

**ANESI®**

RESIDENTIAL HYDRONICS

A next-generation solution for
efficient, reliable residential
hydronic heating.

As homeowners increasingly demand higher efficiency, lower operating costs, and greater sustainability from their heating systems, residential HVAC decision makers are turning to next-generation solutions that deliver measurable performance gains. Gas absorption heat pumps (GAHP) bring thermally driven efficiency to modern hydronic heating, offering a powerful alternative to traditional appliances. By harnessing gas-fired absorption technology, these systems can significantly reduce energy consumption, improve low-ambient heating performance, and support long-term decarbonization strategies—all while providing the reliable, comfortable heat homeowners expect. For end users and industry professionals seeking to elevate residential hydronic performance, gas absorption heat pumps represent a forward-looking, high-value opportunity.

**FUEL FLEXIBILITY
ULTRA HIGH EFFICIENCY
NATURAL REFRIGERANT
LOWER TOTAL GHG OUTPUT**

Efficient, Cold-Climate Hydronic Heating

GAHPs deliver superior efficiency for radiant floors, panel radiators, baseboard, and hydronic air handlers—using far less fuel than traditional boilers and avoiding the high electrical demand of air-to-water electric heat pumps (AWEHP). By capturing renewable heat from outdoor air, they maintain strong heating output in extreme cold where AWEHPs often struggle, reducing annual fuel use and lowering operating costs without sacrificing comfort. During commercial power outages, backup generators need to provide less than 10% of the power required by an electric heat pump system to continue the operation of GAHP systems.

Sustainable Heating with Fuel Options

Unlike conventional boilers and electric heat pumps, GAHPs cut on-site and overall emissions while offering flexibility. Their ability to run on natural gas or propane gives homeowners and contractors a choice of the most economical and locally available fuel source, supporting long-term sustainability and lower GHG output without relying solely on grid electricity.

Outdoor-Safe & Hydronic/AC Ready

With all combustion outdoors, GAHPs enhance safety, minimize indoor mechanical space, and operate quietly. They integrate easily with existing hydronic systems—from radiant floors to indirect water heaters—and pair seamlessly with air conditioning equipment, enabling efficient upgrades without major renovations, unlike many electric heat pump retrofits.



Hydronic Application Versatility

Gas absorption heat pumps are exceptionally well-suited for a wide range of residential hydronic heating applications, delivering efficient, reliable, and low-emission performance across multiple system types. Their high-temperature water output and stable, low-ambient performance make them ideal for radiant floor heating, where consistent, moderate water temperatures are essential for comfort and efficiency. In domestic water heating, GAHPs provide high recovery rates with lower fuel consumption than traditional boilers, avoiding the cold-weather limitations of AWEHPs and supporting both everyday household hot water loads and high-demand situations. For pools, leveraging renewable ambient energy significantly reduces heating costs and total GHG emissions, even during shoulder-season operation. With flexible integration into existing loops and controls, GAHPs offer a versatile, energy-saving alternative for nearly any hydronic application.

HEATING APPLICATIONS

WATER | SPACE | FLOOR | POOL



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