

APM WinMachine

Version 10.0

List of new features and capabilities

APM Structure 3D

Module calculating the stress-strain state, stability, own and forced oscillations of parts and structures by finite element

- A 64-bit version of the product (APM Structure3D, 64 v.10.0), which allows you to perform calculations of building structures without limitation the dimension of tasks. Using 64-bit version allows you to:
 - a) To accelerate the procedure for up to several thousand times depending on the specific problem
 - b) Solve problems without the formal restrictions on dimension. The actual dimension of the limited amount of RAM. In test mode considered the problem of 15 million degrees of freedom
 - a) There are procedures to expedite the work with a group of geometric objects to create models
- Prepared as 32-bit versions of the product (APM Structure3D v.10.0), which increased the dimension of the tasks, as well as improved procedures for working with a group of objects in the performance of geometric constructions.
- New features animation when viewing the results of the calculation of statics, stability and natural frequencies.
- In the process of constructing a model of the opportunity by pressing CTRL and left mouse button to rotate, scroll and zoom editor.
- Made to clarify the calculation of the pillars in oblique bending.
- Optionally added quick procedure of pushing (with a copy of all loads).
- Redesign of the dialogue task and the calculation of steel structural elements.
- Informative dialogue complemented the job of cross-sections.
- Altered interface inference results of the calculation of forced oscillations.
- In the process of task geometry computational model appeared to determine the parameters of the intersection:
 - a) two rods
 - b) the rod and plate
 - a) two plates
- Added procedure for determining the minimum distance between two skew rod finite elements.
- There was a team determining the angular dimensions:
 - a) between two rods
 - b) between two plates
 - c) between the plate and rod

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- When specifying the geometry of the structure is now possible to construct a projection:
 - a) nodes on the rod
 - b) nodes on the plate
- Ability to perform inspections on the coincidence of rods, plates and solid elements.
- A tool of communication "group of nodes - a group of nodes"
- The opportunity of job distributed load on the rod at an arbitrary angle on the local or global coordinate systems

APM Studio

Pre-and post-processor for calculating the three-dimensional solid and shell models

- A 64-bit version of the product APM Studio64 v.10.0.
- A 32-bit version of the product APM Studio v.10.0, which improved procedure for partitioning into finite elements of solid models and the procedure for reading step-size of solid and shell objects.

APM Shaft

Module calculation and design of axles and shafts

- When calculated on the fatigue strength appeared more choices characteristics of the material: carbon steel or alloy steel. As a result, it raises the accuracy of calculations carried out

APM Technology

Module for the development of technological processes and design of technical documentation

- Significant changes have occurred with the model of technological data. Presentation of the project is implemented as a four tree structures: "Product", "Process Technology", "Equipment", "Technology Documentation". Between them implement appropriate visual and semantic context
- In the new version, along with the possibility of developing TA machining, realized the possibility of developing TA heat treatment
- Established patterns of technological cards for paperwork TP heat treatment
- The users can design TS assembly (welding, brazing, assembly)
- Established patterns of technological cards for paperwork TP assembly
- For TAs assembly designed presentation product structure in the form of its constituent objects of type "detail" and "assembly unit"

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- Ability to develop model and group processes
- For operations in TP is the implementation of the calculations of basic and auxiliary time
- Implemented calculation of piece of time, as well as the execution time estimates for the production batch
- The ability to create one or several sets of technical documentation in the project using objects "set of technological documents" and "Technology Paper
- The users can use templates of standard documents (in accordance with ECTД) in the development of documentation workflow
- Non Work (clearance, opening, printing) as a separate document, technological, and once with a whole set of documents
- Implemented display of the technological structure of the enterprise objects of type "shop" - "Land" - "Equipment". This makes it clearer and easier to work technologist in selecting the equipment needed in TP, as well as providing a visual correlation between the equipment and carry on its Operations
- For convenience, the development of TA holds details of structure formation in the form of a set of structural and technological elements (CTE). This will permit additional control, visually trace the connection between the object moving and processed it TEF
- Added ability to connect and use in the development of several TAs calculation modules of APM Calculation Instrument

*In preparation for the next versions of APM WinMachine
planned to carry out work to improve the interface, algorithms and methods of calculation
as well as expansion of existing capacity modules in 2D and 3D-modeling
calculation compounds, FE analysis, etc.*