

Dehumidification Services



Let Source Help You Manage Your Humidity Challenge

Managing humidity has long been a challenge for grocery stores, commercial office buildings, retail environments, schools and other facilities where customer and employee comfort or product integrity depend on a properly controlled indoor environment. This is especially true in hot, high-humidity climates that make up over 70 percent of the United States. Most people understand that humidity plays a significant role in human comfort, however few understand the role it plays in 1) costs related to purchasing and installing new refrigeration or HVAC systems, 2) operating (energy) costs, 3) the resultant health impact, and 4) other intangibles like odor control and indoor air quality.

The Challenge

Many people have heard of the “Father of Air Conditioning” Willis Carrier. What most do not know is that his first major application of a mechanical vapor compression system for “air conditioning” was actually designed for a newspaper factory to control humidity, not temperature. Since that time, modern air conditioning systems have been used to control both temperature and moisture. The problem is that while vapor compression systems are very efficient in controlling temperature, they are very inefficient in controlling humidity. In hot, humid outdoor environments or indoor environments that throw off moisture from people or processes, the size of the air conditioner has to be increased in order to

address humidity; sometimes by a factor of two or more. Over sizing the air conditioning results in more frequent system cycling on and off, making it even less efficient. To control humidity, traditional AC systems are set for lower temperatures, to condense more moisture out of the environment. They then have to reheat the air to get back to the desired temperature for customer comfort. The combination of these factors results in higher first cost for the equipment and significantly higher energy costs. Many industrial applications require very low humidity levels, which are difficult to achieve with traditional vapor compression systems. Most people are comfortable when the relative humidity is between 40 and 60 percent and can tolerate higher temperatures when the humidity is low. This implies that the set point for air conditioning can actually be raised to between 75 and 78 degrees in such instances, saving energy. Unfortunately, many adverse health factors occur when the humidity is outside this range. For instance, toxic mold and mildew thrive when the relative humidity is in the 75-90 percent range, even when the temperature is in the low 70s. At the other end of the spectrum, very low humidity can result in dry nasal passages, allergies, dust mites, and other conditions. Very humid environments are also a factor in odor generation and conveyance, and detrimental to good health. Controlling humidity is very important in both new buildings and retrofit applications, as fresh air requirements for buildings designed to cure “sick building syndrome”, brings in more moisture from the outside than the original AC system was designed to handle. It is also critical for applications where humidity control is essential, or where people congregate, since people are a large source of moisture (latent load).

Solutions to the Challenge

A solution to this challenge is to utilize specialized dehumidification systems which are superior for addressing humidity control. There are several types



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of dehumidification systems available today from a variety of manufacturers, each using different technologies but with the same common objective of managing humidity levels of the internal environment in a cost-effective and sustainable manner. The technologies include specialized vapor compression systems, solid desiccant (chemical) based systems and liquid desiccant systems. As with most technologies there are both cost and performance tradeoffs among the various approaches, but each provides much better humidity management and significantly lower cost than using a traditional HVAC system alone. The best dehumidification solution for your specific situation depends on your budget, your dehumidification objectives, and your return on investment (ROI) criteria.

Source: Your Dehumidification Partner

Source Refrigeration & HVAC is an expert service provider of mission-critical Refrigeration & HVAC systems, including dehumidification. We are trained on major dehumidification equipment manufacturers' products and technologies, and have the expertise and resources to work with you on all stages of your dehumidification system's life cycle. Not only do our engineers evaluate and help recommend the best equipment for your specific situation, we are fully trained in installation, start-ups, commissioning, service and optimization of dehumidification systems.

Our services include:

- **System Design** – Whether you are incorporating a dehumidification system as part of a new construction project or a remodel project, our in-house engineering team, with more than 300 years of combined refrigeration and HVAC experience, can help you determine the best approach for your facility. We work with you in considering initial costs, performance, energy efficiency, and long-term total cost of ownership trade-offs.
- **Installation** - Proper installation is critical to the performance of any system. Our expert field crews are trained to install dehumidification equipment from major manufacturers and are ready to install your system either as part of a new construction project, a remodel or a retrofit. Source has over 400 trained installation and retrofit specialists.
- **System Start-ups** – Having a dehumidification system that operates right from the start is a critical step in lowering your costs and improving your customer's comfort levels. While many companies will get your dehumidification system up and running after they've installed it, our start-up technicians ensure you get the performance you expect from the beginning, which helps avoid potential operating issues down the road.
- **Service & Maintenance** – Our nationwide team of more than 500 field-based, self-performing refrigeration and HVAC service experts can maintain your dehumidification system investment with scheduled preventative maintenance programs and as-needed service. Any unplanned system or product issues will be handled in a timely, professional manner, 24/7. Our automated dispatch system helps ensure we send the right technician for your specific challenge, the first time.
- **Energy Optimization** – As part of our Dehumidification Services, our dedicated Energy Optimization team specializes in analyzing and adjusting equipment, controls and systems to ensure they are operating in the most energy efficient manner possible while not compromising performance.



With nationwide coverage, Source provides excellent service to multi-site, multi-state businesses as well as local businesses across the country. We have the knowledge, experience and resources to develop dehumidification solutions to your specific situation.

Benefits:

Key benefits from using Source to assist with your dehumidification efforts include:

- Designs for lower first cost
- Designs and retrofits lowering energy cost by 40 percent or more
- Improved customer and employee comfort
- Improved Indoor air quality and avoidance of potential health risks from toxic mold, mildew, allergies, smoke, and dust mites
- Lower frost build-up for refrigeration components and fogging of glass surfaces
- Less HVAC equipment cycling
- Improved control of industrial processes

Contact us today to find out how Source's comprehensive Dehumidification Services can help save you money while increasing the comfort level of your customers and employees!



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SUMMARY OF SERVICES:

ENGINEERING

- Refrigeration, HVAC and Dehumidification System Design
- Objective Design Review
- EMS design
- Refrigerant Conversion Program
- Energy Modeling
- Store Surveys (pre-remodel or expansion)
- Energy Compliance
- Energy Design Review

INSTALLATION

- New Construction of Refrigeration, HVAC, Dehumidification and EMS Systems
- Remodels of Refrigeration, HVAC, Dehumidification and EMS Systems
- Right Start™ start-up Program
- Refrigerant Conversion Program

SERVICE

- Service Maintenance Agreements
- Time & Material repairs and maintenance
- Preventative Maintenance Programs
- Leak Detection
- Asset/Equipment Tagging

ENERGY OPTIMIZATION

- Retro-commissioning – optimization of existing EMS
- Retrofits – installation and optimization of EMS
- Variable Frequency Drive (VFD) Installations
- Problem / High-cost System Solutions
- New store commissioning

TRAINING

- Custom technical training programs available