SOLIDWORKS FLOW SIMULATION: HVAC APPLICATIONS MODULE

THE COMPLETE HVAC SIMULATION TOOL

The HVAC Applications Module for SolidWorks® Flow Simulation enables designers and engineers to quickly and accurately model complex systems for thermal and fluid-flow analysis. The module evaluates air and gas movement in working and living environments, as well as thermal radiation, offering advanced radiation modeling, comfort parameters calculation, analysis of admixture (tracer) in a carrier fluid flow, and an enlarged database of materials and fans.

With the HVAC Applications Module, engineers can tackle the tough challenges of designing efficient cooling systems for people and large-scale environments, lighting systems, or efficient contaminant dispersion systems with advanced simulation tools for:

• **Airflow Optimization** – Managing airflow within a large-scale environment ensures that the optimum temperature is maintained for the largest number of people.

• **Product Thermal Design** – The HVAC Applications Module simulates airflow in the environment and products used in the environment so you can now analyze products considering real-world behaviors.

• **Human Comfort Factors** – The effectiveness of environmental control is measured by eight human comfort factors that evaluate both the reaction of people and the environment.

• **Tracer Study** – Analyze the flow of an admixture in an existing carrier fluid to evaluate the effectiveness of a ventilation system in removing contaminant.

SolidWorks Flow Simulation software is a powerful tool that takes the complexity out of computational fluid dynamics (CFD) for designers and engineers. You can quickly and easily simulate fluid flow, heat transfer, and fluid forces that are critical to the success of your design.

The HVAC Applications Module provides industry-specific tools and methodologies that deliver unrivaled ease of use, power, and productivity for modeling complex systems.

FLOW SIMULATION FOR EVERY ENGINEER

- **Specialized CFD Tools**
  - Accurately evaluate fluid flows in your designs

- **Optimize HVAC for Airflow and Comfort Factors**

- **Visualize Radiation Through Semitransparent Materials**

- **FLOW SIMULATION FOR EVERY ENGINEER**

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Industry-specific tools in the HVAC Applications Module for SolidWorks Flow Simulation give engineers dedicated CFD tools for fluid-flow simulation that are easy to use while providing exceptional simulation power:

- **Advanced Radiation Modeling** – Thermal radiation can have a major effect on cooling requirements. Semitransparent materials (defined as absorptive solid material) are commonly used in the lighting industry and the building industry (glass). Understanding the impact of material choices requires sophisticated radiation modeling that’s included in the HVAC Applications Module.

- **Comfort Parameters** – “Predicted mean vote” (PMV) and “Predicted percent dissatisfied” (PPD) are the two main comfort parameters out of eight calculated by the HVAC Applications Module. These parameters identify where there are problems in thermal comfort level, so you can resolve them before the cooling system is built.

- **Tracer Study** – When an admixture substance (such as a contaminant) diffuses in a carrier fluid, you can evaluate the mass fraction of the substance as well as the Local Air Quality Index (LAQI) and Contaminant Removal Effectiveness (CRE) parameters to determine the effectiveness of the ventilation system.

- **Engineering Database** – An enhanced engineering database includes a wide range of building materials and fans so you can do thermal analysis quickly and efficiently.

With its combination of ease of use and industry-specific tools, the HVAC Applications Module ensures maximum analysis productivity with enhanced simulation fidelity.

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**Tracer Mass Fraction**

The HVAC Applications Module helps you identify contaminant risk with the Tracer Study.

**ACCRUATELY SIMULATE THERMAL RADIATION THROUGH SEMITRANSPARENT MATERIALS.**

**SYSTEM REQUIREMENTS**

- Windows® 7 (32- or 64-bit) or Windows Vista®
- 2 GB RAM (minimum)
- 5 GB disk space free (minimum)
- Video board (certified recommended)
- Intel® or AMD® processor
- DVD or broadband Internet connection
- Internet Explorer 8 or later

For additional details, visit www.solidworks.com/systemrequirements

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Visit www.solidworks.com/cfd or contact your local authorized SolidWorks reseller to learn more.