the provision of information in the field of technical regulations and of rules on Information Society services (codification)[20], Decision No 1673/2006/EC of the European Parliament and of the Council of 24 October 2006 on the financing of European standardisation and Council Decision of 22 December 1986 on standardization in the field of information technology and telecommunications (87/95/EEC).[21] European standards are adopted by the aforementioned European standardisation organisations – CEN, CENELEC but also ETSI (European Telecommunications Standards Institute) – and the norms are rooted in the principles of alignment, transparency, openness, consensus, voluntary application, independence of particular interests and efficiency. The European standardisation system itself is actually based on a special system of a privileged public-private partnership between the European Commission and the above organisations in compliance with provisions of Regulation (EU) No 1025/2012.[22] Initiative for adoption of standards is based on annual work programme adopted by the Commission taking into account long-term growth strategies of the Union.

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19 Regulation (EU) No 1025/12 of the European Parliament and of the Council of 25 October 2012 on European standardisation, amending Council Directives 89/686/EEC and 93/15/EEC and Directives 94/9/EC, 94/25/EC, 95/16/EC, 97/23/EC, 98/34/EC, 2004/22/EC, 2007/23/EC, 2009/23/EC and 2009/105/EC of the European Parliament and of the Council and repealing Council Decision 87/95/EEC and Decision No 1673/2006/EC of the European Parliament and of the Council, Official Journal of the European Union, L 316/12, 25.10.2012, Article 1

20 Directive 2015/1535 of the European Parliament and of the Council of 9 September 2015 laying down a procedure for the provision of information in the field of technical regulations and of rules on Information Society services (codification), Official Journal of the European Union, L 241/1, 19.9.2015

21 Regulation (EU) No 1025/12 of the European Parliament and of the Council of 25 October 2012, *op. cit.* in note 19, item 7

22 According to: [https://eur-lex.europa.eu/legal-content/HR/TXT/HTML/?uri=CELEX:52018DC0686&from=EN] Accessed on 09.04.2019

The annual work programme specifies European standards and standardisation deliverables that the Commission, in accordance with Article 10 of the above Regulation, requests from the European standardisation organisations. The main objective of standardisation is to define voluntary technical or qualitative specifications met by present-day and future products, production processes and services and the aforementioned voluntary aspect[23] concerns application of European standards and this property makes them separate sources of law considering the secondary sources of EU law. In addition to the main objective, an objective of standardisation is to ensure successfulness and effectiveness of standards because they are an instrument and support to Union policies and legislation with mutual cooperation of European standardisation organisations, national standardisation bodies, the Member States and the Commission. In order to achieve the standardisation objectives laid down in Regulation (EU) No 1025/2012, the Union may adopt measures in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty on European Union.[24]

It should be pointed out at this junction that, according to provisions of Regulation (EU) No 1025/2012, national standards, adopted by national standardisation bodies, are also created within the framework of the standardisation system[25]. Thus conflicting standards may occur and therefore it is necessary for efficiency

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23 Also on the topic: Kuzle, K., *Neka pitanja normizacije u Hrvatskoj*, Croatian Public Administration, *Vol*. 7, No. 4, 2007, p. 860

24 Consolidated versions of the Treaty on European Union and the Treaty on Functioning of the European Union, *op. cit.* in note 14

25 National standardisation bodies are: ASI – Austrian Standards in Austria, NBN – Bureau de Normalisation in Belgium, BDS – Bulgarian Institute for Standardization in Bulgaria, HZN – Croatian Standards Institute in the Republic of Croatia, UNMZ – Czech Office for Standards, Metrology and Testing in the Czech Republic, DS – Dansk Standard in Denmark, EVS – Estonian Centre for Standardisation in Estonia, SFS – Suomen Standardisoimisliitto in Finland, AFNOR – Association française de normalisation in France, DIN – Deutsches Institut für Normung in Germany, NQIS/ELOT – Hellenic Organization for Standardization in Greece, MSZT – Hungarian Standards Institution in Hungary, IST – Icelandic Standards in Iceland, NSAI – National Standards Authority of Ireland in Ireland, UNI – Ente Nazionale Italiano di Unificazione in Italy, LVS – Latvian Standards in Latvia, LST – Lithuanian Standards Board in Lithuania, ILNAS – Institut Luxembourgeois de la normalisation, de l'accreditation, de la sécurité et qualité des produits et services in Luxembourg, MCCAA – Malta Competition and Consumer Affairs Authority in Malta, NEN – Nederlands Normalisatie-instituut in the Netherlands, PKN – Polish Committee for Standardization in Poland, IPQ – Instituto Português da Qualidade in Portugal, ASRO – Romanian Standards Association in Romania, SUTN – Slovak Standards Institute in Slovakia, SIST – Slovenian Institute for Standardization in Slovenia, UNE – Asociación Española de Normalización y Certificación in Spain, SIS – Swedish Standards Institute in Sweden, BSI – British Standards Institution in the United Kingdom. According to: [https://www.evs.ee/EVS/Li] Accessed on 09.04.2019

of standardisation within the Union to exchange information[26] among the national standardisation bodies, European standardisation organisations and the European Commission concerning their present and future activities in the sphere of standardisation. In the Republic of Croatia, the national standardisation body is the Croatian Standards Institute established as a public institution through a regulation of the Government of the Republic of Croatia[27], and basic legislation in the field of standardisation are the Standardisation Act[28], the Product Technical Requirements and Compliance Assessment Act[29], the Accreditation Act[30], the Metrology Act[31], and the General Product Safety Act[32].

Effect of the European Union sources and legislation is known[33], but even though application of the European standards is voluntary, the following sub-chapter of the paper shall demonstrate how Eurocodes, as standards, are incorporated in the national law. It is important to emphasise that EU regulations and directives provide a framework for a method for standardisation at the level of the European standardisation organisations in coordination with the Commission and a method for creation of standards. The basic regulation on standardisation in the field of construction and construction products at the EU level is Regulation (EU) No 305/2011 of the European Parliament and the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC[34]. In addition to Eurocodes, the European standards are aligned standards and European Assessment Documents regulated by the above Regulation.

It may be concluded that the construction sector is regulated at multiple levels through regulation of construction products, works, professional qualifications of stakeholders encompassed by the system, health and occupational safety, en-

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26 On the topic: Van Leeuwen, B., *European Standardisation of Services and its Impact on Private Law,* Hart Publishing, Portland, USA, 2017, pp. 57–60

27 Regulation on Establishment of the Croatian Standards Institute, Official Gazette No 154/04, 44/05, 30/10, 34/12, and 79/12

28 Standardisation Act, Official Gazette No 80/13

29 Product Technical Requirements and Compliance Assessment Act, Official Gazette No 80/13, 14/14, and 32/19

30 Accreditation Act, Official Gazette No 158/03, 75/09, and 56/13

31 Metrology Act, Official Gazette No 74/14, and 111/18

32 General Product Safety Act, Official Gazette No 30/09, 139/10, 14/14, and 32/19

33 On the topic: Ćapeta, T.; Rodin, S., *Osnove prava Europske unije*, Narodne novine, Zagreb, 2011, pp. 10–20

34 Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC, Official Journal of the EU L 88, 4.4.2011

vironmental impact etc. Creation of normative acts, i.e. sources of law, within the framework of EU institutions was previously surveyed in a large number of professional papers. Furthermore it is an intention of this paper to demonstrate the manner of creation of the rules on construction at the level of European standardisation organisations in coordination with EU bodies. Therefore, creation of harmonised Eurocodes standards.

3.2. Eurocodes

In 1975, the Commission of the European Communities initiated establishment of a group for development of harmonised technical rules for structural analysis and engineering works. Those activities were aimed at elimination of technical obstacles to commerce and harmonisation of technical specifications. In the first stage, such rules would be applicable as an alternative to national rules of the Member States and replace them accordingly in the final stages of application. Between 1975 and 1989, the Commission, assisted by the Committee composed of Member State representatives, developed the Eurocodes programmes. In 1984, the first *Building Codes,* i.e. the Eurocodes, were adopted at the level of the Community or the Union. In 1989, under an agreement between the Commission and the CEN, the Member States and the European Free Trade Association (EFTA) members transfer preparation and publication of the Eurocodes to CEN[35] in order to ensure their future status of standards. The above fact ties the Eurocodes with provisions of all Commission directives or decisions related to European standards. In 1992, publication of the Eurocodes started and, in 2003, the Commission made a recommendation on implementation and use of the Eurocodes in all Member States. In 2007, publication of the Eurocodes concluded and, in 2012, the Commission submitted a request to CEN to amend the existing Eurocodes for a greater scope of the construction Eurocodes. The Eurocodes development practice and implementation differs among countries, especially at the Member State level and a further review of methods of implementation of the Eurocodes in legal systems of the Member States is given.

The EN Eurocodes, as European standards are a set of rules for structural analysis of buildings and engineering works as well as construction products created by the CEN. They are recommended means for fulfilment of prerequisites for compliance with the basic requirements of Regulation (EU) No 305/2011 of the

[35] According to: Sêco e Pinto, P.S., *Interaction Between Eurocode 7 – Geotechnical Design and Eurocode 8 – Design for Earthquake Resistance of Foundations*, Geotechnical Engineering for Disaster Mitigation and Rehabilitation, Proceedings of the 2nd International Conference GEDMAR08, Nanjing, China, Science Press Beijing and Springer-Verlag GmbH Berlin Heidelberg, 2008, p. 37

European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC[36], and Regulation on construction materials bearing the CE mark as well as preferred references for technical specifications of public procurement agreements.[37] They are deemed the most advanced rules in the world for structural analysis of civil engineering structures.

The third generation of standards (EN) is in effect, published between 2007 and 2009, and the period for repealing of contradictory national standards expired in March 2010.[38] The Eurocodes comprehensively cover all principal construction materials (concrete, steel, wood, masonry works and aluminium), all principal fields of structural engineering (fundamental structures, fire and earthquake protection etc.), and a wide range of structures and products (buildings, bridges, silos, towers etc.). The structural Eurocodes programme comprises the following standards which generally consist of multiple parts (58 standards in about 4900 pages):

- "EN 1990, Eurocode: Basis of structural design
- EN 1991, Eurocode 1: Actions on structures
- EN 1992, Eurocode 2: Design of concrete structures
- EN 1993, Eurocode 3: Design of steel structures
- EN 1994, Eurocode 4: Design of composite steel and concrete structures
- EN 1995, Eurocode 5: Design of timber structures
- EN 1996, Eurocode 6: Design of masonry structures
- EN 1997, Eurocode 7: Geotechnical design
- EN 1998, Eurocode 8: Design of structures for earthquake resistance
- EN 1999, Eurocode 9: Design of aluminium structures."[39]

The following intended purpose of the EN Eurocodes is recognised:

- means to demonstrate compliance of buildings and other structures with the basic requirements of Regulation (EU) No 305/2011 of the European Parlia-

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[36] Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC, *op.cit.* in note 34

[37] According to: [http://eurocodes.jrc.ec.europa.eu/showpage.php?id=1] Accessed on 21.022019, Gaćeša-Morić, V., *Normizacija u području graditeljstva*, Građevinar, *Vol.* 53, No. 8, 2001, p. 549 and Sêco e Pinto, P.S., *op.cit.* in note 35, p. 36

[38] The first generation of standards (EN) came in force in 1985, and the second in 1989. (author's comment)

[39] Sêco e Pinto, P.S., *loc.cit.*, p. 36

ment and the Council laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC, especially the parts from the above regulation pertaining to: The basic requirement 1 "Mechanical resistance and stability" and The basic requirement 2 "Safety in case of fire";

- basis for determination of construction works contracts and related engineering services;
- framework for development of harmonised technical construction product data (European standards (EN) and European technical approvals (ETA)).

The Eurocodes confirm responsibility of administrative bodies for adoption of rules of each Member State and ensure their entitlement to determine values concerning prescription of safety issues at the national level where they vary among countries.[40] They provide common structural analysis rules for everyday use in analysis of whole structures and parts of structure and structures of traditional and innovative construction. Unusual forms of construction and analysis conditions are not specially encompassed and in such cases the design engineer is directed to consult experts additionally.[41]

It can be noted here that these standards in the process of obtaining building and use permits in the Republic of Croatia are related to design (as an integral part of the main project) in order to meet the foregoing basic requirements for the building referred to in Article 6 of Construction Law, primarily mechanical resistance and building stability.

The Eurocodes are implemented in national systems as national standards. If an EN Eurocode is available from CEN (date of availability), state administration bodies and national standardisation bodies[42] should:

- translate the Eurocode or a part thereof which is amended or supplemented into the standard national language (the integral text of the Eurocode must be transposed without any modification);
- develop a national supplement containing nationally determined parameters (NDP) where permitted by the EN Eurocode, and the NDPs are applied in analysis of buildings and engineering structures built in the relevant country, i.e. as:

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40 Croatian standard HRN EN 1990, Eurocode: *Basis of structural design (EN 1990:2002+A1:2005+A1:2005/AC:2010)*, Croatian Standards Institute, second edition, Zagreb, 2011, p. 5

41 *Ibid.* The Eurocodes do not encompass: action of sea waves, glass and plastic structures, new materials and special types of structures (nuclear power plants, dams, offshore oil platforms etc.)

42 See: [http://www.hzn.hr/default.aspx?id=73] Accessed on 21.02.2019

a) values and/or classes where the Eurocode specifies other options;
b) values where only a symbol is s specified in the Eurocode;
c) country-specific (geographical, climatological etc.) data, e.g. a snow load map;
d) procedures to be applied if the Eurocode specifies other possible procedures;

and it may also contain:

a) decisions on application of informational supplements;
b) references to non-contradictory supplemental data to assist users in application of the Eurocode;

- publish national standards transposed through the EN Eurocode and the national supplement;
- adopt own national provisions to allow use of the implemented EN Eurocode or a part thereof in the territory of the relevant state.
- promote education on the Eurocodes.[43]

Therefore, in accordance with the above, the national standards implementing the Eurocodes shall contain full text of the Eurocode (including all supplements as published by CEN), which may be preceded by a national cover page and a national foreword and it may be followed by a national supplement.[44]

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[43] According to: Croatian standard HRN EN 1990, Eurocode: Basis of structural design (EN 1990:2002+A1:2005+A1:2005/AC:2010), *op. cit.* in note 40, p. 6, DG Enterprise and Industry Joint Research Centre: The Eurocodes: Implementation and Use, 2008, p. 5 and Faradis, M. N. *et al.*, *Seismic Design of Concrete Buildings to Eurocode 8*, CRC Press, Taylor and Francis Group, Boca Raton, 2015, pp. 2–3

[44] *Ibid.* These are examples of names of national standards implementing the Eurocodes in the Republic of Croatia:
- HRN EN 1990:2011
Eurocode: Basis of structural design (EN1990:2002+A1:2005+A1:2005/AC:2010);
- HRN EN 1991-1-1:2012
Eurocode 1: Actions on structures -- Part 1-1: General actions -- Densities, self-weight and imposed loads for buildings (EN 1991-1-1:2002+AC:2009);
- HRN EN 02/01/1991:2012
Eurocode 1: Actions on structures -- Part 1-2: General actions -- Actions on structures exposed to fire (EN 1991-1-2:2002+AC:2009);
- HRN EN 03/01/1991:2012
Eurocode 1: Actions on structures -- Part 1-3: General actions -- Snow loads (EN 1991-1-3:2003+AC:2009);
- HRN EN 04/01/1991:2012
Eurocode 1: Actions on structures -- Part 1-4: General actions -- Wind actions (EN 1991-1-4:2005+AC:2010+A1:2010) etc.

Considering years of application of the Eurocodes and their effectiveness and a developed system for implementation of the above standards in the EFTA and the Member States, it may be concluded that the advantages of their use are:

- an uniform level of safety of structure and their characteristics in the Member States;
- ensured common structural analysis criteria and methods for fulfilment of mechanical resistance, stability and fire protection requirements considering durability and cost-effectiveness;
- ensured mutual understanding among owners, entrepreneurs, users, design engineers, contractors and manufacturers;
- facilitated exchange of construction services;
- facilitated promotion and use of construction components and tools;
- facilitated promotion and use of construction materials and products;
- allowed preparation of common design development aids and software;
- increased competitiveness of European construction companies, contractors, design engineers and manufacturers worldwide;
- provided common foundations for research and development;
- a route to an uniform level of safety of construction in Europe.[45]

It may be noted here that all parts of the Eurocodes are published in the Republic of Croatia by the Croatian Standards Institute as national standards. They are translated into the standard Croatian language. As regards application, design engineers may opt to apply other technical conditions and plans while complying with the basic requirements concerning the structure and pertaining to mechanical stability and resistance of structures, but the resulting safety must be at least as high as safety achieved through application of the Eurocodes. However, since other national standards are not concurrently available in the Republic of Croatia, the practice of application of the Eurocode is mandatory.[46]

In order to make the Eurocodes as standards also available through regulations, Article 17 of the Construction Act regulates adoption of technical regulations in the field of the basic requirements for structures and properties of construction products. The technical regulations are adopted by the minister in the form of

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45 *Ibid.*, p. 9

46 According to: Dimova, S. *et al.*, *State of implementation of the Eurocodes in the European Union,* European Commission, Brussels, 2015, p. 32

rules and provisions of those regulations refer specifically to national standards applying the Eurocodes rendering thus regulated standards mandatory instead of voluntary.

As pointed out above, voluntary application of standards is a fundamental principle of European standardisation. Nonetheless, in individual EU Member States, national legislation may pertain to standards whereby alignment with those standards is actually mandatory. In a comparative analysis of data published in 2015[47], even though they are generally considered to be non-mandatory, i.e. voluntary, the Eurocodes are, in practice, the only method available for structure design development in Austria, the Republic of Croatia, Estonia, Finland, Hungary and Poland because there are no other technical standards which would provide an identical or greater degree of safety. As regards Malta and Spain, rate of publication of national supplements has reached a stage where design development is not possible in compliance with the Eurocodes. Application of the Eurocodes is mandatory for individual parts of buildings in the Czech Republic and Bulgaria. 25 Eurocode parts are mandatory means for development of designs of road structures. Then, in France, application of 22 Eurocode parts is mandatory for seismic and fire protection design development. In Belgium, 6 Eurocode parts are mandatory means of fire protection design development. In Slovenia, Eurocodes EN 1990, EN 1991, and EN 1998 are mandatory means of structural design development, while 41 Eurocode parts are mandatory for the same field of design development in Denmark. 11 Eurocode parts are mandatory for structure design development in Romania, while 43 Eurocode parts are mandatory in Germany and 46 in Sweden. According to the research data, 38 parts of Portuguese national standards should have been implemented and/or aligned with Eurocodes and then they should be adopted through legislation along with national supplements.

In accordance with the above data, it may be pointed out that the Eurocodes are used in EU Member State national implementation of the Eurocodes as voluntary national standards as well as a regulatory framework encompassing, as presented above, different numbers of the Eurocode parts. Given the widespread application of parts of Eurocodes in Europe, they can be considered effective.

4. PRESENTATION OF A PART OF THE EMPIRICAL RESEARCH DATA

A portion of the results of the empirical research has been used for the purposes of this paper. The empirical research has was performed for the purpose of develop-

[47] According to: *Ibid.*

ment of the doctoral thesis aiming to offer a comprehensive analysis of legal aspects of obtaining construction and operating licences in the Republic of Croatia.

The first part of the paper reviews regulation in the field of construction at the EU level, but this part of the paper is intended as an analysis of the manner in which the two categories of respondents deal with the sources of EU law themselves and to find out if the administration officials themselves are acquainted with the sources of EU law and if they use the sources of EU law in the course of procedure concerning obtaining of construction and operating licences. Responses to the claims and their comparison may be reviewed in the following tables.

Table 1: Agreement with claims concerning issuing of construction licences (%) – competent county and city-level administrative departments and/or their branch offices

	Disagree completely	**Disagree**	**Neither agree, nor disagree**	**Agree**	**Agree completely**
Considering their number, it is hard to keep track of EU standards (EU regulations, directives, decisions, Eurocodes, harmonised standards etc.)	0.0	2.4	17.1	43.9	36.6

Source: Processing of the empirical research results by the authors

Table 2: Agreement with claims concerning issuing of construction licences (%) – architects, members of the Croatian Chamber of Architects

	Disagree completely	**Disagree**	**Neither agree, nor disagree**	**Agree**	**Agree completely**
Considering their number, it is hard to keep track of EU standards (EU regulations, directives, decisions, Eurocodes, harmonised standards etc.)	1.0	4.9	6.8	31.1	56.3

Source: Processing of the empirical research results by the authors

Table 3: Use of the sources of EU law – competent county and city-level administrative departments and/or their branch offices

Activity	**Yes (%)**	**No (%)**
Utilisation of the sources of EU law in conduct of administrative procedure concerning obtaining of construction and operating licences	7.7	92.3
Officials of this administrative office have attended some forms of education (seminars, conferences, courses etc.) regarding use of the sources of EU law or they have attained the same knowledge through formal systems of education (universities, polytechnics, colleges).	12.5	87.5

Source: Processing of the empirical research results by the authors

Following the above, according to the claims presented in the Tables 1 and 2 and according to the rate of agreement with the same, it is evident that the competent administrative departments agree or agree completely with the same at a high rate of 80.%, while 87.4% of the architects agree or completely agree with this claim that the respondents find it difficult to keep track of all the sources of law which are actually indispensable for their daily work. According to data shown in the Table 3, it is evident that a large percentage of the officials of the competent administrative bodies are not acquainted with the EU law and they are accordingly unable to use it.

5. DISCUSSION

Following the above, it may be concluded that the regulatory framework for construction at the EU level is systematic, numerous, and stratified. Its development involves numerous EU Directorates-General in formulation of secondary legislation as well as European standardisation organisations and national standardisation organisations through creation of standards in the standardisation procedure. It may be deemed that this is so because the field of construction is of interest to many economic operators and all activities taking place in the sector must be clear and predictable. Namely, this sector provides 18 million jobs directly and contributes about 9% to the GDP of the EU, but it also provides solutions for social, climate and energy challenges and therefore it is an objective of the European Union to help this sector to become competitive, efficient and sustainable.[48] It is therefore necessary that all elements of the process are regulated. Van der Heijden thus points out that design development and construction are becoming increasingly sophisticated under influence of modern technologies and the overall administrative aspect of construction is expanding under their impact[49]

[48] According to: [https://ec.europa.eu/growth/sectors/construction_en] Accessed on 12.04.2019

[49] About the tendency of growing administrative organizations in Pusić, E., *Nauka o upravi*, Školska knjiga, Zagreb, 2016, pp. 49–56

and regulations and legal rules are thereby becoming proportionally more numerous. However, it is important to distinguish here that the sources of law presented in the paper also have a different effect and that they may be applied differently. Namely, application and impact of the EU sources of law towards the EU Member States is known and the standards stemming from the European standardisation organisations coordinating with the European Commission are characterised by voluntary application. Nonetheless, this voluntariness is actually conditional because, according to the 2015 research data, it is apparent that the EU Member States are implementing the Eurocodes in their legal systems as standards and they even frame them with their own regulations – as the Republic of Croatia does through the technical regulations adopted by the minister.

After all, the regulations are there primarily to serve stakeholders in the system and primarily they must be available to them because it is not possible to develop a general design for the purpose of obtaining a construction and operating licence in the Republic of Croatia without the presented sources of law. Results of the research thus lead to the conclusion that the above sources must be more accessible and better presented, as well as that the system should provide better ways to become acquainted with and use the aforementioned sources and this shall be given as a recommendation in the conclusion of the paper.

In accordance with the information presented in the theoretical part of the paper and the results of a part of the empirical research, the hypothesis formulated in the introduction of the paper may be deemed confirmed, i.e. the construction-related regulatory systems at the EU level, apart from being specifically realised within the framework of the secondary law, are also generated by the European standardisation organisations in coordination with the European Commission and therefore such existing regulatory work leads to a large volume of the legislation and difficulties in its monitoring and consequently in its application by stakeholders in this system – as revealed by the research results.

6. CONCLUSION AND RECOMMENDATIONS FOR IMPROVEMENTS

In conclusion, it may be said that the construction sector is regulated at multiple levels and the areas of regulation in construction concern construction products, works, professional qualifications of stakeholders encompassed by the system, health and occupational safety, environmental impact etc. At that, the specified fields of regulation are subject to regulation within the framework of processes of standardisation within EU bodies as well as within the European standardisation organisations coordinating with EU bodies although voluntary application

of norms is one of the fundamental principles of European standardisation. This leads to a significant number of sources of law where persons who are intended recipients of these standards cannot keep track of all the relevant sources (for example engineers and architects) or apply them, for instance in processes for obtaining construction and operating licences (for example officials of competent administrative bodies) – as demonstrated by the research results.

Even though publication of the sources of EU law is performed at the level of the Official Journal of the EU, the persons meant to be recipients of those sources of law on construction are unable – as revealed by the empirical research results – to monitor publication of this source of law on a daily basis. In accordance with the above, it is hereby recommended to make all the regulations more accessible at the level of the Republic of Croatia. This could be achieved at a single spot if chambers (of architects, electrical engineers, machine engineers and civil engineers), working together with the Ministry of Construction and Physical Planning, specifically the Sector of Construction, Housing and Public Utility Management of the Directorate for Construction, Real Estate Appraisal and Energy Efficiency in the Buildings Sector and the Sector for Building and Use Permits of the Directorate for Permits of State Significance, establish a central repository of all sources of EU law relevant for this special area of administration. Regulations should be distributed in respect of their topic, in a manner which renders all the most recent amendments to the regulations available. The Croatian Chamber of Architects has made a step in this direction since it consistently publishes and makes available various types of regulations for the needs of its members, but this list suffers from lack of all relevant amendments to individual regulations. This would greatly contribute to better understanding of regulations as well as enhance implementation of the principle of lawfulness at all levels.

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