**TC250/SC7/EG7: Pile Design**

**(draft) Interim Report 2014**

# Agreed Scope of work

The scope of work of EG7 is currently defined as follows (unchanged during last period):

1. Editing, changing and improving text of EC 7, section 7 (mainly editorial task, e.g. cancel doublings, resetting mistakes). Aim should be to make document much clearer
2. Review of combined values for correlation factors, partial factors, model factors and action factors in each country as this is considered to be of major interest.
3. Harmonizing of different design approaches
4. It was agreed that aspects which are presently not covered appropriate should be included in future version of EC 7. The most relevant aspects were identified as follows:

* how to consider downdrag / negative skin friction
* ground heave
* design of pile groups
* design of piled rafts
* dynamic / cyclic loads
* seismic design of pile foundations (strong relation to EC 8 is requested)
* transversally loaded piles, especially by horizontally moving ground
* serviceability of pile foundations

1. A comparison of calculation methods used for pile foundations (e.g. effective stress method etc.) was proposed.

From August 2013 on the work of EG 7 has been focused on preparing a revised section 7 “Pile Foundations” with concrete and detailed recommendations for the evolution of this chapter. In this context stepwise the present text of section 7 is reviewed and complemented analysing the four questions:

1. Which clauses should remain unchanged in the next edition?
2. Which clauses should be deleted from the next edition 7? And why?
3. Which of those clauses should be changed in the next edition? What changes should be made? And why?

4. What new clauses should be added on our topic in the next edition? And why?

Thereby concrete proposals are elaborated e.g. for the design of piles for negative skin friction (downdrag) and other issues.

These proposals and recommendations might later be used by the Project Team which will be mandated with writing this section of the new code.

# Key issues under discussion

**New Structure of Section “Pile Foundation”**

The Vienna meeting in October 2013 was intensively used by EG7 for several meetings. As one important result a new structure for the section “Pile Foundation” was elaborated. The new structure follows the concept of the future EC 7, part 3, and its common substructure. The new structure which was confirmed by all delegates in February 2014-meeting is attached to this interim report.

**Present status of work**

In order to make the outcome of EG7 as effective and valuable as possible EG 7 has been working on the text of the section 7 “Pile Foundation” since summer 2013. The process of elaborating which clauses could be deleted, which clauses could remain unchanged and which clauses or even subsections should be added in the next edition of Eurocode 7 is ongoing in a systematic manner, but will take some more time due to the extent of this section.

The present working version of the section “Pile Foundations” has been restructured and attached to the new structure which was elaborated during the Vienna meeting. Actually the section is discussed with all delegates clause by clause whereas new subsections need more time to be prepared.

The present status (2014-07-30) of the working version of section ´Pile foundations´ is attached to this progress report. It looks quite promising that the aim to come up with a more user-friendly version of the section “Pile Foundations” will be reached as the clauses already revised could be focused on the essential principals.

Special focus was set during the last meetings on elaborating a more precise approach for considering negative skin friction (downdrag) for both ultimate limit state and serviceability limit state (for current status see Appendix).

**Further issues under discussion**

Further issues currently under discussion - also in interaction with EG14 (Ground improvement) - is a precise ´definition of piles´ in opposition to column-like soil improvement elements.

**Outlook**

It is planned to elaborate a complete draft version of an updated section “Pile Foundation” until March 2015, as this work is comprehensive and as it is expected that work of a project team on section “Pile Foundation” will not start before spring 2015.

# Decisions/outcomes

* The new structure and the present status of the working version of section ´Pile foundations´ is attached in a ´two-column´-layout providing the original text on the left side and the improved proposal on the right side (status of 2014-07-30).

# Meetings held/planned

|  |  |  |
| --- | --- | --- |
| Tele-meeting no. | Date held/scheduled | Available from webpage? |
| 1st meeting (´kick-off´ meeting) | 2011-11-09 |  |
| 2nd meeting (regular meeting) | 2012-02-02 |  |
| 3rd meeting (regular meeting) | 2012-04-27 |  |
| 4th meeting (regular meeting) | 2012-06-28 |  |
| 5th meeting (Brussels meeting) | 2012-09-05 |  |
| 6th meeting (regular meeting) | 2012-11-07 |  |
| 7th meeting (regular meeting) | 2013-02-27 |  |
| 8th meeting (regular meeting) | 2013-08-30 |  |
| 9th meeting (regular meeting) | 2013-10-04 |  |
| 10th meeting (Vienna meeting) | 2013-10-17/18 |  |
| 11th meeting (regular meeting) | 2014-02-26 |  |
| 12th meeting (regular meeting) | 2014-03-25 |  |
| 13th meeting (regular meeting) | 2014-04-30 |  |
| 15th meeting (regular meeting) | 2014-09-30 | scheduled |
| 16th meeting (regular meeting) | 2014-10-29 | scheduled |

* Minutes of meetings are available for all meetings

# Active membership

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Position\* | Country | Listed on webpage? |
| Gary Axelsson |  | Sweden |  |
| Ioan Boldurean |  | Romania |  |
| Sébastien Burlon |  | France |  |
| ~~Roger Frank~~ |  | ~~France~~ |  |
| Josif Josioivski |  | Republic of Mazedonia |  |
| Boleslaw Klosinski |  | Poland |  |
| Jan Kos |  | Czech Republic |  |
| ~~Alessandro Mandolini~~ |  | ~~Italy~~ |  |
| Christian Moormann | Convenor | Germany |  |
| Ole Møller |  | Denmark |  |
| Panicos Papadopoulos |  | Cyprus |  |
| Chris Raison | Secretary | UK |  |
| Krzystof Sahajda |  | Poland |  |
| Arne Schram Simonsen |  | Norway |  |
| Frits van Tol |  | Netherlands |  |
| ~~Monika de Vos~~ |  | ~~Belgium~~ |  |

\*please indicate Convenor/Secretary

Kari-Matti Malmivaara (Finland) was nominated as new delegate, but hasn´t attend so far.

# Report prepared by:

Christian Moormann

2014-07-30