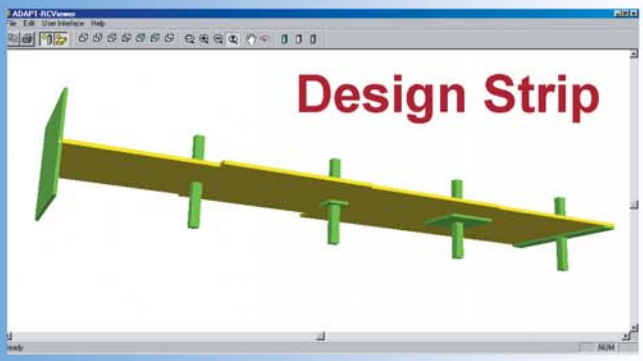
ADAPT-RC

For Design and Evaluation of Reinforced Concrete Floor Systems, Slabs and Beams

- Complete modeling and design of a reinforced concrete floor
- Analysis and capacity calculation of an existing floor
- One- and two-way floor systems
- Beam frames
- Drop caps, drop panels, steps above and below the slab
- Multiple beam cross-sections: T, L and I sections
- Reinforcement check for strength and minimum code requirements
- Beam shear and punching shear checks
- Deflection calculation including cracked section analysis
- Gives the capacity of a floor system for a user-specified reinforcement distribution
- Performs capacity/demand analysis for existing floors
- Graphical display of moments, shears and deflections
- Graphical and tabular display of location, length and amount of reinforcement required

Program Description



ADAPT-RC is a proven program based on the Equivalent Frame Method- the traditional design procedure for concrete floor systems. ***ADAPT-RC*** draws on a more than 20-year track record of serving concrete design engineers worldwide. ***ADAPT-RC*** models the structural features of each design strip, such as beams, drop caps, drop panels, cut outs, and steps above and below the slab, through an intuitive and user-friendly input editor. The program provides a graphical report and table of the location, amount and length of the reinforcement needed to meet the requirements of the specified design code.

A strong feature of ***ADAPT-RC*** is the calculation of immediate and long-term deflection of the floor system using cracked sections. Using the floor's geometry, material and loading, the equivalent moment of inertia is calculated for each 1/20th segment of each span. A numerical integration along each span gives the calculated deflection. Deflection due to live load is based on increased cracking subsequent to the application of permanent (dead) load.

ADAPT-RC operates in two modes – DESIGN and INVESTIGATION (review). In its design mode, it determines the reinforcement needed for the user-specified loading. It also calculates the deflection based on that reinforcement. In its investigation mode, there are several options for checking the adequacy of a floor. If the reinforcement is specified, the program calculates the capacity of the structure. If both the reinforcement and loading are specified, the program reports whether the design is adequate for the loading using a demand/capacity graph. Deflection is based on a cracked section analysis.

ADAPT-RC is a stand-alone, complete program. Its productivity can be enhanced, however, by combining it with ADAPT-Modeler. ADAPT-Modeler creates a three dimensional structural model of the entire floor system from your existing DWG or DXF file, or with user input. ADAPT-Modeler will then automatically generate the input data for ***ADAPT-RC***. This eliminates the time-consuming (and sometimes error-prone) process of generating input data files with span lengths, tributaries and loading.

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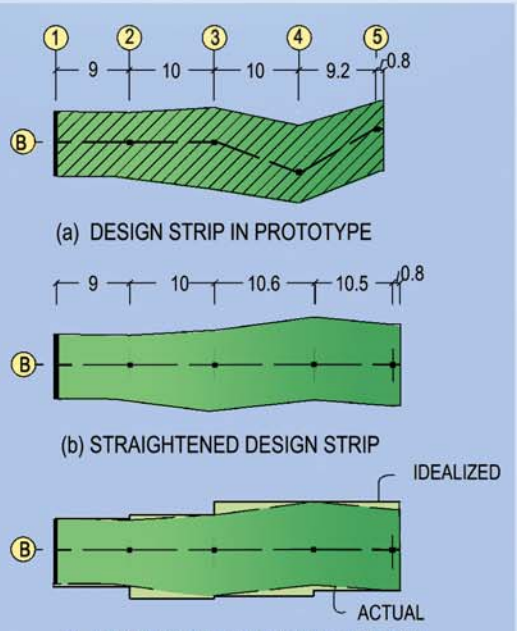
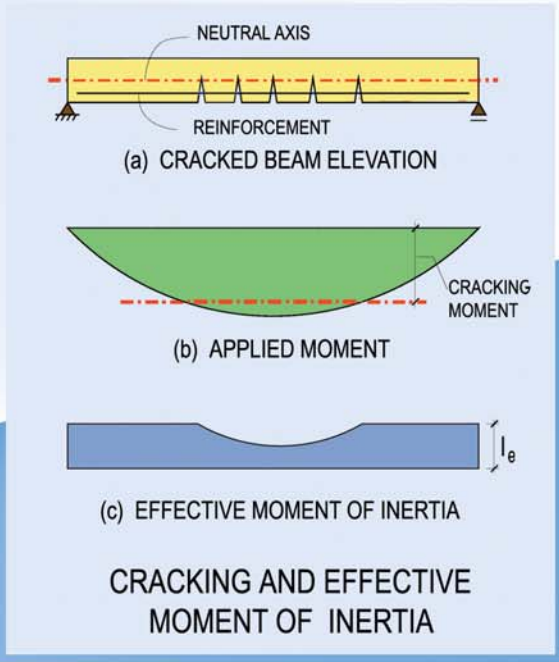
ADAPT-RC

The Industry Proven Design Method for Concrete Floor Systems

- Three-dimensional view of the design strip
- Punching shear check
- Graphical presentation of moments, shears and deflections
- Detailed calculation of reinforcement and code check at the face-of-support and at 1/20th points along each span
- Graphical summary of the entire design for your calculation package showing the number, position and length of the reinforcing steel





Investigation (Review) Features

Geometry, Material, Loading		Design Option	Investigation Options 1	2	3
Input	Loading	X		X	
	Demand Moment (Mu)				X
	Demand Shear (Vu)				X
	Area of Steel Provided		X	X	X
Output	Demand Moment (Mu)	X		X	
	Demand Shear (Vu)	X		X	
	Moment Capacity (φMn)		X	X	X
	Shear Capacity (φVn)		N/A	X	X
	Reinforcement for Bending	X		X	X
	Reinforcement for Shear	X		X	X
	Deflection	X		X	X

Codes

The program comes in ACI, IBC (International Building Code), and a number of other building codes.

Technical Support and Training

Prompt and competent technical support is provided by ADAPT software developers and engineers who are engaged in the design of concrete structures on a daily basis. The support is either through ADAPT headquarters in California, or through regional representatives in Europe and Asia. Training is offered at ADAPT's Headquarters in the San Francisco Bay area, at the client's office or via scheduled seminars worldwide.

Hardware Requirements

PC compatible computer, Windows operating system, minimum of 128 MB RAM, 10 GB hard drive.

Units

● SI ● MKS ● American Customary

Authors

Many talented engineers and software developers have been involved in the creation of this software over the years. All have made significant contributions. The work was inspired and led by ***Dr Bijan O. Aalami***, Professor Emeritus of San Francisco State University, a California Structural Engineer and a world leader and teacher in the design of concrete buildings, bridges, special structures and post-tensioning.

Warranty

No warranty, expressed or implied is made with respect to the sold software, either by the authors, or by the seller, either expressed or implied toward the merchantability of fitness to particular purpose, beyond replacing the original software medium and hardware in event of physical defects, for a period of six months from the date of first shipment of software.

ADAPT is now serving engineers in over 70 countries around the world

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