Mobile Home & Energy

- **Understanding SEER Ratings for Mobile Home Cooling**

Understanding SEER Ratings for Mobile Home Cooling Tracking Power Usage in Mobile Home Heating Systems Adapting Mobile Homes for High Efficiency HVAC Equipment Comparing SEER Values to Lower Energy Costs in Mobile Homes Evaluating ROI of Efficient Upgrades in Mobile Home Air Conditioning Minimizing Heat Loss with Insulation for Mobile Home HVAC Achieving Energy Savings with Variable Speed Motors in Mobile Homes Choosing Thermostat Controls for Better Mobile Home Efficiency Calculating Long Term Benefits of Efficient Mobile Home Furnaces Checking Duct Seal Quality for Improved Mobile Home SEER Performance Pinpointing Energy Loss in Mobile Home HVAC Installations Monitoring Seasonal Impacts on Mobile Home AC Efficiency

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Exploring Common Certifications Required for Mobile Home HVAC Service Understanding EPA Regulations for Mobile Home Cooling Systems Evaluating Technician Training Programs for Mobile Home Heating Examining NATE Credentials and What They Mean for Mobile Home Repair Verifying Local Licensing for Mobile Home HVAC Professionals Assessing Safety Knowledge in Mobile Home Technician Work Matching Skill Levels to Complex Mobile Home AC Installations Identifying Gaps in Technical Training for Mobile Home HVAC Work Learning About Continuing Education for Mobile Home Furnace Repair Validating Experience Through Field Tests in Mobile Home HVAC Exploring Online Resources for Mobile Home Technician Readiness Collaborating with Certified Professionals for Mobile Home HVAC Projects

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Work

How SEER Ratings Impact Energy Efficiency in Mobile Homes

In the realm of mobile home maintenance, the role of a technician is both vital and intricate. These professionals are tasked with ensuring that mobile homes remain safe, functional, and comfortable for their inhabitants. However, amid this multifaceted job lies an essential component that cannot be overstated: the importance of safety knowledge. For mobile home technicians, possessing a robust understanding of safety protocols is not merely beneficial; it's imperative.

Mobile home technicians often find themselves working in environments that can present numerous hazards. From electrical systems to structural components, each aspect of their work carries its own set of risks. Compact heat pumps are ideal for mobile homes with limited space **mobile home hvac systems** expert. Therefore, having a comprehensive knowledge of safety measures is crucial to prevent accidents and injuries. This awareness begins with training and continues through ongoing education and practice.

Assessing safety knowledge among mobile home technicians involves evaluating their understanding of potential hazards and their preparedness to handle emergencies effectively. It requires them to be well-versed in the use of personal protective equipment (PPE), safe handling techniques for tools and materials, and strategies for mitigating risks associated with confined spaces or elevated work areas.

Moreover, effective safety knowledge assessment goes beyond theoretical understanding; it also considers practical application in real-world scenarios. Technicians must demonstrate proficiency in identifying faulty wiring or gas leaks before they become critical issues. They must also exhibit the ability to implement preventive measures that safeguard both themselves and the residents they serve.

Continuous assessment ensures that technicians stay up-to-date with evolving safety standards and technological advancements within the industry. Regular workshops, certifications, and refresher courses are integral to maintaining high levels of competency in safety practices.

Ultimately, prioritizing safety knowledge within this profession not only protects the technicians but also instills confidence in homeowners who rely on these experts for maintaining their living spaces. By emphasizing the significance of thorough safety education and consistent evaluation, we ensure that mobile home technicians are equipped to perform their duties safely and efficiently while minimizing risks.

In conclusion, assessing safety knowledge among mobile home technicians is fundamental to fostering a secure working environment. As these professionals navigate complex repair tasks within potentially hazardous settings, their ability to apply sound safety principles is crucial for preventing accidents and safeguarding lives. Through continual learning and assessment efforts focused on enhancing safety acumen, we bolster the integrity of this critical workforce sector while promoting overall well-being within residential communities.

Working in the field of mobile home HVAC (Heating, Ventilation, and Air Conditioning) can be both rewarding and challenging. Technicians are tasked with ensuring that these homes maintain a comfortable climate while also adhering to safety standards. One critical aspect of this work is understanding and managing common safety hazards associated with mobile home HVAC systems.

Mobile homes present unique challenges compared to traditional houses. They often have different structural designs, materials, and space constraints that influence how HVAC systems are installed and maintained. As a result, technicians need to be particularly vigilant about the safety risks inherent in their work environment.

One of the primary safety hazards in mobile home HVAC work is electrical shock. Many components of an HVAC system operate on electricity, making it essential for technicians to understand the electrical schematics they are working with. Faulty wiring or improper grounding can lead to serious injuries or even fatalities. Therefore, it is crucial for technicians to always ensure power is turned off before starting any maintenance work and to use insulated tools whenever possible.

Another significant hazard involves working with refrigerants. These substances are necessary for cooling mechanisms but can pose health risks if mishandled. Refrigerant exposure can cause respiratory problems or skin irritation, and improper handling can lead to leaks that may harm the environment. Technicians must be knowledgeable about safe handling practices, including wearing appropriate personal protective equipment (PPE) such as gloves and goggles.

Confined spaces in mobile homes add another layer of risk during HVAC servicing. The limited space can make it difficult for technicians to maneuver safely, increasing the likelihood of slips, trips, or falls. Additionally, poor ventilation in these confined areas may exacerbate exposure to harmful fumes or dust particles during repairs or installations. To mitigate these risks, it's important for technicians to conduct thorough assessments before entering such spaces and ensure they have adequate ventilation.

Furthermore, mechanical injuries from moving parts within an HVAC system pose a threat if proper precautions aren't taken. Blower fans and other components can cause cuts or bruises if accidentally activated during service operations. Lockout/tagout procedures should be strictly followed to prevent accidental energizing of machinery while maintenance is being performed.

Given these potential dangers, assessing the safety knowledge of mobile home HVAC technicians becomes imperative not only for their well-being but also for that of the residents they serve. Comprehensive training programs should emphasize hazard recognition, correct usage of PPE, adherence to industry standards like those set by OSHA (Occupational Safety and Health Administration), and emergency response protocols.

In conclusion, understanding common safety hazards in mobile home HVAC work is vital for every technician involved in this specialized field. By prioritizing education on these risks and implementing proactive safety measures consistently throughout their tasks, technicians not only protect themselves but also enhance the reliability and efficiency of their service delivery-ultimately contributing to safer living environments within mobile homes across communities.

Posted by on

Choosing the Right SEER Rating for Your Mobile Home HVAC System

Evaluating the current safety training programs for technicians, particularly in the context of assessing safety knowledge in mobile home technician work, is a critical endeavor that demands both thoroughness and sensitivity to the unique challenges faced by this workforce. Mobile home technicians operate in environments that present a diverse array of risks and safety considerations. Therefore, it is imperative that their training not only meets regulatory standards but also genuinely equips them with the practical knowledge and skills needed to navigate their everyday tasks safely.

At the heart of effective safety training is the ability to understand and mitigate potential hazards specific to mobile home maintenance and repair. These hazards can range from electrical issues and structural instability to exposure to harmful substances. A robust training program should encompass comprehensive modules on these topics, ensuring technicians are well-versed in identifying risks before they escalate into accidents.

One major aspect of evaluating these programs lies in assessing how well they translate theoretical knowledge into real-world application. Training sessions should incorporate hands-on learning opportunities, where technicians can practice skills in a controlled environment that mimics actual working conditions. This experiential learning approach not only reinforces theoretical concepts but also builds confidence among technicians as they learn to handle tools and equipment safely.

Moreover, continuous assessment plays a pivotal role in maintaining high safety standards. Regular evaluations-through quizzes, practical demonstrations, or scenario-based assessments-ensure that technicians retain crucial information over time. Feedback from these assessments should be utilized constructively to adapt and improve training materials continually.

Another essential factor is keeping pace with advancements in technology and industry practices. As new tools and techniques emerge, training programs must evolve correspondingly. This involves updating curriculum content regularly and providing refresher courses so that all personnel remain current with best practices.

Furthermore, fostering an organizational culture that prioritizes safety can greatly enhance the effectiveness of any training initiative. When management leads by example-emphasizing safety protocols consistently across all levels-it creates an environment where every technician feels responsible for not only their own wellbeing but also that of their colleagues.

Ultimately, evaluating current safety training programs requires a holistic approach that considers both content quality and delivery methods while fostering an ongoing dialogue about improvement based on feedback from those directly involved-the technicians themselves. By investing in comprehensive education frameworks tailored specifically for mobile home technician work, organizations can significantly reduce workplace accidents and promote a safer working environment for all employees involved.

Factors Influencing SEER Rating Effectiveness in Mobile Homes

Assessing safety knowledge and skills in mobile home technician work is a critical component of ensuring the well-being of both technicians and the residents they serve. This specialized field requires a comprehensive understanding of safety protocols, as technicians are often tasked with handling complex systems in potentially hazardous environments. As such, employing effective techniques to evaluate their safety competence is paramount.

One fundamental technique for assessing safety knowledge is through structured training programs followed by rigorous testing. These programs should cover all aspects of mobile home maintenance and repair, emphasizing areas that pose significant safety risks, such as electrical systems, gas lines, and structural integrity. Post-training assessments can take various forms, including written exams and practical evaluations, to ensure that technicians not only understand theoretical concepts but can also apply them in real-world scenarios.

Another vital technique involves regular on-the-job observations. Supervisors or experienced mentors can accompany technicians during their routine tasks to directly assess their adherence to safety protocols. This method provides immediate feedback and allows for the correction of unsafe practices before they result in accidents. It also helps identify areas where additional training might be necessary.

Simulated emergency scenarios are another effective assessment tool. By creating controlled environments that mimic potential hazards technicians might face, employers can evaluate how well their staff responds under pressure. These simulations test both the individual's problem-solving abilities and their capacity to remain calm while adhering to safety procedures.

Peer reviews also offer valuable insights into a technician's safety competencies. Encouraging team members to provide constructive feedback about each other's performance fosters an environment of continuous improvement and accountability. This technique not only highlights individual strengths and weaknesses but also builds a culture of mutual support where safety is prioritized.

Finally, maintaining open lines of communication between technicians and management about changes in safety standards or new equipment is crucial for ongoing assessment. Regular meetings or briefings can keep everyone informed about the latest best practices and regulations, ensuring that all staff members remain up-to-date with industry standards.

In conclusion, assessing safety knowledge in mobile home technician work requires a multifaceted approach involving training programs, practical evaluations, on-the-job observations, simulated emergencies, peer reviews, and consistent communication. By integrating these techniques into the workplace, employers can significantly enhance the overall safety culture within their organizations-protecting not only their employees but also the clients they serve.

Comparing SEER Ratings Across Different Mobile Home Cooling Systems

In the ever-evolving landscape of mobile home construction and maintenance, the role of a technician is critical. These professionals ensure that mobile homes are not only functional but also safe for habitation. However, as with any occupation involving complex machinery and potential hazards, safety awareness and compliance are paramount. Therefore, assessing safety knowledge among mobile home technicians is crucial for fostering a culture of safety and preventing accidents.

One effective strategy to improve safety awareness is through comprehensive training programs tailored to the specific needs of mobile home technicians. These programs should cover a breadth of topics including hazard recognition, proper use of personal protective equipment (PPE), emergency procedures, and updates on regulatory changes. By offering hands-on workshops alongside theoretical instruction, technicians can better internalize best practices and apply them in real-world scenarios. Moreover, integrating technology such as virtual reality simulations can provide immersive experiences that enhance learning outcomes.

Another key approach is implementing regular assessments to gauge the current level of safety knowledge among technicians. These assessments can take various forms: written tests, practical demonstrations, or interactive quizzes that focus on critical aspects of their work environment. By evaluating their understanding periodically, companies can identify knowledge gaps early and address them promptly through targeted training sessions or

refresher courses.

Creating a culture where safety discussions are encouraged also plays an essential role in improving compliance. Regular safety meetings where technicians share experiences and learn from one another can cultivate a sense of collective responsibility towards maintaining high safety standards. Encouraging open dialogue about near-misses or potential hazards without fear of reprimand can lead to constructive feedback loops that continuously enhance workplace practices.

Furthermore, leadership commitment cannot be overstated when it comes to promoting safety awareness and compliance. When supervisors actively participate in safety training sessions and model appropriate behavior, it reinforces the importance of these initiatives throughout the organization. Leaders should also recognize and reward adherence to safety protocols to motivate technicians further.

Lastly, leveraging technology for monitoring compliance ensures accountability while providing valuable data insights into areas needing improvement. Digital checklists for routine inspections or mobile applications for reporting hazards streamline processes while keeping accurate records that are easily accessible for audits or reviews.

In conclusion, enhancing safety awareness and compliance in the realm of mobile home technician work requires a multifaceted approach centered on education, assessment, culture-building, leadership involvement, and technological integration. Through these strategies, we fortify our commitment to safeguarding not only the lives of those who work within this field but also those who reside in the homes they help build and maintain.

Tips for Maintaining Optimal Performance of High-SEER Rated Systems

In the realm of mobile home HVAC maintenance, safety is a paramount concern that demands constant attention and diligence. The unique nature of mobile homes, with their compact spaces and often complex layouts, presents distinct challenges for technicians tasked with ensuring that heating, ventilation, and air conditioning systems function correctly without compromising safety. To delve deeper into this subject, examining case studies on safety incidents can offer valuable insights into the current state of safety knowledge among mobile home HVAC technicians.

A critical aspect of assessing safety knowledge in this field involves understanding the common hazards that technicians may encounter during their work. Electric shocks, gas leaks, refrigerant exposure, and falls from heights are just a few examples of potential risks inherent to HVAC maintenance in mobile homes. Each incident provides an opportunity to explore what went wrong and how similar occurrences can be prevented in the future.

One illustrative case study involved a technician who suffered an electric shock while attempting to repair an air conditioning unit inside a mobile home. An investigation revealed that the technician had not fully de-energized the system before beginning repairs-a fundamental step in electrical safety protocols. This incident underscores the importance of comprehensive training programs that emphasize adherence to established safety procedures. Technicians must be equipped with not only technical skills but also a robust understanding of safety measures specific to their working environment.

Another case highlighted issues related to inadequate ventilation when dealing with refrigerants. In this instance, improper handling led to refrigerant exposure that resulted in respiratory distress for two technicians. Such incidents highlight gaps in safety practices related to hazardous material management within confined spaces typical of mobile homes. This points to a need for enhanced training on proper equipment handling and environmental monitoring techniques.

Additionally, falls remain a significant concern as technicians often navigate precarious positions both inside and atop mobile homes during installations or repairs. A reported fall from a ladder brought attention to insufficient use of personal protective equipment (PPE) such as harnesses or non-slip footwear-tools essential for minimizing fall risk.

To address these recurring issues effectively requires more than just reactive measures post-incident; it necessitates proactive strategies focused on education and prevention. Regular

workshops and refresher courses tailored specifically for mobile home environments can reinforce critical safety concepts among HVAC technicians. Incorporating real-world scenarios from past incidents into training sessions can help illustrate potential dangers vividly while fostering problem-solving skills crucial for emergency situations.

Moreover, fostering an organizational culture where continuous learning about workplace hazards is encouraged will empower technicians themselves as advocates for safer practices within their teams or companies at large.

In conclusion, analyzing case studies concerning safety incidents offers invaluable lessons regarding existing knowledge gaps among mobile home HVAC maintenance professionals concerning safe operations amidst challenging conditions unique to such settings.
Through dedicated efforts towards improving educational initiatives centered around practical applications paired with cultivating awareness-driven cultures across organizations involved in these services we stand poised not only safeguard lives but also enhance overall efficiency within industry standards thereby elevating service quality provided by skilled conscientious frontline workers entrusted safeguarding comfort well-being countless individuals residing modular dwellings nationwide worldwide alike!

About Sick building syndrome

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Sick building syndrome	
Specialty	Environmental medicine, immunology

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Sick building syndrome (**SBS**) is a condition in which people develop symptoms of illness or become infected with chronic disease from the building in which they work or reside.[1] In scientific literature, SBS is also known as **building-related illness (BRI)**,

building-related symptoms (BRS), or **idiopathic environmental intolerance (IEI)**.

The main identifying observation is an increased incidence of complaints of such symptoms as headache, eye, nose, and throat irritation, fatigue, dizziness, and nausea. The 1989 Oxford English Dictionary defines SBS in that way.[2] The World Health Organization created a 484-page tome on indoor air quality 1984, when SBS was attributed only to non-organic causes, and suggested that the book might form a basis for legislation or litigation.[3]

The outbreaks may or may not be a direct result of inadequate or inappropriate cleaning.[2] SBS has also been used to describe staff concerns in post-war buildings with faulty building aerodynamics, construction materials, construction process, and maintenance.[2] Some symptoms tend to increase in severity with the time people spend in the building, often improving or even disappearing when people are away from the building.[2][4] The term *SBS* is also used interchangeably with "**building-related symptoms**", which orients the name of the condition around patients' symptoms rather than a "sick" building.[5]

Attempts have been made to connect sick building syndrome to various causes, such as contaminants produced by outgassing of some building materials, volatile organic compounds (VOC), improper exhaust ventilation of ozone (produced by the operation of some office machines), light industrial chemicals used within, and insufficient fresh-air intake or air filtration (*see* "Minimum efficiency reporting value").[2] Sick building syndrome has also been attributed to heating, ventilation, and air conditioning (HVAC) systems, an attribution about which there are inconsistent findings.[6]

Signs and symptoms

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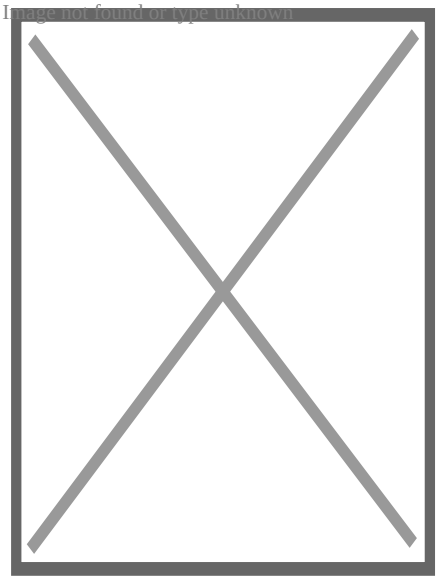

An air quality monitor

Human exposure to aerosols has a variety of adverse health effects.[7] Building occupants complain of symptoms such as sensory irritation of the eyes, nose, or throat; neurotoxic or general health problems; skin irritation; nonspecific hypersensitivity reactions; infectious diseases;[8] and odor and taste sensations.[9] Poor lighting has caused general malaise.[10]

Extrinsic allergic alveolitis has been associated with the presence of fungi and bacteria in the moist air of residential houses and commercial offices.[11] A study in 2017 correlated several inflammatory diseases of the respiratory tract with objective evidence of damp-caused damage in homes.[12]

The WHO has classified the reported symptoms into broad categories, including mucous-membrane irritation (eye, nose, and throat irritation), neurotoxic effects (headaches, fatigue, and irritability), asthma and asthma-like symptoms (chest tightness and wheezing), skin dryness and irritation, and gastrointestinal complaints.[13]

Several sick occupants may report individual symptoms that do not seem connected. The key to discovery is the increased incidence of illnesses in general with onset or exacerbation in a short period, usually weeks. In most cases, SBS symptoms are relieved soon after the occupants leave the particular room or zone.[14] However, there can be lingering effects of various neurotoxins, which may not clear up when the occupant leaves the building. In some cases, including those of sensitive people, there are long-term health effects.[15]

Cause

[edit]

ASHRAE has recognized that polluted urban air, designated within the United States Environmental Protection Agency (EPA)'s air quality ratings as unacceptable, requires the installation of treatment such as filtration for which the HVAC practitioners generally apply carbon-impregnated filters and their likes. Different toxins will aggravate the human body in different ways. Some people are more allergic to mold, while others are highly sensitive to dust. Inadequate ventilation will exaggerate small problems (such as deteriorating fiberglass insulation or cooking fumes) into a much more serious indoor air quality problem.[10]

Common products such as paint, insulation, rigid foam, particle board, plywood, duct liners, exhaust fumes and other chemical contaminants from indoor or outdoor sources, and biological contaminants can be trapped inside by the HVAC AC system. As this air is recycled using fan coils the overall oxygenation ratio drops and becomes harmful. When combined with other stress factors such as traffic noise and poor lighting, inhabitants of buildings located in a polluted urban area can quickly become ill as their immune system is overwhelmed.[10]

Certain VOCs, considered toxic chemical contaminants to humans, are used as adhesives in many common building construction products. These aromatic carbon rings / VOCs can cause acute and chronic health effects in the occupants of a building, including cancer, paralysis, lung failure, and others. Bacterial spores, fungal spores, mold spores, pollen, and viruses are types of biological contaminants and can all cause allergic reactions or illness described as SBS. In addition, pollution from outdoors, such as motor vehicle exhaust, can enter buildings, worsen indoor air quality, and increase the indoor concentration of carbon monoxide and carbon dioxide.[16] Adult SBS symptoms were associated with a history of allergic rhinitis, eczema and asthma.[17]

A 2015 study concerning the association of SBS and indoor air pollutants in office buildings in Iran found that, as carbon dioxide increased in a building, nausea, headaches, nasal irritation, dyspnea, and throat dryness also rose.[10] Some work conditions have been correlated with specific symptoms: brighter light, for example was significantly related to skin dryness, eye pain, and malaise.[10] Higher temperature is correlated with sneezing, skin redness, itchy eyes, and headache; lower relative humidity has been associated with sneezing, skin redness, and eye pain.[10]

In 1973, in response to the oil crisis and conservation concerns, ASHRAE Standards 62-73 and 62-81 reduced required ventilation from 10 cubic feet per minute (4.7 L/s) per person to 5 cubic feet per minute (2.4 L/s) per person, but this was found to be a contributing factor to sick building syndrome.[18] As of the 2016 revision, ASHRAE

ventilation standards call for 5 to 10 cubic feet per minute of ventilation per occupant (depending on the occupancy type) in addition to ventilation based on the zone floor area delivered to the breathing zone.[19]

Workplace

[edit]

Excessive work stress or dissatisfaction, poor interpersonal relationships and poor communication are often seen to be associated with SBS, recent[*when?*] studies show that a combination of environmental sensitivity and stress can greatly contribute to sick building syndrome.[15][*citation needed*]

Greater effects were found with features of the psycho-social work environment including high job demands and low support. The report concluded that the physical environment of office buildings appears to be less important than features of the psycho-social work environment in explaining differences in the prevalence of symptoms. However, there is still a relationship between sick building syndrome and symptoms of workers regardless of workplace stress.[20]

Specific work-related stressors are related with specific SBS symptoms. Workload and work conflict are significantly associated with general symptoms (headache, abnormal tiredness, sensation of cold or nausea). While crowded workspaces and low work satisfaction are associated with upper respiratory symptoms.[21] Work productivity has been associated with ventilation rates, a contributing factor to SBS, and there's a significant increase in production as ventilation rates increase, by 1.7% for every two-fold increase of ventilation rate.[22] Printer effluent, released into the office air as ultra-fine particles (UFPs) as toner is burned during the printing process, may lead to certain SBS symptoms.[23][24] Printer effluent may contain a variety of toxins to which a subset of office workers are sensitive, triggering SBS symptoms.[25]

Specific careers are also associated with specific SBS symptoms. Transport, communication, healthcare, and social workers have highest prevalence of general symptoms. Skin symptoms such as eczema, itching, and rashes on hands and face are associated with technical work. Forestry, agriculture, and sales workers have the lowest rates of sick building syndrome symptoms.[26]

From the assessment done by Fisk and Mudarri, 21% of asthma cases in the United States were caused by wet environments with mold that exist in all indoor environments, such as schools, office buildings, houses and apartments. Fisk and Berkeley Laboratory colleagues also found that the exposure to the mold increases the chances of respiratory issues by 30 to 50 percent.[27] Additionally, studies

showing that health effects with dampness and mold in indoor environments found that increased risk of adverse health effects occurs with dampness or visible mold environments.[28]

Milton et al. determined the cost of sick leave specific for one business was an estimated $480 per employee, and about five days of sick leave per year could be attributed to low ventilation rates. When comparing low ventilation rate areas of the building to higher ventilation rate areas, the relative risk of short-term sick leave was 1.53 times greater in the low ventilation areas.[29]

Home

[edit]

Sick building syndrome can be caused by one's home. Laminate flooring may release more SBS-causing chemicals than do stone, tile, and concrete floors.[17] Recent redecorating and new furnishings within the last year are associated with increased symptoms; so are dampness and related factors, having pets, and cockroaches.[17] Mosquitoes are related to more symptoms, but it is unclear whether the immediate cause of the symptoms is the mosquitoes or the repellents used against them.[17]

Mold

[edit]
Main article: Mold health issues

Sick building syndrome may be associated with indoor mold or mycotoxin contamination. However, the attribution of sick building syndrome to mold is controversial and supported by little evidence.[30][31][32]

Indoor temperature

[edit]
Main article: Room temperature § Health effects

Indoor temperature under 18 °C (64 °F) has been shown to be associated with increased respiratory and cardiovascular diseases, increased blood levels, and increased hospitalization.[33]

Diagnosis

[edit]

While sick building syndrome (SBS) encompasses a multitude of non-specific symptoms, building-related illness (BRI) comprises specific, diagnosable symptoms caused by certain agents (chemicals, bacteria, fungi, etc.). These can typically be identified, measured, and quantified.[34] There are usually four causal agents in BRi: immunologic, infectious, toxic, and irritant.[34] For instance, Legionnaire's disease, usually caused by *Legionella pneumophila*, involves a specific organism which could be ascertained through clinical findings as the source of contamination within a building.[34]

Prevention

[edit]

- Reduction of time spent in the building
- If living in the building, moving to a new place
- Fixing any deteriorated paint or concrete deterioration
- Regular inspections to indicate for presence of mold or other toxins
- Adequate maintenance of all building mechanical systems
- Toxin-absorbing plants, such as sansevieria[35][36][37][38][39][40][41][*excessive citation*
- Roof shingle non-pressure cleaning for removal of algae, mold, and *Gloeocapsa magma*
- Using ozone to eliminate the many sources, such as VOCs, molds, mildews, bacteria, viruses, and even odors. However, numerous studies identify high-ozone shock treatment as ineffective despite commercial popularity and popular belief.
- Replacement of water-stained ceiling tiles and carpeting
- Only using paints, adhesives, solvents, and pesticides in well-ventilated areas or only using these pollutant sources during periods of non-occupancy
- Increasing the number of air exchanges; the American Society of Heating, Refrigeration and Air-Conditioning Engineers recommend a minimum of 8.4 air exchanges per 24-hour period
- Increased ventilation rates that are above the minimum guidelines[22]
- Proper and frequent maintenance of HVAC systems
- UV-C light in the HVAC plenum
- Installation of HVAC air cleaning systems or devices to remove VOCs and bioeffluents (people odors)
- Central vacuums that completely remove all particles from the house including the ultrafine particles (UFPs) which are less than 0.1 ?m
- Regular vacuuming with a HEPA filter vacuum cleaner to collect and retain 99.97% of particles down to and including 0.3 micrometers
- Placing bedding in sunshine, which is related to a study done in a high-humidity area where damp bedding was common and associated with SBS[17]

- Lighting in the workplace should be designed to give individuals control, and be natural when possible[42]
- Relocating office printers outside the air conditioning boundary, perhaps to another building
- Replacing current office printers with lower emission rate printers[43]
- Identification and removal of products containing harmful ingredients

Management

[edit]

SBS, as a non-specific blanket term, does not have any specific cause or cure. Any known cure would be associated with the specific eventual disease that was cause by exposure to known contaminants. In all cases, alleviation consists of removing the affected person from the building associated. BRI, on the other hand, utilizes treatment appropriate for the contaminant identified within the building (e.g., antibiotics for Legionnaire's disease).[*citation needed*]

Improving the indoor air quality (IAQ) of a particular building can attenuate, or even eliminate, the continued exposure to toxins. However, a Cochrane review of 12 mold and dampness remediation studies in private homes, workplaces and schools by two independent authors were deemed to be very low to moderate quality of evidence in reducing adult asthma symptoms and results were inconsistent among children.[44] For the individual, the recovery may be a process involved with targeting the acute symptoms of a specific illness, as in the case of mold toxins.[45] Treating various building-related illnesses is vital to the overall understanding of SBS. Careful analysis by certified building professionals and physicians can help to identify the exact cause of the BRI, and help to illustrate a causal path to infection. With this knowledge one can, theoretically, remediate a building of contaminants and rebuild the structure with new materials. Office BRI may more likely than not be explained by three events: "Wide range in the threshold of response in any population (susceptibility), a spectrum of response to any given agent, or variability in exposure within large office buildings."[46]

Isolating any one of the three aspects of office BRI can be a great challenge, which is why those who find themselves with BRI should take three steps, history, examinations, and interventions. History describes the action of continually monitoring and recording the health of workers experiencing BRI, as well as obtaining records of previous building alterations or related activity. Examinations go hand in hand with monitoring employee health. This step is done by physically examining the entire workspace and evaluating possible threats to health status among employees. Interventions follow accordingly based on the results of the Examination and History report.[46]

Epidemiology

[edit]

Some studies have found that women have higher reports of SBS symptoms than men.[17][10] It is not entirely clear, however, if this is due to biological, social, or occupational factors.

A 2001 study published in the Journal Indoor Air, gathered 1464 office-working participants to increase the scientific understanding of gender differences under the Sick Building Syndrome phenomenon.[47] Using questionnaires, ergonomic investigations, building evaluations, as well as physical, biological, and chemical variables, the investigators obtained results that compare with past studies of SBS and gender. The study team found that across most test variables, prevalence rates were different in most areas, but there was also a deep stratification of working conditions between genders as well. For example, men's workplaces tend to be significantly larger and have all-around better job characteristics. Secondly, there was a noticeable difference in reporting rates, specifically that women have higher rates of reporting roughly 20% higher than men. This information was similar to that found in previous studies, thus indicating a potential difference in willingness to report.[47]

There might be a gender difference in reporting rates of sick building syndrome, because women tend to report more symptoms than men do. Along with this, some studies have found that women have a more responsive immune system and are more prone to mucosal dryness and facial erythema. Also, women are alleged by some to be more exposed to indoor environmental factors because they have a greater tendency to have clerical jobs, wherein they are exposed to unique office equipment and materials (example: blueprint machines, toner-based printers), whereas men often have jobs based outside of offices.[48]

History

[edit]

This section **possibly contains original research**. Please improve it by verifying the claims made and adding inline citations. Statements consisting only of original research should be removed. *(August 2017) (Learn how and when to remove this message)*

In the late 1970s, it was noted that nonspecific symptoms were reported by tenants in newly constructed homes, offices, and nurseries. In media it was called "office illness". The term "sick building syndrome" was coined by the WHO in 1986, when they also estimated that 10–30% of newly built office buildings in the West had indoor air

problems. Early Danish and British studies reported symptoms.

Poor indoor environments attracted attention. The Swedish allergy study (SOU 1989:76) designated "sick building" as a cause of the allergy epidemic as was feared. In the 1990s, therefore, extensive research into "sick building" was carried out. Various physical and chemical factors in the buildings were examined on a broad front.

The problem was highlighted increasingly in media and was described as a "ticking time bomb". Many studies were performed in individual buildings.

In the 1990s "sick buildings" were contrasted against "healthy buildings". The chemical contents of building materials were highlighted. Many building material manufacturers were actively working to gain control of the chemical content and to replace criticized additives. The ventilation industry advocated above all more well-functioning ventilation. Others perceived ecological construction, natural materials, and simple techniques as a solution.

At the end of the 1990s came an increased distrust of the concept of "sick building". A dissertation at the Karolinska Institute in Stockholm 1999 questioned the methodology of previous research, and a Danish study from 2005 showed these flaws experimentally. It was suggested that sick building syndrome was not really a coherent syndrome and was not a disease to be individually diagnosed, but a collection of as many as a dozen semi-related diseases. In 2006 the Swedish National Board of Health and Welfare recommended in the medical journal *Läkartidningen* that "sick building syndrome" should not be used as a clinical diagnosis. Thereafter, it has become increasingly less common to use terms such as *sick buildings* and *sick building syndrome* in research. However, the concept remains alive in popular culture and is used to designate the set of symptoms related to poor home or work environment engineering. *Sick building* is therefore an expression used especially in the context of workplace health.

Sick building syndrome made a rapid journey from media to courtroom where professional engineers and architects became named defendants and were represented by their respective professional practice insurers. Proceedings invariably relied on expert witnesses, medical and technical experts along with building managers, contractors and manufacturers of finishes and furnishings, testifying as to cause and effect. Most of these actions resulted in sealed settlement agreements, none of these being dramatic. The insurers needed a defense based upon Standards of Professional Practice to meet a court decision that declared that in a modern, essentially sealed building, the HVAC systems must produce breathing air for suitable human consumption. ASHRAE (American Society of Heating, Refrigeration and Air Conditioning Engineers, currently with over 50,000 international members) undertook

the task of codifying its indoor air quality (IAQ) standard.

ASHRAE empirical research determined that "acceptability" was a function of outdoor (fresh air) ventilation rate and used carbon dioxide as an accurate measurement of occupant presence and activity. Building odors and contaminants would be suitably controlled by this dilution methodology. ASHRAE codified a level of 1,000 ppm of carbon dioxide and specified the use of widely available sense-and-control equipment to assure compliance. The 1989 issue of ASHRAE 62.1-1989 published the whys and wherefores and overrode the 1981 requirements that were aimed at a ventilation level of 5,000 ppm of carbon dioxide (the OSHA workplace limit), federally set to minimize HVAC system energy consumption. This apparently ended the SBS epidemic.

Over time, building materials changed with respect to emissions potential. Smoking vanished and dramatic improvements in ambient air quality, coupled with code compliant ventilation and maintenance, per ASHRAE standards have all contributed to the acceptability of the indoor air environment.[49][50]

See also

[edit]

- Aerotoxic syndrome
- Air purifier
- Asthmagen
- Cleanroom
- Electromagnetic hypersensitivity
- Havana syndrome
- Healthy building
- Indoor air quality
- Lead paint
- Multiple chemical sensitivity
- NASA Clean Air Study
- Nosocomial infection
- Particulates
- Power tools
- Renovation
- Somatization disorder
- Fan death

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External links

[edit]

- Best Practices for Indoor Air Quality when Remodeling Your Home, US EPA
- Renovation and Repair, Part of Indoor Air Quality Design Tools for Schools, US EPA
- Addressing Indoor Environmental Concerns During Remodeling, US EPA
- Dust FAQs, UK HSE Archived 2023-03-20 at the Wayback Machine
- CCOHS: Welding - Fumes And Gases | Health Effect of Welding Fumes

Classification	○ **MeSH**: D018877 D
External resources	○ **Patient UK**: Sick building syndrome

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- e

Heating, ventilation, and air conditioning

Fundamental concepts	○ Air changes per hour ○ Bake-out ○ Building envelope ○ Convection ○ Dilution ○ Domestic energy consumption ○ Enthalpy ○ Fluid dynamics ○ Gas compressor ○ Heat pump and refrigeration cycle ○ Heat transfer ○ Humidity ○ Infiltration ○ Latent heat ○ Noise control ○ Outgassing ○ Particulates ○ Psychrometrics ○ Sensible heat ○ Stack effect ○ Thermal comfort ○ Thermal destratification ○ Thermal mass ○ Thermodynamics ○ Vapour pressure of water

Technology

- Absorption-compression heat pump
- Absorption refrigerator
- Air barrier
- Air conditioning
- Antifreeze
- Automobile air conditioning
- Autonomous building
- Building insulation materials
- Central heating
- Central solar heating
- Chilled beam
- Chilled water
- Constant air volume (CAV)
- Coolant
- Cross ventilation
- Dedicated outdoor air system (DOAS)
- Deep water source cooling
- Demand controlled ventilation (DCV)
- Displacement ventilation
- District cooling
- District heating
- Electric heating
- Energy recovery ventilation (ERV)
- Firestop
- Forced-air
- Forced-air gas
- Free cooling
- Heat recovery ventilation (HRV)
- Hybrid heat
- Hydronics
- Ice storage air conditioning
- Kitchen ventilation
- Mixed-mode ventilation
- Microgeneration
- Passive cooling
- Passive daytime radiative cooling
- Passive house
- Passive ventilation
- Radiant heating and cooling
- Radiant cooling
- Radiant heating
- Radon mitigation
- Refrigeration
- Renewable heat
- Room air distribution
- Solar air heat
- Solar combisystem

- Air conditioner inverter
- Air door
- Air filter
- Air handler
- Air ionizer
- Air-mixing plenum
- Air purifier
- Air source heat pump
- Attic fan
- Automatic balancing valve
- Back boiler
- Barrier pipe
- Blast damper
- Boiler
- Centrifugal fan
- Ceramic heater
- Chiller
- Condensate pump
- Condenser
- Condensing boiler
- Convection heater
- Compressor
- Cooling tower
- Damper
- Dehumidifier
- Duct
- Economizer
- Electrostatic precipitator
- Evaporative cooler
- Evaporator
- Exhaust hood
- Expansion tank
- Fan
- Fan coil unit
- Fan filter unit
- Fan heater
- Fire damper
- Fireplace
- Fireplace insert
- Freeze stat
- Flue
- Freon
- Fume hood
- Furnace
- Gas compressor
- Gas heater
- Gasoline heater

Measurement and control

- Air flow meter
- Aquastat
- BACnet
- Blower door
- Building automation
- Carbon dioxide sensor
- Clean air delivery rate (CADR)
- Control valve
- Gas detector
- Home energy monitor
- Humidistat
- HVAC control system
- Infrared thermometer
- Intelligent buildings
- LonWorks
- Minimum efficiency reporting value (MERV)
- Normal temperature and pressure (NTP)
- OpenTherm
- Programmable communicating thermostat
- Programmable thermostat
- Psychrometrics
- Room temperature
- Smart thermostat
- Standard temperature and pressure (STP)
- Thermographic camera
- Thermostat
- Thermostatic radiator valve

Professions, trades, and services

- Architectural acoustics
- Architectural engineering
- Architectural technologist
- Building services engineering
- Building information modeling (BIM)
- Deep energy retrofit
- Duct cleaning
- Duct leakage testing
- Environmental engineering
- Hydronic balancing
- Kitchen exhaust cleaning
- Mechanical engineering
- Mechanical, electrical, and plumbing
- Mold growth, assessment, and remediation
- Refrigerant reclamation
- Testing, adjusting, balancing

Industry organizations	○ AHRI ○ AMCA ○ ASHRAE ○ ASTM International ○ BRE ○ BSRIA ○ CIBSE ○ Institute of Refrigeration ○ IIR ○ LEED ○ SMACNA ○ UMC
Health and safety	○ Indoor air quality (IAQ) ○ Passive smoking ○ Sick building syndrome (SBS) ○ Volatile organic compound (VOC)
See also	○ ASHRAE Handbook ○ Building science ○ Fireproofing ○ Glossary of HVAC terms ○ Warm Spaces ○ World Refrigeration Day ○ Template:Home automation ○ Template:Solar energy

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Employment

Classifications	○ Academic tenure
	○ Casual
	○ Contingent work
	○ Full-time job
	○ Gig worker
	○ Job sharing
	○ Part-time job
	○ Self-employment
	○ Side job
	○ Skilled worker
	  ○ Journeyman
	  ○ Technician
	  ○ Tradesperson
	○ Independent contractor
	○ Labour hire
	○ Temporary work
	○ Laborer
	○ Wage labour

Hiring

- Application
- Background check
- Business networking
- Cover letter
- Curriculum vitae
- Drug testing
- Employment contract
- Employment counsellor
- Executive search
  - list
- Induction programme
- Job fair
- Job fraud
- Job hunting
- Job interview
- Letter of recommendation
- Onboarding
- Overqualification
- Person–environment fit
- Personality–job fit theory
- Personality hire
- Probation
- Realistic job preview
- Recruitment
- Résumé
- Simultaneous recruiting of new graduates
- Underemployment
- Work-at-home scheme

Roles

- Cooperative
- Employee
- Employer
- Internship
- Job
- Labour hire
- Permanent employment
- Supervisor
- Volunteering

Working class	○ Blue-collar ○ Green-collar ○ Grey-collar ○ Pink-collar ○ Precariat ○ White-collar ○ Red-collar ○ New-collar ○ No-collar ○ Orange-collar ○ Scarlet-collar ○ Black-collar ○ Gold-collar

Career and training

- Apprenticeship
- Artisan
  - Master craftsman
- Avocation
- Career assessment
- Career counseling
- Career development
- Coaching
- Creative class
- Education
  - Continuing education
  - E-learning
  - Employability
  - Further education
  - Graduate school
  - Induction training
  - Knowledge worker
  - Licensure
  - Lifelong learning
  - Overspecialization
  - Practice-based professional learning
  - Professional association
  - Professional certification
  - Professional development
  - Professional school
  - Reflective practice
  - Retraining
  - Vocational education
  - Vocational school
  - Vocational university
- Mentorship
- Occupational Outlook Handbook
- Practice firm
- Profession
  - Operator
  - Professional
- Tradesman
- Vocation

Attendance

- Break
- Break room
- Career break
- Furlough
- Gap year
- Leave of absence
- Long service leave
- No call, no show
- Sabbatical
- Sick leave
- Time clock

Schedules

- 35-hour workweek
- Four-day week
- Eight-hour day
- 996 working hour system
- Flextime
- On-call
- Overtime
- Remote work
- Six-hour day
- Shift work
- Working time
- Workweek and weekend

Wages and salaries

- Income bracket
- Income tax
- Living wage
- Maximum wage
- National average salary
  - World
  - Europe
- Minimum wage
  - Canada
  - Hong Kong
  - Europe
  - United States
- Progressive wage
  - Singapore
- Overtime rate
- Paid time off
- Performance-related pay
- Salary cap
- Wage compression
- Working poor

Benefits

- Annual leave
- Casual Friday
- Child care
- Disability insurance
- Health insurance
- Life insurance
- Marriage leave
- Parental leave
- Pension
- Sick leave
  - United States
- Take-home vehicle

Safety and health

- Crunch
- Epilepsy and employment
- Human factors and ergonomics
- Karoshi
- List of countries by rate of fatal workplace accidents
- Occupational burnout
- Occupational disease
- Occupational exposure limit
- Occupational health psychology
- Occupational injury
- Occupational noise
- Occupational stress
- Personal protective equipment
- Repetitive strain injury
- Right to sit
  - United States
- Sick building syndrome
- Work accident
  - Occupational fatality
- Workers' compensation
- Workers' right to access the toilet
- Workplace health promotion
- Workplace phobia
- Workplace wellness

Equal opportunity

- Affirmative action
- Equal pay for equal work
- Gender pay gap
- Glass ceiling

Infractions

- Corporate collapses and scandals
  - Accounting scandals
  - Control fraud
  - Corporate behaviour
  - Corporate crime
- Discrimination
- Exploitation of labour
- Dress code
- Employee handbook
- Employee monitoring
- Evaluation
- Labour law
- Sexual harassment
- Sleeping while on duty
- Wage theft
- Whistleblower
- Workplace bullying
- Workplace harassment
- Workplace incivility

Willingness

- Boreout
- Careerism
- Civil conscription
- Conscription
- Critique of work
- Dead-end job
- Job satisfaction
- McJob
- Organizational commitment
- Refusal of work
- Slavery
  - Bonded labour
  - Human trafficking
  - Labour camp
  - Penal labour
  - Peonage
  - Truck wages
  - Unfree labour
  - Wage slavery
- Work ethic
- Work–life interface
  - Downshifting
  - Slow living
- Workaholic

Termination

- At-will employment
- Dismissal
  - Banishment room
  - Constructive dismissal
  - Wrongful dismissal
- Employee offboarding
- Exit interview
- Layoff
- Notice period
- Pink slip
- Resignation
  - Letter of resignation
- Restructuring
- Retirement
  - Mandatory retirement
  - Retirement age
  - Retirement planning
- Severance package
  - Golden handshake
  - Golden parachute
- Turnover

Unemployment

- Barriers to entry
- Discouraged worker
- Economic depression
  - Great Depression
  - Long Depression
- Frictional unemployment
- Full employment
- Graduate unemployment
- Involuntary unemployment
- Jobless recovery
- Phillips curve
- Recession
  - Great Recession
  - Job losses caused by the Great Recession
  - Lists of recessions
  - Recession-proof job
- Reserve army of labour
- Structural unemployment
- Technological unemployment
- Types of unemployment
- Unemployment benefits
- Unemployment Convention, 1919
- Unemployment extension
- List of countries by unemployment rate
- Employment-to-population ratio
  - List
- Wage curve
- Youth unemployment

Public programs

- Workfare
- Unemployment insurance
- Make-work job
- Job creation program
- Job creation index
- Job guarantee
- Employer of last resort
- Guaranteed minimum income
- Right to work
- *Historical:*
- *U.S.A.:*
- Civil Works Administration
- Works Progress Administration

Comprehensive Employment and Training Act

See also

- Bullshit job
- Busy work
- Credentialism and educational inflation
- Emotional labor
- Evil corporation
- Going postal
- Kiss up kick down
- Labor rights
- Make-work job
- Narcissism in the workplace
- Post-work society
- Presenteeism
- Psychopathy in the workplace
- Sunday scaries
- Slow movement (culture)
- Toxic leader
- Toxic workplace
- Workhouse

Image not found or type unknown See also templates

- Aspects of corporations
- Aspects of jobs
- Aspects of occupations
- Aspects of organizations
- Aspects of workplaces
- Corporate titles
- Critique of work
- Organized labor

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- Japan
- Czech Republic
- Israel

About Durham Supply Inc

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Things To Do in Oklahoma County

Photo

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Crystal Bridge Tropical Conservatory

4.7 (464)

Photo

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Lighthouse

4.7 (993)

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Bricktown Water Taxi

4.7 (2568)

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Stockyards City Main Street

4.6 (256)

Photo

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Route 66 Park

4.6 (756)

Photo

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Model T Graveyard

4.3 (35)

Driving Directions in Oklahoma County

Driving Directions From Love's Travel Stop to Durham Supply Inc

Driving Directions From Subway to Durham Supply Inc

Driving Directions From Oklahoma City to Durham Supply Inc

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Driving Directions From Bricktown Water Taxi to Durham Supply Inc

Driving Directions From Oklahoma City National Memorial & Museum to Durham Supply Inc

Driving Directions From Museum of Osteology to Durham Supply Inc

Driving Directions From Sanctuary Asia to Durham Supply Inc

Driving Directions From Sanctuary Asia to Durham Supply Inc

Driving Directions From Oklahoma Railway Museum to Durham Supply Inc

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Reviews for Durham Supply Inc

Durham Supply Inc

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Jennifer Williamson

(5)

First we would like to thank you for installing our air conditioning unit! I'd like to really brag about our technician, Mack, that came to our home to install our unit in our new home. Mack was here for most of the day and throughly explained everything we had a question about. By the late afternoon, we had cold air pumping through our vents and we couldn't have been more thankful. I can tell you, I would be very lucky to have a technician like Mack if this were my company. He was very very professional, kind, and courteous. Please give Mack a pat on the back and stay rest assured that Mack is doing a great job and upholding your company name! Mack, if you see this, great job!! Thanks for everything you did!! We now have a new HVAC company in the event we need one. We will also spread the word to others!!

Durham Supply Inc

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Salest

(5)

Had to make a quick run for 2 sets of ?? door locks for front and back door.. In/ out in a quick minute! They helped me right away. ?? Made sure the 2 sets had the same ? keys. The ? bathroom was clean and had everything I needed. ? ?. Made a quick inquiry about a random item... they quickly looked it up and gave me pricing. Great ? job ?

Durham Supply Inc

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Noel Vandy

(5)

Thanks to the hard work of Randy our AC finally got the service it needed. These 100 degree days definitely feel long when your house isn't getting cool anymore. We were so glad when Randy came to work on the unit, he had all the tools and products he needed with him and it was all good and running well when he left. With a long drive to get here and only few opportunities to do so, we are glad he got it done in 1 visit. Now let us hope it will keep running well for a good while.

Durham Supply Inc

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Crystal Dawn

(1)

I would give 0 stars. This isnTHE WORST company for heating and air. I purchased a home less than one year ago and my ac has gone out twice and these people refuse to repair it although I AM UNDER WARRANTY!!!! They say it’s an environmental issue and they can’t fix it or even try to or replace my warrantied air conditioning system.

Durham Supply Inc

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K Moore

(1)

No service after the sale. I purchased a sliding patio door and was given the wrong size sliding screen door. After speaking with the salesman and manager several times the issue is still not resolved and, I was charged full price for an incomplete door. They blamed the supplier for all the issues…and have offered me nothing to resolve this.

Check our other pages :

- **Exploring Common Certifications Required for Mobile Home HVAC Service**
- **Calculating Long Term Benefits of Efficient Mobile Home Furnaces**
- **Evaluating ROI of Efficient Upgrades in Mobile Home Air Conditioning**

Frequently Asked Questions

What is the first safety step a technician should take before beginning work on a mobile home HVAC system?

The technician should ensure that the power supply to the HVAC system is completely shut off and locked out to prevent accidental activation during maintenance or repair.

Why is proper ventilation crucial when working with refrigerants in an HVAC system?

Proper ventilation is essential because refrigerants can displace oxygen and pose asphyxiation risks, as well as contribute to possible fire hazards if they accumulate in confined spaces.

What personal protective equipment (PPE) should a technician use when handling HVAC components containing sharp edges?

Technicians should wear cut-resistant gloves and appropriate eye protection to guard against injuries from sharp metal edges or other hazardous materials encountered during repairs.

How can technicians verify that an HVAC systems pressure levels are safe before proceeding with further diagnostics or repairs?

Technicians must use calibrated gauges to measure the systems refrigerant pressures and compare them against manufacturer specifications to ensure they fall within safe operating ranges.

Royal Supply Inc

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City : Oklahoma City

State : OK

Zip : 73149

Address : Unknown Address

Google Business Profile

Company Website : **https://royal-durhamsupply.com/locations/oklahoma-city-oklahoma/**