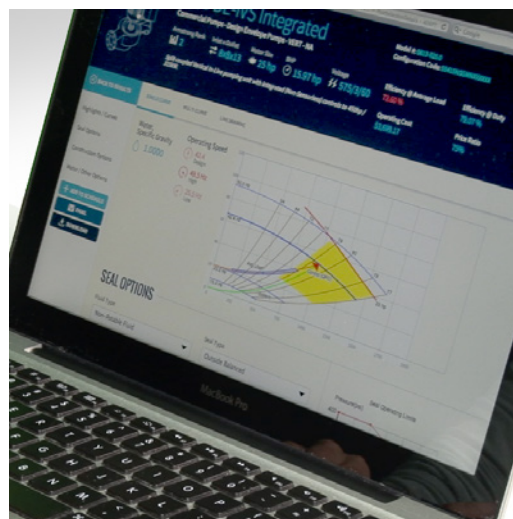


# The 7 ADEPT advantages

## Pump selection software comparison

WHITE PAPER



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## Seven key ways ADEPT makes it simple and quick to work anywhere, select the best fluid management solutions, optimize performance, save energy, and reduce life cycle costs.

Following extensive voice of the customer sessions, application development, beta testing and more customer work; Armstrong commissioned a study to assess pump selection software among global suppliers of fluid management solutions.

### THE SEVEN ASPECTS OF COMPARISON

-  The ease of accessing, logging in, quickly and accurately searching fluid management options
-  The simplicity with which equipment selections can be added to schedules and whether the application remembers data and saves schedules so they can be built conveniently over several sessions
-  How quickly each platform can access and share documents such as submittals, specifications, line drawings, equipment data, and performance curves; through email, printing, downloading, filing, and manipulating document design to suit the task at hand
-  The degree to which the software allows users to benefit from a focus on composite and dynamic performance curves and related data
-  The adaptability of the software to a variety of mobile devices, the popular browsers, and whether a native iPad application exists
-  The availability of all the necessary technical documents and multi-language reports
-  How intuitive is the design and navigation? How contemporary is the look, feel and usability?

## DESIGN ENVELOPE

The study also explored selection tool design in the context of the Design Envelope engineering approach; which represents the state-of-the-art of variable speed innovation combined with unprecedented fluid management intelligence and load limiting logic. It permits engineers and other users to simply and quickly review and compare a full envelope of operating efficiencies, secure in the knowledge that short term and long term performance is unequalled, life cycle costs are contained, and optimal energy savings realized. Future building conditions and regulatory changes will not affect these highly intelligent, instantaneously responsive fluid management solutions.

### STUDY METHODOLOGY

Each pump selection tool was rated during a series of routine tasks, including search, create schedule, review detail, interact with performance curve data, return to schedule, design report, connect to specification format, submittals, Revit drawings, email data, print data, download data and so on. Each function was rated on a scale of 1-5 with 5 being the most satisfying user experience and 1 being the least. Scores are shown both individually and in total.

**RESULTS**

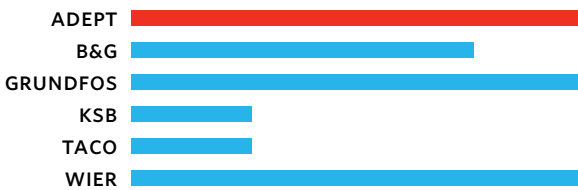
There are significant differences between the overall user effectiveness and the basic capabilities of some equipment selection tools when compared with others. Recently updated tools scored higher, are more aligned with user needs; and offer functions that others do not offer.



**1. EASY START & QUICK SEARCH**

The ease of accessing, logging in, quickly and accurately searching fluid management options.

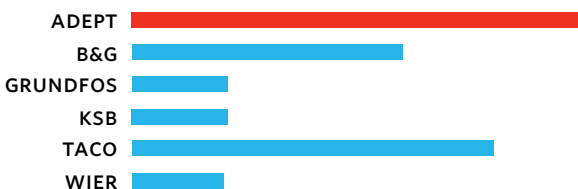
- Some applications make customers request access to selection software with long registration forms and cumbersome logins.
- Some ask for just Flow and Head, while others demand a lot of data input before any equipment recommendations are provided. Some search functions are easier with practice, but not immediately obvious to a novice user. Hopefully the user is rewarded early and motivated to stay with the program. ADEPT is among the easiest to use in this regard.



**2. SIMPLE SCHEDULE BUILD & SMART MEMORY**

The ease with which equipment selections can be added to schedules, and whether the application remembers data and saves schedules so they can be built conveniently over several sessions.

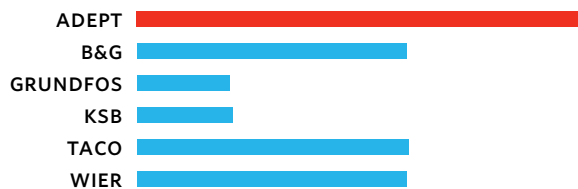
- Some of the software reviewed doesn't easily create an equipment schedule. Or doesn't retain user data over several visits. ADEPT does both.
- ADEPT also allows adding to, editing and referencing the schedule from almost anywhere in the app. And it offers schedule formats with or without simple, composite or dynamic performance curves.



**3. QUICK DOCUMENT ACCESS & SHARING**

How quickly each platform can access and share documents such as submittals, specifications, line drawings, equipment data, and performance curves.

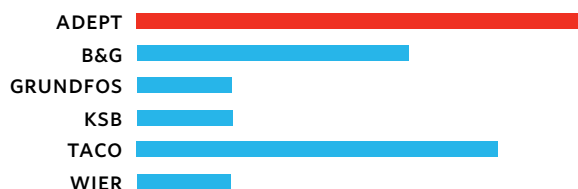
- With some applications it's easy to find product data and imagery. With others it is not. Users want to reference these items quickly while searching, and once a pump or schedule of solutions is identified, users want to generate specs, submittals and detail sheets; and share them quickly.
- ADEPT makes it easy, from everywhere in the app, to custom design documents, email them, print them, download them and file them.
- With ADEPT, users email from right within the program. It remembers prior contacts, optionally pre-defines subject, message, signature; and makes it simple and quick to attach and send the applicable specs, submittals, product sheets, drawings or curves.



**4. SIMPLE, COMPOSITE & DYNAMIC PERFORMANCE CURVES**

The degree to which the software allows users to benefit from a focus on composite and dynamic performance curves and related data.

- Performance curves are especially important to Armstrong, the indisputable thought leader in efficiency 'envelopes.' ADEPT's curves are highly evolved in synch with its revolutionary Design Envelope engineering approach (see side bar).
- ADEPT curves can be simple, or composites, dynamic, full color; shown in a schedule list, big on their own, part of key documents, and so on. ADEPT is the clear winner here.

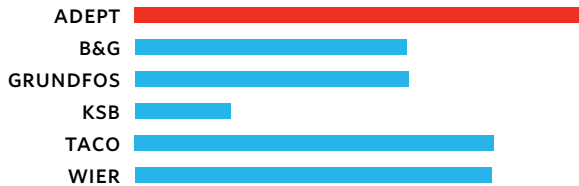




**5. MOBILE DEVICES, BROWSERS, IPAD APP**

Work anywhere: Adaptability of the software to a variety of mobile devices, popular browsers, and whether a native iPad app exists.

- Most of the pump selection software reviewed has been more or less adapted for use on mobile devices; however effectiveness varies, depending on each brand’s commitment to the project (and to the future of work).
- ADEPT has taken mobile design to a new level, after clients signaled its importance.
- ADEPT software is redesigned specifically for each of the most popular browsers and mobile devices.
- ADEPT created a native application for the iPad, recognizing that many users are seeking this convenience.



**6. TECHNICAL DOCUMENTS & MULTI-LANGUAGE REPORTS**

The availability of all the necessary technical documents and multi-language reports.

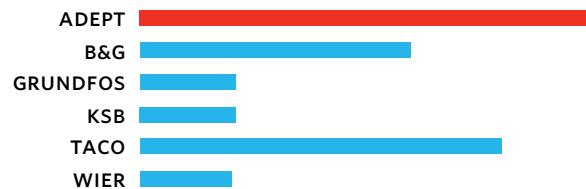
- Most of the applications reviewed can access or generate specifications, submittals and BIM-style line drawings. But, generally speaking, it is easier to find, create and share more kinds of documents with ADEPT.
- Fluid management firms have mixed records regarding language support, depending on where they do business. ADEPT provides documents in English, German and French; with more languages under development.



**7. INTUITIVE DESIGN & NAVIGATION**

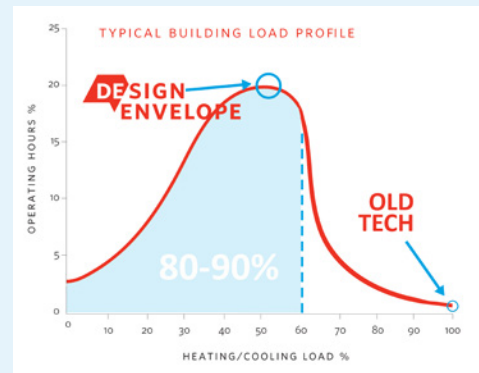
How intuitive is the design and navigation? How contemporary is the look, feel, and usability?

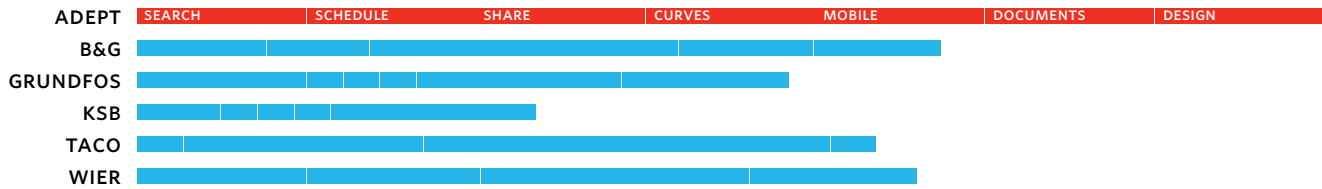
- Most of the applications scored well on intuitive design, although some of the designs are very dated and their applications very limited in their capabilities.
- ADEPT is simple and quick, with modern usability conventions, beautiful animation and graphics; and vastly more capable than all other apps. It is future oriented in terms of browsers, operating systems and mobile devices; and is a pleasure to use.



**DESIGN ENVELOPE: REVOLUTIONARY INTELLIGENCE**

The ADEPT focus on performance curves and efficiency envelopes relates strongly to the Armstrong Design Envelope (DE) story. After 80 years of engineering leadership, Armstrong developed DE and began a technological revolution in fluid management. DE incorporates the newest capability and intelligence, reinventing performance assumptions and re-engineering for a new level of operating efficiency, life-cycle cost advantage, building and construction economies. Conventional systems are designed for optimum efficiency at 100% of load. DE is designed for optimum efficiency at 50% load, because most systems operate at less than 60% capacity 90% of the time. Variable speed can now realize its potential through on-board intelligent, integrated controls, that employ fluid flow data, heat transfer, and demand-based control. DE solutions automatically adjust speeds within an optimal efficiency envelope, responding instantaneously to system load; drawing only the required power, for ideal short term and long term performance.





CONCLUSION



- There are significant differences between the overall user-effectiveness of some equipment selection tools when compared with others. In general, the most recently updated tools, including ADEPT, are more aligned with user needs. Those at the top of the scale for each individual task do not differ significantly. In other words, where software developers have invested time in making a certain function easier, they have generally succeeded.
- At first glance it appears that most pump selection tools seek to achieve the same goal of specifying the optimum equipment for the design challenge. On closer inspection it is found that the selected approach results in a modification of the overall result; and thus the goals must be different. For example some software focusses on helping clients make better engineering drawings, some makes fast specification documents, and some helps clients find the least expensive option for up-front or installed equipment cost.
- ADEPT combines the goal of its software with the goal of Armstrong’s unique, patented Design Envelope equipment engineering approach. Design Envelope incorporates the newest variable speed technological capability and computer intelligence, reinventing performance assumptions and re-engineering for a new level of operating efficiency, life-cycle cost advantage, building and construction economies.
- ADEPT reflects significant improvements and superiority over the others. Clearly, Armstrong has invested a great deal in customer research and advanced development, and this reveals itself in the positive experience of using the new ap-

plication. ADEPT is indisputably the standard against which everything else will be compared, going forward.

- The world’s best-engineered fluid management solutions and technologies are now accompanied by the best software for selecting them, simply and quickly, while working anywhere.

SOFTWARE USABILITY TESTING

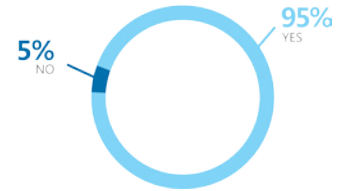
To ensure the most effective possible development process for ADEPT, a rigorous program of usability tests was employed, with exacting methodology.

Volunteers from engineering, architecture, and sales organizations remained surprisingly polite and patient, as Armstrong tested and re-tested 5 key areas that were seen as critically important to users.

Even when improvements were only partly implemented, customer input was paying off. “It’s already substantially faster,” said one user. “I find ADEPT to be far more intuitive when navigating through the screens,” said another.

WHAT USERS SAID

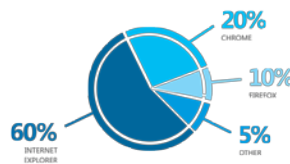
WERE YOU ABLE TO SUCCESSFULLY SEND AND RECEIVE AN EMAIL FROM ADEPT?



WERE YOU ABLE TO ADD A PUMP TO SCHEDULE?



BROWSER USED



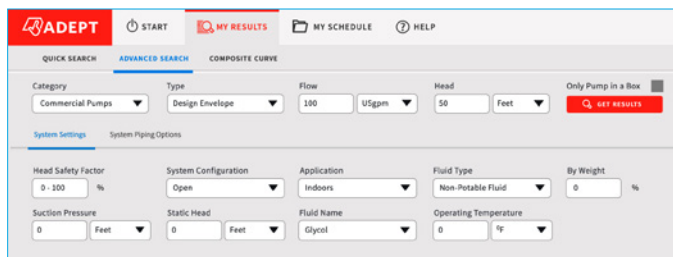
The usability tests were focused on making it simple and quick to search for a particular pump, email a spec, add to or subtract from a schedule, export the schedule, and so on.

Users spoke loudly and clearly on the subject of ensuring ADEPT could operate seamlessly on mobile computing devices, on both Windows and OSX, and with all different kinds of browsers; including Explorer, Safari, Firefox, Chrome and Opera.

**CONTINUING USER FEEDBACK &  
ADEPT WEBINAR INFO SESSIONS**

Although ADEPT has been launched, the development team remains dedicated to continuing improvements. Users can send feedback to the team by contacting:

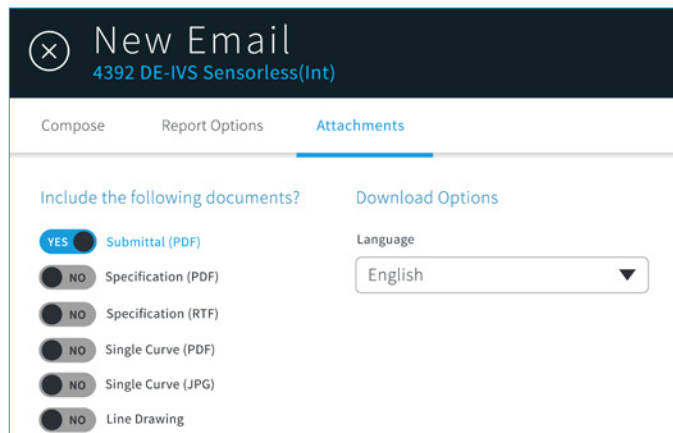
[ADEPT@ArmstrongFluidTechnology.com](mailto:ADEPT@ArmstrongFluidTechnology.com)



Category: Commercial Pumps | Type: Design Envelope | Flow: 100 USgpm | Head: 50 Feet

Category: Commercial Pumps - Type: Design Envelope - Flow: 100 USgpm - Head: 50 PSI - Sorted by: Rank Ascending

ARMSTRONG RANK	SERIES	MODEL #	POLES	BHP	MOTOR SIZE	EFFICIENCY @ AVG. LOAD	EFFICIENCY @ DUTY	OPERATING COST	PRICE RATIO	NET I & O	NPSHR	ACTIONS
1	4392 DE-IVS Sensorless(Int)	0206-005.0	2	3hp	Shp	51.26%	58.33%	\$966.01	102%	2x2	4,244 psi	+ ADD TO SCHEDULE   EMAIL
2	4392 DE-IVS Sensorless(Int)	0206-007.5	2	3hp	Shp	51.62%	60.11%	\$959.14	113%	2x2	4,396 psi	+ ADD TO SCHEDULE   EMAIL
3	4392 DE-IVS Sensorless(Int)	0208-007.5	2	3hp	Shp	45.91%	55.01%	\$100.00	120%	2x2	3,651 psi	+ ADD TO SCHEDULE   EMAIL
4	4392 DE-IVS Sensorless(Int)	0206-005.0	2	3hp	Shp	51.26%	58.33%	\$966.01	102%	2x2	4,244 psi	+ ADD TO SCHEDULE   EMAIL
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**4392 DE-IVS Sensorless(Int)**  
Commercial Pumps - Design Envelope - Twin - Close Coupled

Search Criteria: Flow: 100 USgpm | Head: 50 PSI

Model #: 0206-007.5  
Configuration Code: 04431N63MNSXXXX

Rank: 1 | Inlet x Outlet: 2in x 2in | Motor: Shp | BHP: 60hp | Poles: FF | Voltage: 575/3/0

Efficiency @ Avg. Load: 73.25% | Efficiency @ Duty Points: 71.20%

12 Months Operating Cost: \$966.01 | Price Ratio: 115%

Clear-coupled Vertical In-Line pumping unit with integrated Sensorless controls to 7.5hp / 3.5kW

Highlights / Curves: Operating Speed: 18.7 Hz Design, 50.1 Hz High, 25.0 Hz Low

ACCESSORIES: SUCTION GUIDE, FLO-TREX

SEAL OPTIONS: Fluid Type: Non-Potable Fluid, Seal Type: Inside Single-Spring, Seal: Armstrong A2, Manufacturer Code: C-ic L EPSS 2A, Stationary Seal: Silicon Carbide, Springs: Stainless Steel

CONSTRUCTION OPTIONS: Construction: BF, Rating: ANSI-125, Casting (Inlets): Cast Iron (A48-30), Impeller: ZLB Bronze C87850, Shaft Sleeve: Bronze, Flash Line: Braided Stainless Steel

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