



DLUBAL RFEM 5 ESSENTIAL TRAINING – CONCRETE STRUCTURES

Objectives:

After completing this training, you will be able to:

- ✓ Create a 3D structural model
- ✓ Define loads and load combination
- ✓ Calculate the internal forces, deformations and support reactions
- ✓ Analyse the member and surfaces stresses
- ✓ Design concrete structures according to standard code
- ✓ Display results using graphic window and table
- ✓ Checking results according to standard code
- ✓ Optimize cross-section
- ✓ Generate printout report
- ✓ Import/export Dlubal RFEM with Autodesk Revit Structures

Modules:

RFEM 5 Main Module

Add on Modules:

RF-CONCRETE Surfaces – Design of concrete surfaces

RF-CONCRETE Members – Design of concrete members

RF-CONCRETE Columns – Design of concrete columns



TRAINING PROGRAMME DAY 1

Chapter 1: Introduction to Dlubal RFEM 5

- 1.1 Finite Elements
- 1.2 Graphical User Interface
- 1.3 Project Management
- 1.4 Units and Decimal Places
- 1.5 Type of Model 2D/3D
- 1.6 Standard Code

Chapter 2: Model Data

- 2.1 Work Plane
- 2.2 Floor Slab - Rectangular Surface
- 2.3 Floor Slab - Rows of Columns
- 2.4 Floor Slab - Walls
- 2.5 Floor Slab - Semicircular Surface
- 2.6 Ceiling Slab – Surfaces
- 2.7 Ceiling Slab – Opening
- 2.8 Walls – Lines
- 2.9 Walls – Surfaces
- 2.10 Columns
- 2.11 Downstand Beam
- 2.12 Opening
- 2.13 Supports – Line Supports
- 2.14 Supports – Surface Supports

Chapter 3: Load Cases and Combinations

- 3.1 Load Cases
- 3.2 Actions
- 3.3 Combination Expressions
- 3.4 Action Combinations
- 3.5 Load Combinations
- 3.6 Result Combinations

Chapter 4: Loads

- 4.1 LC1: Selfweight
- 4.2 LC2: Imposed Loads
- 4.3 LC3: Wind in +X
- 4.4 LC4: Wind in +Y
- 4.5 LC5: Imperfection Towards +X
- 4.6 LC6: Imperfection Towards +Y

Chapter 5: Calculation

- 5.1 Plausibility Check
- 5.2 FE Mesh - Generation
- 5.3 FE Mesh - Mesh Refinements
- 5.4 Calculation Parameters
- 5.5 Calculation



TRAINING PROGRAMME DAY 2

Chapter 6: Results

- 6.1 Results Output
- 6.2 Deformations - Surfaces
- 6.3 Deformations - Members
- 6.4 Internal Forces – Selected Results of Surfaces
- 6.5 Internal Forces – Specific Results of Members
- 6.6 Sections
- 6.7 Numerical Results – Work Window
- 6.8 Numerical Results – Results Tables

Chapter 7: Documentation

- 7.1 Printout Report
- 7.2 Graphics - Graphic printout
- 7.3 Graphics - Mass Print
- 7.4 Printout Report Header
- 7.5 Printout Report Template

Chapter 8: Calculations

- 8.1 Detail Settings
- 8.2 Stresses and Ratio
- 8.3 Start Calculation

Chapter 9: RF-CONCRETE Surfaces

- 9.1 Input Data – General Data
- 9.2 Input Data - Reinforcement
- 9.3 Results – Required Reinforcement
- 9.4 Results – Serviceability Design
- 9.5 Results – Graphical Results
- 9.5 Results - Printout

Chapter 10: RF-CONCRETE Members

- 10.1 General Data
- 10.2 Ribs
- 10.3 Supports
- 10.4 Reinforcement
- 10.5 Required Reinforcement
- 10.6 Provided Reinforcement
- 10.7 Curtailment
- 10.8 Graphical Results

Chapter 11: RF-CONCRETE Columns

- 11.1 General Data
- 11.2 Cross-Sections
- 11.3 Reinforcement
- 11.4 Required Reinforcement
- 11.5 Provided Reinforcement
- 11.6 Nonlinear Calculation
- 11.7 Graphical Results
- 11.8 Printout