BUILDING CAPACITIES FOR ELABORATION OF NDPs AND NAs OF THE EUROCODES IN THE BALKAN REGION



4-5 November 2014, Skopje

Eurocodes and their National Annexes in Montenegro

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- Doc. dr Željka Radovanović, EC 1 and EC 6 Groups Leader, Chamber of Engineers
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Basic data on Montenegro

- Became independent in 2006
- State territory ~ 14.000 km2
- **Population** ~ 620.000





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Responsible institutions

- Ministry of Sustainable Development and Tourism
 responsible for regulations in sectors: spatial development, construction and urban planning;
- Institute for Standardization of Montenegro (ISME) - adoption of standards and related documents;
- Institute of Hydro-meteorology and Seismology (maps: wind, snow, isotherms and seismic hasards);
- Geological Survey of Montenegro NDPs for EN 1997;
- Faculty of Civil Engineering general education
- Chamber of Engineers practical education of engineers



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Existing relevant national regulations

- Law on spatial development and constructions (2008/2014);
- Some regulations inherited from ex Yugoslavia (SFRY, FRY and S&M), based on JUS standards;
- Law on Construction Products, partly transposed contents of EU regulation no. 305/2011;
- IPA twinning project on Eurocodes (2012-2013);
- Action plans for Eurocodes adoption and implementation (adopted by Government of Montenegro in January 2014)

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Action Plan for Eurocodes adoption

approved by Government of Montenegro in January 2014

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Action Plan for Eurocodes implementation approved by Government of Montenegro in January 2014

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Institutions involvement



Institute for Standardization of Montenegro



 April 2007 – Government established National Institute for Standardization (ISME), dealing with standardization issues at national level;

• For the purpose of Directive on construction products transposition(89/106/EEC) i.e. Regulation no.305/2011 into national legislation, ISME adopted harmonized standards following concerned regulation;

• In July 2011, ISME established Tehnical Committee ISME/TK 002: Eurocodes for managing adoption and implementation processes for Eurocodes and defining National Annexes

In September 2012 Technical Committee established
 8 working groups for all Eurocodes

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Technical Committee ISME/TK 002: Eurocodes – Groups



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ISME/TK 002: Eurocodes - activities

- EN 1990 published as MEST EN 1990:2013 in Montenegrin
- MEST EN 1990:2013/NA:2013 published in Montenegrin
- Eurocodes parts EN 1991-1, EN 1991-3 and EN 1991-5, as well as their National Annexes, are prepared by Group for EC 1 and provided to ISME that is bound to realize technical text editing. Following it, TC meetings members shall discuss it and make the decision on its processing to Public Enquiry



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• Text of the standard EN 1998-1 was translated into Montenegrin, technically processed, being in rnMEST EN 1998-1 stage

• TC made the decision on putting rnMEST EN 1998-1 to Public Enquiry, that is going to be carried out in recent time

 rnMEST EN 1998-1/NA – currently in preparatory stage and in the process of NDPs values determining

• Parameters defining critical periods on elestic spectral response diagram have not been yet defined.... institutions should jointly process relevant data using appropriate methodologies

• We expect the work on determining the values of these parameters to be finished by the end of the current year



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EN1998-1 NDPs: responsible Institute for Hydrometeorology and Seismology

Seismic hazard data Spectral response data Strong motion data base temperature Soil type characterization



Snow loads data Wind loads data Max&min shade air



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Faculty of Civil Engineering related activities

• ECTS Catalogue adopted with new Eurocodes contents (implementation has started)

 National experts attended workshops on Eurocodes: Brussels (2008 & 2011), Lisbon (2012), Dublin (2013), than visited ASI, DIN and DIBt (2013)

• Every two years Faculty organize Symposiums on constructions - From Theory to Practice, partly devoted to Eurocodes implementation

• During several last years, in more than 40 cases PhD and Master theses as well as final diploma works, were prepared with the subjects on Eurocodes.



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Several seminars on Eurocodes organized by Montenegrin Chamber of engineers and Civil Engineering Faculty

- First informative seminar on Eurocodes implementation in Montenegro, 2009
- Round table EU standards: EC 0 and EC 1, 2010
- Several conferences on *Eurocodes topics*, 2010-2012
- **Round table on** *Construction products and European regulations*, **2013**,
- Second informative seminar on *Eurocodes implementation*, 2013, etc.



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Seminars held in October 2013 covered the following topics

- Overview and comparison of Eurocodes and existing National rules
- Explanation of Eurocode EN 1990
- EN 1991-1-1: Densities, self-weight, imposed loads for buildings
- EN 1991-1-3: Snow loads
- EN 1991-1-4: Wind action
- EN 1991-1-5: Thermal action
- EN 1998: Earthquakes basic rules
- EN 1998: Seismic actions and rules for buildings
- EN 1992: Design of concrete structures
- EN 1993: Design of steel structures
- EN 1996: Design of masonry structures



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Expectations, specific problems and needs

• Based on Action plan we expect adoption and implementation of Eurocodes to be finished until the end of 2017, including period of coexistence with old regulations,

• As promised, we expect the Government of Montenegro, as the interested party, provide financial support for the implementation of the process of adoption and implementation of Eurocodes in Montenegro,

• Small industrial capacities and therefore less involvement of business entities,

 Relatively poor existing research databases - necessary for preparation of NDPs in National annexes - rise requirement for more research activities

• We underlay the need for better regional cooperation: a regional center for Eurocodes would be useful.

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Thanks for your patience!

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