

SAP 2000 Level - 2

CHAPTER Revision on Level 1 Sap2000

- 1.1 Design Beams
- 1.2 Design Frames
- 1.3 Design Multi-Story
- 1.4 Design Trusses

CHAPTER 2 The Analysis of Solid Slabs

- 2.1 Design a primary thickness with excel sheet
- 2.2 Get a primary straining actions with first principles
- 2.3 Define the slab shell
- 2.4 Define Area Sections
- 2.5 Edit Grids
- 2.6 Draw The slab
- 2.7 Joint Restrains
- 2.8 Load cases
- 2.9 Load combinations
- 2.10 Assign the loads
- 2.11 Mesh The Areas
- 2.12 Analyze
- 2.13 Straining Actions
- 2.14 Stresses
- 2.15 Reinforcement (Mesh and additional)
- 2.16 Home work

CHAPTER 3 The Analysis of Paneled Beams

- 3.1 Design a primary thickness for each individual slab
- 3.2 Get a guide Bending Moment to check the Results (Manual)
- 3.3 Edit Grids
- 3.4 Define the (Slab , Beams)
- 3.5 Then Draw the area
- 3.6 Load Combination (Ultimate-Working)
- 3.7 Define the girder beams and secondary beams
- 3.8 Analyze
- 3.9 Stress

Chapter 4 The Analysis of Hollow Blocks

- 4.1 Define of the Rips & Blocks & Solid part
- 4.2 Define The Main Criteria of Hollow Blocks
- 4.3 Edit Grids
- 4.4 Define properties of (slabs & beams)
- 4.5 Mesh the Areas

- 4.5 Joint Restrains
- 4.6 Degree of Freedom
- 4.7 Analyze
- 4.8 Straining Actions
- 4.9 Reinforcement
- 4.10 Deflection

Chapter 5 The Analyze of Flat Slab

- 5.1 Get a primary thickness of the flat slab
- 5.2 Determine the allowable deflection
- 5.3 Columns (required check punching)
- 5.4 Edit Grids
- 5.5 Define the (Slabs – Beams)
- 5.6 Draw the areas
- 5.7 Mesh the areas
- 5.8 Check deflection
- 5.9 Check punching
- 5.10 Load cases – load combination
- 5.11 Loads
- 5.12 Analyze
- 5.13 Stress
- 5.14 Reinforcement

Sap Project

1-Steps of The Project

- 1.1 Export From AutoCAD
- 1.2 Statical System
- 1.3 Define The Frames (Slabs-Beams)
- 1.4 Draw the area
- 1.5 Mesh the area
- 1.6 Join Restrains
- 1.7 Load Cases _ Load Combinations
- 1.8 Assign Loads
- 1.9 Replicate The Floors
- 1.10 Analyze
- 1.11 Export The Columns
- 1.12 Design The Columns
- 1.13 Reinforcement

2-Analyze of Raft

- 2.1 Exports from AutoCAD
- 2.2 Draw The Raft on Sap 2000
- 2.3 Put The Springs to check bearing
- 2.4 Reinforcement the Raft

Chapter 6 Analyze of Stairs (Two flight stair – Three flight stair-Helical Stairs)

- 6.1 Define the materials
- 6.2 Define the frames
- 6.3 Draw the levels
- 6.4 Load cases – Load combination
- 6.5 Loads
- 6.6 Draw the areas
- 6.7 Mesh the areas
- 6.8 Analyze
- 6.9 Straining Actions
- 6.10 Reinforcement

Chapter 7 Lateral Loads (Wind Loads – Earth Quake Loads)

Chapter 8 Tanks

- 8.1 Edit the grids
- 8.2 Define The Frames (Slabs-Beams)
- 8.3 Draw the area
- 8.4 Mesh the area
- 8.5 Join Restraints
- 8.6 Load Cases _ Load Combinations
- 8.7 Assign Loads
- 8.8 Replicate The Floors
- 8.9 Analyze
- 8.10 Reinforcement