

**InfoCAD 7.0**

Update-Information November 2007

Please note: This program version requires Windows 2000 or higher.

Important information on the current version of the program can be found in the InfoCAD online help. New program versions are posted regularly on the service page of our web server at [www.infograph.de](http://www.infograph.de).

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## News in InfoCAD 7.0

The following chapters provide you with the latest information on the InfoCAD program system and the most important changes with respect to the previous version 6.5 from november 2006.

### General Information

- The help system is now available in English. You can switch between the languages using the corresponding command of the Options Menu. Additional documents can be downloaded from the internet service page „<http://www.infograph.de/enu/service.htm>“.
- You can now display the first 999 load case variants to be combined in the action dialogs for DIN 1045-1, EC2, OENORM, SIA 262, and DIN 18800. Load groups to be analyzed according to the deflection theory can be created for selected variants.
- The combination info function was expanded so that the deformations associated with extremal support reactions (or vice versa) can be called up.
- You can create load cases with load groups based on the deflection theory or superposition load cases directly from within the Combination info (shortcut menu).
- The labeling of the section integrals has been completely revised. The font size can be changed.
- A new context function allows to change the orientation of model faces.
- The symbolic representation of the boundary properties can be switched.
- A new branch for spring elements has been added to the database. It allows you to depict all properties including the nonlinear characteristics in the printout.
- A new toolbar with functions of the View menu makes it easier to change the viewport.
- For numerical results representation you can now modify the offered list of base reinforcements.
- You can now define the number of decimal places you want for any graphical display of results.
- The image view can be moved with the mouse by pressing down the mouse wheel.
- From this version on the operating systems Windows 2000 and higher are supported only.

### 64-Bit Edition

- The 64-bit edition of the program system is offered for the 64-bit windows operating systems. This edition is characterized by a significant higher computing speed and allows the use of the entire available memory.

### Finite Elements Analysis

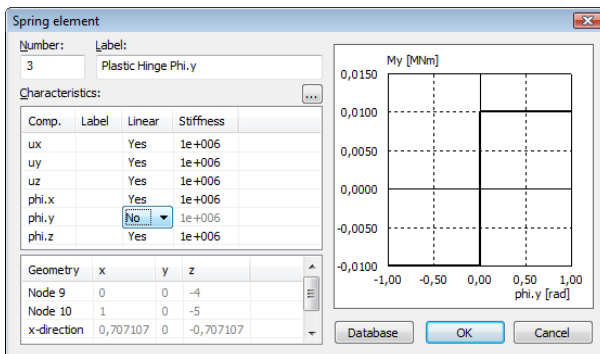
- A new direct equation solver called parallel sparse solver has been implemented. Memory optimization and parallel processing result in a significant speed advantage over the standard equation solver, especially for large systems. It is activated using the FEM analysis settings. The new module is licensed together with the iterative equation solver.
- The program capacity has been increased to 1 million nodes and elements. This now allows you to analyse structures with up to 6 million degrees of freedom. Depending on the size of the systems of equations it may be necessary to use the 64-bit program version in conjunction with the parallel sparse solver or the iterative equation solver.
- During the FEM calculation, the processing of geometrically defined point loads, line loads and area loads has been optimized resulting in a considerable increase of speed.
- The failure of tensile supports can be activated individually and for every direction.
- For the calculation of the buckling eigenvalues the required iteration accuracy has been increased.
- The program features spring elements that can be assigned any nonlinear characteristics. This allows for the modeling of numerous effects, including spring deflection, plastic joints, contact and tearing, etc. The spring elements are available for static and dynamic calculations.
- For area elements, the determination of lateral forces has been optimized.

### Nonlinear System Analysis

- For nonlinear calculations of concrete constructions the influence of time-dependent creep can be taken into account. The settings are provided within the load group dialog.

### Spring Elements

- This new element describes a spring between two nodes. A linear or nonlinear spring characteristic can be defined for each of the components.

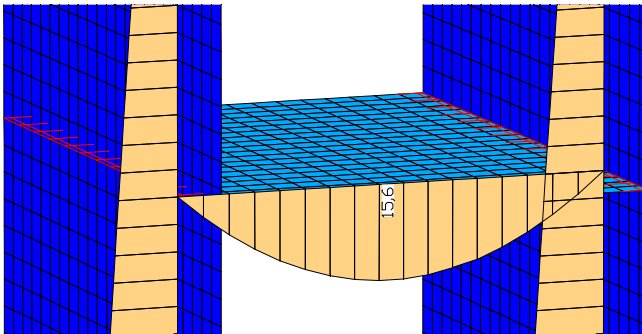


## Printing

- A new function on the print list toolbar allows to switch between different print lists.
- Cut-outs can be optionally ordered next to one another in the print list.
- You can define the page frame to be used for the entries in the print list.
- The page formats now support the new @Pfad text variable.
- The page setup now allows you to print the names of graphical views of the print list instead of the page title while using the standard page frame. For user-defined page frames, this function is supported by the new variables @Objekt, @Ordner and @Kapitel.

## Line Hinges

- The new Line hinges function is used to define moment joints on area elements.



## Loads

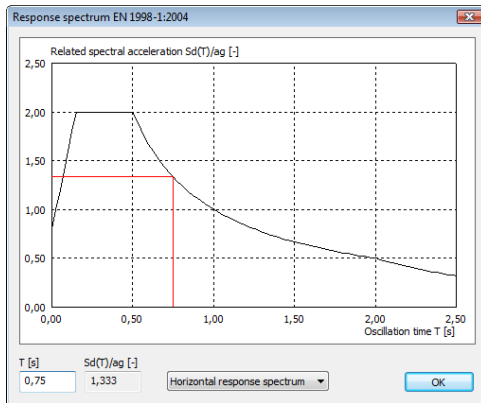
- The direction of effect of the local line load on areas can now be defined freely. It is no longer linked to the local element system of the area elements. The corresponding representation has also been improved as a result.
- As regards the structure types 2D Frame and Axisymmetric Shell, the material's specific weight is now also calculated for the dead load load type.
- The new temperature load type has been added for all structure types.
- In the FEM system the dead load load type can optionally be defined for each element. This is helpful, for instance, in conjunction with the construction stages.
- All marked load cases can be displayed simultaneously using the shortcut menu. In this way you can easily check, for instance, if all areas of a slab are assigned a load.

## Prestressing

- The default value when entering new tendon groups has been changed to  $f_{p_{0.1k}} = 1500 \text{ MN/m}^2$ .

## Dynamics

- The response spectrum for earthquake checks according to EN 1998-1:2004 (EC8) has been added.



- For the load-time function a new time step calculation option has been added. This makes it much easier to map the effect of multiple loads with different load-time functions (transient or periodic) to act simultaneously on the same structure.
- Accelerations are now also combined for the load case combination of results from time-step integrations.

## Beam Section

- The british UB and UC profiles (BS 4-1:1993) have been added to the section library.
- The representation of the main stresses  $\sigma_1$  and  $\sigma_2$  has been added to the section stress dialog.

## OENORM B 4700, B 4750 and B 4753

- For the crack width limitation, the action combinations according to B 4753, table 1, can now be selected as an option.
- For the check of decompression and concrete tensile stresses in construction stages, the decisive tensile strength according to B 4750, Chapter 3.7.3, and B 4753, Chapter 11.4.2 (3), can now be defined in the Section dialog.

### **Eurocode EN 1992-1-1:2004, DIN EN 1992-1-1:2005**

- New design methods for biaxial bending with normal force according to Chapter 6.1 of the standard have been implemented. At present, the calculation is performed for polygon sections and composite sections within the scope of the FEM's single design. You can activate the new methods in the Design codes dialog of the Options menu.

### **Systemviewer**

- A new function allows to show the contours of the system. This results in a clearer representation of complex structures.
- The image view can be moved with the mouse by pressing down the mouse wheel.

### **License Manager**

- Operation as a service is now also possible using Windows Vista.
- In the service mode no dialogs are executed. Instead, settings are made using the expanded InfoMonitor help tool. Error messages are now written to the Windows event log.
- The settings are no longer written to the registry but rather to the InfoNetKey.ini file.

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