

GRUPO NAMM INNOVATING BETTER-PERFORMING HVAC AIRFLOW PRODUCTS WITH SOLIDWORKS SOLUTIONS

Case Study

Grupo NAMM replaced its previous design solution with SOLIDWORKS Premium software for design and structural simulation, and SOLIDWORKS Flow Simulation for simulating airflow in its products, to meet the more stringent LEED (Leadership in Energy and Environmental Design) international requirements for green buildings in developing its Airkitek brand of grilles, diffusers, industrial louvers, and architectural louvers for HVAC systems for the U.S. market.

Challenge:

Innovate better-performing HVAC airflow products—such as Grilles, diffusers, and louvers—to accelerate development, improve quality, and develop disruptive products that meet the needs of LEED (Leadership in Energy and Environmental Design) building requirements, create a new brand for introduction into the United States market, and provide customers with confidence in brand performance.

Solution:

Implement SOLIDWORKS Premium software for design, analysis, and rendering, and SOLIDWORKS Flow Simulation software for computational fluid dynamics (CFD) simulation.

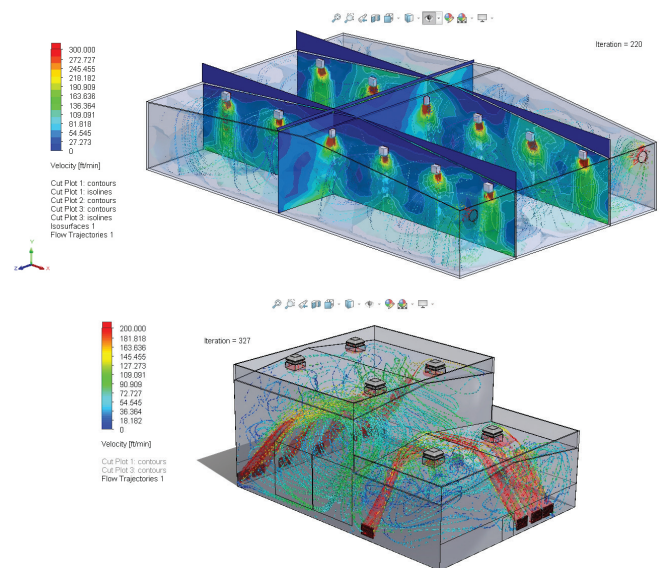
Results:

- Reduced prototyping costs by 20 percent overall
- Innovated TermoTransfer® Technology breakthrough
- Launched new Airkitek® brand in U.S. market
- Slashed photography costs through use of photo-realistic renderings

Grupo NAMM (www.namm.com.mx) is the largest Mexican manufacturer of equipment for air distribution in HVAC systems—such as grilles, diffusers, louvers, and dampers—with a 30 percent share of the Mexican market. Founded in 1976 with its headquarters and 60,000-square-foot production facility in Monterrey, the company also operates several sales branches across Mexico and the United States after recently entering the U.S. market with its Airkitek® brand (www.airkitek.com) of products.



NAMM® is committed to leveraging technology to provide high-performance and aesthetic solutions for air movement, according to Engineering Chief Felipe Dossantos. “Moving into the international market—like we have done with Airkitek in the U.S.—requires a higher level of product performance as well as disruptive, innovative products to displace competitors that are already in the market,” Dossantos explains. “When I joined the Grupo NAMM® in 2019, one of my first priorities was to understand the design and engineering capabilities that we would need to meet the more stringent LEED [Leadership in



Grupo NAMM relied on SOLIDWORKS Flow Simulation software to improve airflow in buildings and the performance of its products, and to develop the company’s breakthrough TermoTransfer Technology, a system of louvers that not only exhaust heat but also draw in fresh air, increasing heat transfer efficiency as a result.

Energy and Environmental Design] international requirements for green buildings, under which customers want to see how our products perform in terms of airflow.”

To show airflow performance, NAMM® needed a flow simulation and computational fluid dynamics (CFD) analysis software. This prompted NAMM® management to replace the previous design software they had been using, with SOLIDWORKS® solutions since 2016. “There were no integrated flow simulators for use with our previous solution,



“Initially, we used SOLIDWORKS Flow Simulation to improve existing designs and minimize errors. Then, we used it in R&D to

develop the innovative techniques, concepts, and products that led to our Airkitek® brand of products for the U.S. market. We’re also using airflow as a boundary condition to conduct structural simulations. These powerful simulation tools enable us to understand what’s possible as we continue to develop disruptive, innovative products for the international market.”

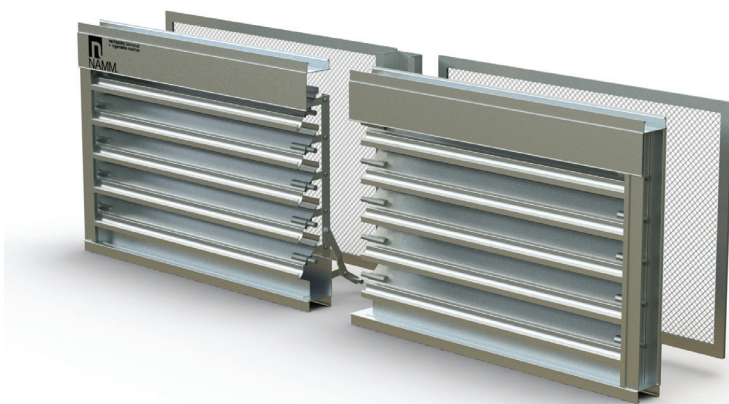
— Felipe Dossantos, Engineering Chief

so we made the decision to move to SOLIDWORKS Premium for design and structural simulation, and SOLIDWORKS Flow Simulation for simulating airflow in our products,” Dossantos recalls. “We need to be able to produce airflow performance answers quickly when clients request them, and the integration between SOLIDWORKS Premium and SOLIDWORKS Flow Simulation gives us the ability and flexibility that we need to quickly perform flow simulations and increase the efficiency of heat transfer by optimizing airflow in our products.”

Dossantos notes that the transition to SOLIDWORKS product development solutions was a smooth, easy process that was completed within six months. “We not only replaced the design tools that we had used before moving to SOLIDWORKS and added structural and flow simulation capabilities, we also learned some new applications that have helped us improve our development processes, such as surfacing, sheet metal design, and rendering tools,” Dossantos says.

SIMULATING HVAC AIRFLOW LEADS TO PRODUCT INNOVATIONS

After deploying SOLIDWORKS Flow Simulation to capture airflow performance in existing products, and in response to customer requests to determine how NAMM products perform using customer constraints, NAMM® leveraged SOLIDWORKS Flow Simulation for R&D, culminating in the company’s breakthrough TermoTransfer Technology, a system of louvers that not only exhaust heat, but also draw



Using SOLIDWORKS Visualize, Grupo NAMM created marketing imagery for its catalogue, website, and customers, and for use on social media, reducing photography costs substantially and helping the manufacturer expand internationally by making the most of digital marketing.

in fresh air, increasing heat transfer efficiency as a result. “SOLIDWORKS Flow Simulation is really good for making disruptive designs without negatively affecting heat transfer efficiency,” Dossantos stresses.

“Initially, we used SOLIDWORKS Flow Simulation to improve existing designs and minimize errors,” Dossantos adds. “Then, we used it in R&D to develop the innovative techniques, concepts, and products that led to our Airkitek brand of products for the U.S. market. We’re also using airflow as a boundary condition to conduct structural simulations. These powerful simulation tools enable us to understand what’s possible as we continue to develop disruptive, innovative products for the international market.”



“The ability to run flow simulations with SOLIDWORKS Flow Simulation allows us to quickly address any concerns that prospective customers may have, give them confidence in our products’ performance, and prove the effectiveness of our products as we expand internationally.”

— Abraham Alarcón, Business Developer

CREATING QUALITY BRAND FOR US MARKET

Using integrated SOLIDWORKS design and simulation tools, NAMM® created and launched its Airkitek® brand, developing an entire line of LEED-compliant, high-quality products for the American market. “As the Airkitek® name signifies, we are leveraging technology to become true ‘architects of air’ when it comes to HVAC equipment,” Business Developer Abraham Alarcón says.

“Potential customers in the U.S. are much more demanding and want to see how air flows through our products and the effects of that airflow on heating and cooling,” Alarcón adds. “Fortunately, we have run the flow simulations on our products that they want to see and can even run custom simulations using a client’s specific set of constraints. The ability to run flow simulations with SOLIDWORKS Flow Simulation allows us to quickly address any concerns that prospective customers may have, give them confidence in our products’ performance, and prove the effectiveness of our products as we expand internationally.”

REDUCING PROTOTYPING AND PHOTOGRAPHY COSTS

Since implementing integrated SOLIDWORKS design and simulation tools, NAMM® has realized benefits beyond its immediate objectives and is now using SOLIDWORKS tools to further reduce costs related to product prototyping and



photography. “With SOLIDWORKS simulation tools, we avoid many rounds of prototyping by using simulations as virtual prototypes, reducing prototyping costs by 20 percent overall,” Dossantos explains. “And, when we come to the end of development and need a final prototype for validation, we can use SOLIDWORKS and our 3D printer to do so at significantly less cost.

“We’re also using the photo-realistic rendering capabilities of SOLIDWORKS Visualize to create marketing imagery for our catalogue, website, and customers, and for use on social media,” Dossantos adds. “In addition to reducing photography costs substantially, these renderings are helping us expand internationally by making the most of digital marketing.”

Focus on Grupo NAMM

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