Subject	Choice between ψ_1 and ψ_2
Clause N°/ Subclause N° / Annex	4.3.1 (2) in EN 1991-1-2

Reason for change

The choice between ψ_1 and ψ_2 that is allowed in the national annex does not go in the direction of a European harmonisation.

Original content

4.3Combination rules for actions

4.3.1General rule

(2)The representative value of the variable action Q_1 may be considered as the quasi-permanent value $\psi_{2,1} Q_1$, or as an alternative the frequent value $\psi_{1,1} Q_1$.

NOTE The use of the quasi-permanent value $\psi_{2,1} Q_1$ or the frequent value $\psi_{1,1} Q_1$ may be specified in the national annex. The use of $\psi_{2,1} Q_1$ is recommended.

Change

This Clause is not changed

Background information

1) There are arguments for each choice. For example:
   - ✓ Ψ_2 is used for other accidental actions, such as seismic action. Therefore Ψ_2 should be chosen also for the fire situation;
   - ✓ If Ψ_2 is used for the fire situation, there will be no horizontal action considered in the fire situation (because the value of Ψ_2, for the wind load is typically 0 in many European regions). Therefore, Ψ_1 should be chosen;
   - ✓ If the argument for choosing Ψ_1 in order to ensure that some horizontal load be considered in the fire situation, there is no reason to choose also Ψ_1 for the other variable actions such as, for example, live load. Therefore, Ψ_1 should be chosen for the wind load and Ψ_1 should be chosen for the other variable loads.

It is difficult to decide on scientific bases which one of these arguments is more valid than the others.

2) The choice will affect the safety level, which is a competence of each member state.
   It is known that, for load combinations in other situations, the choice of the combination factors is imposed; there is no possibility to choose another combination factor in the national annex. Yet, **the value** given to each combination factor is chosen in the national annex. The member states therefore keep control of the safety level by the choice of the value given to the combination factors. For the fire situation, on the contrary, imposing Ψ_1 in countries where Ψ_2 was used previously, or vice versa, will *de facto* change the safety level.

3) In the present situation, from the information transmitted to the Project Team, it appears, see document “HGFPT-Task11-BD-Annex 1.docx”, that:
   - 14 member states chose the recommended value of Ψ_2
   - 12 member states chose the recommended value of Ψ_1
   - 2 member states chose an intermediate solution.

Any modification of this clause would thus bear a high risk of a negative vote, especially considering the implications in safety level mentioned as argument N° 2.

Ease of use justification

N/A