



Invitation to Bid  
ITB-2022-08  
Dehumidifier for Wellness Center Natatorium  
Town of Wytheville, VA

The Town of Wytheville is seeking sealed bids from qualified firms who can provide and install a new Desert Aire, or equivalent dehumidifier, and the supporting equipment for installation at the Wellness Center Natatorium. The contractor will be responsible for the removal of the existing dehumidifier equipment and duct work along with the installation of a new unit, related equipment, and new fabric duct. Sealed bids will be received at the Assistant Town Manager's Office at the Town of Wytheville Municipal Building, until 4:00 p.m. on December 16, 2022. The Invitation to Bid and related documentation is available at the Town of Wytheville website <https://www.wytheville.org/rfp> . Interested firms may contact the Assistant Town Manager at 276-223-3352 to request information regarding this procurement.

The Town of Wytheville prohibits discrimination on the basis of race, color, religion, faith-based organizations, gender identity, sexual orientation, political affiliation, age, disability, veteran status, national origin, or any other basis prohibited by state law relating to discrimination in employment. SWAM and DBE firms are encouraged to apply. The Town of Wytheville is an Equal Opportunity Employer.



## Town of Wytheville, Virginia Invitation to Bid Dehumidifier Wellness Center Natatorium

<b>ISSUE DATE:</b>  11/04/22	<b>DEPARTMENT:</b>  Assistant Town Manager	<b>PROCUREMENT #:</b>  ITB-2022-08
<b>DATE/TIME LAST DAY FOR QUESTIONS:</b>  11/28/22 on or before noon	<b>DATE &amp; TIME FOR SITE VISIT/ MEETING:</b> Meet at Wellness Center 11/16/22 Arrive at 10AM	<b>DATE/TIME OF CLOSING:</b>  Bid Opening on 12/16/22 at 4:00 pm
<b>TOWN CONTACT NAME:</b>  Elaine Holeton	<b>CONTACT PHONE:</b>  276-223-3352	<b>CONTACT EMAIL:</b>  elaine.holeton@wytheville.org
<b>PHYSICAL ADDRESS DELIVER/DELIVERY SERVICE</b> Town Municipal Building 150 East Monroe Street Wytheville, VA 24382	<b>MAILING ADDRESS VIA USPS:</b>  Town of Wytheville P.O. Box 533 Wytheville, VA 24382	<b>HOURS OF OPERATION:</b>  8 am – 5 pm Daily, Monday through Friday, Except local, state, and federal holidays

**Process:** Sealed proposals subject to the terms and conditions as set forth by the Town of Wytheville shall be received in accordance with the date(s), time(s), and locations as specified above. All responses shall be in accordance with the requirements of this procurement document and the ensuing contract documents. Any alterations or changes will be made by a written addendum issued by the Town and all Offerors are responsible for obtaining issue addenda when notice of such is posted.

**Agreement:** In accordance with the following proposal and in compliance with the terms and conditions provided, unless otherwise noted, the undersigned offers and agrees, if the proposal is accepted, to furnish items or services as proposed, to be delivered, or furnished to designated points within the time specified, and further agrees to any changes when said changes are mutually agreed by both parties through subsequent negotiations. By signing this proposal, I certify that I am authorized to Bind the Offeror in any and all negotiations and /or contractual matters relating to the proposal. By submitting this proposal, I understand, and I agree to be bound by the conditions set forth in this document and listed attachments.

**Note:** This public body does not discriminate against faith-based organizations in accordance with the *Code of Virginia*, § 2.2-4343.1 or against a bidder or offeror because of race, religion, color, sex, national origin, age, disability, sexual orientation, gender identity, political affiliation, or veteran status or any other basis prohibited by state law relating to discrimination in employment.

<b>Vendor's Legally Authorized Signature:</b>	<b>Date:</b>
<b>Printed Name of Signatory:</b>	<b>Title:</b>
<b>Name of Business/Firm:</b>	<b>Contact Phone:</b>
<b>Federal Employment ID#</b>	<b>Contact Email:</b>

**INVITATION TO BID, ITB 2022-08**  
**TOWN OF WYTHEVILLE, VA**  
**TABLE OF CONTENTS**

	<b>Purpose</b>	<b>1</b>
	<b>Background</b>	<b>1</b>
	<b>Scope of Work</b>	<b>2</b>
	<b>Site Visit and Informational Meeting</b>	<b>2</b>
	<b>Equipment Schedule &amp; Warranty &amp; Delivery</b>	<b>3</b>
	<b>Proposal Submittal and Instructions to Offerors</b>	<b>4</b>
	<b>Questions, Bid Bond, Award of Contract, Contract Terms</b>	<b>5</b>
	<b>Supplemental Provisions</b>	<b>6</b>
<b>Appendix I</b>	<b>Town of Wytheville General Terms &amp; Conditions</b>	
<b>Exhibit 1</b>	<b>Dehumidifier Information</b>	
<b>Exhibit 2</b>	<b>Fabric Duct Work Information</b>	
	<b>ATTACHMENTS REQUIRED FOR THIS ITB</b>	
	<b>BID FORM</b>	
<b>A</b>	<b>Addendum Status Form</b>	
<b>B</b>	<b>Proprietary/Confidential Information Form</b>	
<b>C</b>	<b>State Corporation Commission (SCC) Form</b>	
<b>D</b>	<b>Non-Collusion Form</b>	
<b>E</b>	<b>Insurance Requirements &amp; Form 61-A (Workers' Comp)</b>	
<b>F</b>	<b>Notice of Exemptions Form</b>	
<b>G</b>	<b>Business License and Professional License Form</b>	
<b>H</b>	<b>Self-Certify Status Form</b>	
<b>I</b>	<b>Reference List Form</b>	
<b>J</b>	<b>Sample Contract</b>	
<b>WC</b>	<b>Workman Compensation Form</b>	
<b>W9</b>	<b>W-9 Taxpayer Identifier Form</b>	

**INVITATION TO BID, ITB 2022-08**  
**DEHUMIDIFIER & DUCT WORK FOR WELLNESS CENTER NATATORIUM**  
**TOWN OF WYTHEVILLE, VIRGINIA**

**1.0 Purpose**

The purpose of this Invitation to Bid (ITB) is to solicit sealed bids from interested and qualified vendors (Bidders) who can provide and install a new Desert Aire, or equivalent, dehumidifier, and supporting equipment, for the Wellness Center Natatorium. The contractor will be responsible for the removal of existing dehumidifier equipment and duct work and perform the installation of new equipment and fabric duct required to make the dehumidifier system functional and operational.

**2.0 Background**

The Town of Wytheville is in southwest Virginia and is conveniently located at the crossroads of Interstates I-77 and I-81 in the Blue Ridge Mountains of Virginia. The 2020 census population is 8,265 persons residing within the geographic town limits of 14.5 square miles. The Town Manager and his administrative staff, manage town operations out of the municipal building on 150 East Monroe Street.

The location of the proposed dehumidifier and job site is the Town of Wytheville Wellness Center, pool area/natatorium, located at 333 Community Boulevard, Wytheville, Virginia 24382. The natatorium is part of the Parks and Recreation Department and used for open swimming, swim teams and aquatics programs.

The current dehumidifier unit is located on the roof of the structure. A copy of the nameplate of the existing Desert Aire unit is shown in Exhibit 1 and titled Existing Unit. The existing unit is the original equipment installed at the time of the Wellness Center construction in 2007. The unit is at the end of its useful life. The town seeks to replace the unit with a new dehumidifier and related equipment. As part of the scope the town also seeks to replace the related ductwork as shown in the Exhibit 2. Based on preliminary scoping it appears that a new unit will fit in the same footprint as the original located on the rooftop. The available space needed for new equipment must be validated by the Vendor as part of the bid submittal.

To prepare for the dehumidifier replacement project, and to better understand what type of equipment is needed, the Town requested assistance from Dan Santalucia of Advanced Enviro Solutions, Inc. to scope out a potential replacement model. Mr. Santalucia visited the site, collected site metrics, and provided a recommended model/system of Desert Aire. The recommended equipment is an increase in capacity from the original equipment. We are unsure if the original equipment was undersized or if changes in pool room air and or water conditions have changed since 2007. Replacement of the duct work fabric is expected. Preliminary specifications for both the dehumidifier and the fabric duct are provided in Exhibit 1 and Exhibit 2 as a general

reference to the type of equipment we think is needed. The vendor is expected to make an independent assessment of equipment needed as part of the bid submittal. Advanced Enviro Solutions, Inc. is not bidding on the project directly to Town of Wytheville and is available, at the discretion of the vendor, for equipment quotes. The vendor may use any products and/or supplier they so choose in submitting proposals.

### **3.0 Scope of Work**

The scope listed below is a best guess approximation of the work needed to complete the project. The Town is reliant on qualified contractors to provide their own scope of work and a bid estimate which is reflective of the work typical for this type of installation project. The workplan listed below is generalized for reference only.

- A. Site visit to confirm system size and develop any associated and required mechanical engineering drawings, measurements and field verified specifications for the project.
- B. Coordination with equipment manufacturer and/or supplier on the purchase of needed equipment and materials for installation.
- C. Finalize work plan, scheduling, and required documents.
- D. Coordinate with subcontractors if needed.
- E. Obtain Building Permit (Permit fees waived by the Town)
- F. Scheduling and coordination with the Wellness Center Staff and Building Maintenance Supervisor. Determine installation dates and sequencing.
- G. Determine required electrical work, if needed. (Use the space on the Bid Form identified as Bid Alternative 1 to provide hourly rates for unknown electrical work that may result in a change order)
- H. Removal and disposal of existing equipment to prepare for new installation
- I. Installation of the new dehumidifier and related equipment
- J. Installation of new fabric duct with transition connections to the existing metal duct trunk.
- K. Testing of equipment, training of staff on any user interfaces and long-term equipment needs.
- L. Understand and assist with coordinating the “authorized start-up” of equipment for warranty validation.
- M. Provide warranty documents and discuss regular maintenance agreements and/or service plans

### **4.0 Site Visit and Informational Meeting**

The Town has scheduled a site visit/meeting date of November 16<sup>th</sup>, 2022, at 10 AM, lasting until 1PM or later if requested, for interested vendors to visit the natatorium, equipment site and ask questions of the Building Maintenance Supervisor. Meet at the front desk, Recreation Center, 333 Community Boulevard, Wytheville, VA. This site visit is optional for vendors.

## 5.0 Equipment Schedule (Will need to be site verified by Vendor)

Reference Exhibit 1 - Existing Nameplate, The Proposed Dehumidifier Type with Specifications and Natatorium Conditions

Reference Exhibit 2 - Proposed Ductwork Type and Proposed Duct Layout

Please provide equipment and materials in your bid that is reflective of the entire scope from start to finish.

We expect that minimal alterations to electrical are needed, but in the event electrical work is needed we are asking for a rate schedule. Hourly rates for electrical work shall be submitted as Bid Alternative.

## 6.0 Warranty

Products. Vendor shall include in the bid proposal the manufacturer warranty information for major components of the project, including the dehumidifier, essential controls, fans, blowers, and the ductwork.

Workmanship. Vendor shall include proposed warranty terms for the workmanship associated with the proposed scope of work.

Vendor must be able to coordinate with equipment manufacturer to enable completion of authorized startup for warranty validation.

Warranty will be considered as part of the bid selection process.

## 7.0 Delivery Locations & Times

Site delivery and storage can be negotiated at time of contract. To ensure accountability and proper handling, the Town prefers that the vendor brings to the site all the materials and equipment needed for the project at the time of installation.

## 8.0 Proposal Submittal

The proposal shall convey that the offeror has a comprehensive understanding of the products and services which are required to complete this project. The sections shown in the table below must be submitted as part of the offeror's bid proposal.

### REQUIRED SECTIONS TO SUBMIT FOR THE ITB PACKET (TABLE BELOW)

<b>Section 1</b>	Cover Sheet (Use the cover sheet provided by Town) needs to be signed by the offeror.
<b>Section 2</b>	Firm Cover Letter. Submit a cover letter that introduces your firm and your experience with similar projects. Signed by person with the legal authority to execute a contract resulting from the RFP.

<b>Section 3</b>	Proposed Timeline and Implementation Plan. Show a phased plan, begin with proposed start date, and show to end of project, show milestones and completion tasks Show percentage-based payment schedule per task and deliverables or as lump sums.
<b>Section 4</b>	Completed Bid Form for Dehumidifier and Duct Work. Bid shall reflect both the products and services to complete the entire installation.
<b>Section 5</b>	Completed Bid Alternative for Electrical Work, Enter on Bid Form. Show hourly rates for related electrical work Show hourly rate of services for typical electrical work.
<b>Section 6</b>	List of Subcontractors. If the bid includes the use of subcontractors provide a list of proposed subcontractors and DPOR license for each subcontractor. Bid price shall reflect the price of subcontractors.
<b>Section 7</b>	Warranty Information for Workmanship and Materials. Major Components Expected.
<b>Section 8</b>	Required Forms. Complete and return the attachments provided. Complete and return Attachments A-J, The WC and W-9 Form. All required forms are attached to the ITB.
<b>Section 9</b>	Include Appendix -I- General Terms for Town of Wytheville with your proposal. This indicates that you agree with the general terms.
<b>Section 10</b>	Maintenance Agreements and Cost. It is expected that a long-term maintenance agreement will be needed to satisfy the manufacturer warranty. Include with the bid packet your firm's standard maintenance agreement and annual cost based on 2023 implementation date. If unknown this is optional but may impact ability to receive the contract.

**9.0 Instructions to Offerors:** The entire ITB shall be submitted as one package submittal. The proposal shall be submitted in an opaque sealed envelope or box and clearly marked: **“Sealed proposal: Town of Wytheville ITB 2022-08 Dehumidifier Project.”** One (1) paper copy and one (1) electronic copy on thumb drive shall be provided. All expenses shall be borne by the offeror in submitting the ITB.

If proprietary/confidential information is identified (See Attachment B), the offeror is required to submit a redacted copy of the proposal, in addition to these requirements.

The date/time of closing, the delivery and mailing address, the point of contact and the receiving information listed on the cover sheet provided with this ITB shall be used to deliver the ITB. The Town will not be responsible for delays in service by the USPS or private couriers or for delivery on dates the office is closed.

The bids will be publicly opened at the Municipal Building, Town Manager's Office, at the date/time of the ITB closing as listed on the cover sheet. The Town reserves the right to cancel this ITB at any time or reject any or all proposals received. The Town may ask questions of clarification prior to deciding on a bid winner to ensure that the vendor is responsive and responsible.

**Questions By Offerors:** Any questions related to this ITB or requests for clarification, outside of the meeting/site visit date, shall be directed to the project contact as listed on the cover sheet, Questions shall be submitted via email or in writing by the date listed. All questions and any responses will be in writing after the due date for questions. Responses with a key piece of information that changes the scope or intent of the proposal will be posted as addenda at the Town Website <https://www.wytheville.org/rfp> It is the responsibility of Offerors to ensure that they have received all addenda and to include **Attachment A- Addendum Status** indicating whether or not an addenda was received by the offeror.

**10.0 Bid Bond.** There is no bid bond requirement for this ITB.

### **11.0 Award of Contract, Contract Term, and Payment Terms**

**Award of Contract.** The contract will be awarded to the lowest responsive and responsible bidder who is the most qualified to provide the specified goods and services. The Town prefers to use one vendor but reserves the right to award a contract(s) to as many Offeror(s) as deemed necessary to fulfill the anticipated needs of the Town. If only one proposal is received, the town can choose to either rebid the project or engage in a contract with that offeror without having to rebid the project. The Notice of Award will be in writing.

**Timeframe.** The expected timeline for executing a contract and beginning work can be agreed upon by both parties prior to executing the contract and may be based on equipment availability. The proposed time period for both the execution of the contract and the complete installation of the project shall not exceed one year from the date the bid was received. Future bid price escalation/de-escalation due to any unplanned delay in Contract on behalf of the Town will be considered by the Town, with adequate proof of difference in price from price at bid, as submitted by contractor. Bid price escalation/de-escalation adjustments can only be approved by the Town Manager and must be fact based and submitted at the time of contract execution.

**Contract Term.** The subsequent contract shall be a firm, fixed-price contract for a one-time project and does not have any options to renew.

**Payment Terms.** Payment terms will be included in the contract and based on proposed milestones. Payment terms shall be net thirty (30) days from receipt of invoice and confirmation that all material and workmanship is in good condition, quality, and quantity. Invoices shall be sent to the project manager as listed on the cover sheet or as otherwise determined by the Town.

**Non-Appropriation of Funds.** In the event no funds or insufficient funds are appropriated for expenditures under this award the Town will notify the contractor prior to execution of any contract and the award shall terminate without penalty or expense to the Town.

**12.0 Supplemental Provisions.**

The supplemental provisions, Appendix I Town of Wytheville Procurement Policy General Terms and Conditions, shall be included as part of the Invitation to Bid and will apply to all contracts.

**\*END OF ITB\***

**APPENDIX I - TOWN OF WYTHEVILLE  
PROCUREMENT POLICY  
GENERAL TERMS AND CONDITIONS**

**1. Laws, Regulations, and Courts.**

- A. This procurement is governed by the applicable statutes in the Virginia Public Procurement Act (Code of Virginia, § 2.2-4300 through § 2.2-4377), the Town of Wytheville (Town) Code of Ordinances (2-81 through 2-159) and policies set forth by the Town Purchasing Agent.
- B. The Contractor shall comply with all federal, state, and local laws, ordinances, rules, regulations, and lawful orders of any public authority bearing on the performance of the work and shall give all notices required thereby.
- C. All solicitations or contracts issued by Town of Wytheville shall be governed by the laws of the Commonwealth of Virginia. Jurisdiction and venue for any litigation arising out of or involving this agreement shall lie in the Circuit Court of the County of Wythe and such litigation shall be brought only in such courts. The Town and the Contractor are encouraged to resolve any issues in controversy arising from contractual dispute using Alternative Dispute Resolution (ADR) procedures (*Code of Virginia, § 2.2-4366*).

**2. Taxes.** Pursuant to *Code of Virginia § 58.1-609.1(4)*, the Town is exempt from the payment of Virginia state sales and use taxes. Vendors should not include such taxes in invoices presented to the Town for payment. State sales and use tax certificates of exemption, Form ST-12, will be issued upon request.

**3. Anti-Discrimination Statement by Town.** The Town certifies that it shall not discriminate against any bidder, offeror or contractor because of race, religion, color, sex, sexual orientation, gender identity, national origin, age, disability, status as a service disabled veteran, faith-based organizational status, any other basis prohibited by state law relating to discrimination in employment or because the bidder or offeror employs ex-offenders unless the Town has made a written determination that employing ex-offenders on the specific contract is not in its best interest. If Contractor is a faith-based organization, the organization shall not discriminate against any recipient of goods, services, or disbursements made pursuant to the contract on the basis of the recipient's religion, religious belief, refusal to participate in a religious practice, or on the basis of race, age, color, gender or national origin and shall be subject to the same rules as other organizations that contract with public bodies to account for the use of the funds provided; however, if the faith-based organization segregates public funds into separate accounts, only the accounts and programs funded with public funds shall be subject to audit by the public body. (*Code of Virginia, § 2.2-4343.1 and 2.2-4310*)

**4. Anti-Discrimination Statement by Contractor.**

- A. During the performance of the contract, the Contractor agrees to the following provisions.
  - 1. The Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, status as a service-disabled veteran, or any other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification necessary to the normal operation of the Contractor. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
  - 2. The Contractor, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, will state that such Contractor is an equal opportunity employer.
  - 3. Notices, advertisements, and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting these requirements.
- B. The Contractor also agrees to include the provisions in every subcontract or purchase order over \$10,000, so that the provisions will be binding upon each subcontractor or Contractor. (*Code of Virginia, § 2.2-4310*)

**5. Immigration Reform and Control Act of 1986.** In executing a contract with the Town, the Contractor certifies that it does not and will not during the performance of the contract knowingly employ unauthorized alien workers or otherwise violate the provisions of the Federal Immigration Reform and Control Act of 1986. (*Code of Virginia, § 2.2-4311.1*)

6. **Drug-Free Workplace.** During the performance of this contract, the Contractor agrees to (i) provide a drug-free workplace for the Contractor's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of the Contractor that the Contractor maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or Contractor. For the purposes of this section, "drug-free workplace" means a site for the performance of work done in connection with a specific contract awarded to a Contractor, the employees of whom are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana during the performance of the contract. (*Code of Virginia, § 2.2-4312*)
7. **Authorization to Transact Business in the Commonwealth.** In order to contract with Town of Wytheville, contractors organized as a stock or nonstock corporation, limited liability company, business trust, or limited partnership or registered as a registered limited liability partnership shall be authorized to transact business in the Commonwealth as a domestic or foreign business entity if so required by Code of Virginia, Title 13.1 or Title 50 or as otherwise required by law. Pursuant to competitive sealed bidding or competitive negotiation, a bidder or offeror organized or authorized to transact business in the Commonwealth pursuant to Title 13.1 or Title 50 shall include in its bid or proposal the identification number issued to it by the State Corporation Commission. Any bidder or offeror that is not required to be authorized to transact business in the Commonwealth as a foreign business entity under Title 13.1 or Title 50 or as otherwise required by law shall include in its bid or proposal a statement describing why the bidder or offeror is not required to be so authorized. Any bidder or offeror that fails to provide the required information shall not be awarded a contract unless a waiver of this requirement is granted by the Town Manager. Any business entity as described above that enters a contract with a public body pursuant to the Virginia Public Procurement Act shall not allow its existence to lapse or its certificate of authority or registration to transact business in the Commonwealth to be revoked or cancelled at any time during the contract. Town of Wytheville may void any contract with a business entity if that entity fails to remain in compliance with the provisions of this section. (*Code of Virginia, § 2.2-4311.2*)
8. **Indemnification.** Contractor agrees to indemnify, defend and hold harmless the Town of Wytheville, Virginia and their officers, agents, and employees from any claims, damages and actions of any kind or nature, whether at law or in equity, arising from or caused by the use of any materials, goods, or equipment of any kind or nature furnished by the Contractor or any services of any kind or nature furnished by the Contractor, provided that such liability is not attributable to the sole negligence of the Town or to failure of the Town to use the materials, goods, infrastructure or equipment in the manner already and permanently described by the Contractor on the materials, goods, infrastructure or equipment delivered.
9. **Insurance.** Contractor certifies that it will have the following insurance coverage at the time the contract is awarded. Contractor further certifies that the Contractor and any subcontractors will maintain this insurance coverage during the entire term of the contract and three (3) years beyond the expiration date of the policy for liability insurance. All insurance coverage will be provided by insurance companies authorized to sell insurance in Virginia. The Town Manager at his discretion can modify these requirements in writing.

**Minimum Insurance Coverage and Limits Required:**

- a. **Workers' Compensation** - Statutory requirements and benefits. Coverage is compulsory for employers of three or more employees, to include the employer. Contractors who fail to notify the Town of increases in the number of employees that change their workers' compensation requirements under the *Code of Virginia* during the contract shall be in noncompliance with the contract. *§ 2.2-4332 and 65.2-800 et seq. Code of Virginia*
- b. **Employer's Liability** - \$1,000,000 bodily injury by accident/\$1,000,000 bodily injury by disease policy limit/\$1,000,000 bodily injury by disease each employee.
- c. **Automobile Liability Insurance** with limits of \$1,000,000. Coverage symbol 1, Best Rating of A-.
- d. **Commercial General Liability** - \$1,000,000 combined single limits. Commercial General Liability is to include bodily injury and property damage, personal injury and advertising injury, products and

completed operations coverage. The “Town of Wytheville, Virginia, its Officers, agents, and employees” shall be added as additional insured on a primary basis and so endorsed on the policy. Such additional insured status shall be primary without participation by County’s insurers.

- e. **Professional Liability** – limit of \$1,000,000.
- f. **Builders Risk Coverage.** Replacement cost basis for the duration of the contract.

10. **Debarment Status.** In submitting a proposal, the contractor certifies that it is not currently debarred from submitting proposals or bids on contracts by any department, agency, or political subdivision of (i) the Commonwealth of Virginia, (ii) any other state, or (iii) the federal government, nor is it an agent of any person or entity that is currently debarred from submitting bids or proposals on contracts by the same.

11. **Payment.**

- A. Contractor shall provide the Town with a complete and accurate IRS Form W-9.
- B. Invoices for products/services ordered, delivered, and accepted shall be submitted to the attention of the Project Manager for the project, Town of Wytheville, P.O. Box 533, Wytheville, VA 24382.
- C. Unless otherwise specified, any payment terms requiring payment in less than 30 days will be regarded as requiring payment 30 days after correct invoice or delivery, whichever occurs last.
- D. Unless otherwise provided under the terms of the contract, interest shall accrue at the rate of one percent (1%) per month.
- E. Date of payment is deemed to be (1) the date of postmark in all cases where payment is made by mail, or (2) the date of offset when offset proceedings have been instituted as authorized under the Virginia Debt Collection Act.
- F. Unreasonable Charges. Under certain emergency procurements and for most time and material purchases, final job costs cannot be accurately determined at the time orders are placed. In such cases, Contractors should be put on notice that final payment in full is contingent on a determination of reasonableness with respect to all invoiced charges. Charges which appear to be unreasonable will be researched and challenged, and that portion of the invoice held in abeyance until a settlement can be reached. Upon determining that invoiced charges are not reasonable, the Town shall promptly notify the Contractor, in writing, as to those charges which it considers unreasonable and the basis for the determination. A Contractor may not institute legal action unless a settlement cannot be reached within thirty (30) days of notification. The provisions of this section do not relieve the Town of its prompt payment obligations with respect to those charges which are not in dispute (*Code of Virginia, § 2.2-4363*).
- G. The Contractor is obligated to: (1) pay the subcontractor(s) within seven (7) days of the Contractor’s receipt of payment from the Town for the proportionate share of the payment received for work performed by the subcontractor(s) under the contract; or (2) notify the Town and the subcontractor(s) within seven days, in writing of the Contractor’s intention to withhold all or a part of the subcontractor’s payment with the reason for nonpayment. (*Code of Virginia § 2.2-4354*)
- H. The Contractor is obligated to pay the subcontractor(s) interest at the rate of one percent (1%) per month on all amounts owed by the Contractor that remain unpaid after seven days following receipt by the contractor of payments from the Town, except for amounts withheld as states in Section g above.
- I. These provisions apply to each sub-tier Contractor performing under the primary contractor. A contractor’s obligation to pay an interest charge to a subcontractor shall not be construed to be an obligation of the County. A contract modification shall not be made for the purpose of providing reimbursement for the interest charge. A cost reimbursement claim shall not include any amount for reimbursement for the interest charge.

12. **Availability of Funds.** It is understood and agreed between the parties that the Town shall be bound hereunder only to the extent of the funds available, or which may hereafter become available. The contract will be contingent upon annual appropriations by the Town Council. Failure of the Town Council to appropriate adequate funds for the terms of the contract shall result in the immediate cancellation of the contract. There shall be no penalty should the Town Council fail to make annual appropriations for the contract.

13. **Assignment of Contract.** A contact shall not be assignable by the Contractor in whole or in part without the written consent of the Town.

14. **Default.** It shall be the Contractor's responsibility to make sure that all work is completed as required. In case of failure to deliver goods or services in accordance with the contract terms and conditions, the Town, after five (5) days have passed from the date of delivery of written notice, may procure them from other sources and hold the Contractor responsible for any resulting additional purchase and administrative costs. This remedy shall be in addition to any other remedies which the Town may have.

15. **Changes to the Contract.** All contract modifications must be approved by the Town Manager or his designee. The Town will not assume responsibility for the cost of any changes made without proper consent. Changes can be made to the contract in any of the following ways:

A. The parties may agree in writing to modify the terms, conditions, or scope of the contract. Any additional goods or services to be provided shall be of a sort that is ancillary to the contract goods or services, or within the same broad product or service categories as were included in the contract award. Any increase or decrease in the price of the contract resulting from such modification shall be agreed to by the parties as a part of their written agreement to modify the scope of the contract.

B. The Town may order changes within the general scope of the contract at any time by written notice to the Contractor. Changes within the scope of the contract include, but are not limited to, things such as services to be performed, the method of packing or shipment, and the place of delivery or installation. The Contractor shall comply with the notice upon receipt, unless the Contractor intends to claim an adjustment to compensation, schedule, or other contractual impact that would be caused by complying with such notice, in which case the Contractor shall, in writing, promptly notify the Town of the adjustment to be sought, and before proceeding to comply with the notice, shall await the Town's written decision affirming, modifying, or revoking the prior written notice. If the Town decides to issue a notice that requires an adjustment to compensation, the Contractor shall be compensated for any additional costs incurred as the result of such order and shall give the Town a credit for any savings. Said compensation shall be determined by one of the following methods:

1. By mutual agreement between the parties in writing; or
2. By agreeing upon a unit price or using a unit price set forth in the contract, if the work to be done can be expressed in units, and the Contractor accounts for the number of units of work performed, subject to the Town's right to audit the Contractor's records and/or to determine the correct number of units independently; or
3. By ordering the Contractor to proceed with the work and keep a record of all costs incurred and savings realized. A markup for overhead and profit may be allowed if provided by the contract. The same markup shall be used for determining a decrease in price as the result of savings realized. The Contractor shall present the Town with all vouchers and records of expenses incurred and savings realized. The Town shall have the right to audit the records of the Contractor as it deems necessary to determine costs or savings. Any claim for an adjustment in price under this provision must be asserted by written notice to the Town within thirty (30) days from the date of receipt of the written order from the Town. Neither the existence of a claim nor a dispute resolution process, litigation or any other provision of this contract shall excuse the Contractor from promptly complying with the changes ordered by the Town or with the performance of the contract.

16. **Fixed Price Contract.** A fixed price contract cannot be increased by more than 25% of the amount of the contract or \$50,000, whichever is greater, without the advance written approval of the Town Council. (*Code of Virginia § 2.2-4309*)

17. **Termination of Contract.**

A. **Termination for Cause.**

1. If the Contractor should be adjudged as bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, the Town may terminate the contract. If Contractor violates any provision of the Virginia Governmental Fraud Act, the Town may terminate the contract. If the Contractor should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled

workmen or proper materials, or if he should fail to make prompt payment to subcontractors or suppliers of material or labor, or persistently disregards laws, ordinances, or the written instructions of the Town, or otherwise be guilty of a substantial violation of any provision of the contract, then the Town may terminate the contract. The Town retains the sole discretion to determine any violation of this section.

2. Prior to termination of the contract, the Town shall give the Contractor and his surety (when applicable) ten (10) calendar days written notice, during which the Contractor and/or his surety may rectify the cause of the termination. If rectified to the satisfaction of the Town within said ten (10) days, the Town may rescind its notice of termination. If it does not, the termination for cause shall become effective at the end of the ten-day (10) notice period. In the alternative, the Town may postpone the effective date of the termination notice, at its sole discretion, if it should receive reassurances from the Contractor and/or its surety that the causes of termination will be remedied in a time and manner which the Town finds acceptable. If at any time more than ten (10) days after the notice of termination, the Town determines that Contractor and/or its surety has not or is not likely to rectify the causes of termination in an acceptable manner or within the time allowed, then the Town may immediately terminate the contract for cause by giving written notice to the Contractor and its surety. This decision shall be final and not subject to an appeal to any court of law or equity. In no event shall termination for cause terminate the obligations of the Contractor's surety on its payment and performance bonds.
3. Notice of terminations, whether initial or given after a period of postponement, may be served upon the Contractor and the surety by mail or any other means at their last known places of business in Virginia or elsewhere, by delivery to any officer or management/supervisory employee of either wherever they may be found, or, if no such officer, employee or place of business is known or can be found by reasonable inquiry within three (3) days, by posting the notice at the job site. Failure to accept or pick up registered or certified mail addressed to the last known address shall be deemed to be delivery.
4. Upon termination of the contract, the Town shall take possession of its property and of all materials, tools, and appliances thereon and finish the work by whatever method the Town may deem expedient. In such case, the Contractor shall not be entitled to receive any further payment. If the expense of finishing the work, including compensation for additional managerial and administrative services shall exceed the unpaid balance of the contract price, the Contractor shall pay the difference to the Town, together with any other expenses of terminating the contract and having it completed by others.
5. Termination of the contract is without prejudice to any other right/remedy of the Town.

#### **B. Termination for Convenience**

1. Town may terminate this contract at any time without cause, in whole or in part, upon giving the Contractor notice of such termination. Upon such termination, the Contractor shall immediately cease work and remove from the project site all labor forces and materials as the Town elects not to purchase or to assume in the manner hereinafter provided. Upon such termination, the Contractor shall take such steps as the Town may require to assign to the Town the Contractor's interest in all subcontracts and purchase orders designated by the Town. After all such steps have been taken to the Town's satisfaction, the Contractor shall receive full compensation for termination and assignment the following:
  - All amounts then otherwise due under the terms of this contract as of the latest request for payment,
  - Amounts due for work performed after the latest request for payment through the date of termination, and
  - Reasonable compensation for the actual cost of demobilization incurred by the Contractor as a direct result of such termination. The Contractor shall not be entitled to any compensation for lost profits or for any other type of contractual compensation or damage other than those provided by the preceding sentence. Upon payment of the forgoing, the Town shall have no further obligations to the Contractor of any nature.

2. In no event shall termination for the convenience of the Town terminate the obligations of the Contractor's surety on its payment and performance bonds.
18. **Debarment Process.** The Town policy on debarment is defined in the Wytheville Town Code, Section 2-156. (Enabled under Code of Virginia § 2.2-4321)
19. **Contractual Disputes.** Disputes and claims arising under this agreement shall be processed pursuant to the *Code of Virginia §2.2-4363.*
20. **Audit.** The contractor shall retain all books, records, and other documents relative to this contract for five (5) years after final payment from the Town, or until audited by the Town, whichever is sooner. The agency, its authorized agents, and/or state auditors shall have full access to and the right to examine any of said materials during said period.
21. **Patents, Copyright and Trademark.** The Contractor shall obtain all licenses necessary to use any invention, article, appliance, process, or technique of whatever kind and shall pay all royalties and license fees. The Contractor shall indemnify, defend, hold, and save harmless the Town, its officers, agents, and employees, from any loss or liability for or on account of such infringement.
22. **Conflict of Interest Policy and Ethics in Public Contracting.** The Town maintains a Conflict of Interest Policy in accordance with *Code of Virginia §2.2-4367* through *§2.2-4377.* A contractor certifies by signing their bid/proposal to the Town, that no conflict of interest or collusion exists between any person representing the Town and the offeror/contractor.
23. **Business and Contractors License.** Where required, contractor's and businesses are required to obtain licenses and permits prior to working in the Town. Information regarding the Town of Wytheville Business License requirement is available at <https://www.wytheville.org/business>
24. **COVID-19.**

The Contractor is required to adhere in all respects to all federal, state, and local COVID-19 regulations, including, but not limited to, Executive Orders issued by the Governor of Virginia, the rules promulgated by the Virginia Department of Labor and Industry ("DOLI Rules"), and the Town of Wytheville (COVID-19) Preparedness and Response Plan (the "Required Local Plan"). In the event of conflict between COVID-19 provisions, the strictest provision shall govern. Without limiting the foregoing, the Contractor shall abide by the following:

  - A. Sick and Exposed Persons to Stay at Home. Sick and exposed contractors to the Covid-19 virus shall stay at home and isolate for five (5) days and shall stay home until all signs of fever and/or illness is not present prior to returning to work. Isolation and quarantine guidelines are subject to change at the direction of local, state, and federal mandates. Any questions regarding exposure, illness, isolation, and quarantine guidelines can be directed to Human Resources Department at 276-223-3321.
  - B. Notice to Town Required of Positive COVID-19 Tests at Town Work Sites. Pursuant to the DOLI Rules and the Required Local Plan, the Contractor is required by law to advise the Town within 24 hours if an employee of the Contractor or someone associated with the Contractor who was present at a place of employment owned or operated by the Town tests positive for COVID-19. All such reports of positive COVID-19 tests shall be directed to Human Resources Department at (276) 223-3321
  - C. Subcontractors. The Contractor is responsible for ensuring that its subcontractors comply with all the foregoing requirements.

**Exhibit 1- Dehumidifier**

Existing equipment nameplate

Proposed Equipment (needs to be validated by Vendor)

Pool Load Calculations by Dan Santalucia (needs to be validated by Vendor)

Desert Aire Select Aire Series Dehumidifier Specifications (for reference only)

Desert Aire Select Aire Series Sequence of Operations (for reference only)

Desert Aire Select Aire Series Warranty Information (for reference only)

# Existing Equipment

Model No. SA40R4MCH2I2800  
Serial No. 1208 E16197



Voltage/Phase/Hz 480/3/60 Control Voltage 24  
Minimum Ampacity 106.0  
Maximum Overcurrent Protective Device 125

Compressors		
Mtr #	RLA	LRA
2	27.2	167.0
3	N/A	N/A
4	25.0	158.0
5	25.0	158.0

Blower(s)		
Mtr #	HP	FLA
1	15.00	18.8
6	1.50	2.5
7	1.50	2.5

Electric Heater	
kW N/A	FLA N/A

### Factory Charge (lbs.)

Circuit A 116.0  
Circuit B 178.0

**R22 ONLY**  
Maximum Design  
Pressures (psig):  
375 High Side  
150 Low Side

Wiring Diagram Numbers: HNS-0360 / HT1 / LNS-0002 / LCS-0001

This Unit Is For Outdoor Use

Patent Number 5,682,754

Desert Aire Corporation  
8300 West Sleske Court  
Milwaukee, WI 53223  
(414) 357-7400 Fax: (414) 357-8501

ETL LISTED  
CONFORMS TO  
ANSI / UL-1995  
CERTIFIED TO  
CAN / CSA C22.2 NO. 236  
ETL TESTING LABORATORIES INC.  
CORTLAND, NY 13045

SA Air Balancing Data



N

**Project: Wytheville Commun**

**Location: Wytheville, VA**

**Unit Model #: ND40**

**System Tag: PDU-1**

**Date: 03/01/2005**

**WYTHEVILLE WELLNESS CENTER**

Proposed New Dehumidifier Equipment needed for Town of Wytheville Natatorium. Shall be verified by vendor prior to submitting bid.

POOL ROOM DEHUMIDIFIER UNIT												
GENERAL SYSTEM DATA								SUPPLY AIR FAN DATA				
TAG NO.	SERVICING AREA	LOCATION	SYSTEM TYPE	MOISTURE REMOVAL CAPACITY	TOTAL COOLING	SENSIBLE COOLING	EAT: DB / WB	MOTOR HP	SUPPLY AIR	ESP	OUTDOOR AIR	ESP
PDU-1	Natatorium	Outdoor	DX Split System	301 lbs/hr - Occupied Mode	645.5 MBH	326.7 MBH	85°F DB	25	22,000 CFM	2.0 in wc	4900 CFM	0.2 in. wc
	(multiple pools)	Rooftop	Dual Refrig. Circuits	240.2 lbs/hr - Unoccupied Mode			73.9°F WB					

EXHAUST AIR FAN DATA			AUX. HEAT				UNIT ELECTRICAL DATA				NOTES
MOTOR HP	EXHAUST AIR	ESP	TYPE	MBH	EWT	LWT	VOLTAGE	PHASE	MCA	MOPD	LISTED BELOW
7.5	5400 CFM	0.2 in. wc	Hot Water Coil	750	180	160	460	3	135	150	1 - 21

PDU - AIR COOLED CONDENSER												
GENERAL CONDENSER SECTION DATA					FAN DATA			UNIT ELECTRICAL DATA				NOTES
TAG NO.	SERVICING AREA	LOCATION	RATED AMBIENT TEMP.	TOTAL HEAT OF REJECTION	TOTAL CFM	QTY. FANS	LAYOUT	VOLTAGE	PHASE / HZ	MCA	MOPD	LISTED BELOW
ACC-1	Natatorium	Rooftop	100°F	818 MBH	32,522	3	Single Row	460	Mar-60	11.7	15	1 - 21

**NOTES:**

- 1 Pool Room Air Temp.: 85°F
- 2 (4) Pool Water Temps.: 83°F Main Lap; 83°F Waterpark; 94°F Therapy; 104°F Spa/Whirlpool
- 3 PDU to be equipped with Pool Water Heater/Condenser Energy Saver Option and Associated Water Flow Switch: Refrig Circuit A
- 4 Aux Hot Water Heat Coll to be integrally contained in main unit.
- 5 (2) Single Point Power Connections: One for Main Unit; Separate One for Condenser Section
- 6 Non-fused disconnect switch to be provided (factory mounted).
- 7 Energy Recovery via Intelligent Exhaust Air Damper System for Rejecting Air to Outdoors Before or After Evaporator Coil
- 8 Manufacturer Warranty Provisions: As identified in specifications section. (including standard system, extended compressor and coil warranties)
- 9 Sequence of Operation: Refer to section dedicated to SOO for detailed system operation/function.
- 10 Weather tight cabinet and rain hoods suited for outdoor (rooftop) installation/operation.
- 11 Bottom Return Air and Supply Air connections. Top Outdoor Air and Exhaust Air connections.
- 12 Factory Mounted Temp/Humidity Sensors internally in Return Air Section of Unit.
- 13 Standard MERV 8 Air Filters
- 14 Factory Mounted Airflow Switch for prevention of compressor circuit operation during absence of airflow.
- 15 Refrigerant Type: R410A
- 16 Hot Gas Bypass Protection Included
- 17 Stainless Steel Condensate Drain Pan (sloped for positive water flow)
- 18 Standalone Remote Condenser to be field hard piped to main dehumidifier unit.
- 19 Remote Display Panel (user interface) included. (for field wiring connection)
- 20 BMS Communication: Data Com Protocol (BacNet Needed to communicate with current Wytheville com system)
- 21 Basis of Design: Desert Aire Model SAS0 (main unit) and RC85026C (remote condenser)

# Initial Load Calc- Needs to be verified by Vendor prior to submitting Bid.



## POOL LOAD CALC - SYSTEM SELECTION: SA50 WYTHEVILLE WELLNESS CENTER

### Application Input

#### Zone Air Design Conditions

Design Dry Bulb Temperature (F)

Design Unoccupied Relative Humidity (%)

Design Occupied Relative Humidity (%)

#### Pool Design Conditions

Type	Activity	Temp (F)	Area (sq. ft)
Public (School/YMCA)	1.00	83	3150
Waterpark	2.00	83	1700
Therapy	0.66	94	320
Spa	1.00	104	110

All calculations based on ASHRAE handbook and standards. Results are based on input provided. Actual conditions deviating from the provided inputs will result in different evaporation rate calculation results. ASHRAE recommends 2.0 or greater for Waterpark applications. It is highly recommended that Engineer of Record review designs of features for proper activity factors given unique designs possible. Higher activity factors may be needed to account for specific features or feature density.

#### Outdoor Air Design Conditions

User-Entered Data

ASHRAE 0.4%

ASHRAE 1.0%

ASHRAE 2.0%

Country: USA

State: VIRGINIA

City: Roanoke

Dry Bulb Temperature (F)

Wet Bulb Temperature (F)

Humidity Ratio (grains)

Winter Design Temp (F)

Altitude (ft)

#### Outdoor Air Rate Calculation Inputs

Gross Room Floor and Pool Area (sq ft)

Total Pool and Wet Deck Area (sq ft)

Room Volume (cu ft)

Spectator/Bleacher Area (sq ft)

Number of Spectators

Unoccupied OA (Low Exhaust/Evacuator)

Unoccupied OA Flow Rate (CFM)

Desert Aire makes no representations or warranties as to the accuracy of the information provided in this sizing output analysis. The information provided herein is general guidance based upon industry standard practices and/or Desert Aire's past experience and shall not be relied upon for a determination of sizing. In no event shall Desert Aire be liable for damages arising out of the capacity and efficiency values provided by Desert Aire or the performance of a particular production unit in accordance with such values. Construction practices may also impact unwanted or unintended infiltration or exfiltration from adjoining spaces that are not accounted for in Desert Aire's calculations.

#### Model Type(s)

Unit Size	Unit Unoccupied MRC (lbs/hr)	Unit Occupied MRC (lbs/hr)	Supply Air Flow Rate (CFM)	Maximum Outdoor Air (CFM)	Selected	Qty.
SA18	92.5	116.5	6200	4100	<input type="checkbox"/>	1
SA20	97.2	121.6	6200	4100	<input type="checkbox"/>	1
SA24	119.5	150.6	11000	5500	<input type="checkbox"/>	1
SA30	146.6	184.8	13800	6900	<input type="checkbox"/>	1
SA35	170.0	213.1	15100	7550	<input type="checkbox"/>	1
SA40	194.1	244.0	17900	8950	<input type="checkbox"/>	1
SA45	216.0	270.9	19200	9600	<input type="checkbox"/>	1
<b>SA50</b>	240.2	301.9	22000	11000	<input checked="" type="checkbox"/>	1
SA60	287.9	362.9	26400	13200	<input type="checkbox"/>	1

Selected model sizes should be noted to add new units to this project.

#### Total Selected System(s) Capacity (Occ. Mode)

Total Refrigeration Capacity 645 MBH

Sensible Capacity 326 MBH

Zone Air Turnover 4.1 turns per hour

Unoccupied MRC 240.2 lbs / hr

Occupied MRC 301.9 lbs / hr

Supply Air Flow Rate 22000 CFM

Maximum Outdoor Air 11000 CFM

### Calculation Results and Unit Performance

EVAPORATION RATE CALCULATION RESULTS (lbs./hr.)		
	Unoccupied	Occupied
1st Body of Water (main pool)	83.3	128.2
2nd Body of Water (water park)	45.0	138.3
3rd Body of Water (therapy pool)	16.0	18.5
4th Body of Water (spa/whirlpool)	8.6	14.6
Pool & Deck Area - Outdoor Air Load	0.0	0.1
Spectator Load	N/A	N/A
<b>TOTAL LATENT LOAD:</b>	<b>152.9</b>	<b>299.7</b>

#### Ventilation Air Results

	Value	Override
Pool and Deck Outdoor Air (CFM)	3926	<input type="checkbox"/> 0
Spectator Outdoor Air (CFM)	0	<input type="checkbox"/> 0

Total Ventilation Rate **0.7** Air Changes / Hour

2022\_08A

<b>SA Pool Dehumidifier</b>	
UNIT TAG	PDU-01
UNIT MANUFACTURE	DESERT AIRE
MODEL NO	SA50
LOCATION	Outdoor
UNIT WEIGHT	8300 lbs.
<b>FAN DATA</b>	
SUPPLY AIR FLOW - CFM	22,000
S/A ESP AT MAXIMUM FLOW (in. W.C.)	2.00
S/A FAN TSP (in. W.C)	3.60
S/A FAN HP	25
OUTSIDE AIR FLOW - CFM	4,900
EXHAUST AIR FLOW - CFM	5,400
E/A ESP AT MAXIMUM FLOW (in. W.C.)	0.40
E/A FAN TSP (in. W.C)	2.12
E/A FAN HP	7.5
<b>PERFORMANCE</b>	
EAT DB   WB (°F)	85.0   73.9
MOISTURE REMOVAL CAPACITY - LB/HR	301.9
TOTAL COOLING CAP BTUH	645,544
TOTAL SENSIBLE CAP BTUH	326,776
THR BTUH	818,052
COMPRESSOR Circuit A	20
COMPRESSOR Circuit B	30
<b>UNIT ELECTRICAL</b>	
VOLTAGE	460/3/60
MOPD	150
MCA	135
SHORT CIRCUIT CURRENT RATING (SCCR)	65
<b>AUXILIARY HEATING</b>	
TYPE	Hot Water Coil
MBH	750
EAT / EWT	75 / 180
GPM / LWT	0 / 160
<b>POOL WATER HEAT RECOVERY</b>	
CIRCUIT A - CONDENSER 1	Pool (Full)
<b>REMOTE CONDENSER DATA</b>	
MODEL NUMBER	RC8S026C4H22436
AMBIENT TEMPERATURE (°F)	100
NO. OF FANS	3
WEIGHT	1246
VOLTAGE	460/3/60
MCA	11.7
MOPD	15
SHORT CIRCUIT CURRENT RATING (SCCR)	5kA

## Elaine Holeton

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**From:** christopherp@wytheville.org  
**Sent:** Thursday, October 20, 2022 9:00 AM  
**To:** 'Elaine Holeton'  
**Subject:** FW: Aux. Hot Water Coil - Pool Dehum Unit  
**Attachments:** Aux Hot Water Coil Heat Summary.pdf

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**From:** Dan Santalucia <dan@aesresources.com>  
**Sent:** Wednesday, October 19, 2022 4:42 PM  
**To:** christopherp@wytheville.org; James Marshall <james.marshall@wytheville.org>  
**Subject:** Aux. Hot Water Coil - Pool Dehum Unit

Chris, James:

Following up on today's conversation, this is to clarify on the **Auxiliary Hot Water Heating Coil (Aux HWC) to be included** in the replacement system.

Several points for clarification...

- This is keeping with the same Aux HWC feature as contained in the existing rooftop unit at Wytheville Wellness.
- The function/purpose of this coil is to heat the "air" of the pool room (not the pool water) when necessary at times, especially as needed during peak winter days.
- Very effective (if not the best) form of auxiliary heat due to its simplicity, efficiency and cost. Fortunate that this follows with what's already in place on the existing unit in Wytheville.
- Not to be confused with "Pool Water Heater Condenser" option, which is intended to apply heat to the "pool water" loop as an energy saving option. Also available as a separate option on the SA Series dehumidifier.

### ATTACHMENT:

- **Aux Hot Water Coil Heater Summary**

For customer sites equipped with hot water supply as in your case at the wellness center, Aux HWC Heat is an obvious and solid choice.

While I hope this clarifies and distinguishes between these two options, feel free to contact me with any questions. Ready to assist.

Sincerely,  
Dan Santalucia  
Advanced Enviro Solutions, Inc.



1661 Huntingdon Road  
Crozier, VA 23039

PH (804) 677.7752  
FX (866) 510.0156

Visit our **AESresources** website.



## SelectAire™ Series Dehumidifiers

### DEHUMIDIFIER SPECIFICATIONS

#### Unit Description

**Enclosure:** The unit shall be fabricated per the following method: The base rails and supports shall be 12-gauge galvanized steel channels; corner posts and side posts shall be formed of 16-gauge galvanized steel; top panels and removable side panels shall be 16-gauge galvanized steel. Removable panels with insert nut screw sites shall be provided to allow easy access to all internal parts and components. The electrical control box and switch panel shall be enclosed in a separate compartment, complete with a hinged door.

**Paint and Finish:** Prior to painting, all metal parts shall be pretreated to remove oils and dirt and rinsed with an ionized solution. Painting shall be by a powder coat technique to assure positive adherence with a high impact finish. All sides of panels shall be painted after manufacturing. The paint shall be High Yield Polyester. The paint shall be rated to meet a minimum of 1,000-hour salt spray test (ASTM B117), have a minimum Direct Impact Resistance of 160 in-lbs (ASTM D2794), have a minimum flexibility of ¼" Mandrel (ASTM D522, Method B) and a minimum 1000-hour Humidity Resistance (ASTM D2247). The unit color shall be light gray.

#### Refrigeration System:

**Refrigerant:** The system's operating refrigerant shall be R-410A.

**Compressors :** The compressors shall be a dual circuit, tandem pair, heavy-duty scroll-type. The circuits shall be staged. The compressor shall be equipped with high- and low-pressure safety switches, with internal protection from overheating. The compressor shall be externally vibration isolated.

**Receiver:** The unit shall include a refrigerant receiver with rotolock service valves. The receiver shall be sized for full-system refrigerant capacity to allow system pump down, and for operating at the highest efficiency over a wide range of load conditions

#### Evaporator Dehumidifier Coils:

**Fins:** Fins shall be die-formed, aluminum and shall be damage resistant. Extruded fin collars provide maximum heat transfer. Fin spacing shall be 10 FPI (fins per inch) maximum. The coil shall be a maximum of 38" in height to avoid water carryover to the reheat coil and re-evaporation into the air stream.

**Tubes:** Coils shall be fabricated from seamless drawn copper. The tubes shall be hydraulically expanded into the fins to form a permanent metal-to-metal bond for maximum heat transfer and stability.

Each coil shall have its own drain pan.

**Testing:** Coils shall be leak tested with 420 psig nitrogen.



## SelectAire™ Series Dehumidifiers

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### Refrigerant Condenser Coils:

#### Air-Cooled Condenser (Reheat Coil):

The reheat coil shall be positioned with a minimum of 5" clearance from the DX coil to help prevent water re-evaporation.

**Fins:** Fins shall be die-formed aluminum and shall be damage resistant. Fin spacing shall be 12 FPI (fins per inch) maximum.

**Tubes:** Coils shall be fabricated from seamless drawn copper. The tubes shall be hydraulically expanded into the fins to form a permanent metal-to-metal bond for maximum heat transfer and stability. The coil shall be a minimum of two (2) rows deep.

**Testing:** Coils shall be leak tested with 420 psig nitrogen.

#### ElectroFin® E-Coating:

All air-side refrigerant heat exchangers shall be coated with ElectroFin® E-Coat through electro-deposition immersion process for enhanced corrosion resistance. Dry film thickness shall be 0.6-1.2 mils (15-25 µm). Heat transfer coefficient loss shall be less than 1% after coating. Minimum salt spray resistance per ASTM B117-97 / DIN 53167 after coating shall be 6,000 hours. Phenol coatings or fin surface only coatings are not acceptable. Manual dip processes or spray application processes will not meet specification.

#### Pool Water-Cooled Condenser Circuit A:

The dehumidifier's Circuit A shall be equipped with a water cooled condenser that rejects heat to the pool/spa water loop. The condenser shall be tube-in-tube, cupronickel construction with CPVC stub-outs.

Outdoor units shall have the condenser wrapped in insulation and heat traced. The heat tracing shall be wired back to the control panel for an independent 120V power connection.

#### Remote Air-Cooled Condenser Circuit A:

The size and capacity shall be in accordance with the unit schedule. The system shall be able to reject all the recovered heat (T.H.R) from Circuit A to the outdoor condenser.

The unit shall be provided with a weatherproof electrical panel with factory mounted door interrupt disconnect switch.

The cabinet shall be constructed of G90 galvanized steel. The sides shall be one-piece construction. The unit shall be provided with lifting eyes located on the fan discharge panel.



## SelectAire™ Series Dehumidifiers

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The coil shall be constructed of copper tubing in a staggered design. Tubes shall be hydraulically expanded into full-collared, plate-type aluminum fins. Coils shall be factory leak-tested and sealed with caps.

The fan motors shall be heavy-duty PSC or three-phase with permanently lubricated ball bearings and built-in overload protection. All motors shall be factory-wired and leads terminating in a weatherproof junction box located on the outside of the unit cabinet.

The fan diameter shall not exceed 30". All units shall have a dynamically balanced fan with aluminum blades.

The fans shall be cycled based on internal head pressure on multiple fan units.

Fan guards shall be heavy-gauge, closed-mesh steel wire with vinyl coating. Guards shall be contoured for maximum rigidity.

### **Remote Air-Cooled Condenser Circuit B:**

The size and capacity shall be in accordance with the unit schedule. The system shall be able to reject all the recovered heat (T.H.R) from Circuit B to the outdoor condenser.

The unit shall be provided with a weatherproof electrical panel with factory mounted door interrupt disconnect switch.

The cabinet shall be constructed of G90 galvanized steel. The sides shall be one-piece construction. The unit shall be provided with lifting eyes located on the fan discharge panel.

The coil shall be constructed of copper tubing in a staggered design. Tubes shall be hydraulically expanded into full-collared, plate-type aluminum fins. Coils shall be factory leak-tested and sealed with caps.

The fan motors shall be heavy-duty PSC or three-phase with permanently lubricated ball bearings and built-in overload protection. All motors shall be factory-wired and leads terminating in a weatherproof junction box located on the outside of the unit cabinet.

The fan diameter shall not exceed 30". All units shall have a dynamically balanced fan with aluminum blades.

The fans shall be cycled based on internal head pressure on multiple fan units.

Fan guards shall be heavy-gauge, closed-mesh steel wire with vinyl coating. Guards shall be contoured for maximum rigidity.

### **RC5 and RC8 Series:**



## SelectAire™ Series Dehumidifiers

The condenser will be provided with a 1100 RPM motor designed fan blade to produce 69dbA or less noise @ 3 meters in accordance with AHRI standard 370-2001.

### Auxiliary Heater

#### Hot Water Coil:

The capacity shall be in accordance with the schedule. The coil shall be integral to the unit.

**Fins:** Fins shall be die-formed, aluminum and shall be damage resistant. Fin spacing shall be 14 FPI.

**Tubes:** Coil shall be fabricated from seamless drawn copper. The tubes shall be hydraulically expanded into the fins to form a permanent metal-to-metal bond for maximum heat transfer and stability.

Coils shall be leak tested with 315 psig of nitrogen.

**Freeze protection:** The system will include a temperature sensor that is located on the top third of the discharge side of the hot water coil. When this sensor reads a temperature of 35°F or below, the unit will de-energize the blower(s), close the outdoor air damper, open the return damper (if applicable) and force the heat output to maximum. The unit will go into alarm mode and will need to manually reset to restart the unit.

The modulating or on/off control valve shall be provided and installed by the mechanical contractor to meet the required flow rate and pressure drop listed in the schedule.

#### Unit Location:

The unit shall be designed for a rooftop, roof curb application with bottom return air connection and schedule supply air connection.

#### Ventilation and Exhaust Air:

##### **Basic SelectAire™ with Auto Balancing Control:**

The unit will include the SelectAire™ Energy Recovery Ventilation Air and Exhaust Assembly with up to 25% of the supply air volume for ventilation air. Exact amount of ventilation and exhaust air is as listed on the specification schedule.

The internal control system will maintain the correct proportions of return air, supply air, exhaust air and ventilation air. The system will monitor the static pressure difference at three locations; the ventilation air intake, evaporator coil and the zone vs. ambient.

By monitoring the pressure differential across the ventilation air orifice plate, the unit controller will modulate the ventilation air damper to ensure the correct amount of



## SelectAire™ Series Dehumidifiers

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ventilation air during occupied times. The amount of ventilation air can be set through the unit controller.

The system will monitor the pressure differential across the evaporator coil and will modulate the evaporator bypass damper to ensure the proper amount of evaporator cfm therefore optimizing the moisture removal capacity of the system at all times.

The system will monitor the pressure difference between the zone pressure and the ambient pressure once the initial air balance has been completed and setup values entered into the controller. This will vary the exhaust fan volume via the fan motor VFD to help guarantee the negative pressure within the space.

### **SelectAire™ Recovery System:**

The unit will be supplied with an integral fresh air/exhaust air heat recovery system for the introduction of outside air, to comply with ASHRAE Ventilation Standards 62.1-2010 and local health codes.

The exhaust air can be exhausted either before or after the evaporator coil, providing the ability to extract energy from the return air if heating is required. The control decision will be determined by the thermostat's heating and cooling setpoints.

On a call for heating, it is desirable to extract as much heat as possible from the exhaust air. Energy is recovered from the exhaust air by first passing it through the circuit "A" evaporator coil in a cooling / heat pump operation. The cooled air is exhausted and the "Heat Pump" energy plus the heat of rejection is returned to the air stream or water (as required) as sensible heat. The minimum COP of this operation is 4.4.

On a call for cooling, warm return air from the space is exhausted before the evaporator coil when it is desirable to remove as much heat as possible from the building. The refrigeration system serves to dehumidify and/or air condition the return air from the space.

Exhaust will be provided with plenum fan(s) and motor(s) in direct drive arrangement on a frame independent of the unit base, properly sized for all exhausts modes listed in the unit schedule.

The ventilation air is brought in through the integral plenum, and isolated from the exhaust air. It will include MERV 7, 2" thick, extended surface type filters and a motorized, proportional modulating damper assembly.

The warm exhaust, cold exhaust, and ventilation air dampers each will be a motorized, proportional modulating damper assembly. All dampers will be "fail to close".

In addition, a motorized, proportional modulating damper assembly will be included between the evaporator coils to ensure proper face velocity and system efficiency in all modes of operation (Occupied and Unoccupied).



## SelectAire™ Series Dehumidifiers

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The controller will automatically adjust these dampers to maintain the specified flow rates (R/A, O/A and E/A) through the use of integral flow measurement devices.

The SelectAire™ heat recovery system will use the "heat pump" principle to recovery energy on a call for heating by operating one of the dual refrigeration circuits in conjunction with exhaust air.

The outdoor air shall be filtered by a 2" MERV 7 pleated filter.

The unit shall be supplied with an outdoor rain hood and bird screen.

### **Electrical Control Panel:**

The electrical control panel will be easily accessible on one side so that service can be performed from the side of the unit. It will be of adequate size so as to house all electrical controls and devices. The unit will be provided with single point power connection to serve controls, fans, electric auxiliary heater (if provided), and compressors, factory wired to the power connection lug set. The electrical controls will include low-voltage transformers to supply 24 VAC control power, clearly labeled high- and low-voltage terminal strips, high- and low-pressure control (with manual reset of the high-pressure cutout and automatic reset of low-pressure cutout), and an anti-short cycling timer to protect against compressor cycling.

**Short Circuit Current Rating (SCCR):** The complete unit shall be rated in compliance with NEC® 110.10 and UL 1995 at nameplate voltage maximum, when protected by Class J, Class T or Class RK1 fusing. Electrical markings on the unit shall include, but not limited to the MCA (Minimum Circuit Ampacity), the MOPD (Maximum Over-Current Protection Device) and the SCCR.

**Disconnect:** Provided with a factory mounted and wired disconnect switch.

### **Control System:**

A digital control system using a modern microprocessor will be used to accurately and precisely control the DESERT AIRE dehumidification system and the space environment. The controller will include three (3) levels of password protection.

The controller will provide precise system control and feature an easy-to-read display which indicates actual operating and set points. The display will be remote mountable up to 1,640 feet from the unit. The controller will have a built-in occupancy timer.

### **Temperature Sensor:**

The unit shall include a temperature sensor to be field-installed.

### **Relative Humidity Sensor:**

The unit shall include a relative humidity sensor to be field-installed.

### **Aquastat:**



## SelectAire™ Series Dehumidifiers

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The dehumidifier shall be provided with one aquastat per pool or spa water condenser. The aquastat shall be installed by the mechanical contractor in the main water loop upstream of the pool heater and dehumidifier, constant water flow required across the aquastat.

### **BMS Compatibility:**

The units controller shall have the following BMS compatibility: Lonworks communication card.

The following Control Points will be available as read/write through the on board terminal or through the BMS system:

- Zone Air RH Setpoint
- Zone Air RH Deadband
- Zone Air Temperature Setpoint
- Zone Cooling Deadband
- Zone Cooling Stage Deadband
- Zone Heating Deadband
- Energy Recovery Deadband
- Pool 1 Temperature Setpoint (optional)
- Pool 1 Temperature Differential (optional)
- Pool 1 Stage Deadband (optional)
- Pool 2 Temperature Setpoint (optional)
- Pool 2 Temperature Differential (optional)
- Pool 2 Stage Deadband (optional)
- Network Occupancy Command (optional)
- Network Event Command (optional)
- Network Purge Command (optional)
- Network Off Command (optional)
- Remote Reset

The controller will include the following alarms:

- Low Suction Pressure Circuit A
- Low Suction Pressure Circuit B
- High Discharge Pressure Circuit A
- High Discharge Pressure Circuit B
- Supply Air Sensor Failure
- Zone Air Sensor Failure
- Supply Fan Overload
- Compressor Circuit A Overload
- Compressor Circuit B Overload
- System Shutdown
- Low Supply Air Temperature
- Exhaust Fan Overload
- Low Voltage (optional)
- Low Air Flow
- Freeze Stat (optional)

### **Airflow Switch:**



## SelectAire™ Series Dehumidifiers

The dehumidifier shall be equipped with an airflow switch to prevent the compressors from starting or operating on loss of airflow.

### **Water Flow Switch:**

The dehumidifier shall be equipped with one water flow switch per water condenser. A water flow switch shall prevent condenser operation in the event of loss of water flow. The unit shall be able to function normally in the dehumidification mode when water flow is not present.

### **Condensate Drain Pan:**

The drain pan will be 20-gauge stainless steel, sloped, and positioned under the dehumidifier coil. The drain pan will be TIG welded and securely attached to the evaporator endplates to avoid shifting. The drain pan will be fitted with a minimum 1" MPT non-corrosive plastic drain connection. The drain pan will meet all the requirements of ASHRAE Standard 62.

### **Insulation:**

The thermal and sound insulation shall be engineered polymer closed-cell foam insulation (EPFI). Indoor units shall have 3/8" thick insulation and outdoor units shall have 3/4" thick insulation. The insulation meets the following requirements.

- NFPA 255 Flame Spread – 25
- NFPA 255 Smoke Developed – 50
- NFPA 255 Fuel Contributed – 0
- NFPA 90A (2-2.4.2) and 90B
- ASTM C5118 (Thermal Resistance)
- ASTM C411 (Hot Surface Performance)
- ASTM C423 (Sound Absorption)
- ASTM C665 (Fungi Resistance)
- ASTM E90 (Airborne Sound Transmission Loss)
- ASTM E96 (Water Vapor Transmission)
- UL 94HBF (Horizontal Burn)
- UL 181 (Air Erosion, Mold Growth, and Humidity)
- ASTM C1136 (Mold, Mildew, and Moisture Resistance)

### **Supply Fan:**

Supply fan will either be double inlet forward curve fan or double inlet air foil fan.

**Double Inlet Forward Curve Fans:** The fan housing shall be made of galvanized steel. The impeller is manufactured in galvanized steel with tab locked blades.

**Double Inlet Air Foil Fans:** The fan housing shall be made of galvanized steel. The high performance impeller is manufactured in corrosion resistant steel, with backward curved, true airfoil shaped blades, welded into position. All wheels are coated with an anticorrosive primer and a final layer of synthetic paint.

All bearings are selected for a minimum of a L50 Lifetime of 200,000 hours.

All fans shall be dynamically and statically balanced.



## SelectAire™ Series Dehumidifiers

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**Blower Discharge:** The unit's air discharge will be as shown on the drawing.

**Blower Pulley Assembly:** The driver pulley and the blower pulley will be made of cast iron. The motor sheave will be a variable pitch type to allow for field adjustment of CFM and external static.

### **Exhaust Fan:**

The unit shall be provided with plenum fan(s) and motor(s) in direct drive arrangement on a frame independent of the unit base.

The exhaust fan motor shall be variable speed via electronically commutated (EC) design for highest overall system efficiency. Motor to be permanent magnet brushless DC design with integral rectifier and electronics. Integral under/over voltage protection, motor protection, and status indication is required. Motor electronics to be encapsulated for shock, moisture and corrosion resistance. Fixed speed motors or AC motors with variable speed drives are not acceptable. Motors shall utilize permanently lubricated ball bearings with L10 life of 40,000 hours minimum.

The venturi shall be constructed of heavy weight galvanized steel and have provisions for static pressure measurement via transducer at the inlet plenum and specific position at the venture throat. Qualified values of the venture static pressure coefficients to calculate airflow must be type tested in the application and programmed into the unit controller for display of flow rates.

The fan impeller is to be constructed of a high strength, low mass, corrosion-free composite material in a single shot injection molding process. The impeller blades are to be backwards-curved airflow type. Forward-curved or flat backwards-incline blades are not acceptable. The impeller shall be balanced with hub with admissible vibration severity less than 0.11 in/s.

The exhaust fan frame assembly shall be constructed of heavy gauge galvanized and shall support the fan and motor. When more than one fan is provided, each must be mounted on its own independent frame.

### **Return Air Filters:**

The system shall be provided with MERV 8 disposable filters consisting of 4" pleated filter.

### **Approvals/Listings:**

The unit shall be labeled and listed by ETL or UL.

### **Unit Manufacturer:**

The unit shall be manufactured by DESERT AIRE CORPORATION, Germantown, WI, USA. The manufacturer must be an active member of the ARI Dehumidification group.

### **Execution:**

#### **Preparation:**



## SelectAire™ Series Dehumidifiers

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Installing contractor to provide all labor, refrigerant, and material required for a complete installation. Minimum 3 feet clearance on all sides. Work to be performed shall be in accord with local codes, regulations, and OSHA standards.

**Delivery, Storage, and Handling:**

Customer to provide a suitable space for the equipment with proper access and entries. Unit to be stored in a clean, dry space and protected from the outdoor environment. Handle with care to avoid damage.

**Installation:**

Unit shall be installed per plans and manufacturer's installation recommendations.

**Field Quality Control:**

Installing contractor to clean, check, and perform all preliminary start-up procedures before final operation of the unit, per manufacturer's recommendations.

**Operation/Maintenance Manuals (in English):**

Manuals will include electrical and control drawings and refrigeration piping drawings. Manufacturer's representative shall instruct owners/operators of the unit regarding its functions and sequence of operation.



# SelectAire™ Series Dehumidifiers

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## SEQUENCE OF OPERATION

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**Supply Blower Runs Continuously.**

### **CIRCUIT HEAT SINK CONFIGURATION:**

Compressor Starts On a Call for dehumidification and or cooling. The system has two configurable circuits as follows:

**Circuit "A" Priority:** Hot Gas Reheat / Air Cooled Remote Condenser / Water

**Circuit "B" Priority:** Hot Gas Reheat / Air Cooled Remote Condenser

### **Dehumidification**

**First Stage:** Circuit "A" starts and runs in respective order listed in the "Circuit Heat Sink Configuration Section".

**Second Stage:** Circuit "B" starts and runs in respective order listed in the "Circuit Heat Sink Configuration Section".

### **Cooling**

**First Stage:** The exhaust damper before the evaporator coils opens. Circuit "A" will start and operate with the air reheat off reject its heat to following condenser(s), in respective order, listed in the "Circuit Heat Sink Configuration Section".

**Second Stage:** Circuit "B" will start and operate with the air reheat off reject its heat to following condenser(s), in respective order, listed in the "Circuit Heat Sink Configuration Section".

### **Air Heating**

**Occupied Times:**

**First Stage:** The cold air exhaust damper (damper after evaporator) will open to maximize heating capacity. Circuit "A" will start and operate in the air reheat mode.

**Second Stage:** The auxiliary heater is activated by a 0-10VDC control signal from the dehumidifier.

**Unoccupied Times:**

**First Stage:** The auxiliary heater is controlled by a 0-10VDC control signal from the dehumidifier



# SelectAire™ Series Dehumidifiers

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## Pool Water Heating

### Circuit A

First Stage: If there is a call for pool/spa water heating and when heat recovery is available, the pool water condenser will be activated.

Second Stage: An auxiliary pool/spa heater dry contactor will be closed, to activate the pool heater by others.

### Circuit B

First Stage: An auxiliary pool/spa heater dry contactor will be closed, to activate the pool heater by others.

## Exhaust and Outside Air

The operation of the SelectAire system's exhaust fan is to maintain the negative pressure of the pool room by controlling the fan's EC motor using inputs from the differential pressure transducer input signal.

The dehumidifier controls the flow rate of the outdoor air in each mode by measuring the pressure differential across the calibration plate in the intake section to vary the outside air damper. This provides a direct measure of outdoor air volume.

The system provides 5 individual settings for outdoor air flow rates that are field programmable:

- Unoccupied - Controlled via time clock
- Occupied - Controlled via time clock
- Event - Controlled via time clock
- Max OA - Controlled via VOC sensor set point activation
- Purge - Controlled via contact closure

## EMERGENCY SYSTEM SHUTDOWN

Terminal points are available for a binary contact closure by others to control unit shutdown by smoke detector or other similar device. An open contact in the 24 VAC circuit will deactivate motors, fans and compressors.



# SelectAire™ Series Dehumidifiers

## SYSTEM WARRANTY

### Dehumidification Equipment Standard Limited Warranty

Desert Aire warrants the dehumidifying unit to be free from defects in materials and workmanship subject to the terms, conditions and limitations stated herein.

#### TERMS

Desert Aire warrants all components (except as noted) for a period of two (2) years from the date of shipment. This warranty shall be limited to the supply of new or rebuilt parts for the part which has failed because of defects in workmanship or material, and does not include the cost for labor, transportation or other costs not herein provided for. Replaced parts are warranted only for the remaining portion of the original warranty period.

#### CONDITIONS

The warranty is subject to the following conditions:

1. The unit must be properly installed and maintained in accordance with the Desert Aire "Installation and Operation Manual" provided with each unit and/or other documentation provided.
2. The Start-Up Report must be completed and returned to Desert Aire within 30 days of the start-up.
3. This warranty shall not apply to any part that has been tampered with, or has been subject to misuse, negligence or accident. A warranty can be obtained for altered equipment but only with written consent from Desert Aire.
4. The following parts and components are excluded from the warranty: belts, filters, driers, fuses and refrigerant.
5. Refrigerant coils or other components that corrode due to improperly balanced pool chemistry or corrosive air quality will not be warranted.
6. All replacements or repairs will be FOB Germantown, WI.
7. This warranty shall be null and void if defects or damages result from unauthorized opening of the refrigerant circuit, tampering with factory set controls, or operating outside the original design conditions.
8. Desert Aire shall not be liable for labor costs incurred in diagnosing the problem, or the removal or replacement of the part or parts being repaired.
9. Desert Aire must preauthorize all warranty coverage described herein.



## SelectAire™ Series Dehumidifiers

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### **Extended Warranty:**

Your Desert Aire unit may have extended warranties beyond this Standard Limited Warranty document. Extended warranties are only available at the time of the purchase of the original equipment. These extended warranties are covered under a separate document and their terms and conditions are separate from this document. It is mentioned in this document for informational purposes only.

*Any and all incidental or consequential damages are expressly excluded from this warranty. Some states do not allow the exclusion of incidental or consequential damages for personal injury, so the above limitations may not apply to you for certain damages. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state. No person or representative is authorized to make any warranty or assume any liability not strictly in accordance with the aforementioned.*

Inquiries regarding warranty matters should be addressed to:

Desert Aire Corp. ,c/o Service Manager  
N120 W18485 Freistadt Road  
Germantown, WI 53022

PH: (262) 946-7400

FAX: (262) 946-7401

E-MAIL: [service@desert-aire.com](mailto:service@desert-aire.com)



## SelectAire™ Series Dehumidifiers

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### Dehumidification Components Optional Extended Warranty

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Desert Aire warrants the following components to be free from defects in materials and workmanship subject to the terms, conditions and limitations stated on the standard warranty form. *(Provided if Displayed)*

#### **COMPRESSOR THREE (3)-YEAR EXTENDED WARRANTY TERMS**

For an additional fee (contact your local representative for cost), Desert Aire offers an extended three (3)-year warranty for compressors. This extended warranty begins after the system's standard two (2)-year warranty ends. This warranty will be limited to the supply of new or rebuilt parts for the part which has failed because of defects in workmanship or material, and does not include the cost for labor, transportation or other costs not herein provided for. Replaced parts are warranted only for the remaining portion of the original warranty period.

#### **COIL THREE (3)-YEAR EXTENDED WARRANTY TERMS**

For an additional fee (contact your local representative for cost), Desert Aire offers an extended three (3)-year warranty for coils. Upon special request, the coils will be coated with an Electro Fin® E-Coating. This extended warranty is only available for coated coils and begins after the system's standard two (2)-year warranty ends. This warranty will be limited to the supply of new or rebuilt parts for the part which has failed because of defects in workmanship or material, and does not include the cost of labor, transportation or other costs not herein provided for. Replaced parts are warranted only for the remaining portion of the original warranty period. Extended warranties do not apply to remote condenser coils.

**Exhibit 2- Fabric Duct**

Email from Dan Santalucia (for reference only)

Duct Run Sketch (needs to be validated and verified by Vendor)

Nanosox Information (optional equipment or other supplied by Vendor)

Preliminary AES Quote (needs to be validated and updated by Vendor or other supplier if preferred and price included in Vendor Bid Form 2)

## Elaine Holeton

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**From:** Dan Santalucia <dan@aesresources.com>  
**Sent:** Thursday, October 13, 2022 10:00 AM  
**To:** Joshua Sharitz; James Marshall  
**Cc:** christopherp@wytheville.org; Crystal Hylton; Elaine Holeton  
**Subject:** Fabric Duct - Pool Room - Wytheville Wellness Ctr.  
**Attachments:** AES Quote - Nanosox Fabric Duct - Wytheville Wellness Center Pool Room 10-13-22 01.pdf; Duct Run Sketch - Wytheville Wellness Pool Room.pdf; Nanosox - Overview Brochure.pdf

Josh, James:

Good morning. Attached are the following (3) items on the replacement fabric duct for the pool room at Wytheville Wellness Center...

- **Quote: Center line and perimeter branches, including DUAL TRACK SUSPENSION for superior stability, reliability, longevity and ease of installation**
- **My Basic Hand Sketch Representing Fabric Duct Runs in the Pool Room**
- **Nanosox Fabric Duct Advantages Overview**

Similarly sized, based on the existing fabric duct and metal trunk opening diameters below (as recently supplied by James) for simplifying the transition to the new air distribution duct work.

- **Metal trunk openings where fabric ties in initially are the same size as the fabric duct itself.**
- **Left & Right metal trunk openings and fabric duct that serves the outside perimeter of the pool room >> 30" diameter**
- **Center metal trunk opening and fabric duct that serves down the center of the pool room >> 22" diameter**
- **Plan entails leaving existing metal trunk in place for continued use.**

Some fine tuning will be required to ensure accurate fit and form, but the attached quote should provide a fairly solid estimate for budgeting & planning purposes.

Please confirm receipt and let me know if you'd like to review together for clarity.

On another note... Any questions on the dehumidifier system equipment schedule and specs provided for use in the bid documents? Just let me know. Ready to assist.

Sincerely,  
Dan Santalucia  
Advanced Enviro Solutions, Inc.



1661 Huntingdon Road  
Crozier, VA 23039

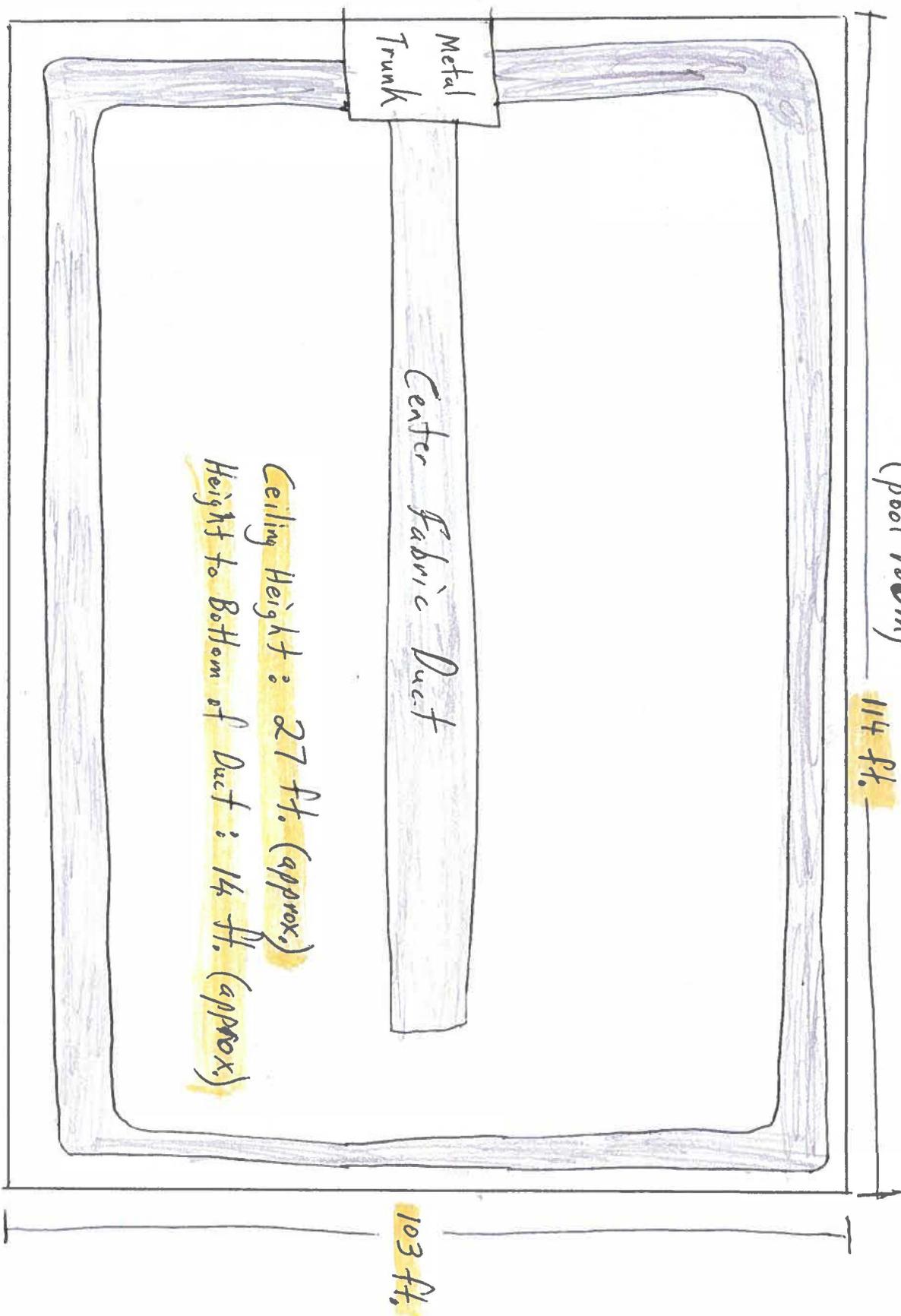
PH (804) 677.7752

FX (866) 510.0156

Visit our **AESresources** website.

# Wytheville Wellness Center

(pool room) 114 ft.



Sketch shown for reference only. Vendor will need to design and submit bid based on vendor's own design.

## NOTES:

- Desert Air dehum unit 22,000 CFM
- Target ESP: 0.5" to 0.75"
- Outer side of duct averaging 2 - 3 ft from walls
- Center Duct w/linear perfs at 1:00 & 11:00
- Perimeter Duct w linear perfs at 4:00 & 10:00

Example shown for reference only. Vendor will need to submit bid based on chosen material.



# PRODUCT INTRODUCTION



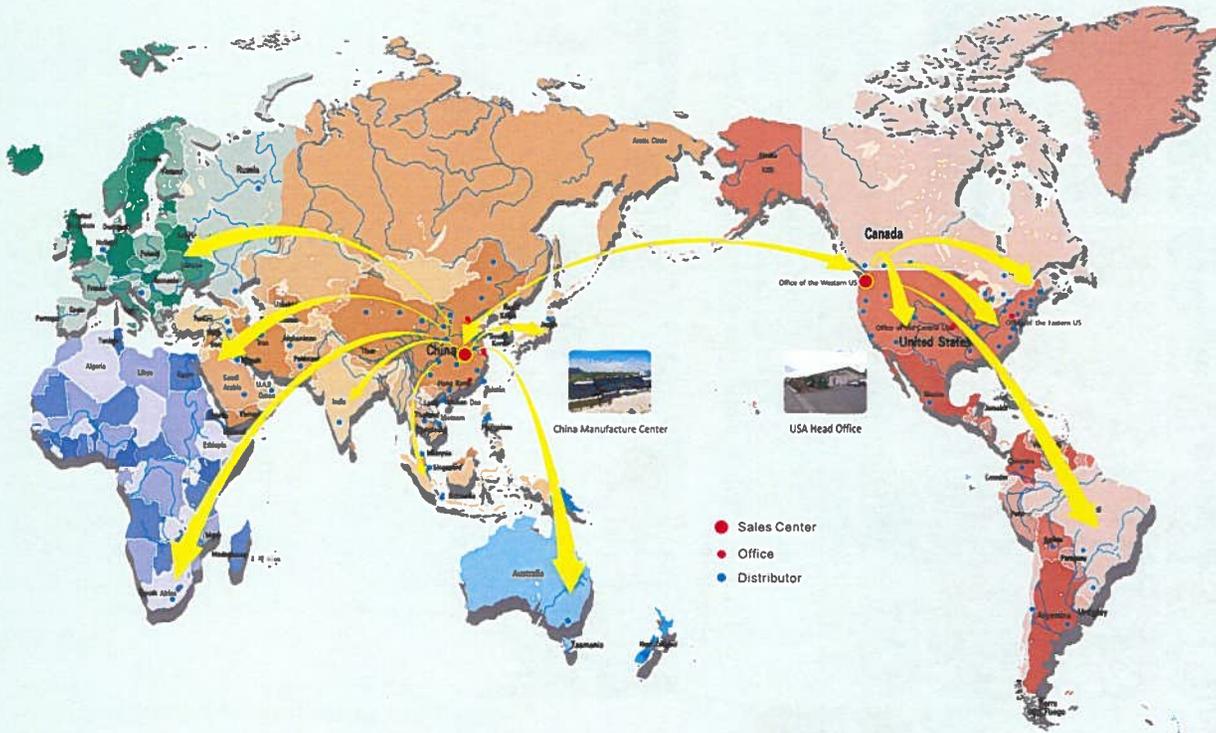
## NANOSOX AIR DISPERSION SYSTEM

A flexible air dispersion system for the HVAC/R industry made of special high-tech fabric, replacing traditional air ducts, air dampers, diffusers and insulation

Displacement

Permeation with injection

100% injection with non-permeable



Durkee America Inc. is a subsidiary of DURKEE INTERNATIONAL INDUSTRY Ltd, a multi national high-tech enterprise, with focus in the HVAC/R industry. As a manufacturing & servicing oriented organization, NanoSox® has established modern manufacturing center, 3 sales and service centers (China, Asia and America). Being a world renowned fabric air dispersion system supplier, NanoSox® has become a dominant leading brand in the vast Asian market and globally.

As an advocate of precise air distribution concepts for years, and armed with leading technology, high-tech fabric material, NanoSox® insists on using global top-level manufacturing technology and standards to produce the highest quality fabric air dispersion system products. It has acquired many national and regional standard quality certificates, such as: international QA system ISO9001: 2008, ISO14001, OHS18001, North American UL 2518 and Ac167 products certification, European EN testing, BS testing and China NFCTC testing.

NanoSox® air dispersion system has been widely applied in various permanent and temporary applications such as supermarkets, sports, public facilities & events, food, electronic, automotive, logistic etc. It's been consistently approved by countless renowned clients in more than 32 countries and regions, including Beijing Olympics, Shanghai World Expo, Carrefour, Tesco, Kraft, Nestle, McDonald's, Yale, Verizon, Foxconn, BMW, VW, Nissan, Toyota, Honda, Fiat, etc. All these successful applications have made NanoSox® one of the international leading brand.

Driven by our experienced and energetic team where any innovative ideas can promptly transfer into new products, our ongoing effort will strive for the optimum solution.

NanoSox supplies fabric air duct products and application services for many well-known organizations globally



- Yale University Lab
- McDonald's Playground
- BMW Alter-sales Service Shop
- MGM Hotel
- Verizon Switch Hub
- New Life Church
- Audi Showroom
- Unhaul Storage
- Kraft Food Baking Workshop
- Kellogg's
- Testa Olga Factory
- Goodyear Tyre Factory
- Apple New Headquarter
- OMNI Showroom
- Church Basketball Court
- Kraft Foods Brazil

### North America

- PRIMO Small Goods Facility
- LION
- Melbourne Library
- Calwell High School
- Eisfedenhall Ice Hockey Stadium
- Smithton Milk Powder Processing Facility
- Woodston Printing
- Beef Boning Room
- OBS Witte Vrouwen
- Heineken Beverage
- Aquasana
- OCE Vanlo
- Autoszaln Workshop
- LEMO Workshop
- ATTSZ Assembly Workshop
- Varroda Sewing Workshop

### Europe/Oceania

- India - 2010 Commonwealth games
- India - Kraft/Cadbury food
- India - Whirlpool, ALPLA factory
- India - Bc India 2011/2013 by RMB events
- India - SunGard software office
- UAE - Carrefour FUJAIRAH
- UAE - Fitness First / MOC (Mirdif City Centre)
- UAE - Caterpillar warehouse
- OMAN - Khinji Ramdas Warehouse
- Saudi - Herfy food
- Kuwait - Kuwait Flour Mills biscuit factory
- Pakistan - Carrefour Dolmen City store
- Mauritius - La Gauslette Commercial Centre
- Kenya - Kenya TV Studio
- Nigeria - Lecture Theater/Auditorium
- Egypt - Misr International plastic factory

### Asia/Africa

- Thailand - Tesco Lotus Supermarket
- Thailand - Carrefour Supermarket
- Thailand - UNILEVER PCL
- Indonesia - Nestle
- Indonesia - BMG Group
- Indonesia - Fitness First
- Malaysia - Tesco Supermarket
- Malaysia - Carrefour Supermarket
- Philippines - Nestle
- Philippines - Murata electronic factory
- Philippines - SR supermarket
- South Korea - Agriculture storage room
- China - 2008 Olympic Games
- China - 2010 Shanghai World Expo
- China - Volkswagen
- China - Foxconn

### Asia

WHY USE

10 DISTINCTIVE FEATURES COMPARE WITH CONVENTIONAL DUCTWORK



NanoSox® Fabric Duct Air Dispersion system disperses airflow through fabric permeation and designed multi-row orifices to form a 3-dimensional air dispersion effect with great comfort, overall even airflow and precise air throw.



Multiple standard color and custom color / patterns are available to compliment any indoor decor.



Supply cooling air is permeated through fabric forming an air layer around fabric duct to result in no temperature difference between inside and outside; therefore no insulation is required to prevent condensation.



NanoSox® Fabric Duct System is very easy to launder. Improved IAQ meets higher healthy and environment-friendly requirements.



The NanoSox® Fabric Duct System uses flexible material operating at lower velocities so it does not generate noise or transmit resonance. A quiet system improves the environmental quality.



EVEN & COMFORTABLE



AESTHETIC



CONDENSATION FREE



HYGIENIC & HEALTHY



QUIET



LIGHT WEIGHT



QUICK INSTALLATION



RELIABLE QUALITY



GREEN



ECONOMICAL



The NanoSox® Fabric Air Duct System is a very light weight system which is only 1/40 the weight of a traditional metal air duct system. The NanoSox® System lends itself well to applications such as new construction and building renovations without the need of roof load requirement considerations.



Utilizing a specialized cable or track suspension system provides for simple and quick installation time and requires approximately 1/10 or less the installation time of a conventional metal duct system. This greatly reduces the construction time and ensures virtually no material is wasted on the jobsite.



Introduce large laser production line and system simulation platform into NanoSox® system, all products are manufactured in our ISO9001 certified factory to ensure product properties such as high pressure resistance, micro permeability.



Environmentally friendly NanoSox® inherent fire resistant fabric has no chemical treatment to meet the fire code. In addition, the green manufacturing processes, operation procedures, lighter weight and being designed based on lower static pressure, these make it more energy efficient.



A simpler NanoSox® design can replace the whole traditional ductwork system including air ducts, valves, diffusers and insulation materials, lightweight, easy transportation and installation to reduce overall cost.

➤ Comprehensive product line up

1 Full range of fabric material

High-quality Nanosox™-N series, optimal Nanosox™-L series, and top fire proof Fibersox series, with variations of regular, antistatic and anti-microbial functional properties. Totally 9 products with multi-functional customization ability as per special demands, providing the most comprehensive standard permeability choices, to fulfill the higher requirements in various industries.



2 Complete duct profile

Besides the duct shapes of Round, Half round, Large half round, Quarter and Rectangular, Conic duct has been developed as the world unique, providing better air distribution performance and economic features.



3 Versatile fittings

In addition to regular fittings (inlet, end cap, elbow, T-connector), Unique fittings such as square to round, Y inlet, bevel end cap, tension ring, wall pass-through and expansion segment and more are introduced to fit various applications.



4 Outlets

Airflow can be discharged through fabric permeation, mesh slot, s-slot, linear slot, orifice, nozzle, and rings.



➤ Premium fabric material

1 Unique micro permeability technology

Permeability as low as 0.2 cfm/ft<sup>2</sup> (3.6m<sup>3</sup>/m<sup>2</sup>/h) can be achieved to ensure minimum air permeation in high pressure large systems, while still maintaining condensation free.



2 Superior fire resistant NanoSox®

Without chemical treatment, the superior permanent fire resistance performance of NanoSox® does not degrade after repeated laundering.



3 Nonflammable Fibersox™ material

Nonflammable Fibersox™ is made of non-organic fire proof material. It is classified under nonflammable as Class "A" type, to meet the most stringent fire safety requirement.



4 Best industry warranty

Exceptional product series are backed by unmatched industry warranty. A 15 years, 10 years, and 8 years limited warranties come with NanoSox™-N, NanoSox™-L and Fibersox™ series.



➤ Professional design and installation

1 World leading air dispersion system technology

With a large space airflow lab and modern CFD computer simulation technology, NanoSox engineers can tackle the most complicated and most demanding project with precision and confidence.



CFD computer assistant simulation

2 Detailed design manual and iCase application gallery

Accompanied with thousands client iCase application gallery, the new NanoSox system design manual is easy to follow and easy to find reference project designs to achieve optimum solutions.



3 iSox design software

Unique iSox CAD design software makes the precision system design a breeze.



4 Full installation manual & specialized tools

Extensive work flow pictures in the detailed installation instruction, along with proprietary tool (cable tightener) quickly turn a novice installer to professional in no time.



➤ Advanced production

1 Large scale laser automatic production line

Produces by the world leading automatic production lines, NanoSox reaches the annual production capacity of 32,300,000ft<sup>2</sup>



2 Global top advanced multi-head laser processing center

Precise processing technology of NanoSox System reaches the international top level with the global top advanced multi-head laser processing center.



3 Large-scale and full range of storage leads to shorter lead time

Full range of storage facilities, plus high efficient production management system, shortens regular lead time to less than 15 days, and even shorter for special orders.



4 World largest simulation test lab

The finished products could be tested at the simulation test lab, which guarantees the zero-defect and completely accordant air distribution effect as per the design requirement.



WHERE TO USE

# APPLICATIONS

APPLICATIONS



## NANOSOx USED IN SPORT CENTER SWIMMING POOL

NanoSox system was successfully applied on Wuhan Sports Center of 366,000ft<sup>2</sup>(34,000m<sup>2</sup>)(Swimming & diving Pool), the major game venue of 6th national city games and the largest indoor swimming pool with power sunroof. The interior walls are decorated with aluminum composite panels. The original designed metal air duct system was facing some difficult challenges: The roof of the swimming pool is glass structured, very easy to bring condensation issue; power sunroof leaves no space to install metal ducts; hundreds of adjustable diffusers are necessary and airflow is not optimum. The customer ultimately decided to choose NanoSox system in both swim competition center and training center.

In the actual application, we placed 3 ducts above the swimming pool to effectively prevent sunroof condensation. And another 6 ducts of total 400ft(120m) long with multi-row orifices were mounted along two sides of arc walls, 10% airflow permeates through fabric, 90% was dispersed to both the walls for condensation prevention and auditorium for their comfort. Moreover, micro-permeability fabric ducts could guarantee itself condensation free.

NanoSox system applied in this project is the highlight for applying for LUBAN AWARD, and has earned us a good reputation as expert in sports facilities from then on.

## APPLICATIONS IN SPORTS FACILITIES

### FEATURES

Even & comfortable airflow, anti-corrosion, no condensation and High cost efficiency.



LARGE STADIUMS MID-SIZED BALL COURTS SMALL BALL HALLS FITNESS CLUB SWIMMING POOLS

WHERE TO USE

# APPLICATIONS

APPLICATIONS



## Beijing Olympic Village Restaurant

----- NanoSox was the global exclusive supplier of fabric air distribution systems for 2008 Beijing Olympics

2008 Beijing Olympics, a global prominent event. Green is a key prerequisite for designing and constructing the Olympic Games' facilities, where strict ecological standards and systematic guarantee systems would be established. The total construction area of the village is about 226,000 ft<sup>2</sup>(21,000M<sup>2</sup>). NanoSox system solution successfully won the bid, becoming the only supplier of fabric air dispersion system for 2008 Beijing Olympic games.

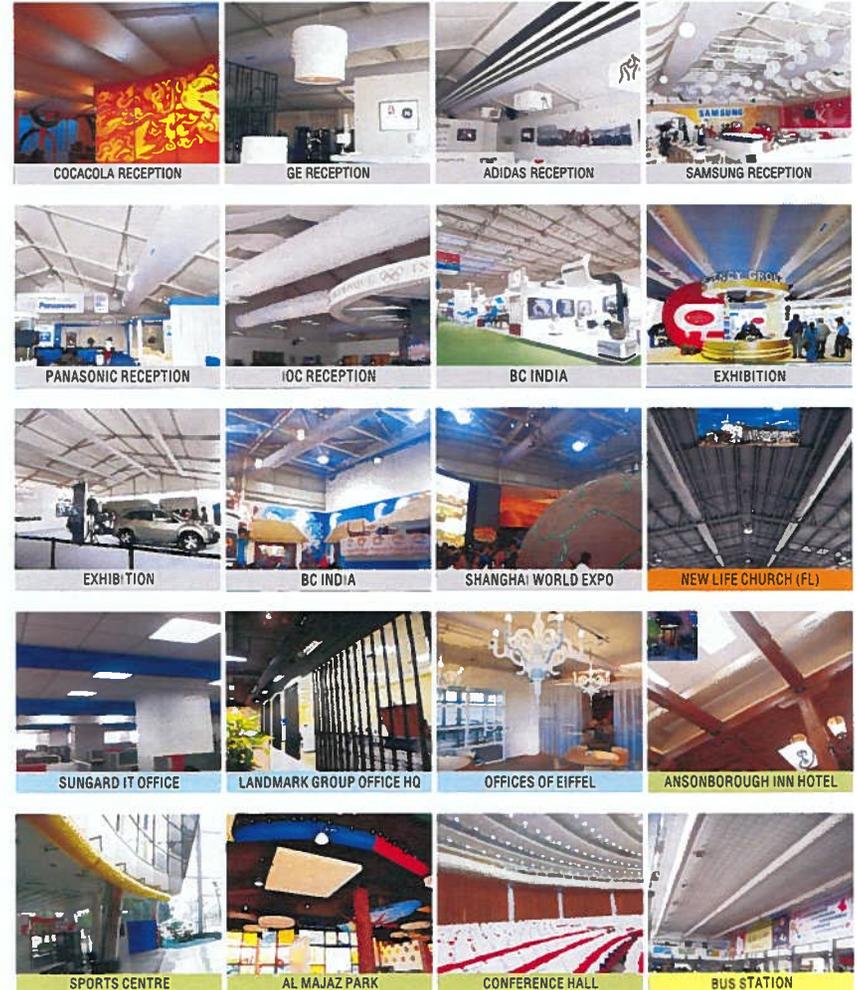
Aiming at requirements from BOCOG and jobsite (temporary tent, large area, low space, no insulation on roof, dense occupancies). NanoSox system made of permanent fire resistant fabric "NanoSox" with "s-slot" was arranged at lower height (10ft or 3m from the floor) to make air distribution more even & comfortable and energy saving.

After almost three months of operation for the Beijing Olympics and Paralympic Games, NanoSox system sustained cruel testing and gained a consistently good reputation from China and abroad. The advantages of safe & energy savings, green & environmentally-friendly material, recyclable and quick installation and removal ability, was greatly approved by officers of BOCOG. The NanoSox system was successfully installed in another 23 reception halls following main the restaurant.

# PUBLIC FACILITIES

## FEATURES

Precise air dispersion, even & comfortable airflow, long distance air throw, improved air quality, easy to clean and maintain.



Exhibition & Reception    Church    Office    Conference Hall    Transportation

WHERE TO USE

# APPLICATIONS



## Carrefour Supermarket

----One of the largest supermarket chains worldwide

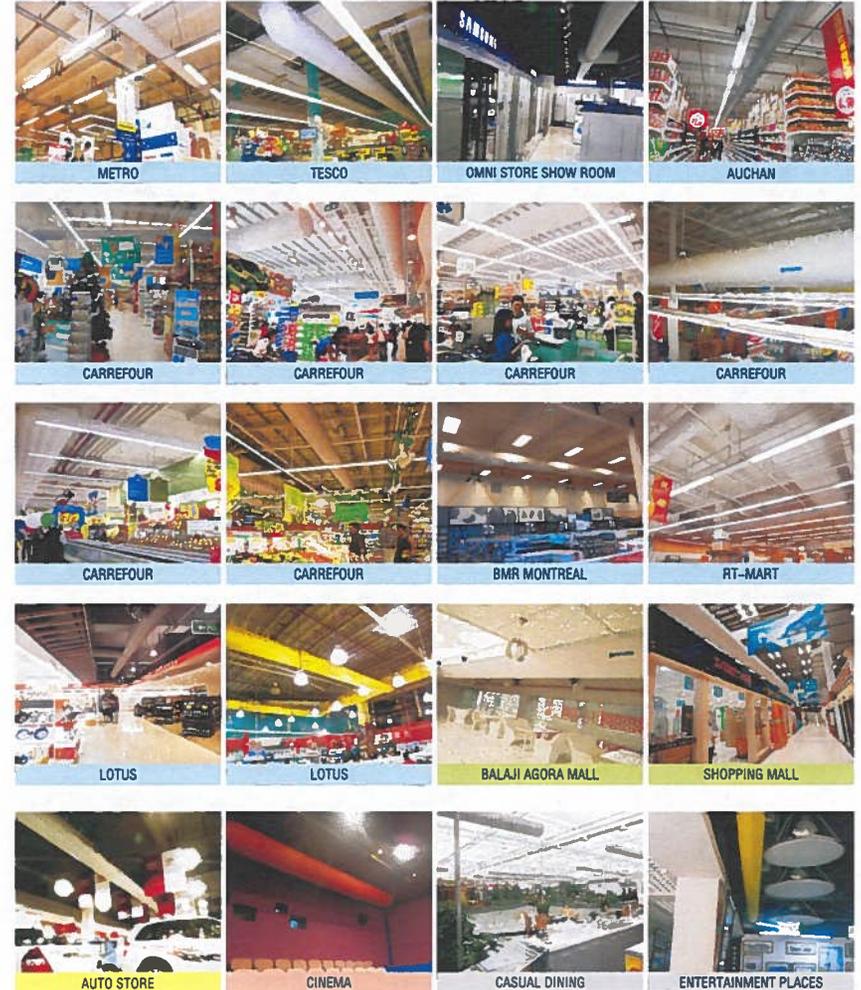
Carrefour, one of the largest supermarket chains, with business operations in many countries all over the world, features diverse structure styles in various countries, such as, Carrefour china store is typically low space with restricted room. Conversely Southeast Asian stores have higher ceiling heights and have larger spaces. Both scenarios pose a high demand on aesthetics and require a short installation time. The former used traditional metal air duct system shared the problems of poor even air distribution, bad air quality, etc, and the cleaning of the ducts annually was virtually impossible. Especially in China, due to the new national hygienic code which demands annually compulsive cleaning of AC ventilating systems in public places, Carrefour started to seek innovative air dispersion system. NanoSox's quick installation, easy maintenance and cost efficient in cleaning attracted all the sights of Carrefour. Since 2008 the NanoSox system has been employed in all Asian stores.

By application from Carrefour, NanoSox was abundantly applied to Metro, Tesco, Auchan, Decathlon, Lotus etc. large supermarket chains, and became the dominant fabric air duct system supplier for Asian supermarket chains.

# COMMERCIAL FACILITIES

## FEATURES

Precise air dispersion, even & comfortable airflow, improved air quality, easy to clean and maintain.



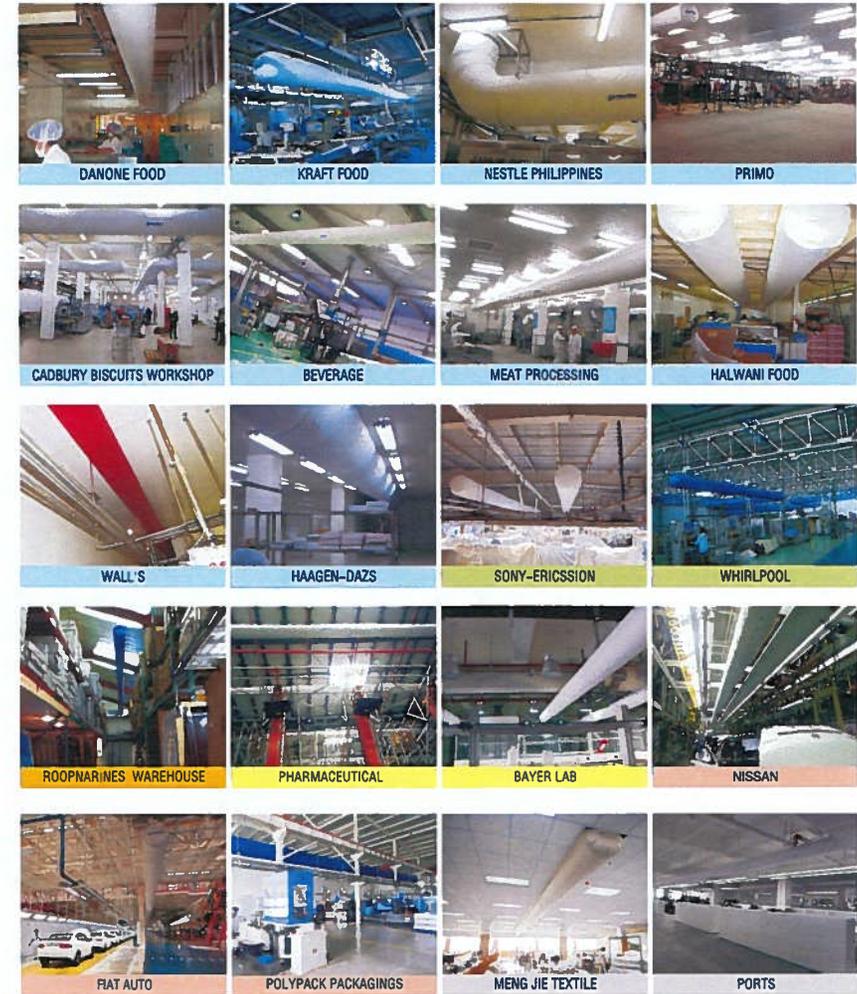
Supermarkets Shopping Mall Store Theatre Entertainment Places

WHERE TO USE

# APPLICATIONS

## INDUSTRIAL FACILITIES

Ideal air exchange, even & comfortable airflow, easy to clean & maintain, quick installation, and no roof load requirement.



### Kraft Foods

Kraft Food is one of the world's largest food companies, with business operations in 145 countries. Kraft Nabisco Food (Suzhou) Co., Ltd., the solely owned subsidiary of U.S. Kraft Nabisco International Co., is located in Suzhou Industry Zone. The facility covers an area of 540,000ft<sup>2</sup>(50,000m<sup>2</sup>) with 310,000ft<sup>2</sup>(28,817m<sup>2</sup>) of production workshop which accommodates eight production lines. For traditional system delivers air through diffusers, unable to meet requirement of keeping low air velocity in large cooling capacity, along with more problems, such as increasing roof loads and high cost of cleaning and maintenance.

NanoSox system employs large air permeability fabric to introduce an environment of large air coverage area, low airflow velocity, even air dispersion without drafts to prevent the biscuit chippings and powders from being blown off and guarantee building occupant's comfort. The ductwork is cleaned in three months intervals due to easy dismantlement, clean and ease of reinstallation to meet sanitation and cleanliness requirement.

NanoSox was successfully installed in the phase one project; Kraft (worldwide) has since become a regular client and partner of NanoSox, we've installed and offered many unique NanoSox solutions to Kraft (Cadbury) factories in India, Philippines, Indonesia, Canada and Brazil.

The NanoSox Fabric Duct system does not only have incomparable advantages in the solid food industry, but also prominent advantages in AC systems of other food industries and various factories.

Food ■ Electronics ■ Warehouse ■ Chemical & Pharmaceutical ■ Mechanical ■ Textile & Printing ■

HOW TO SELECT

# Nanosox<sup>®</sup> - N Series



Different from other product, NanoSox<sup>®</sup>-N series has no chemical treatment. It's weaved with material made in nanotechnology and permanent fire resistant property. The superior fire safety performance does not degrade after laundering. NanoSox<sup>®</sup>-N series provides higher physical properties, including high pressure resistant, tensile strength, stable permeability, antimicrobial, antistatic, etc anti-corrosion. Along with 10 standard permeation rates and 15 years warranty, it is the top level fabric and most widely used product series, with comprehensive domestic and international certifications and patents.



**N / General**  
Constructed of NanoSox<sup>®</sup>-N fabric in various permeability. Typically applied on all kinds of heating & cooling places with general comfort requirement.

**N-M / Anti Microbial**  
Made of permanent antimicrobial NanoSox<sup>®</sup>-M fabric which guarantees both permanent antimicrobial and fire resistant performance. Mainly applied on food, pharmacy, clean room etc. industries of cleanness demanding.

**N-S / AntiStatic**  
A combination of NanoSox<sup>®</sup>-N fabric in diverse permeability and inherent antistatic fibre to dissipate static build-up. Typically used in electronic, chemical, precision manufacturing etc industries of static sensitive environment.

**N00 / Non permeable**  
Made of non-permeable NanoSox<sup>®</sup>-N fabric. Commonly used in industrial workshop, warehouse etc heating and ventilating area where features a high and large space. Meanwhile, it is also applicable to light refrigerating places.

## Material property & Product Performance Indicators



Property	Items	Index	Remarks	Code compliance	Testing organization	Remarks	
Material property	Test Permeability		0.0.2/0.1/1/2/4/6/11/16/20cm <sup>3</sup> /m <sup>2</sup> at 0.5" <sup>w.g</sup>	0.0.2/0.46/1/2/4.5/6.9/9.2/15.5/20	ASTM D737 GB/T 5453-1997	CTIC	
	Filter effect	B	FIGRA, W <sub>0.5</sub> < 100 TP900A, W <sub>0.5</sub> < 7.5	7 1.1			
		s1	SHDGRA, w <sub>0.5</sub> < 30 TP900A, w <sub>0.5</sub> < 50	0 13	GB 8624-2012	NFTC	Formal testing
		10	Flaming particles or droplets with 90% ignition of the filter paper	No	EN13691-1; 2007	SGS	
		10	Smoke Testly ZA1	ZA1			
	Thermal property	Class 1	Calculated Smoke Development(CSD) < 30 Plume Surface Smoke Density(PSD) < 25	0	UL 2518	UL	Formal testing and UL certificate
		Class 0	Fire propagation index	0.4	BS 476-4.7-1997	TUV SUD PSB	Formal testing
		Weight	7.2oz/yd <sup>2</sup> (241g/m <sup>2</sup> ) ± 5%	7.23oz (241g)	ASTM D2778		Formal testing
		Tensile strength	> 3.48 (150)	6.58 (290)	GB/T 3917.1-1997		
		Tear strength	> 112N (2500)	2780 (1240)	GB/T 3923.1-1997		
		Shrinkage after washing	< 2%	0.5%	GB/T 8630-2002	CTIC	
	Operational performance	Permeability tolerance (CV%)	< 5%	3.7%	GB/T4353-1997		
		Temperature range	-17.8°C@ 70°F(standard), 121°C@251°F(1000h) No change of appearance	No change	UL 2518	UL	Formal testing and UL certificate
		Class 0 fibre drop property	No fabric drops	No change	UL 2518	UL	
		Anti-mold	No Decaying or decomposing after 60days under 90%humidity condition at 30(86)	No change	UL 2518	UL	
PH 4.0-7.5			7.4				
Textile health security		Formaldehyde content < 20mg/kg (20ppm) Decomposable Azo-dye < 20mg/kg (20ppm) No abnormal odor	Accord Unfound None	GB 18401-2003	CTIC	Class A (Baby crotch type)	
System performance	N-M Anti-microbial	>95%	>99%	ASTM E2148	CTIC		
	N-S Anti-static	No change at 7.6 m <sup>2</sup> /sq (1000sq) static pressure Appearance no change, no tear, no damage at 8 times(2000) static pressure	0.0952u/m <sup>2</sup> (1.0u/m <sup>2</sup> )	AC187 & UL181	UL	Formal testing and UL certificate	
Permeability	Passive permeability	Passive permeability volume at 2 or less (100Pa) < 2.8cm <sup>3</sup> /m <sup>2</sup> ( 50m <sup>3</sup> /m <sup>2</sup> ) Passive permeability volume at 4 or less (1000Pa) < 0.5cm <sup>3</sup> /m <sup>2</sup> ( 100m <sup>3</sup> /m <sup>2</sup> )	No change 0.64 ( 25m <sup>3</sup> /m <sup>2</sup> ) 1.98 ( 48m <sup>3</sup> /m <sup>2</sup> )	JGJ 141-2004		Rated center of quality supervision and inspection and testing for air condition equipment	
	Permeability tolerance	< 1%	No change				
	Dimension tolerance						

## SYSTEM SELECTION



Airflow Models

Permeability Indicators (cm<sup>3</sup>/m<sup>2</sup> in 0.5w.g.)

	PM	PS	PE	EJ
N	20	16	8	4
N-M	10	6	2	0.5
N-S	16	8	2	0.5

Note: permeability value on the table is 0.5 w.g. 1.5, 5, 16, 20 is value according to metric system used in EN 12599. 1, 0.5, 0.2, 0.1, 0.05, 0.02, 0.01, 0.005, 0.002, 0.001 is available.



Shape

	O	D	HD	Q	S	C
N	•	•	•	•	•	•
N-M	•	•	•	•	•	•
N-S	•	•	•	•	•	•



Color

	W	R	Y	BE	B	LU	GY	GN	BA	CUSTOMIZE
N	•	•	•	•	•	•	•	•	•	•
N-M	•	•	•	•	•	•	•	•	•	•
N-S	•	•	•	•	•	•	•	•	•	•



Air Outlet Model

	SS	LS	O	N	AN	FN
N	•	•	•	•	•	•
N-M	•	•	•	•	•	•
N-S	•	•	•	•	•	•

Nozzle Dia: 1", 1.5", AN Dia: 2", 2.5", Fil Dia: 3"-15"

# HOW TO SELECT

## Nanosox® - L Series



Nanosox®-L is made of inherent permanent fire retardant fabric with reliable & stable physical properties like high pressure resistant, tensile strength, stable permeability. It provides 5 standard permeation rates and 10 years warranty. No chemical treatment is used to exceed fire code requirement.

<b>L / General</b>	<b>L-M / Antimicrobial</b>	<b>L-S / Antistatic</b>	<b>LOO / Non-permeable</b>
Constructed of Nanosox®-L fabric in various permeability. Typically applied on all kinds of heating & cooling places with general comfort requirement.	Constructed of anti-microbial Nanosox®-L fabric with diverse air permeability. Normally applied on food, medical etc. Industries of higher cleanness requirement.	Constructed of antistatic Nanosox®-L fabric with different permeability. Typically used in electronic and precision manufacturing etc. Industries of static sensitive environment.	Made of non-permeable Nanosox®-L fabric. Commonly used in industrial workshop, warehouse etc. heating and ventilating area where features a high and large space.

### Material property & Product Performance Indicators



Property	Items	Index	Results	Code compliance	Testing organization	
Material property	Five Permeability	0/0.5/2/6/16cfm/ft <sup>2</sup> in 0.5" w.g.	0/0.48/2.5.8/15.1	ASTM D737 GB/T 5453-1997	CTTC	
	Fire safety	Class 1	Calculated Smoke Developed(CSD) ≤50	20	UL 2518	UL
		Class 0	Flame Spread Index(FSI) ≤25 Fire propagation index	0 0.4	ASTM E84 BS 476-8.7-1997	TUV SUD PSB
		Weight	6.6oz/yd <sup>2</sup> (226g/m <sup>2</sup> ) ± 8%	6.7oz (227g)	ASTM D3776	CTTC
		Tensile strength	> 3.4lb (150N)	6.5lb (29N)	GB/T 3917.3-1997	
		Tear strength	> 112lb (500N)	273lb (1240N)	GB/T 3923.1-1997	
	Shrinkage after washing	< 2%	0.2%	GB/T 8830-2002		
	Permeability tolerance Cv(%)	< 5%	Accord	GB/T 5453-1997		
	Operational performance	Textile health security	PH 4.0-7.5 Formaldehyde content ≤20mg/kg (20ppm) Decomposable Aromatic Amino dye ≤20mg/kg (20ppm) No abnormal odor	7.4 Accord Unfound None	GB 18401-2003	CTTC
		L-M Antimicrobial	>90%	>95%	ASTM E2149	
		L-S Antistatic	0.065µcm <sup>2</sup> (0.7µcm <sup>2</sup> )	0.065µcm <sup>2</sup>	GB/T 12703-1991	
		System performance	Pressure resistance	No change at 7.6 in"wg (1900pa) static pressure	No change	

## SYSTEM SELECTION



**Permeability Indicators** (cfm/ft<sup>2</sup> in 0.5" w.g.)

	PM	PS	PE	EJ
L	16	6	2	0.5
L-M	16	6	2	0.5
L-S	16	6	2	0.6

Note: permeability value in the table 9.52.6.16 is corresponding to metric system (m<sup>3</sup>/m<sup>2</sup>·h·J: 125Pa) 0.36, 108, 288.

Airflow Models



Shape

	D	D	HD	Q	S	C
L	•	•	•	•	•	•
L-M	•	•	•	•	•	•
L-S	•	•	•	•	•	•



Color

	W	R	Y	BE	BU	GY	GN	BA	CUSTOMIZE
L	•	•	•	•	•	•	•	•	•
L-M	•	•	•	•	•	•	•	•	•
L-S	•	•	•	•	•	•	•	•	•



Air Outlet Model

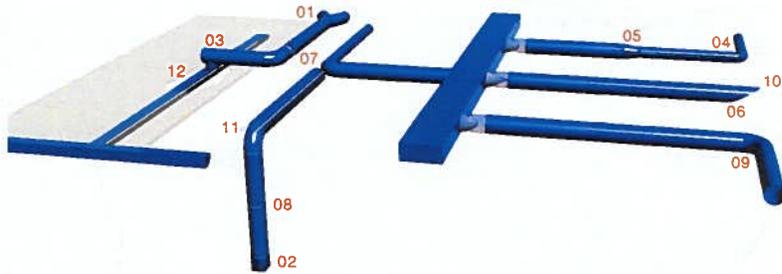
	SS	LS	O	N	AN	FN
L	•	•	•	•	•	•
L-M	•	•	•	•	•	•
L-S	•	•	•	•	•	•

Nozzle Dia.: 1" - 1.5" All Dia.: 2" - 2.5" FN Dia.: 3" - 15"



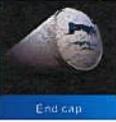
# HOW TO SELECT

# SYSTEM SELECTION



- 01. Y-inlet
- 02. Square to round inlet
- 03. T-connection
- 04. Elbow
- 05. Transition
- 06. Bevel end
- 07. Expansion segment
- 08. Tension ring
- 09. Wall pass through
- 10. Galvanized cable
- 11. H-track
- 12. Flush mount track

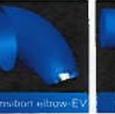
## GENERAL FITTINGS

<b>INLET CONNECTION</b>		<p>Generally, use single layer or double layer inlet to cover outlet of metal duct, fixed with belt, riveted.</p> <p>Nanosox® employs double layer inlet, only fixes the inside layer, the outer layer is used to cover up and easy to remove for washing.</p>
<b>END</b>		<p>Nanosox® uses end cap, joins with duct by zipper, easier to change for washing or extend in the length direction.</p>
<b>ZIPPER CONNECTION</b>		<p>Join among straight duct, fittings, and components, similar to conventional used flange.</p> <p>Nanosox® uses concealed zipper, covered by sleeve from outside.</p>
<b>ELBOW-E</b>	  	<p>Standard centerline radius is 1.5 x Dia.</p> <p>The elbow consists of multiple gores, different curve angles per application requirement.</p>

## GENERAL FITTINGS

<b>TRANSITION-V</b>				<p>Connect ducts with different diameter</p> <p>Bottom flat: more aesthetic Concentrate: better airflow Top flat: easier to install</p>
<b>T-CONNECTOR-T</b>				<p>Deliver the airflow to branch ducts which are perpendicular to main duct. Connected by zipper.</p>

## Special fittings

						
<b>Y-inlet-Y</b>	<b>Square to round inlet-SR</b>	<b>Elbow inlet-IE</b>	<b>T-connection inlet-T</b>	<b>Bevel end-BC</b>	<b>Transition elbow-EV</b>	<b>Bevel transition-BV</b>
Connect two outlets of AHU to one duct.	Connect square metal duct to round fabric duct.	Connect fabric duct inlet with elbows.	Connect fabric duct inlet with T-connection.	Disperse air in bevel end of duct. Specialized for individual case.	Connect elbows in different diameter.	Connect uneven ducts with different diameters.

## Functional fittings

		
<b>Tension ring-TW</b>	<b>Expansion segment-ES</b>	<b>Wall pass through-TR</b>
For supporting use, fixed inside duct to produce aesthetic appearance, applied to upright elbows, etc special occasions.	Connected between two sections, Fold one end in airflow direction, fixed by hasp from outside, contributing to certain flexibility in length.	A component to resolve through wall problem, employs tension ring and certain length of duct to fix in the hole of wall and seal the gap between.

This is no essential difference between design of NanoSox system and traditional metal duct system. Designer could make the layout design according to Nanosox owned specialized software iSox - design. Meanwhile, Nanosox engineering technology center is also ready to do the design work professionally for you.

**A** System layout

NanoSox system layout is mainly applied to air supply system. Lay out the system according to requirements of actual situation or AHU location on building and HVAC design (CAD drawing), space, height and aesthetics, and more.

**■ General location layout**  
 —Low space location layout: make ductwork layout along wall, beam, pole, to save space and improve aesthetics. For workshop application, lay out ductwork along production line or densely occupied area to meet both requirements of production and occupants. For supermarket application, uniformly lay out the system perpendicular to shelves and parallel to light area.

—High and large space layout: To match return air, use straight duct as possible to improve indoor air distribution. For workshop, layout shall be along production line, avoid equipments and travelling crane, meanwhile, consider directional air dispersion. For supermarket, layout is perpendicular to shelves or above main walkway. For sports place, layout shall be around auditoria. For grid structure, lay out ductwork inside it, for grid structure with berm, mount ductwork both sides along berm, both save space and convenience installation and maintenance.

**■ General location aesthetics design**  
 —The relation between duct diameter and aesthetics at different installation height: Generally, the applicable duct diameter is larger when the installation is higher to reach a perfect combination of aesthetics and effect.

—Arc, closed design: The layout could be in arc, or closed round. Oval to match with architecture style for both more aesthetic appearance and uniform air dispersion.

—Design to match with decoration: mount half-round or Quarter-round duct against ceiling, or open a groove on suspended ceiling, then put NanoSox duct inside. For meshed Suspended ceiling, just mount ductwork above it.

**■ Special case design**  
 —Temporary location design: Considering easy installation and dismantlement, track installation is mostly applied. To take reuse into account, maintain the same duct diameter and duct length as possible.

—Anti-condensation design: lay out the ductwork along glass curtain or specially mount one or more ducts to easy-condensation area.

SYSTEM LAYOUT

Use iSox design software, we could complete layout design and drawing work more easily and quickly, greatly reduce designer's time.



Sox design software

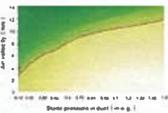


Layout

**B** Dimension selection

Because the NanoSox system diameter selection is related to air velocity and static pressure in the duct, when the static pressure does not match the air velocity in the duct, the air flow in the duct will become turbulent which will affect the actual air dispersion and overall performance. Shown below is a schematic illustrating the relation between pressure, turbulence and air velocity that we obtained through an experiment.

From the schematic, we could find when the air velocity is bigger, static pressure become smaller, the turbulence will be increasing (darker the color, bigger the turbulence), it is for sure that turbulence is related to the ratio of air velocity to static pressure in duct. The bigger the turbulence is, what is more, high air velocity could increase noise from system.



A NanoSox system diameter utilizes inches as a spec unit, starting at 6" thru 72", classified at 2 inch intervals. The duct diameter is determined according to air volume and system inlet air velocity.

Calculation equation:  $g = v \cdot \pi \cdot D^2 / 4$

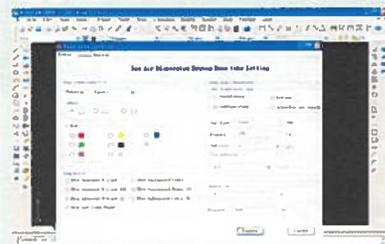
Where g: air volume per duct system, v: System inlet air velocity, D: system duct diameter

NanoSox system inlet air velocity to avoid system inlet turbulence and negative pressure, etc.



If the duct diameter is excessive big, installation space is not enough. It is advised to use rectangle duct or divide the system into several small ducts.

ISOX DESIGN INTERFACE



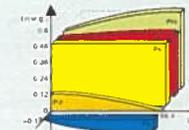
Use iSox software to input each design parameters

**C** Air pressure design

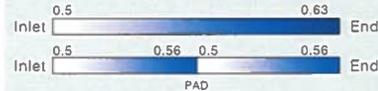
Pressure in a NanoSox system consists of static pressure, velocity pressure and resistance loss, the direct relation of static pressure regain and resistance loss plays a key role. In most cases, static pressure regain is more than frictional resistance loss in a straight duct.

Result: static pressure=inlet static pressure+ static pressure regain-pressure loss (Pr=Ps+Prs-Pz) the average pressure is the average of inlet static pressure and end static pressure. The principle is shown in below schematic.

The principle is shown in below schematic.

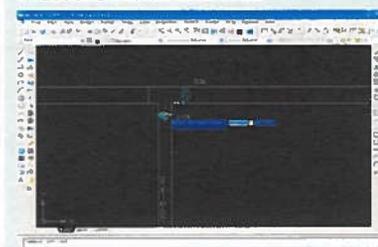


Based on abundant engineering experience, we believe that when pressure difference is less than 10% of inlet static pressure, airflow along the duct is uniform. On the contrary, PAD pressure adjustment device shall be installed to balance the pressure in duct. Shown in below schematic, after balance, maximum pressure difference is in 0.1 w.g., less than 10% of inlet static pressure.



Inlet pressure of complicated system with multi ducts is according to resistance calculation of least favorable loop, meanwhile, consider air dispersion pressure, frictional and local pressure loss from main duct, branch duct.

PRESSURE DESIGN INTERFACE



Insert PAD, ACD air valve

**D** Air dispersion design

Employ NanoSox patented design software specialized for fabric air dispersion system to make the detailed design that is, to determine permeability of fabric, type, dimension, quantity, and direction of orifice or nozzle, which is made by Nanosox engineering technology center.

**A** According to cross section of height design, we determine air throw and controlled area.

Generally, we take the middle line of 2 adjacent ducts as the boundary, according to uniform layout principle. Based on actual project situation, in light of air volume from each duct and layout, divide the whole area, try to uniformly distribute the air volume as possible.



**B** Determine orifices direction

According to divided area, specify the direction of orifices and determine the number of orifice rows.

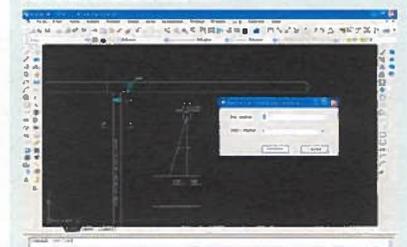
**C** According to airflow capacity, determine permeated air volume and air volume by orifices.

**D** Determine size and rows of orifice

Generally, design is completed by the patented specialized software---iSox-manufacturing, and inputted into automatic production line for manufacturing.

In addition, iSox software can help draw a standard construction plan of installation and automatically list a specification table for each portion of system.

AIR DISPERSION DESIGN



Automatically generate air dispersion sectional view

Refer to 《Nanosox Design Manual》

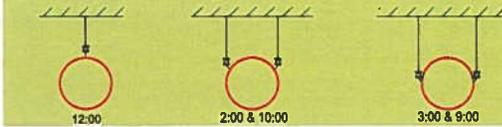


Installation of a NanoSox system is much easier than any conventional air duct system, which consists of 3 styles:

1. cable suspension system.
2. Aluminum track suspension system.
3. Internal retention ring.

## CABLE SUSPENSION SYSTEM

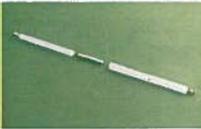
Cable suspension system is more popular due to convenient installation and low cost. Which can be divided as following: By material: galvanized cable, stainless cable  
By load capacity: ordinary cable, heavy duty cable  
By rows of cables: single row, double rows, multi rows  
By suspension direction: 12:00(single row), 2:00 & 10:00 or 3:00 & 9:00 (double rows)



## ALUMINUM TRACK SUSPENSION SYSTEM

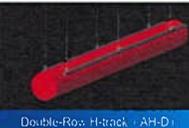
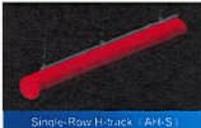
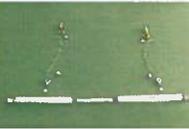
### FLUSH MOUNT TRACK

For half-round, large half-round and quarter-round NanoSox systems which are mounted against ceiling or wall.



### H-TRACK

For suspension type of round NanoSox system.



## INTERNAL RETENTION RING SYSTEM

NanoSox Air dispersion system with the internal retention ring (IRR system) provides perfect inflation appearance even without air supply. Start up popping noise can be prevented, too.



The major material required to install NanoSox system includes: fabric air ducts and its fittings, components and accessories, which are supplied by the manufacturer (shipped with the consignment, including installation drawing, installation manual and assembly drawing, etc.) Other installation auxiliaries required on jobsite, such as, brackets, fastening bolts and mores shall be purchased by the installation contractor.

## Q What is the expected system's service life of a NanoSox system ?

A NanoSox systems practical service life depends on the application environment, AC system, etc factors. Generally, service life of NanoSox<sup>®</sup>-N exceed 20 years, NanoSox<sup>®</sup>-L 15 years, FiberSox<sup>™</sup>10 years. Our warranty for NanoSox<sup>®</sup>-N is 15 years, NanoSox<sup>®</sup>-L10 years, FiberSox<sup>™</sup>8 years.

## Q Does a NanoSox system meet the fire safety regulation in different countries and regions in global market?

As an end air dispersion system in HVAC, NanoSox has passed all kinds of widely recognized international certificates and fire testings including UL A/JJ and AC167 certificates, testing certificate under EN13501-2002 class B1-s1,d0, and China official fire certificate under GB-8624-2006-Class B-s1,d0,t0 and Class A. NanoSox system meets or surpasses code regulations on fire safety in all countries and regions.

## Q NanoSox system looks nice when inflated, how does it look when it's not inflated?

A NanoSox system is made of flexible material, it will droop when the system is off. To gain a better visual effect when the system does not run, a double row suspension system can be used to maintain the round shape on the bottom. For better result, the IRR (Internal Retention Ring) system can be used to better maintain the round shape.

## Q Can NanoSox replace all types of air ducts? Could it be used for air return ductwork?

NanoSox is made of flexible material and can only work in a positive pressure of air supply System. It cannot be used as the air return ductwork. The Internal Retention Ring System can be used for air return ductwork.

## Q Would a NanoSox system have a condensation problem without installing a insulation material on the outside of the duct?

Cooling air permeates through fabric to form air layer around duct to result in no temperature difference between inside and outside, this radically resolves the condensation problem.

## Q It seems that a NanoSox system has a good performance in a cooling or refrigeration application. What about in a heating application? Can the heated air could be thrown down to the occupied zone?

A NanoSox system's air dispersion principle applies induction type laminar flow air dispersion, when air flow is ejected out of the duct openings at a high velocity, compared with ordinary AC system, heat exchange with ambient air in the height is rare, the airflow will not dispersed till the air flow reaches destination area, thus little difference between cold air and hot air dispersion. In a practical application, AHU if matched with cold & hot air dispersion mode could achieve a better effect.

## Q What is the NanoSox air duct product cleaning and maintenance period requirement?

A NanoSox cleaning & maintenance period is variable and depends on the air dispersion mode, application, environmental cleanliness requirement, AHU's filter grade, etc factors. Normally recommended maintenance period is every 3 months for refrigeration and food processing applications with clean requirement; for commercial, public places and large areas, etc normally a 1 to 3 year period. In a serious pollution environment, the color of fabric may become darker after washing.

## Q How much is the friction factor of a NanoSox system? Does NanoSox have a large system resistance? Are there any additional requirements on air volume or air pressure of AHU?

NanoSox system friction factor is less than 0.024, similar to metal duct, but in practical applications, friction resistance of NanoSox system is much less than conventional ducts, due to mostly in round shape, lower average air velocity especially at the middle and end part. For simple straight duct, the system resistance is less than static pressure regain, so the friction resistance could be ignored. For complicated ductwork, the system resistance is only 1/3-1/5 of traditional duct. Thus pressure of traditional air duct is enough for NanoSox system. NanoSox system could design fabric permeability and orifices to guarantee the designed air supplying volume without any additional requirements on AHU.

## Q Will a NanoSox system generate noise? What is the noise absorption effect ?

A NanoSox system does not generate noise and transmit resonance during operating. Pleasers refer to NanoSox detailed technical manual. Noise absorption effect depends on different equipments and environment, it could not replace the absorber of AHUs system, although part of noise could be absorbed.

**NanoSox**  
BY DURKEE AMERICA

— The experts in the air dispersion industry world wide —



**DURKEE AMERICA, INC.**

PO BOX 1592  
Issaquah WA 98027  
Tel: (206) 639-2889 Fax: (206) 639-2890  
Email: [info@durkeeintl.com](mailto:info@durkeeintl.com)

**DISTRIBUTOR DATA**

Preliminary Quote shown for reference only. Vendor will need to validate product type and source based on vendor's site evaluation and preferred product source.

DURKEE AMERICA INC - QUOTATION																
<b>TO:</b> Josh Sharitz, James Marshall - Town of Wytheville <b>FROM:</b> Dan Santalucia, AES							<b>Wytheville Wellness Center</b> Fabric Duct Air Distribution - Pool Room									
<b>PAYMENT TERMS:</b> Per Below <b>QUOTE VALID:</b> 30 Days From Quote Date <b>DATE:</b> October 13, 2022							<b>Quote No.:</b> AES-101322-01									
DurkeeSox air dispersion system products Description																
NO.	Model	Shape	DurkeeSox Detail				Attachment						Support Hardware		Quantity (Sets)	
			Diameter		Color	Length (feet)	Inlet	End cap	Elbow	Redu- cer	Ts	PAD	ACD	Row		Model
			Inch	mm												
1	NS-L	Round	32	813	Std/TBD	370.5	2		4				2	AL H-Track	1	
2	NS-L	Round	28	711	Std/TBD	89	1	1					2	AL H-Track	1	
<b>Pricing includes standard fabric colors.</b> <b>Custom fabric colors and logos available.</b> <b>Consult for options and associated pricing.</b>  <b>(sample color swatch to be approved by customer prior to production for accuracy)</b>																
<b>SUBTOTAL:</b>															\$ 19,985.00	
Silk Screening:															\$ N/A	
Color Selection from Standard Set															\$ 0.00	
Optional Custom Color Selection:															\$ N/A	
Shipping & Handling:															\$ Included	
Applic. Taxes:															\$ N/A	
<b>TOTAL PRICE:</b>															<b>\$ 19,985.00</b>	
<b>Production Notice:</b> loop duct discharge at 4 and 1:30 center duct discharge is at 1 and 11 Item 1,2(AHU-1) airflow: 22,000 CFM total, ESP: 0.5-0.75" BOD:  <b>Please verify color, static pressure, Installation height for system design before production.</b>							<b>Fabric Ducting with inlet, elbows, transitions, suspension system &amp; associated hardware.</b>  <b>Installation &amp; mounting (to structure) H/W supplied in field by installing contractor.</b>									
Estimated total weight: 318 Kg/ 700 Lb Estimated installation time: 60 manhour * (Estimated installation time is based on experienced installers and at least two men crew.)																
<b>Note</b> Suspension system does NOT include cable mounting brackets and ceiling / wall fasteners (To be supplied by contractors) Quotation price are freight allowed to one location. Price subject to change according to detailed design. Duty, tax and related cost not included if not listed. Payment term: Net 30 terms available OAC, Prepayment required otherwise. Late payment penalty apply if not paid before due date. Standard lead time: 3 weeks after order confirmation (except rush orders). Manufacturer is not responsible for shipment and custom delay. <b>All quotes and drawings are confidential. Do not share with third party without written consent from Durkee.</b>																
<b>Advanced Enviro Solutions, Inc.</b> Crozier, VA 23030										www.AESresources.com					PH (804)-677-7752 FX (806)-510-0156	

*Needs to be validated / updated by Vendor*

## **BID FORM**

### **ITB-2022-08 -TOWN OF WYTHEVILLE DEHUMIDIFIER AND DUCTWORK FOR WELLNESS CENTER NATATORIUM**

This bid is submitted to the Town of Wytheville (hereinafter called OWNER”)

- 1.0** The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into an agreement with OWNER in the form included in the Contract Documents to perform and furnish all Work as specified or indicated in the Contract Documents for the Contract Price and within the General Time Period indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents
- 2.0** BIDDER accepts the terms and conditions of the Invitation to Bid and Instructions to Bidders, ~~including without limitation those dealing with the disposition of Bid security.~~ This Bid will remain subject to acceptance for sixty (60) days after the day of Bid opening.
- 3.0** In submitting this Bid:
  - a) BIDDER represents, as more fully set forth in the Agreement, that a complete set of contract documents and addendum were utilized in the preparation of this bid. BIDDER has familiarized itself with the nature and extent of the contract documents, work, site, locality, all local conditions and laws and regulations that in any manner may affect cost., progress, performance or furnishing of the work.
  - b) BIDDER has reviewed and checked all information and data shown or indicated on the Contract Documents and assumes responsibility for the accuracy of the bid submitted. Additional examinations, investigations, explorations, tests, reports or similar information or data in respect of said project that are or will be required by BIDDER in order to perform and furnish the work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents shall be at the expense of the BIDDER.
  - c) BIDDER has given the OWNER written notice of all conflicts, errors or discrepancies that it has discovered in the Contract Documents and the written resolution thereof by OWNER is acceptable to BIDDER.
  - d) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; BIDDER has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; BIDDER has not solicited or induced any person, firm or corporation to refrain from bidding; and BIDDER

has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.

**Note:** Any reference to "OWNER" in these documents will mean the Town of Wytheville with Project Manager as shown in the Bid Documents, as its representative.

**4.0** Bidder by issuing this bid form to the Town of Wytheville guarantees completion of the work on or before one (1) year from the date the bid was received as shown in this document for the following price(s);

**Bid Schedule**

Bidder agrees to perform all work as described in the Bid Document for the following price(s).

**Base Bid:**

<u>No.</u>	<u>Item</u>
1	New Dehumidifier Unit and associated equipment needed to replace existing equipment with properly sized unit and required elements to operate. Scope includes removal and replacement of the existing ductwork with new fabric ductwork. Total project; To include all materials, equipment and installation services, testing and validation and include removal and disposal of existing equipment. Provide Equipment and Workmanship Warranties as offered by both Bidder and Manufacturer of Equipment. See Exhibit 1 and Exhibit 2 for preliminary list of proposed equipment and potential scope of work to be field verified by vendor prior to Bid submittal.

Total Bid (work and materials)

---

(in word form)

(\$ \_\_\_\_\_) dollars

(Amounts shall be shown in words and figures. In case of discrepancy, the amount shown in words shall govern.)

(See Next Page for Bid Alternative for Electrical Work)

**Bid Alternative for Any Unknown Electrical Work**

The Town and the Vendor agree that unknown electrical work may become necessary at the time of new unit installation. To ensure that both parties have the capacity to negotiate a change order to the contract (if needed) in the event unknown electrical work outside of the regular scope of product installation is discovered, due to hidden and unknown variables and/or cable runs, conduit, breakers and switches, that are essential and needed for the equipment upgrade, this Bid Alternative shall be used to show the average hourly rate for common electrical work needed as it relates to this project. Change order must be approved in advance by the Town Manager for work to occur. The Town reserves the right to use own forces or other electrical vendor if preferred. Please complete the table below and add additional sheet if needed:

<u>Type of Electrical Work</u>	<u>Hourly Rate</u>
_____	_____
_____	_____
_____	_____

I certify that the firm signing this bid and registered under that name is legally qualified to perform all work included in the scope of the contract as determined by the Commonwealth of Virginia, Department of Commerce, State Board for Contractors in Granting the Registration.

Submitted on: \_\_\_\_\_, 2022

Respectfully Submitted

License No. \_\_\_\_\_

Designated Representative: \_\_\_\_\_  
Name, printed Title

\_\_\_\_\_  
Signature

Date: \_\_\_\_\_

Company Name: \_\_\_\_\_

Company Address: \_\_\_\_\_

Witness: \_\_\_\_\_ Date \_\_\_\_\_

NOTE: If BIDDER is a corporation, write the State where incorporated under signature and affix seal; if a partnership, give full name of all parties.

**End of Bid Form**

**ATTACHMENT A.**

**ADDENDUM STATUS**

The Town of Wytheville is committed to providing the information necessary for offeror(s) to fully understand the scope of work and to submit complete proposals. Addendums may arise from an identified and last-minute change or for clarification of items/questions which develop after the release of the RFP. The addendum will be posted on the Town’s website, <https://www.wytheville.org/rfp> and on any online platforms that featured the original proposal.

This form is used to ensure that all offeror(s) received addendums (if any) for the proposal.

If no addendum was issued or received indicate N/A here: \_\_\_\_\_

If addendum(s) were issued, indicate that it was received by offeror below:

The undersigned offeror received the addendum(s),

Signature: \_\_\_\_\_

Date(s) of Addendum(s): \_\_\_\_\_

Title: \_\_\_\_\_

Name of Firm: \_\_\_\_\_

\*\*\* THIS FORM MUST BE INCLUDED IN THE PROPOSAL PACKET

## ATTACHMENT B. PROPRIETARY/CONFIDENTIAL INFORMATION

**Code of Virginia 2.2-4342F** “Trade secrets or proprietary information submitted by a bidder, offeror, or contractor in connection with a procurement transaction or prequalification application submitted pursuant to subsection B of § 2.2-4317 shall not be subject to the Virginia Freedom of Information Act (§ 2.2-3700 et seq.); however, the bidder, offeror, or contractor shall (i) invoke the protections of this section prior to or upon submission of the data or other materials, (ii) identify the data or other materials to be protected, and (iii) state the reasons why protection is necessary. A bidder, offeror, or contractor shall not designate as trade secrets or proprietary information (a) an entire bid, proposal, or prequalification application; (b) any portion of a bid, proposal, or prequalification application that does not contain trade secrets or proprietary information; or (c) line-item prices or total bid, proposal, or prequalification application prices.”

Trade secrets or proprietary information shall be identified in writing on this form, either before or at the time the data or other material is submitted. **Note: If proprietary/confidential information is identified, Bidder/Offeror must submit a redacted copy (in both paper and electronic PDF format) of their bid/proposal in addition to the required number of copies requested.** The proprietary or trade secret material must be clearly identified in the redacted bid/proposal copy by a distinct method such as highlighting or underlining and must indicate only the specific words, figures, or paragraphs that constitute a trade secret or proprietary information. The designation of an entire proposal document, line-item prices, and/or total proposal prices as proprietary or trade secrets is not acceptable. If, after being given reasonable time, the offeror refuses to withdraw such a classification designation, the proposal will be rejected.

**Name of Bidder/Offeror:** \_\_\_\_\_

**Indicate N/A if there is no proprietary/confidential information in the proposal:** \_\_\_\_\_

**If there is proprietary/confidential information, complete the table below. Additional sheets can be added if needed.**

SECTION/TITLE OF THE CONFIDENTIAL INFORMATION	PAGE NUMBER(S)	REASON(S) FOR WITHHOLDING FROM DISCLOSURE

\*\*\* THIS FORM MUST BE INCLUDED IN THE PROPOSAL PACKET

## ATTACHMENT C. STATE CORPORATION COMMISSION (SCC) FORM

Pursuant to Code of Virginia 2.2-4311.2 (B) A bidder/offeror organized or authorized to transact business in the Commonwealth pursuant to Title 13.1 or Title 50 is required to include in its bid/proposal the identification number issued to it by the State Corporation Commission (SCC) and shall not allow the identification number to lapse, be revoked or cancelled at any time during the term of the contract. Any bidder/offeror that is not required to be authorized to transact business in the Commonwealth as a foreign business entity under Title 13.1 or Title 50 or as otherwise required by law is required to include in its bid/proposal a statement describing why the bidder/offeror is not required to be so authorized. Any bidder or offeror described in subsection B that fails to provide the required information shall not receive an award unless a waiver of this requirement and the administrative policies and procedures established to implement this section is granted by the Director of the Department of General Services or his the designee or by the Chief Executive of a local governing body. A link to the SCC site is at <http://www.scc.virginia.gov>.

**Select one (1) of the choices with an X.**

**The undersigned Offeror is:**

a corporation/business entity with the following SCC identification number: \_\_\_\_\_

not a corporation, limited liability company, limited partnership, registered limited liability partnership, or business trust.

out-of-state business entity that does not regularly and continuously maintain as part of its ordinary and customary business any employees, agents, offices, facilities, or inventories in Virginia (not counting any employees or agents in Virginia who merely solicit orders that require acceptance outside Virginia before they become contracts, and not counting any incidental presence of the Offeror in Virginia that is needed in order to assemble, maintain, and repair goods in accordance with the contracts by which such goods were sold and shipped into Virginia from bidder's out-of-state location).

out-of-state business entity that is including with this bid an opinion of legal counsel which accurately and completely discloses the undersigned Offeror's current contacts with Virginia and describes why those contacts do not constitute the transaction of business in Virginia within the meaning of § 13.1-757 or other similar provisions in Titles 13.1 or 50 of the Code of Virginia. **Attach opinion of legal counsel to this form.**

an entity which has not completed any of the foregoing options but currently has pending before the SCC an application for authority to transact business in the Commonwealth of Virginia and wishes to be considered for a waiver to allow them to submit the SCC identification number after the due date for bids/proposals. The Town reserves the right to determine in its sole discretion whether to allow such waiver.

**Signed By:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Name:** \_\_\_\_\_ **Title:** \_\_\_\_\_

**Name of Firm on SCC License:** \_\_\_\_\_

\*\*\* THIS FORM MUST BE INCLUDED IN THE PROPOSAL PACKET

**ATTACHMENT D.**

**NON-COLLUSION AFFIDAVIT**

The Town of Wytheville is committed to an equitable and fair procurement process. Procurement policy prohibits collusion as it relates to the development of procurement documents.

I hereby certify that I am the offeror or a partner of the offeror, or an officer or employee of the offeror's corporation with authority to sign on its behalf and I certify that the following statements are true.

- (1) That the attached proposal or proposals have been arrived at by the offeror and have been arrived at and submitted without collusion or any design to limit bidding or competition; and
- (2) That the contents of the proposal or proposals have not been communicated to any person not an employee or agent of the offeror on any bid furnished with the proposal or proposals, and will not be communicated to any such person prior to the official opening of the proposal or proposals; and
- (3) That I have fully informed myself regarding the accuracy of the statements made in this statement.

Signed By: \_\_\_\_\_ Date: \_\_\_\_\_

Name: \_\_\_\_\_ Title: \_\_\_\_\_  
(Print)

Name of Firm: \_\_\_\_\_

\*\*\* THIS FORM MUST BE INCLUDED IN THE PROPOSAL PACKET

## ATTACHMENT E. INSURANCE REQUIREMENTS

By signing and submitting a bid or proposal the vendor certifies that if awarded the contract, they will have the following insurance coverages at the time the contract is awarded. If any subcontractors are involved, the subcontractor will have the same insurance. The contractor further certifies that they or any subcontractor will maintain these coverages during the entire term of the contract.

- a. **Workers' Compensation** - Statutory requirements and benefits. Coverage is compulsory for employers of three or more employees, to include the employer. Contractors who fail to notify the Town of increases in the number of employees that change their workers' compensation requirements under the *Code of Virginia* during the contract shall be in noncompliance with the contract. § 2.2-4332 and 65.2-800 et seq. *Code of Virginia*
- b. **Employer's Liability** - \$1,000,000 bodily injury by accident/\$1,000,000 bodily injury by disease policy limit/\$1,000,000 bodily injury by disease each employee.
- c. **Automobile Liability Insurance** with limits of \$1,000,000. Coverage symbol 1, Best Rating of A-.
- d. **Commercial General Liability** - \$1,000,000 combined single limits. Commercial General Liability is to include bodily injury and property damage, personal injury and advertising injury, products and completed operations coverage. The "Town of Wytheville, Virginia, its Officers, agents, and employees" shall be added as additional insured on a primary basis and so endorsed on the policy. Such additional insured status shall be primary without participation by County's insurers.
- e. **Professional Liability** – limit of \$1,000,000.
- f. **Builders Risk Coverage**. Replacement cost basis for the duration of the contract.

**Upon Request, the Town may require two (2) documents of insurance coverage:**

- 1.) Certificate of Insurance (COI) for the Town of Wytheville. COI must show the Additional Insured Status.
- 2.) Additional Insured Endorsement issued by the insurance company to show the Additional Insured addition was made to the policy.

### BIDDER/OFFEROR STATEMENT

***I understand the Insurance Requirements and will comply in full if awarded this contract.***

Signed By: \_\_\_\_\_ Date: \_\_\_\_\_

Name: \_\_\_\_\_  
(Print)

Name of Firm: \_\_\_\_\_

\*\*\* THIS FORM AND THE ATTACHMENT WC -WORKERS COMPENSATION FORM 61-A MUST BE INCLUDED IN THE PROPOSAL PACKET

## ATTACHMENT F.

## NOTICE OF EXCEPTIONS

**PLEASE SELECT ONE OF THE FOLLOWING BOXES, SIGN THE FORM, AND RETURN THIS FORM WITH YOUR BID/PROPOSAL SUBMISSION.**

- My firm does not have any exceptions to the bid proposal to list on this form. We accept the terms and conditions as listed.
  
- Technology proposal exception. Per Virginia Code § 2.2-4302.2 (3): “In the case of a **proposal for information technology**, as defined in § 2.2-2006, a public body shall not require an offeror to state in a proposal any exception to any liability provisions contained in the Request for Proposal. Negotiations shall then be conducted with each of the offerors so selected. The offeror shall state any exception to any liability provisions contained in the Request for Proposal in writing at the beginning of negotiations, and such exceptions shall be considered during negotiation.”
  
- A/E proposal exception. Per Virginia Code § 2.2-4302.2 (4): “**For architectural or engineering services**, the public body shall not request or require offerors to list any exceptions to proposed contractual terms and conditions, unless such terms and conditions are required by statute, regulation, ordinance, or standards developed pursuant to § 2.2-1132, until after the qualified offerors are ranked for negotiations.”

**WHEN APPLICABLE LIST ANY EXCEPTIONS BELOW:**

The following is a list of exceptions that I have to the bid proposal.

---

---

Signed by: \_\_\_\_\_

Date: \_\_\_\_\_

\*\*\* THIS FORM MUST BE INCLUDED IN THE PROPOSAL PACKET

## ATTACHMENT G. BUSINESS LICENSE & PROFESSIONAL LICENSE

The firm is required to show proof of a business license and proof of any professional licenses required to operate in the Commonwealth of Virginia.

In accordance with the Wytheville Town Code, Section 7-19," It shall be unlawful and shall constitute a misdemeanor for any person to conduct a business, or to engage in a profession, trade or occupation within the municipality, without first procuring a license as required under the provisions of this article."

This clause pertains to all businesses that physically locate an office in the town and/or any contractors who perform work in the town. This clause does not pertain to professional services when a home office is in another jurisdiction.

If chosen and prior to the award of a contract, a firm which is required to obtain a Town of Wytheville Business License will be required to submit a copy of the license. More information regarding The Town of Wytheville Business License is available at the Treasurer's Office or by visiting <https://www.wytheville.org/business>

**Name of Firm and Town of Wytheville Business License Number: (Indicate N/A if not applicable)**

---

**If the home office is located in another jurisdiction, Complete the information below or indicate N/A:**

**Name of Firm:**

**Locality:**

**Business License Number:**

---

**Other Required License(s):**

**\*\*\*List any other professional licenses which may be required to conduct this business in the Commonwealth of Virginia. Use the space below. Indicate N/A if this is not applicable to the scope of work.**

---

**\*\*\* Licensed contractors shall submit the DPOR License Number on the outside of the sealed bid packet in addition to using this form.**

**\*\*\* THIS FORM MUST BE SUBMITTED WITH THE BID PACKET**

**ATTACHMENT H. SELF CERTIFY STATUS (SWAM, DBE, Other)**

The Virginia Small Business Supplier Diversity Agency maintains a list of firms that are SWAM and DBE certified. Small, Women-owned, Minority-owned, Micro, Service-Disabled Veteran-owned, and ESO Businesses (SWAM) can become certified if the firm so chooses and listed at the website <https://www.sbsd.virginia.gov/directory/> . This website provides a link to the Federal Disadvantaged Business Enterprise (DBE) certification process and list for those who qualify for the federal certification.

If your organization is Small, Women Minority- owned business (SWAM) and/or Disadvantaged Business Enterprise (DBE) certified please indicate below. If the firm is not self-certified, indicate with N/A in the space provided.

Signed By: \_\_\_\_\_

Date: \_\_\_\_\_

Title: \_\_\_\_\_

Name of Firm: \_\_\_\_\_

Status: \_\_\_\_\_

Not Applicable/ No Status to report: \_\_\_\_\_

\*\*\* THIS FORM MUST BE INCLUDED IN THE BID PACKET

## ATTACHMENT I.

## REFERENCE LIST

If required, and when stated as a requirement in the bid or proposal packet, list three (3) references who have employed the offeror and/or used related services to the scope of this proposal.

If references are not required as part of this bid put N/A here: \_\_\_\_\_

Company	Contact Name	Phone	Email	Year of Contract	Project Name

\*\*\* THIS FORM MUST BE INCLUDED IN THE PROPOSAL PACKET

**ATTACHMENT J.**

**SAMPLE CONTRACT**

CONTRACT #: \_\_\_\_\_

This Contract entered this date [Date], by \_\_\_\_\_ hereinafter called the “Contractor” and the Town of Wytheville, called the “Owner.”

WITNESSETH that the Contractor and the Owner, in consideration of the mutual covenants, promises and agreements herein contained, agree as follows:

SCOPE OF CONTRACT: The Contractor shall provide [goods/services] to the Owner as set forth in the Contract Documents.

PERIOD OF PERFORMANCE: From \_\_\_\_\_ through \_\_\_\_\_ with \_\_\_\_\_ renewal options.

The contract documents shall consist of:

- (1) This signed form;
- (2) The entire Town of Wytheville’s Official solicitation (no revisions by the Contractor) dated: \_\_\_\_\_. If applicable, any Official Town Addenda: #1, dated: \_\_\_\_\_.
- (3) The Contractor’s Bid/Proposal response dated \_\_\_\_\_ and the following negotiated modifications to the Bid/Proposal (if applicable), all of which are incorporated herein.

IN WITNESS WHEREOF, the parties have caused this Contract to be duly executed intending to be bound thereby.

CONTRACTOR:

TOWN OF WYTHEVILLE (OWNER):

By: \_\_\_\_\_  
(Signature)

By: \_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Printed Name)

\_\_\_\_\_  
(Printed Name)

Title: \_\_\_\_\_ Title: \_\_\_\_\_

\*\*\* THIS FORM IS FOR SAMPLE PURPOSES. IT IS **NOT** REQUIRED TO BE COMPLETED AS PART OF THE BID SUBMITTAL. THIS FORM AND/OR SIMILAR CONTRACT WILL BE EXECUTED IF OFFEROR IS AWARDED THE CONTRACT. THE TOWN RESERVES THE RIGHT TO DRAFT A CONTRACT THAT REFLECTS THE SPECIFIC NEEDS OF THE PROCUREMENT.

# Contractor's Certification of Workers' Compensation Liability

(Form 61-A)



www.workcomp.virginia.gov

**PLEASE COMPLETE FULLY AND LEGIBLY**

This form must be filed in each Virginia locality where a contractor applies for or renews a business license

**FILING INSTRUCTIONS ON REVERSE SIDE**

<b>Locality Issuing License:</b> City <input type="checkbox"/> Town <input checked="" type="checkbox"/> County <input type="checkbox"/>		<b>Name of Locality:</b> Wytheville	<b>Business or Trade Name:</b>	<b>Business License Number:</b>
<b>Name of Applicant</b> Last:		First:	<b>Business FEIN or Tax ID Number:</b>	
<b>Applicant Mailing Address:</b>			<b>Business Address:</b>	
City: State: Zip:			City: State: Zip:	
<b>Home Telephone:</b>			Business: Corp. <input type="checkbox"/> L.L.C. <input type="checkbox"/> Sole Prop <input type="checkbox"/> Partnership <input type="checkbox"/> Other <input type="checkbox"/>	
<b>METHOD of INSURING FOR WORKERS' COMPENSATION LIABILITY:</b>				
<b>Indicate One:</b>  <input type="checkbox"/> Insurance Carrier licensed in Virginia  <input type="checkbox"/> Self insured with certificate of authorization issued by the Virginia Workers' Compensation Commission  <input type="checkbox"/> Group Self-Insurance Association (GSIA) licensed by the State Corporation Commission  <input type="checkbox"/> A Professional Employer Organization (PEO) registered in Virginia		<b>Type of Trade or Industry:</b>		
<b>Name of Insurance Carrier, Self-Insured, GSIA or PEO:</b>		<b>Business Telephone:</b>	<b>E-mail Address:</b>	
<b>Policy, Master Policy or Certificate Number:</b>		<input type="checkbox"/> Check Here if Workers' Compensation is <i>Not</i> Required		
<b>Policy Effective Date and Policy Period:</b>		<b>Reason:</b> <input type="checkbox"/> Less than 3 employees  (Note: Corporate officers, LLC managers, part-time employees and employees of your subcontractors generally count as your employees for workers' compensation purposes. Filing of a 1099, payment of cash wages or designating a worker an "Independent Contractor" does not necessarily alter employee status under the Workers' Compensation Act.)  <input type="checkbox"/> Other (Explain)		
		<b>If you answered workers' compensation Not Required, answer below: Do you hire Independent Contractors or subcontractors to assist you in your work?</b>  <input type="checkbox"/> Yes <input type="checkbox"/> No		

For VWC Use Only:

Under penalty of law, the undersigned certifies s/he is duly authorized by the business license applicant to execute this certificate; the information provided herein is correct; and the business is in compliance with Chapter 8 of Title 65.2 of the Virginia Workers' Compensation Act and will remain in compliance with the law during the effective period of the business license.

<b>Signature of Applicant</b>	<b>Date</b>
<b>Print Name of Applicant</b>	

Form 61-A is prepared and distributed by the Virginia Workers' Compensation Commission to local licensing authorities for use in compliance with Section 58.1-3714, Code of Virginia. Form 61 A is also available online at www.workcomp.virginia.gov

If there are any questions regarding this form, please contact the Commission toll-free at 1-877-664-2566

## ***INSTRUCTIONS FOR COMPLETION OF VWC FORM 61-A***

### ***Contractor's Certification of Workers' Compensation Liability***

#### **To be completed by the official issuing the business license.**

1. Check one. City, Town or County.  
Provide the name of locality issuing the license.  
Provide business license number including any prefix or suffix.

#### **To be completed by the contractor. All information requested is required.**

2. Applicant's name, mailing address and phone number are required.
3. Provide complete name of business. Sole-proprietors and partners should include the trade name under which the business operates.
4. Provide the complete business address used to receive mail by the U.S. Postal Service.
5. Provide the Federal Employer Identification Number (FEIN). If one has not been issued, list the Temporary FEIN issued by the Virginia Tax Dept. If a sole proprietor with neither, list your social security number.
6. Check the legal status of the business.
7. Provide the type of trade/industry in which the business is classified.
8. Provide the business phone number and e-mail if available.
9. Provide the complete name of the insurance company or other insuring entity providing workers' compensation liability insurance for the business. If insured with a carrier, provide carrier name and policy number. If self-insured, provide name on certificate and certificate number. If group self-insured, provide group name and member number. If insured under a Professional Employer Organization (PEO) master policy, provide PEO name and policy number. For all coverage provide policy effective dates.  
  
Do not use the name of an insurance agency.  
If the name of the insurance company is unknown, contact the agent for this information.
10. For contractors that indicate workers' compensation is not required, indicate if you hire subcontractors to assist you in your work or in fulfilling your contracts.
11. For general information regarding whether workers' compensation coverage is required, please review the brochure provided or contact the Virginia Workers' Compensation Commission at 1-877-664-2566.
12. Sign the form and print the name of the person signing the form.
13. Date the form and present it to the licensing authority.

**Note:** The state funds of West Virginia and Maryland are not authorized to write workers' compensation insurance in Virginia.

**DO NOT ATTACH ANY DOCUMENTS TO THE CONTRACTOR'S CERTIFICATE.**



By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting*, later, for further information.

**Note:** If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

**Definition of a U.S. person.** For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien;
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;
- An estate (other than a foreign estate); or
- A domestic trust (as defined in Regulations section 301.7701-7).

**Special rules for partnerships.** Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States.

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

**Foreign person.** If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Pub. 515, *Withholding of Tax on Nonresident Aliens and Foreign Entities*).

**Nonresident alien who becomes a resident alien.** Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items.

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

**Example.** Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

## Backup Withholding

**What is backup withholding?** Persons making certain payments to you must under certain conditions withhold and pay to the IRS 24% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

**Payments you receive will be subject to backup withholding if:**

1. You do not furnish your TIN to the requester,
2. You do not certify your TIN when required (see the instructions for Part II for details),
3. The IRS tells the requester that you furnished an incorrect TIN,
4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or
5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code*, later, and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships*, earlier.

## What is FATCA Reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code*, later, and the Instructions for the Requester of Form W-9 for more information.

## Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

## Penalties

**Failure to furnish TIN.** If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

**Civil penalty for false information with respect to withholding.** If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

**Criminal penalty for falsifying information.** Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

**Misuse of TINs.** If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

## Specific Instructions

### Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account (other than an account maintained by a foreign financial institution (FFI)), list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9. If you are providing Form W-9 to an FFI to document a joint account, each holder of the account that is a U.S. person must provide a Form W-9.

a. **Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

**Note: ITIN applicant:** Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. **Sole proprietor or single-member LLC.** Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or “doing business as” (DBA) name on line 2.

c. **Partnership, LLC that is not a single-member LLC, C corporation, or S corporation.** Enter the entity’s name as shown on the entity’s tax return on line 1 and any business, trade, or DBA name on line 2.

d. **Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. **Disregarded entity.** For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a “disregarded entity.” See Regulations section 301.7701-2(c)(2)(iii). Enter the owner’s name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner’s name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity’s name on line 2, “Business name/disregarded entity name.” If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

### Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

### Line 3

Check the appropriate box on line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box on line 3.

IF the entity/person on line 1 is a(n) . . .	THEN check the box for . . .
• Corporation	Corporation
• Individual • Sole proprietorship, or • Single-member limited liability company (LLC) owned by an individual and disregarded for U.S. federal tax purposes.	Individual/sole proprietor or single-member LLC
• LLC treated as a partnership for U.S. federal tax purposes, • LLC that has filed Form 8832 or 2553 to be taxed as a corporation, or • LLC that is disregarded as an entity separate from its owner but the owner is another LLC that is not disregarded for U.S. federal tax purposes.	Limited liability company and enter the appropriate tax classification. (P= Partnership; C= C corporation; or S= S corporation)
• Partnership	Partnership
• Trust/estate	Trust/estate

### Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space on line 4 any code(s) that may apply to you.

#### Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys’ fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

- 1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)
- 2—The United States or any of its agencies or instrumentalities
- 3—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities
- 4—A foreign government or any of its political subdivisions, agencies, or instrumentalities
- 5—A corporation
- 6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession
- 7—A futures commission merchant registered with the Commodity Futures Trading Commission
- 8—A real estate investment trust
- 9—An entity registered at all times during the tax year under the Investment Company Act of 1940
- 10—A common trust fund operated by a bank under section 584(a)
- 11—A financial institution
- 12—A middleman known in the investment community as a nominee or custodian
- 13—A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over \$600 required to be reported and direct sales over \$5,000 <sup>1</sup>	Generally, exempt payees 1 through 5 <sup>2</sup>
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

<sup>1</sup> See Form 1099-MISC, Miscellaneous Income, and its instructions.

<sup>2</sup> However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

**Exemption from FATCA reporting code.** The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B—The United States or any of its agencies or instrumentalities

C—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G—A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I—A common trust fund as defined in section 584(a)

J—A bank as defined in section 581

K—A broker

L—A trust exempt from tax under section 664 or described in section 4947(a)(1)

M—A tax exempt trust under a section 403(b) plan or section 457(g) plan

**Note:** You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

## Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns. If this address differs from the one the requester already has on file, write NEW at the top. If a new address is provided, there is still a chance the old address will be used until the payor changes your address in their records.

## Line 6

Enter your city, state, and ZIP code.

## Part I. Taxpayer Identification Number (TIN)

**Enter your TIN in the appropriate box.** If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN.

If you are a single-member LLC that is disregarded as an entity separate from its owner, enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

**Note:** See *What Name and Number To Give the Requester*, later, for further clarification of name and TIN combinations.

**How to get a TIN.** If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at [www.SSA.gov](http://www.SSA.gov). You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at [www.irs.gov/Businesses](http://www.irs.gov/Businesses) and clicking on Employer Identification Number (EIN) under Starting a Business. Go to [www.irs.gov/Forms](http://www.irs.gov/Forms) to view, download, or print Form W-7 and/or Form SS-4. Or, you can go to [www.irs.gov/OrderForms](http://www.irs.gov/OrderForms) to place an order and have Form W-7 and/or SS-4 mailed to you within 10 business days.

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

**Note:** Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

**Caution:** A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

## Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if item 1, 4, or 5 below indicates otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code*, earlier.

**Signature requirements.** Complete the certification as indicated in items 1 through 5 below.

**1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983.**

You must give your correct TIN, but you do not have to sign the certification.

**2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983.**

You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

**3. Real estate transactions.**

You must sign the certification. You may cross out item 2 of the certification.

**4. Other payments.**

You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

**5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), ABLE accounts (under section 529A), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions.**

You must give your correct TIN, but you do not have to sign the certification.

**What Name and Number To Give the Requester**

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account) other than an account maintained by an FFI	The actual owner of the account or, if combined funds, the first individual on the account <sup>1</sup>
3. Two or more U.S. persons (joint account maintained by an FFI)	Each holder of the account
4. Custodial account of a minor (Uniform Gift to Minors Act)	The minor <sup>2</sup>
5. a. The usual revocable savings trust (grantor is also trustee)	The grantor-trustee <sup>1</sup>
b. So-called trust account that is not a legal or valid trust under state law	The actual owner <sup>1</sup>
6. Sole proprietorship or disregarded entity owned by an individual	The owner <sup>3</sup>
7. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))	The grantor*
For this type of account:	Give name and EIN of:
8. Disregarded entity not owned by an individual	The owner
9. A valid trust, estate, or pension trust	Legal entity <sup>4</sup>
10. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
11. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
12. Partnership or multi-member LLC	The partnership
13. A broker or registered nominee	The broker or nominee

For this type of account:	Give name and EIN of:
14. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
15. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i)(B))	The trust

<sup>1</sup> List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

<sup>2</sup> Circle the minor's name and furnish the minor's SSN.

<sup>3</sup> You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

<sup>4</sup> List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships*, earlier.

\*Note: The grantor also must provide a Form W-9 to trustee of trust.

Note: If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

**Secure Your Tax Records From Identity Theft**

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Pub. 5027, Identity Theft Information for Taxpayers.

Victims of identity theft who are experiencing economic harm or a systemic problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

**Protect yourself from suspicious emails or phishing schemes.**

Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to [phishing@irs.gov](mailto:phishing@irs.gov). You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at [spam@uce.gov](mailto:spam@uce.gov) or report them at [www.ftc.gov/complaint](http://www.ftc.gov/complaint). You can contact the FTC at [www.ftc.gov/idtheft](http://www.ftc.gov/idtheft) or 877-IDTHEFT (877-438-4338). If you have been the victim of identity theft, see [www.IdentityTheft.gov](http://www.IdentityTheft.gov) and Pub. 5027.

Visit [www.irs.gov/IdentityTheft](http://www.irs.gov/IdentityTheft) to learn more about identity theft and how to reduce your risk.

## Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.