

BENEFITS, IMPACTS AND SUSTAINABILITY OF PROJECTS OUTPUTS

*Support of Capacities of the Institute for Standardization
of Bosnia and Herzegovina in the Area of
Implementation of EUROCODES*

Prof. dr. sc. Sanin Džidić
Chairman of BAS TC 58

STATUS OF EUROCODES IN BIH IN 2013

***Summary of the questionnaires filled by
National Authority relevant representatives
from non-EU countries in the Balkan region***

by

*Artur Pinto, Fabio Taucer, Silvia Dimova, Roberta
Apostolska*

http://eurocodes.jrc.ec.europa.eu/showpage.php?id=2013_12_WS_Balkan#Presentations

International Workshop “Adoption of the EUROCODES in the Balkan Region”, organized by European Commission, EC Research Centre, Institute for the Protection and Security of Citizen, European Laboratory for Structural Assessment in Milan - Ispra, Italy on December 5 and 6, 2013

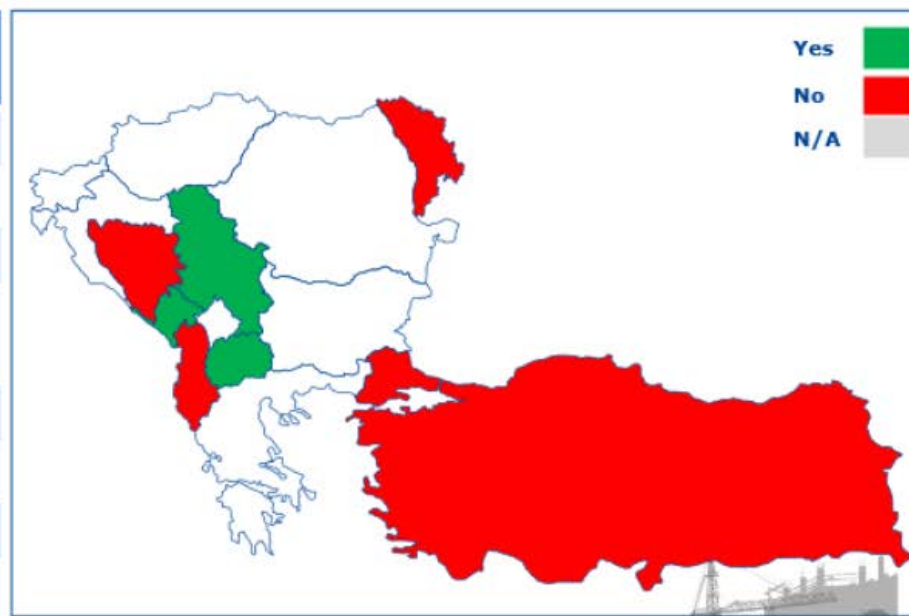
This presentation was prepared in the framework of the project

*“Support of Capacities of the Institute for Standardisation of Bosnia and Herzegovina in the Area of Implementation of EUROCODES”
supported under the Czech Republic Development Cooperation and realized by the Czech Office for Standards, Metrology and Testing (ÚNMZ).*

NATIONAL REGULATORY FRAMEWORK

1.1 Is there a National Action plan for adoption and implementation of the Eurocodes

Albania	Strategy report – MPPT
Bosnia and Herzegovina	No
Croatia	Eurocodes is already adopted
the former Yugoslav Republic of Macedonia	Yes
Moldova	No, initiated by MCDT
Montenegro	Yes
Turkey	No, (EC8 included in NSAP)
Serbia	Yes



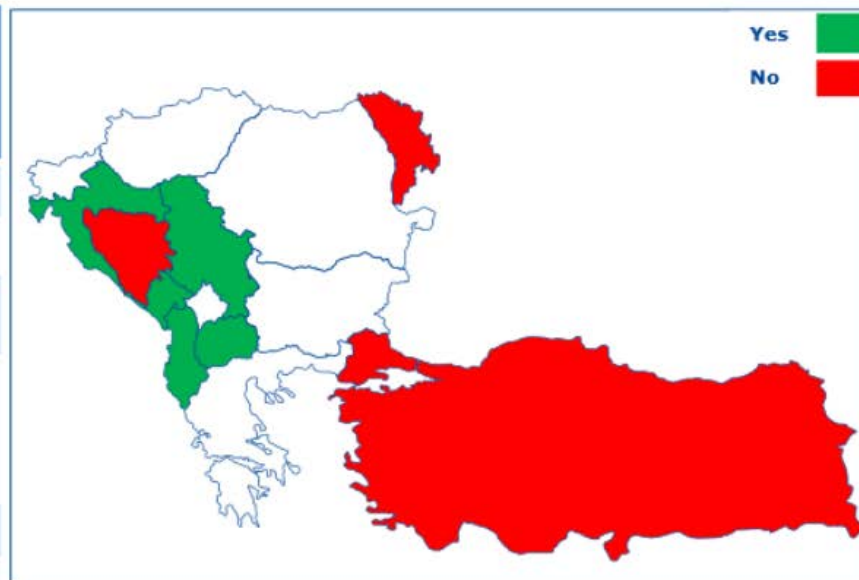
This presentation was prepared in the framework of the project

“Support of Capacities of the Institute for Standardisation of Bosnia and Herzegovina in the Area of Implementation of EUROCODES” supported under the Czech Republic Development Cooperation and realized by the Czech Office for Standards, Metrology and Testing (ÚNMZ).

NATIONAL REGULATORY FRAMEWORK

1.3 Does any relevant national institution support projects for A/I of Eurocodes? If yes, please give information and reference to any project financed by EU

Albania	GDS (NSB)
Bosnia and Herzegovina	No
Croatia	MGIPU, HZN (NSB) & Chamber of Civil Engineers (national)
the former Yugoslav Republic of Macedonia	ISRM (NSB), Chamber of authorized architects and engineers/TAIEX, IPA and GTZ support
Moldova	No
Montenegro	Twinning project/EU-IPA
Turkey	No
Serbia	Academia and ISS (NSB)/GTZ and DIN support



2.1 Is there a Technical Committee for adoption of the Eurocodes already established

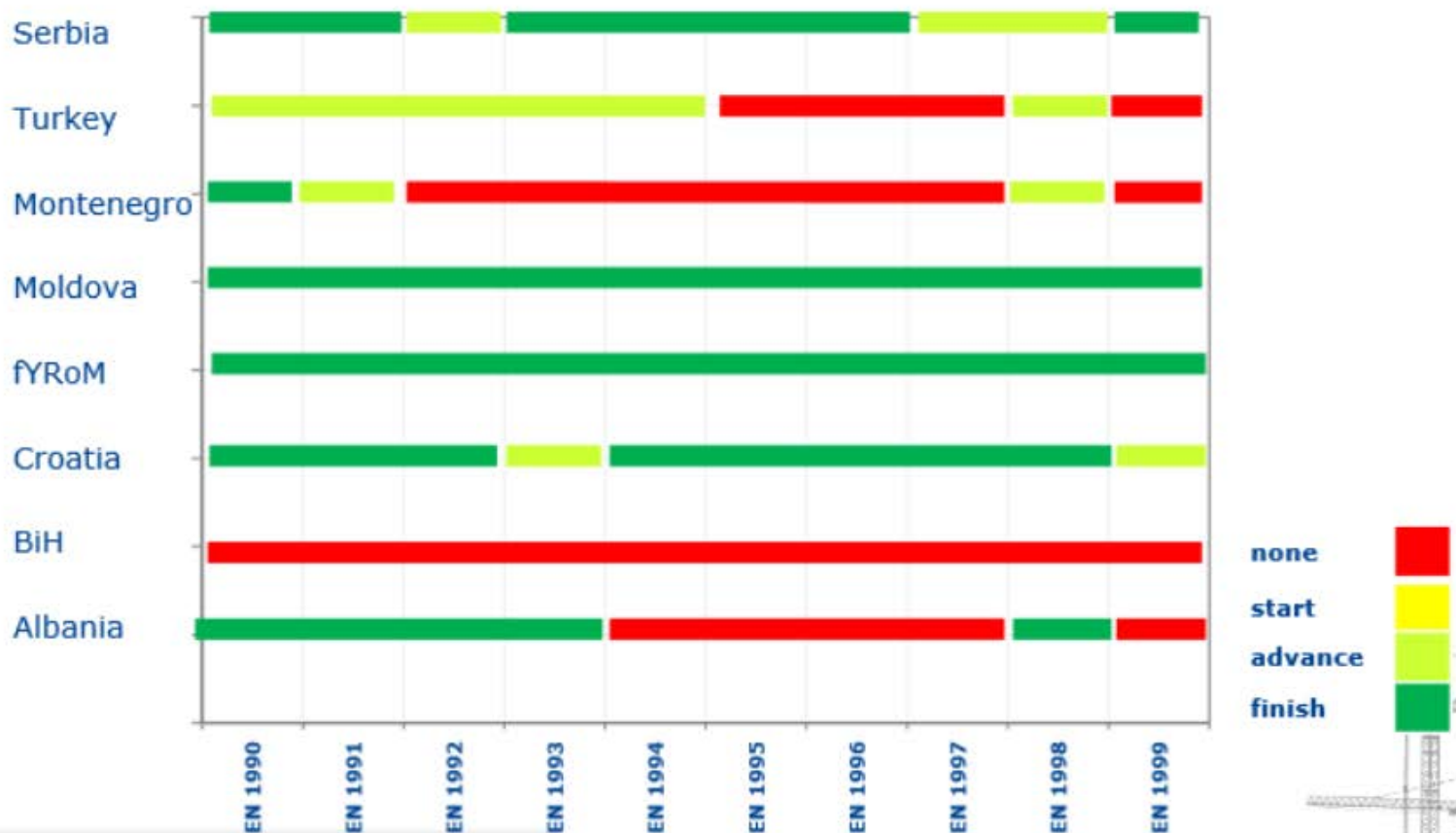
Albania	YES	KT 250 Eurocode (2007)/Chairman - Mr F. Kadiu
Bosnia and Herzegovina	NO	BAS/TC 58 (<i>to be set up</i>)
Croatia	YES	HZN/TO 548 Structural Eurocodes (2006)/Chairman - Mr I. Dzeba
the former Yugoslav Republic of Macedonia	YES	ISRM TC 40 Eurocodes and National Annexes (2012)/Chairman - Mr T. Delipetrov; (<i>ISRM TC 30: 2007-2012</i>)
Moldova	NO	
Montenegro	YES	ISME/TK 002 Eurocodes (2011)/Chairman - Mr R. Zejak
Turkey	YES	TSI – Safety of construction
Serbia	YES	KS U250 - 1,8 (2012)/Chairman – Mr Gj. Vuksanovic KS U250 – 3,6,9 (2006)/ Chairman – Mr Z. Markovic KS U250 – 2 (to be set up)/Chairman – Mr D. Najdanovic KS U250 – 5,6 (2011)/Chairman – Mr B. Stefanovic KS U182 Geotechnics/Chairman – Mr L. Caki



This presentation was prepared in the framework of the project

“Support of Capacities of the Institute for Standardisation of Bosnia and Herzegovina in the Area of Implementation of EUROCODES” supported under the Czech Republic Development Cooperation and realized by the Czech Office for Standards, Metrology and Testing (ÚNMZ).

2.2 Please assess the progress of translation of each Eurocode/priorities



This presentation was prepared in the framework of the project

“Support of Capacities of the Institute for Standardisation of Bosnia and Herzegovina in the Area of Implementation of EUROCODES” supported under the Czech Republic Development Cooperation and realized by the Czech Office for Standards, Metrology and Testing (ÚNMZ).

2.4 Please assess the progress of definition of the NDPs of each Eurocode



This presentation was prepared in the framework of the project

“Support of Capacities of the Institute for Standardisation of Bosnia and Herzegovina in the Area of Implementation of EUROCODES” supported under the Czech Republic Development Cooperation and realized by the Czech Office for Standards, Metrology and Testing (ÚNMZ).

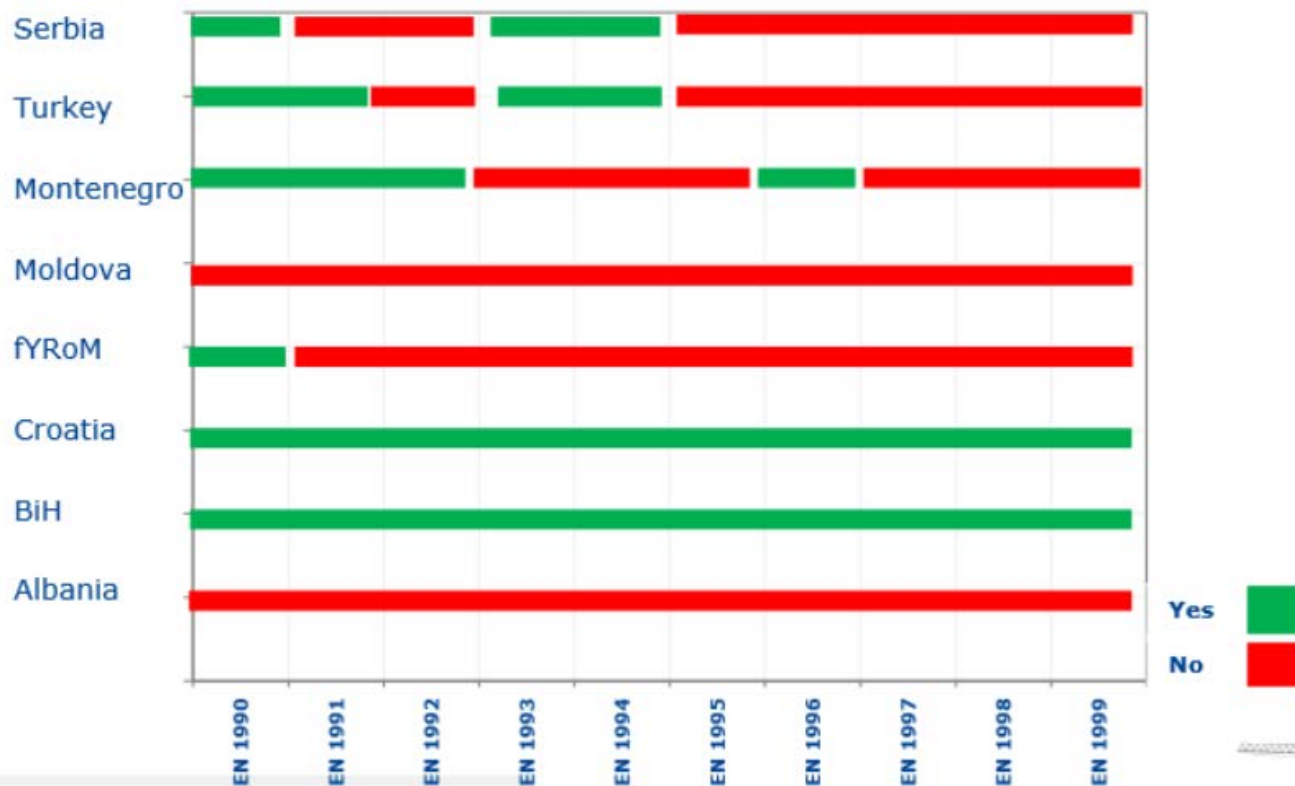
3.4 Are there any training material (booklets, leaflets, guidelines etc.) available on each country national language?



This presentation was prepared in the framework of the project

“Support of Capacities of the Institute for Standardisation of Bosnia and Herzegovina in the Area of Implementation of EUROCODES” supported under the Czech Republic Development Cooperation and realized by the Czech Office for Standards, Metrology and Testing (ÚNMZ).

3.1 Are the Eurocodes included in the first cycle study (Bachelor) curriculum at the Universities?



This presentation was prepared in the framework of the project

“Support of Capacities of the Institute for Standardisation of Bosnia and Herzegovina in the Area of Implementation of EUROCODES” supported under the Czech Republic Development Cooperation and realized by the Czech Office for Standards, Metrology and Testing (ÚNMZ).

SOME FACTS

- 2003 – 2013 – BAS TC 21 – Concrete and Concrete Products adopted all Eurocodes as BAS standards by endorsement method in English;
- BAS TC 58 – Eurocodes established on November 28, 2013 with 17 members at that time, with same scope of work as the mirror committee CEN/TC 250 – Structural Eurocodes;
- First BiH Eurocode BAS EN 1990:2014 adopted on December 31, 2014;

This presentation was prepared in the framework of the project

“Support of Capacities of the Institute for Standardisation of Bosnia and Herzegovina in the Area of Implementation of EUROCODES” supported under the Czech Republic Development Cooperation and realized by the Czech Office for Standards, Metrology and Testing (ÚNMZ).

SOME FACTS

- BAS EN 1990:2014 was translated by members of BAS TC 58, Prof. dr. sc. Amir Čaušević, mr. sci. Asmir Softić and Aldin Varenikić, M. CE;
- The Project *“Support of Capacities of the Institute for Standardization of Bosnia and Herzegovina in the Area of Implementation of EUROCODES”* supported under the Czech Republic Development Cooperation and realized by the Czech Office for Standards, Metrology and Testing (ÚNMZ) launched on January 26, 2015.

This presentation was prepared in the framework of the project

“Support of Capacities of the Institute for Standardisation of Bosnia and Herzegovina in the Area of Implementation of EUROCODES” supported under the Czech Republic Development Cooperation and realized by the Czech Office for Standards, Metrology and Testing (ÚNMZ).

STATUS OF EUROCODES IN BIH IN 2018

- All parts of Eurocodes translated to languages in BiH (58 Parts of Eurocodes, app 5,500 pages)
- All part of Eurocodes reviewed and adopted as official BAS standards through BAS TCs 58, 61 and 62

This presentation was prepared in the framework of the project

“Support of Capacities of the Institute for Standardization of Bosnia and Herzegovina in the Area of Implementation of EUROCODES” supported under the Czech Republic Development Cooperation and realized by the Czech Office for Standards, Metrology and Testing (ÚNMZ).

STATUS OF EUROCODES IN BIH IN 2018

National Annexes

BAS/TC	Referentni broj BAS standarda	Naziv BAS standarda na jednom od službenih jezika u BiH	Naziv na engleskom jeziku	Metoda preuzimanja	Jezik
TC 58	BAS EN 1990/NA:2015	Eurokod - Osnove projektovanja konstrukcija - Nacionalni dodatak	Eurocode - Basis of structural design	izv	bs/en
TC 58	BAS EN 1991-1-1/NA:2016	Evrokod 1: Dejstva na konstrukcije - Dio 1-1: Opšta dejstva - Specifične težine, sopstvena težina i korisna opterećenja u zgradama	Eurocode 1 - Actions on structures: Part 1-1: General actions - Densities, self-weight and imposed loads for buildings	izv	sr/en
TC 58	BAS EN 1991-1-2/NA:2018	Evrokod 1: Dejstva na konstrukcije - Dio 1-2: Opšta dejstva - Dejstva na konstrukcije izložene požaru -	Eurocode 1: Actions on structures - Part 1-2: General actions - Actions on structures exposed to fire -	izv	sr/en
TC 58	nsBAS EN 1991-1-3/NA:2018	Evrokod 1: Dejstva na konstrukcije - Dio 1-3: Opšta dejstva - Opterećenje od snijega - Nacionalni dodatak	Eurocode 1: Actions on structures - Part 1-3: General actions - Snow loads - National annex	izv	sr/en
TC 58	pnBAS EN 1991-1-4/NA:2017	Eurokod 1: Djelovanja na konstrukcije - Dio 1-4: Opća djelovanja - Djelovanja vjetra - Nacionalni dodatak	Eurocode 1: Actions on structures: Part 1-4: General actions - Wind actions - National annex	izv	sr/en
TC 58	BAS EN 1991-1-5/NA:2017	Eurokod 1: Djelovanja na konstrukcije - Dio 1-5: Opća djelovanja - Toplinska djelovanja - Nacionalni dodatak	Eurocode 1 - Actions on structures - Part 1-5: General actions - Thermal actions - National annex	izv	hr/en
TC 58	prBAS EN 1998-1/NA:2016	Evrokod 8: Projektovanje konstrukcija otpornih na dejstvo zemljotresa Dio 1: Opšta pravila, seizmička dejstva i pravila za zgrade - Nacionalni dodatak	Eurocode 8: Design of structures for earthquake resistance - Part 1: General rules, seismic actions and rules for buildings - National annex	izv	sr/en

This presentation was prepared in the framework of the project

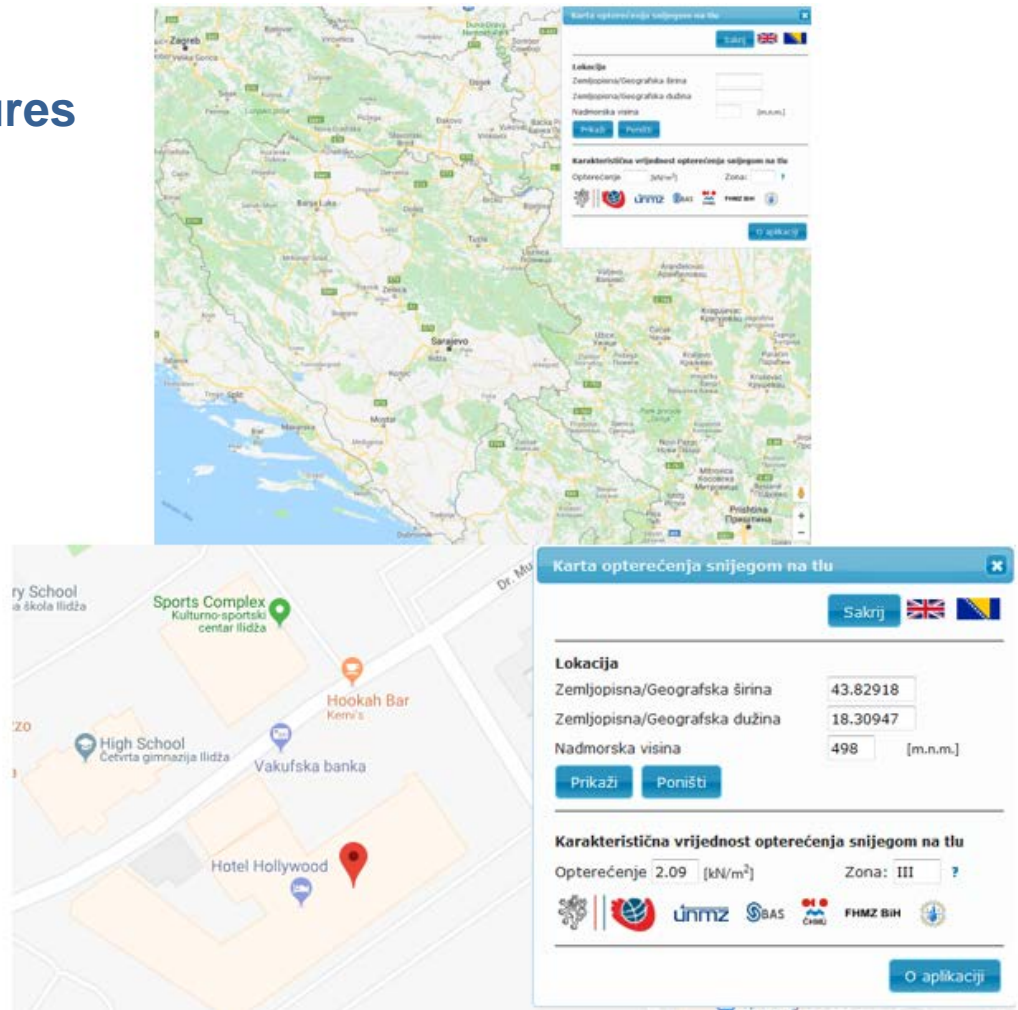
“Support of Capacities of the Institute for Standardization of Bosnia and Herzegovina in the Area of Implementation of EUROCODES” supported under the Czech Republic Development Cooperation and realized by the Czech Office for Standards, Metrology and Testing (ÚNMZ).

nsBAS EN 1991-1-3/NA:2018

Eurocode 1: Actions on structures

Part 1-3: General actions

Snow loads - National annex



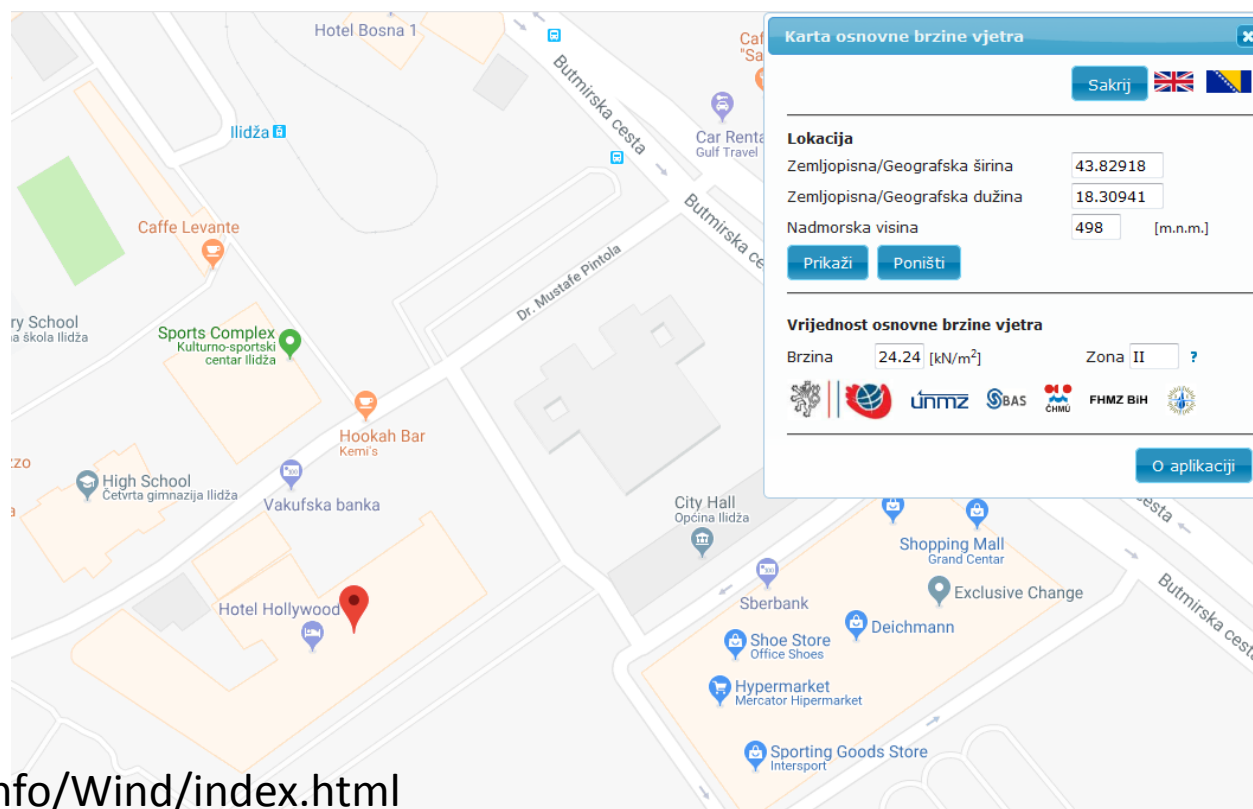
<http://www.bih.clima-maps.info/Snow>

pnBAS EN 1991-1-4/NA:2017

Eurocode 1: Actions on structures

Part 1-4: General actions

Wind actions - National annex



<http://bih.clima-maps.info/Wind/index.html>

This presentation was prepared in the framework of the project

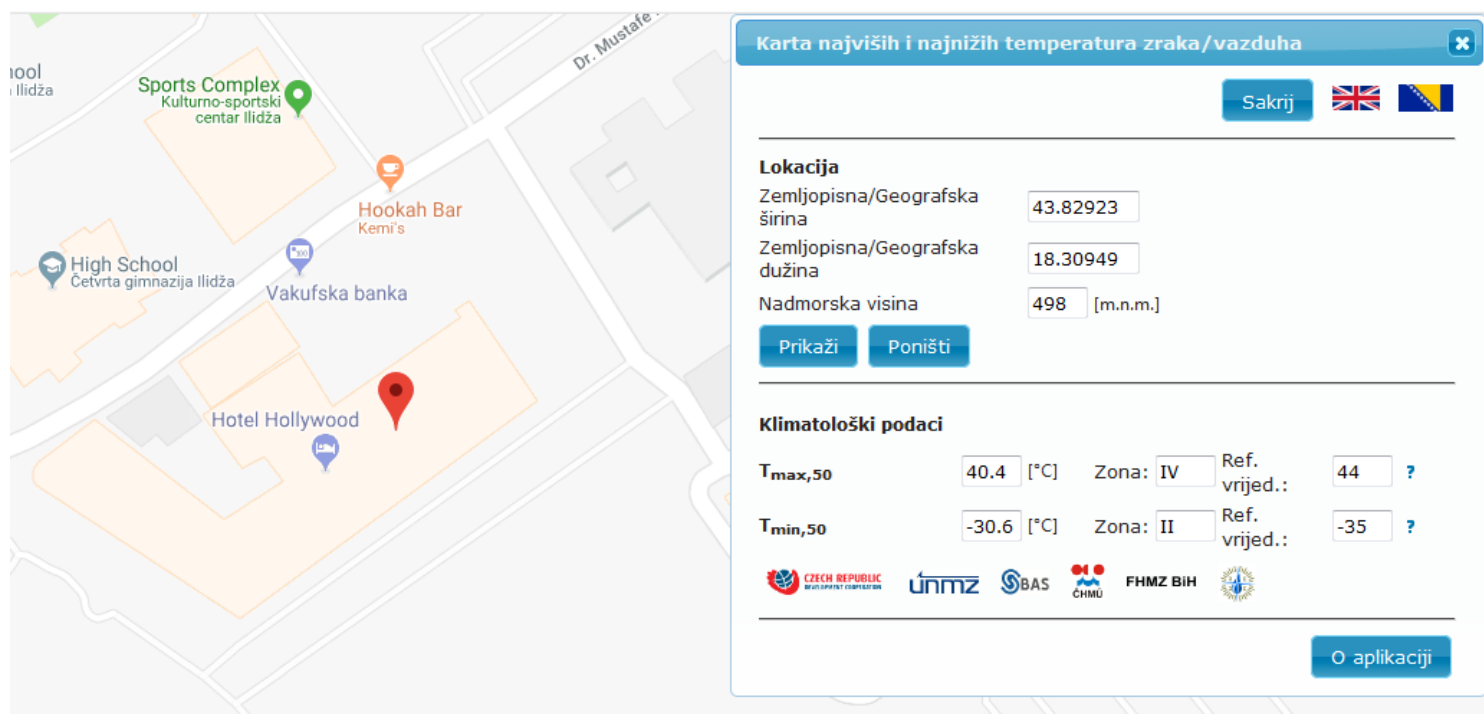
“Support of Capacities of the Institute for Standardization of Bosnia and Herzegovina in the Area of Implementation of EUROCODES” supported under the Czech Republic Development Cooperation and realized by the Czech Office for Standards, Metrology and Testing (ÚNMZ).

BAS EN 1991-1-5/NA:2017

Eurocode 1 - Actions on structures

Part 1-5: General actions - Thermal actions

National annex



<http://www.bih.clima-maps.info/>

WHAT IS THE IMPORTANCE OF NAs TO EC 1

- Expecting similar map for seismic actions soon
- Domestic research incorporated in NAs to EC1
- Superseded regulations for snow load
(Temporary Technical Regulations 1949)
- Superseded JUS Standards for wind actions
JUS U.C7.110, JUS U.C7.111, JUS U.C7.112 and JUS U.C7.113
from 1991
- Full support by hidrometeorological institutes in BiH
- Historical data including recent periods-climate change

This presentation was prepared in the framework of the project

*“Support of Capacities of the Institute for Standardization of Bosnia and Herzegovina in the Area of Implementation of EUROCODES”
supported under the Czech Republic Development Cooperation and realized by the Czech Office for Standards, Metrology and Testing (ÚNMZ).*

BOOKS, HANDBOOKS, EDUCATION MATERIAL FOR EUROCODES



BOOKS, HANDBOOKS, EDUCATION MATERIAL FOR EUROCODES



Autori:

prof. dr. sc. Mustafa Hrasnica, dipl. ing. građ.
prof. dr. sc. Jana Marková, dipl. ing. građ.
prof. dr. sc. Azra Kurtović, dipl. ing. građ.
prof. dr. sc. Amir Čaušević, dipl. ing. građ.
Dejan Dević, dipl. ing. građ.
doc. dr. sc. Salko Kulukčija, dipl. ing. građ.
prof. dr. sc. Rašid Hadžović, dipl. ing. građ.
doc. dr. sc. Suad Zalihić, dipl. ing. građ.
prof. dr. sc. Sanin Džidić, dipl. ing. građ.
mr. sc. Emir Hodžić, dipl. ing. građ.

Recenzent:

prof. dr. sc. Mladen Glibić, dipl. ing. građ.

Izdavači: Institut za standardizaciju Bosne i Hercegovine - BAS,
Vojvode Radomira Putnika 34, 71123 Istočno Sarajevo, BiH

Češka kancelarija za standarde, mjeriteljstvo i ispitivanje - ÚNMZ,
Biskupský dvůr 1148/5, 110 00 Praha 1, Republika Česka

Štampa: Lucc2P studio, Milan Martinek, Republika Česka

Dizajna korica: Zvezdan Šehovac, dipl. ing. el.

Izdanje: Prvo

Tiraž: 200

CIP - Katalogizacija u publikaciji
Nacionalna i univerzitetska biblioteka
Bosne i Hercegovine, Sarajevo

006.77(497.6)(035)
006.4:624.04(497.6)(035)

PRIRUČNIK za eurokodove : BAS EN 1990; BAS EN 1991-1-1; BAS EN 1991-1-2;
BAS EN 1991-1-3; BAS EN 1991-1-4; BAS EN 1991-1-5; BAS EN 1998-1 : Principi i
procedure seta evropskih standarda - sistema tehničkih pravila za projektovanje zgrada i
inženjerskih konstrukcija uključujući građevinske materijale i objedinjavanje metodologija
konstrukterskog projektovanja / [autori Mustafa Hrasnica ... [et al.]. - 1. izd. - Istočno
Sarajevo: Institut za standardizaciju Bosne i Hercegovine, BAS ; Praha: Češka kancelarija za
standarde, mjeriteljstvo i ispitivanje, ÚNMZ, 2018. - 285 str. : graf. prikazi ; 24 cm

Biografije autora: str. 280-285. - Bibliografija uz sva poglavlja.

ISBN 978-9958-530-03-6
1. Hrasnica, Mustafa
COBISS.BH-ID 25694982

© Institut za standardizaciju Bosne i Hercegovine

This presentation was prepared in the framework of the project

*“Support of Capacities of the Institute for Standardization of Bosnia and Herzegovina in the Area of Implementation of EUROCODES”
supported under the Czech Republic Development Cooperation and realized by the Czech Office for Standards, Metrology and Testing (ÚNMZ).*

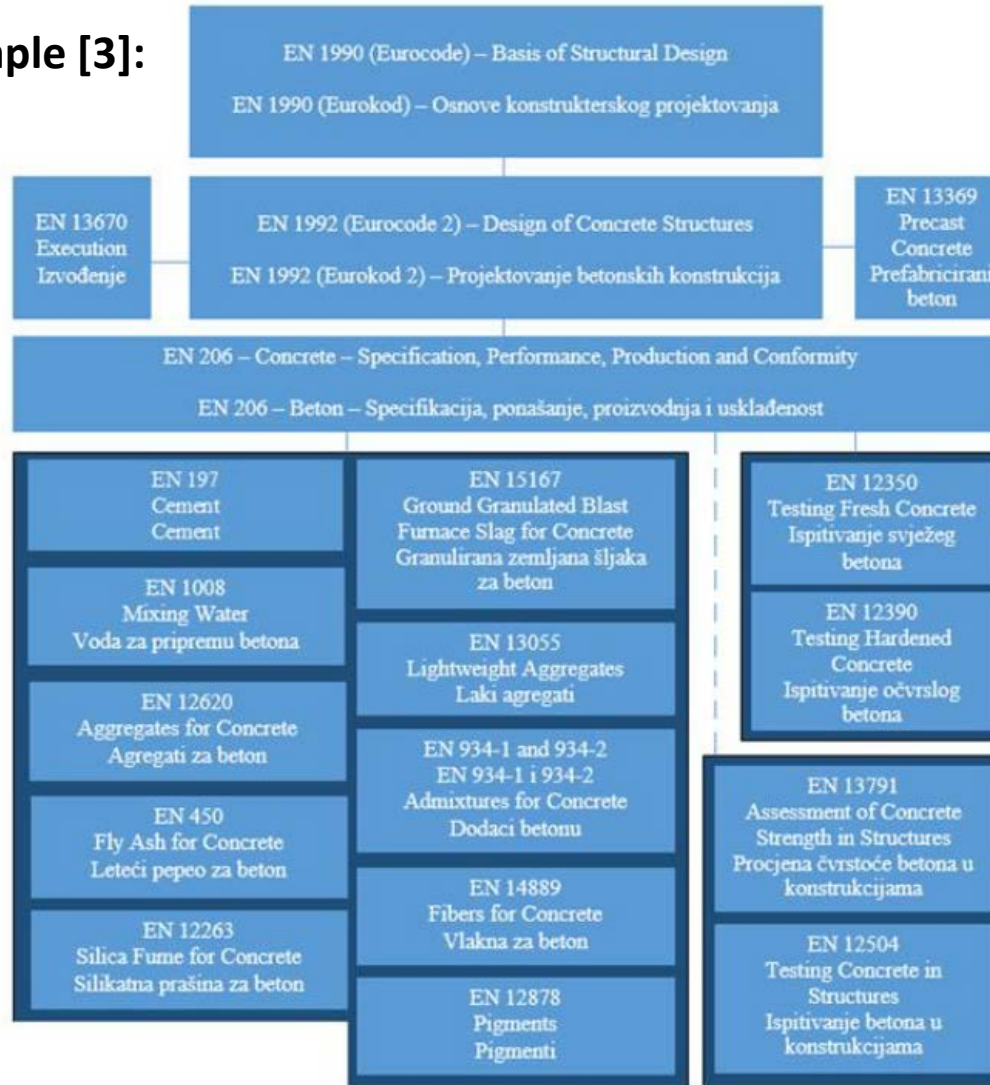
NEXT STEPS AND CHALLENGES IN IMPLEMENTATION AND SUSTAINABILITY OF EUROCODES IN BIH

- Development of other National Annexes for Eurocodes – All BAS Eurocode TCs
- Relationship to other necessary ENs for implementation of Eurocodes – Other BAS TCs (BAS TC 21, ...)

This presentation was prepared in the framework of the project

“Support of Capacities of the Institute for Standardization of Bosnia and Herzegovina in the Area of Implementation of EUROCODES” supported under the Czech Republic Development Cooperation and realized by the Czech Office for Standards, Metrology and Testing (ÚNMZ).

Example [3]:



NEXT STEPS AND CHALLENGES IN IMPLEMENTATION AND SUSTAINABILITY OF EUROCODES IN BIH

This presentation was prepared in the framework of the project

“Support of Capacities of the Institute for Standardization of Bosnia and Herzegovina in the Area of Implementation of EUROCODES” supported under the Czech Republic Development Cooperation and realized by the Czech Office for Standards, Metrology and Testing (ÚNMZ).

NEXT STEPS AND CHALLENGES IN IMPLEMENTATION AND SUSTAINABILITY OF EUROCODES IN BIH

- Accreditation of laboratories in construction sector with BATA
- Accreditation of methods according to ENs

This presentation was prepared in the framework of the project

*“Support of Capacities of the Institute for Standardization of Bosnia and Herzegovina in the Area of Implementation of EUROCODES”
supported under the Czech Republic Development Cooperation and realized by the Czech Office for Standards, Metrology and Testing (ÚNMZ).*

Red. br.	Naziv akreditiranog tijela	Područje
1.	Metalurški institut "Kemal Kapetanović" Zenica	Građevinarstvo
2.	Institut za građevinarstvo, građevinske materijale i nemetale d.o.o. (GIT) Tuzla	Ispitivanje u građevinarstvu
3.	IGH d.o.o. Centralni laboratorij Mostar	Ispitivanje u građevinarstvu
4.	Rudarski Institut d.d. Tuzla	Ispitivanje u građevinarstvu
5.	DTQ d.o.o. Sarajevo	Ispitivanje u građevinarstvu
6.	Institut za zaštitu, ekologiju i obrazovanje d.d. Tuzla	Ispitivanje u području građevinskih materijala
7.	Institut za urbanizam, građevinarstvo i ekologiju RS, PJ Institut za ispitivanje materijala i konstrukcija	Ispitivanje i uzorkovanje građevinskih i metalnih materijala, proizvoda
8.	Institut za građevinarstvo IG Banja Luka	Ispitivanje i uzorkovanje građevinskih materijala i proizvoda
9.	SAC Testing & Consulting d.o.o. Sarajevo	Ispitivanje u građevinarstvu
10.	Zavod za saobraćaj Građevinskog fakulteta Sarajevo, Centralna laboratorija za ispitivanje građevinskih materijala - Odjeljenje za asfalt	Ispitivanje u građevinarstvu

Tabela 1: Spisak laboratorija iz građevinarstva [14]

Područje rada Naziv laboratorije	Kamen i agregat	Beton	Opeka	Asfalt i bitumen	Geotehnika	Mehanička ispitivanje	Uzorkovanje
	LI 7.1	LI 7.2	LI 7.3	LI 7.4	LI 7.5	LI 8	LI 17
Metalurški institut "Kemal Kapetanović" Zenica	X	X	X			X	
GIT Tuzla	X	X	X				X
IGH d.o.o. Mostar	X	X		X			
Rudarski Institut d.d. Tuzla	X	X			X	X	X
DTQ d.o.o. Sarajevo	X	X		X	X		X
Institut za zaštitu, ekologiju i obrazovanje d.d. Tuzla	X	X					
Institut za urbanizam, građevinarstvo i ekologiju RS	X	X	X	X	X	X	X
Institut za građevinarstvo IG Banja Luka	X	X		X			
SAC Testing & Consulting doo Sarajevo	X			X			
Zavod za saobraćaj Građevinskog fakulteta Sarajevo	X			X			

Tabela 2: Prikaz potpodručja rada po laboratorijama[14]

Source: 2017 [4]

This presentation was prepared in the framework of the project

"Support of Capacities of the Institute for Standardization of Bosnia and Herzegovina in the Area of Implementation of EUROCODES" supported under the Czech Republic Development Cooperation and realized by the Czech Office for Standards, Metrology and Testing (ÚNMZ).

NEXT STEPS AND CHALLENGES IN IMPLEMENTATION AND SUSTAINABILITY OF EUROCODES IN BIH

- Cooperation with authorities and BiH governments' ministries in development of regulations for mandatory application of Eurocodes, suspension of existing Rulebooks including transition period – BAS, ministries, members of TCs, academic and professional community

This presentation was prepared in the framework of the project

“Support of Capacities of the Institute for Standardization of Bosnia and Herzegovina in the Area of Implementation of EUROCODES” supported under the Czech Republic Development Cooperation and realized by the Czech Office for Standards, Metrology and Testing (ÚNMZ).

NEXT STEPS AND CHALLENGES IN IMPLEMENTATION AND SUSTAINABILITY OF EUROCODES IN BIH

- Continuation, update and improvements of curriculums at universities
- Research related to NDPs in NAs
- Continuing education of engineers in practice in application and implementation of Eurocodes
- Raising awareness of general public on importance of application and implementation of Eurocodes in construction sector

This presentation was prepared in the framework of the project

“Support of Capacities of the Institute for Standardization of Bosnia and Herzegovina in the Area of Implementation of EUROCODES” supported under the Czech Republic Development Cooperation and realized by the Czech Office for Standards, Metrology and Testing (ÚNMZ).

NEXT STEPS AND CHALLENGES IN IMPLEMENTATION AND SUSTAINABILITY OF EUROCODES IN BIH

- New Generation of Eurocodes

This presentation was prepared in the framework of the project

*“Support of Capacities of the Institute for Standardization of Bosnia and Herzegovina in the Area of Implementation of EUROCODES”
supported under the Czech Republic Development Cooperation and realized by the Czech Office for Standards, Metrology and Testing (ÚNMZ).*

PROJECT WRAP-UP

Typical Project Monitoring and Evaluation (M&E) Question:

"What would happen if this project was not implemented?"

The difference is tremendous, significant
and obvious!

This presentation was prepared in the framework of the project

*"Support of Capacities of the Institute for Standardization of Bosnia and Herzegovina in the Area of Implementation of EUROCODES"
supported under the Czech Republic Development Cooperation and realized by the Czech Office for Standards, Metrology and Testing (ÚNMZ).*

PROJECT WRAP-UP - IMPORTANCE

Questionnaire Information requested by the European Commission to the Council of Ministers of Bosnia and Herzegovina for the preparation of the Opinion on the application of Bosnia and Herzegovina for membership of the European Union - December 2016

CHAPTER 20: ENTERPRISE AND INDUSTRIAL POLICY

Question 125 e) *Is there a strategy/plan for integrating the EN Eurocodes as national standards (EN1990 - EN1999), including the definition of the Nationally Determined Parameters (NDPs)?*

This presentation was prepared in the framework of the project

“Support of Capacities of the Institute for Standardization of Bosnia and Herzegovina in the Area of Implementation of EUROCODES” supported under the Czech Republic Development Cooperation and realized by the Czech Office for Standards, Metrology and Testing (ÚNMZ).

Thank you for your attention!

This presentation was prepared in the framework of the project

*“Support of Capacities of the Institute for Standardization of Bosnia and Herzegovina in the Area of Implementation of EUROCODES”
supported under the Czech Republic Development Cooperation and realized by the Czech Office for Standards, Metrology and Testing (ÚNMZ).*

REFERENCES:

- [1] Pinto A, Taucer F, Dimova S, Apostolska R, 2013. "Summary of the Questionnaires filled by National Authority Relevant Representatives from Non-EU Countries in the Balkan Region", EC Research Centre, Institute for the Protection and Security of Citizens, European Laboratory for Structural Assessment in Milan- Ispra, Italy, December 5-6, 2013;
- [2] Hrasnica at all, 2018., „Priručnik za eurokodove“, Institut za standardizaciju Bosne i Hercegovine - BAS, Istočno Sarajevo i Češka kancelarija za standarde, mjeriteljstvo i ispitivanje - ÚNMZ, Praha 1, Republika Češka, ISBN 978-9958-530-03-6, COBISS.BH-ID 25694982;
- [3] Džidić S, Zečević B, 2017. "Status Eurokodova u Bosni i Hercegovini 2017 – State of the Art", Glasnik Instituta za standardizaciju BiH, Godina XI, broj 1-2, juli 2017, ISSN 2566-3690, Istočno Sarajevo, Bosnia and Herzegovina, pp 3-21;
- [4] Bajramović E, Džidić S, 2017. "[Accredited Laboratories in Process of Introducing of Construction Products to EU Market – Akreditovane laboratorije u procesu plasmana građevinskih proizvoda u Evropsku Uniju](#)", Book of Proceedings of the 3rd International Scientific and Professional Conference "SFERA 2017- Concrete Technologies", March 23-24, 2017, Mostar, Bosnia and Herzegovina, pp 100-105;
- [5] http://eurocodes.jrc.ec.europa.eu/showpage.php?id=2013_12_WS_Balkan#Contact
- [6] <http://www.bih.clima-maps.info/Snow>
- [7] <http://bih.clima-maps.info/Wind/index.html>
- [8] <http://www.bih.clima-maps.info/>

This presentation was prepared in the framework of the project

"Support of Capacities of the Institute for Standardization of Bosnia and Herzegovina in the Area of Implementation of EUROCODES" supported under the Czech Republic Development Cooperation and realized by the Czech Office for Standards, Metrology and Testing (ÚNMZ).