

1. BUILDING STRUCTURES IN SEISMIC AREAS
2. REINFORCED CONCRETE ARCH DAMS AND STABILITY
3. OPTIMIZATION AND HOMOGENIZATION OF STRUCTURES
4. NONLINEAR STRUCTURAL ANALYSIS
5. STRUCTURAL ANALYSIS OF STRUCTURES UNDER FIRE

Main purpose of the research area is development of a numerical model for calculation of steel, reinforced-concrete and composite structures exposed on high temperatures and fire. Up to now, a computer program for plane analysis of bar structures exposed to high temperatures is developed. This program takes into calculation steel structures only. Currently, a new numerical model and new calculation program is under development which should allow analysis of 3D bar structures under high temperatures. The program will take into account heat transfer problem in a cross-section, geometric as well as material nonlinearity of the structure in fire and high temperatures circumstances. The behaviour of the material will be taken into account by EC recommendations.

6. HISTORICAL AND MASONRY STRUCTURES

The main aims of historical and masonry structures research area are experimental investigations of structures, advanced numerical simulations of old and new structures and unreinforced, reinforced and infill masonry.

7. STRUCTURAL HEALTH MONITORING

8. SYSTEM IDENTIFICATION BY AMBIENT VIBRATION TESTS

