



WAVE Design Software

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What is WAVE?

The Water Application Value Engine (WAVE) is the industry first modelling software program by Dow Water & Process Solutions that integrates three of the leading technologies – ultrafiltration (UF), reverse osmosis (RO), and ion exchange (IX) – into one comprehensive tool using a common interface. It is the new Dow software for estimating performance of UF, RO and IX technologies in water treatment systems, either individually or in various combinations.

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Why do I need an integrated software?

Treating water often requires more than one technology to achieve the desired water quality for a specific application. Individual water treatment technology design tools make it difficult to optimize systems with multiple technologies to produce water reliably and at the lowest possible cost.

WAVE simplifies the multi-technology design process and ultimately helps reduce the time it takes to design water treatment systems.

With WAVE, Dow creates new opportunities for engineers to design differentiated and optimized solutions using the best technology at any single place in the water treatment chain as fast and accurately as needed. Customers can set, reset, and calculate plant designs in just a few clicks.

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What are WAVE's key features?

WAVE is a truly integrated expert modelling software, offering:

- Flexible design using 3 technologies, 13 IX processes, 66 multiple unit operation combinations, and the option to specify system feed or net product flow rate
- Modular program architecture, allowing for future expansion to additional technologies
- Powerful calculation engine with the capacity to run complex designs with high level of accuracy
- Improved and consistent algorithms
- Improved water equilibrium calculations and interface
- True mass balance volumes/flows that reflect changes in density due to temperature, water composition and water compressibility
- Consistent hydraulic constraints and regeneration parameters which reflect best practices and state of the art product performance and application
- Harmonized data for all products and processes
- Intuitive interface
- Default values for most parameters, allowing the designer to run a quick design
- Capability to introduce project specific parameters to increase the accuracy of OPEX calculations

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What is a truly integrated software?

In a truly integrated software, any modifications made to any unit operation automatically propagate throughout the system design as opposed to other available software with less technologies where the outlet of one unit operation gets manually copied into the feed of the downstream operation.

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What are the WAVE Ultrafiltration (UF) advanced features?

- The latest Dow UF products, including DOW IntegraFlux™ and DOW IntegraPac™ UF Modules with XP Fiber
- Discriminates between drinking vs. non drinking products
- Updated design guidelines and pressure rating curves
- Membrane integrity testing capabilities
- Ability to specify pH of chemical enhanced backwash (CEB) and clean in place (CIP), introduce trans-membrane pressure (TMP) slopes for BW/CEB/CIP, design for constant flux vs. constant output and use RO concentrate for cleaning

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What are the WAVE Reverse Osmosis (RO) advanced features?

- The latest Dow RO products data base with new calculation improvements and products, including DOW FILMTEC FORTILIFE™ and FILMTEC™ ECO Elements
- Improved internally staged design (ISD) capability – each element in a pressure vessel can now be uniquely defined
- Split permeate available with ISD
- Bypass, pass and stage level concentrate recycle loops
- New system level hydraulic flow calculator
- Batch modelling with the possibility of simultaneous batch case creation
- Design warnings by element position
- Addition of pressure drop in reports

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What are the WAVE Ion Exchange (IX) advanced features?

- The full Dow IX product line, in one software module
- Harmonized data for all processes and resins
- Ability to model 13 IX processes including softening, dealkalinization, demineralization, RO/IX polishing, condensate polishing, and nitrate removal
- Seven IX regeneration schemes including co-current, water or air blocked packed beds, AMBERPACK™, UPCORE™ IX Systems, and internal and external mixed beds

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How do I get a WAVE copy?

WAVE is available as a free download from the Dow Water & Process Solutions Customer Portal, located at: www.dow.com/wave

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What does my computer system need to operate WAVE?

Software Requirements

- Windows Installer 3.1 or higher
- Microsoft .NET Framework 4.0 Client
- SQL Server Compact Edition 3.5 or higher

Note: If one or more of above requirements are absent in the machine then they will be installed along with WAVE Installation Setup (Setup.exe)

Hardware Requirements - Minimum Disk Space required:

- 120 MB (for WAVE Application)
- 50 MB (.Net Framework Client Profile)
- 3MB (for SQL Server CE)

Operating System Requirements - One of the following OS required:

- Windows XP Service Pack 3
- Windows Server 2008
- Windows Vista
- Windows 7 Ultimate/ Professional/ Enterprise/ Home Premium/ Home Basic
- Windows 10

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Is WAVE available in different languages?

WAVE is currently available in four different languages: English, Chinese, Spanish and Portuguese.

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Where can I get support?

WAVE comes with a fully detailed user manual, easily accessible within the software through the "Quick Help" button located in top right. Additional support, including overview literature, video tutorials, and 'ask the expert' is available through the Dow Water & Process Solutions Customer Portal, also accessible from www.dow.com/wave.

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Who do I contact if I have questions about the program or require help?

Please contact your local Dow Water & Process Solutions representative with any questions you may have regarding the software, how it works, or any other questions. Frequently asked questions are available on the DW&PS Customer Portal. You may also contact a Dow expert through the 'Ask the Expert' feature on the Customer Portal.

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How long will ROSA be available?

WAVE upgrades the best features of Dow's older software, including ROSA, while bridging the technologies together under one common, user friendly and time saving interface. Dow's ROSA software phase-out date will be communicated at a later time.

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