

Top 10 Reasons Why More Engineers Are Choosing Pro/ENGINEER® Wildfire™ Over Solid Edge®

Hundreds of thousands of product development pros will choose a 3D CAD solution this year. If you're in that market, you may be wondering, How does Solid Edge® stand up to a powerhouse like Pro/ENGINEER® Wildfire™?

The short answer: No contest. The complete answer: Read on . . .

If manufacturing were to conduct a 3D CAD Olympic Games, Pro/ENGINEER and Solid Edge would compete in very different categories. With the industry's broadest, most powerful CAD toolset, Pro/ENGINEER would be the leading contender—maybe the only contender—in the decathlon.

Solid Edge, which relies heavily on third-party vendors for its CAD/CAM/CAE functionality, would likely compete in a relay, where it could pass the baton to another party to finish the event—a rather dicey strategy, since there's always the risk the vendor might drop the baton, or drop out of the race entirely.

The reality is, to win in today's market, you need a single, integrated, complete CAD toolset, one that offers the power, performance, and connectivity that can give you an advantage—every day. Pro/ENGINEER Wildfire is that solution. That's why IndustryWeek® magazine awarded it one of five Technologies of the Year Awards at its 11th annual Technology and Innovation Awards Program in 2003.



One of the key reasons 2D users choose Pro/ENGINEER 3D solutions over Solid Edge is that, using Solid Edge's sparse toolset, it isn't long before users hit a solid wall. And unlike other MCAD vendors who partner with third-party companies for the technology lacking in its package, Solid Edge simply doesn't offer the tools—third party or otherwise.

	Pro/ENGINEER Wildfire	SE
1 Geometry Constrained—Right from the Outset	✓	—
2 Model Quality Assurance—ModelCHECK™	✓	—
3 Advanced Surfacing—Going the Distance	✓	—
4 Inheritance Features—Value of a Single, Native Architecture	✓	—
5 Shrinkwrap—Share Intellectual Property with Partners and Suppliers	✓	—
6 Large Assembly Management Tools	✓	—
7 Web Connectivity and Web-Based Design Conferencing	✓	—
8 100% Focus on Product Development	✓	—
9 More Complete Set of Tools—On a Single Native Architecture	✓	—
10 More Complete Entry-Level Value Package	✓	—

If you're in the market for 3D CAD, the comparison above will help you make a smart decision. What you'll discover is that there's only one essential tool for the CAD professional. The one used by more than 300,000 engineers at 35,000 companies worldwide: Pro/ENGINEER. And today, it's better than ever. Here's why.

Reason No. 1: Geometry Constrained—Right from the Outset

If you're new to 3D CAD terminology, constrained geometry means your CAD software automatically defines and constrains the dimensions of your model—right from the outset. As you begin modeling, you'll notice numerical dimensions attached to your model, parameters that update as you make changes. By attaching geometrical values to your model, you can maintain model quality throughout the design phase. If you're not constraining sketches up front, you're almost assured of running into significant, costly geometry problems down the road.



The entire Pro/ENGINEER suite is built on a single architecture so that modules interoperate and exchange data seamlessly.

Pro/ENGINEER Wildfire defines and constrains model dimensions from the get-go. So your models always contain all the manufacturing data and vital information you need—every step of the way. Thus, model dimensions can never be overlooked. Constrained geometry also means that later on, as the design develops, modification is easier and more reliable, since all the model's data is automatically carried with the part.

Solid Edge software, on the other hand, doesn't automatically fully constrain your sketch as you begin modeling. Consequently, your model can encounter problems later in the design process due to unintentionally missed dimensions. The time, effort and cost of fixing inaccurate geometry can make or break a successful product. Just consider: Would you allow a drawing to reach the shop floor without all the required dimensions? Of course not. That's what happens when you allow geometry in a 3D MCAD system to remain unconstrained. By constraining geometry from the get-go, Pro/ENGINEER ensures your models are manufacturable from the very first sketch.

Reason No. 2: Model Quality Assurance—ModelCHECK

Imagine having a QA tool that checks the quality of your model as you're designing it—and monitors how closely your models adhere to company and industry standards. Only Pro/ENGINEER has such a tool—ModelCHECK—a unique QA solution that dramatically speeds product design by ensuring the quality and consistency of your models throughout the design phase.

ModelCHECK analyzes your model and provides online, expert advice to help you avoid problems and make corrections. The time, effort, and money saved are truly remarkable.

Conversely, Solid Edge offers no design QA software, so you have no way of automatically checking model quality or ensuring that designs meet corporate and industry standards. How can this affect your business? You could be left with unmanufacturable parts that don't meet company standards, or worse, you may have products that can be manufactured but can't be sold since they don't meet industry standards. Only by employing QA at the earliest possible time (i.e., the design office) can you ensure that your product will fly through production without a hitch.

Reason No. 3: Advanced Surfacing—Going the Distance

Consumers today want much more than high quality for their money. They also want high style—from their cars to their coffee makers. Companies that can build both style and quality into their products today are winning market share. Unfortunately, not every 3D CAD solution has the tools designers need to create that unique look and feel.

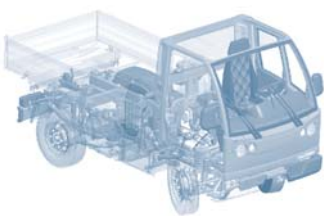
With its Advanced Surfacing tools, Pro/ENGINEER gives you the freedom to create virtually any shape or design you can imagine, without limiting creativity or forcing you to compromise aesthetics. Whether the shape requires a conic surface, boundary blend, or any other surface type, Pro/ENGINEER Advanced Surfacing tools let you quickly create the most complex shapes, easily. This advantage can be seen in many exceptional products designed with Pro/ENGINEER, from PDAs to motorcycles.

While Solid Edge proudly states that it's making strides in surfacing technology, its surfacing capability is still quite a way from Pro/ENGINEER Advanced Surfacing. When competing for that elusive consumer dollar, you need to gain every advantage when your product sits on the shelf (virtual or otherwise). Can you allow your competitors, many of whom are using the advanced tools available in Pro/ENGINEER, to pull that revenue away from your most valuable asset: your product?

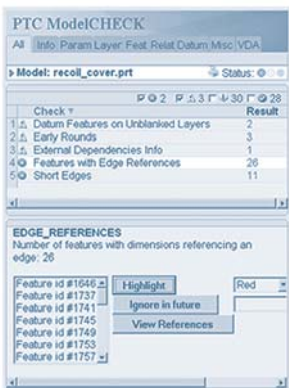
Reason No. 4: Inheritance Features—Value of a Single, Native Architecture

Imagine how much time and effort you could save if all stakeholders in your product development process—design, casting, FEA, machining, et al—could work independently with their own process-specific variant of a model, and every change to the master model automatically would propagate to the variants.

With Pro/ENGINEER Wildfire Inheritance Features, that's exactly the case. Plus, there's no loss of associativity with the original design. This ensures that any subsequent changes are seamlessly propagated. The result: a smoother, more flexible product development process.



Creating winning products today requires a full set of intuitive MCAD tools that deliver the power and performance to get the job done—without sacrificing part, product, or process.



You can identify production problems early in the development cycle with PTC's unique ModelCHECK tools.

Solid Edge does not offer the ability to have multiple variants of a model (i.e., one for casting, one for FEA, one for machining, etc.). Instead, the user has to perform a 'Save As' and manually edit each model to fit the requirements of the process area. Therein lies the challenge: How can analysts and manufacturing engineers make independent changes to a design without affecting the design everywhere else it is used, and still be assured that changes to the master design will be propagated accurately? With Solid Edge, they can't.

Reason No. 5: Shrinkwrap—Share Intellectual Property with Partners and Suppliers

When you're working with large or complex assemblies, you often need to quickly share the outer shape of your design with a supplier or partner who needs it to complete their assigned task. Yet, for a number of reasons—massive file size or to protect your intellectual property (IP)—you'd prefer to e-mail just the critical geometry and not the entire assembly.

PTC created a unique solution called model Shrinkwrap™ that converts your model into a lightweight (small, byte-size) file that can be easily e-mailed anywhere, saving significant time, effort, and aggravation. With a 'shrinkwrapped' file, your partners have everything they need to complete their job, and you can relax knowing your IP is 100% secure—no internal geometry is revealed. Better still, your partners can import this lightweight file directly into their Pro/ENGINEER application and complete their part of the project or assembly.

Solid Edge offers no 'shrink-wrap' capability for creating small, byte-size graphics that can be easily shared with colleagues, customers, and supply chain partners across the Web.

Reason No. 6: Large Assembly Management Tools

If you're managing the design of large assemblies, you know how important it is to precisely control every component, on every level, with every iteration of the design. The fact is, the better the assembly is managed, the faster changes can be propagated and the faster the product can get to market.

Despite the claims of many CAD vendors, not all CAD tools can fully manage large assemblies. Engineers often discover too late that just because an MCAD system has the ability to 'manage the graphics of a large assembly' doesn't mean it has 'large assembly management' tools. Pro/ENGINEER is the one tool that handles both.

Besides having the most advanced graphic management tools on the market, Pro/ENGINEER Wildfire also has advanced tools for creating and managing assemblies of any size, including top-down design tools, skeleton models, assembly management tools, and many others. There simply isn't any other solution on the market that approaches Pro/ENGINEER Wildfire for managing complex and large assemblies—which is why many leading manufacturers trust Pro/ENGINEER for their product development.

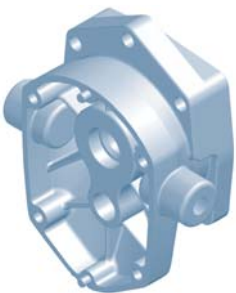
Solid Edge offers no top-down design and management tools such as skeleton models, so users must work through tiresome, complex workarounds when creating and controlling large or complex assemblies.

Reason No. 7: Web Connectivity and Web-Based Design Conferencing

How can you effectively produce quality products today when your product development team is working from all corners of the globe? Easy. Provide your team with instant access to colleagues, data, and applications residing anywhere—directly from their CAD desktop. Better still, empower your designers and engineers to create virtual Web workspaces where entire design teams can access real-time design and collaboration tools.

Pro/ENGINEER Wildfire is designed 'from the ground up' to support Web services—a true breakthrough in CAD collaboration. Web service support means users can instantly connect to everything the Web has to offer—online 3D parts catalogs, external partner sites, internal data repositories—without having to leave Pro/ENGINEER Wildfire. Moreover, Pro/ENGINEER Wildfire offers optional Groove® Networks' peer-to-peer Web technology, which enables design teams to collaborate in Web-based, real-time design conferences as if they were sitting in the same room.

Unlike Pro/ENGINEER Wildfire, Solid Edge does not integrate directly with the Web, which means users are forced to open and close applications to find and incorporate data residing in remote servers and locations. Plus, Solid Edge offers no built-in capability for real-time, peer-to-peer design conferencing that can be safely used in a secure environment for your data. In fact, Solid Edge relies on a tool created solely for simple word processor documents or spreadsheet data, an environment that's unsuitable for the high-resolution graphics of a modern 3D MCAD tool.



Pro/ENGINEER Wildfire models always contain all the manufacturing data and vital information needed.

Reason No. 8: 100% Focus on Product Development

Purchasing a 3D CAD solution is more than buying a software package. It's investing in a long-term relationship with a partner who is committed to your future. Today, as more companies expand their 3D CAD tools into broader-based Product Lifecycle Management (PLM) solutions, it's important that your CAD partner be ready to take your product development where it needs to grow.

As the largest software company with a total commitment to product development, PTC is entirely focused on delivering innovative solutions that help our customers win. Not only does PTC offer the broadest set of product definition solutions, but we're also the first company to combine our CAD solutions with our Windchill® product data management, collaboration, and control tools to create the industry's first integrated Product Development System. PTC is the first product development company to make PLM an affordable, easy-to-deploy, low-risk initiative.

Unlike PTC, Solid Edge offers no clear path from MCAD to a complete Product Lifecycle Management solution. To date, Solid Edge does not provide a solution for customers to scale to a broader solution, thus compromising your ability to meet future product development challenges.

Reason No. 9: More Complete Set of Tools—On a Single Native Architecture

Imagine buying a ratchet set that's missing a few sockets. Then imagine going to a different store to find each missing socket, some of which might be metric, some not. That's the strategy employed by some vendors in the MCAD marketplace. A better solution is to have a complete set of tools designed to work together, a set built on a single, native data architecture.

It's no secret that Pro/ENGINEER Wildfire delivers the broadest set of 3D CAD tools, offering deep functionality that's been continually enhanced during more than a decade of development. The entire Pro/ENGINEER suite is built on a single architecture. All modules interoperate and exchange data seamlessly.

The Solid Edge product development strategy is to establish partnerships with third-party application developers who provide the MCAD technology lacking in the Solid Edge solution set. In many instances, Solid Edge relies on third-party solution providers for much of the product development process coverage. For example, Solid Edge offers no embedded tools for production, whether for process planning or NC programming, effectively isolating the design office from the other participants in the product development process. At the end of the day, you want an integrated solution—not a solution that needs integrating.

Reason No. 10: Most Complete Entry-Level Value Package

As you compare entry-level 3D CAD packages, you'll find that the Pro/ENGINEER Wildfire Foundation Advantage Package offers more robust functionality—at the same price—than every other solution on the market. Below are examples of functionality in the Pro/ENGINEER Wildfire Foundation Advantage package, not available in Solid Edge:

- Advanced Parametric Surfacing
- Mechanism Kinematics
- Integrated Reports
- Free Project Collaboration Site
- Real-Time Photorendering
- Advanced Import Data Repair Tools
- Model Shrinkwrap
- Web Connectivity
- Model Quality Verification—ModelCHECK
- HP Linux Support

PTC—Making Things Happen

As the driving force in 3D CAD and Product Lifecycle Management (PLM), PTC is helping companies reinvigorate their product development processes and bring winning products to market faster. If you're moving to 3D this year, don't take chances with your future. Go forward with the No. 1 product development team: PTC.

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With Peer-to-Peer connectivity, you can invite entire teams into interactive design sessions.