**The supplementary contains:**

**a)** 'Table\_to\_fill\_for\_intercomparison.docx' is a table to perform an inter-comparison with the analytical solution.

It is filled with the numbers attributed to the analytical solution; user is invited to fill it with her/his own numbers attributed to the particular numerical solution.

**b)** Folder 'quad\_mesh' contains three ASCII files attributed to the quadrilateral mesh used in the current study:

'PTquad\_nod2d.out' contains information about mesh nodes.

First line contains total number of nodes.

Every next line contains node ID, Cartesian coordinates and open boundary flag of the particular node. Note, flag is everywhere '0', because the test case does not assume open boundary nodes.

'PTquad\_elem2d.out' contains information about elements organization.

First line contains info about total number of elements.

Every next line represents series of four node IDs, which organize particular element.

'PTquad\_depth.out' contains info about depth at each node.

**c)** Folder 'tri\_mesh' contains three ASCII files attributed to the triangular mesh used in the current study.

The description of each file is the same as for quadrilateral mesh. Note, that the triangular mesh assumes that the first node ID equals to fourth node ID in the ‘PTtri\_elem2d.out’ file.