**SECTION 23 40 00 HVAC Air Cleaning Devices**

**Armstrong VidaShield UV 24™ Air Purification System**

# Part 1 - General

## 1.1 RELATED DOCUMENTS

Drawings and general conditions of Contract, including General and Supplementary Conditions and Divisions-1 Specification sections apply to work of this section.

## 1.2 SUMMARY

A. Section Includes

 1. Armstrong VidaShield UV 24™ Air Purification System

 2. Acoustical Infill panels

B. Related Sections

 1. Section 09 51 00 - Acoustical Ceilings

 3. Section 09 53 00 - Acoustical Ceiling Suspension Assemblies

 4. Section 09 20 00 - Plaster and Gypsum Board

 5. Section 01 81 13 - Sustainable Design Requirements

 6. Section 01 81 19 - Indoor Air Quality Requirements

 7. Section 02 42 00 - Removal and Salvage of Construction Materials

 8. Divisions 23 - HVAC Air Distribution

 9. Division 26 - Electrical

C. Alternates

 1. Prior Approval: Unless otherwise provided for in the Contract documents, proposed product substitutions may be submitted no later than TEN (10) working days prior to the date established for receipt of bids. Acceptability of a proposed substitution is contingent upon the Architect's review of the proposal for acceptability and approved products will be set forth by the Addenda. If included in a Bid are substitute products that have not been approved by Addenda, the specified products shall be provided without additional compensation.

 2. Submittals that do not provide adequate data for the product evaluation will not be considered. The proposed substitution must meet all requirements of this section, including but not necessarily limited to, the following: Single source materials suppliers (if specified in Section 1.5); Underwriters' Laboratories Classified Acoustical performance; Panel design, size, composition, color, and finish; Suspension system component profiles and sizes; Compliance with the referenced standards.

## 1.3 REFERENCES

A. American Society for Testing and Materials (ASTM):

 1. ASTM A 1008 Standard Specification for Steel, Sheet, Cold Rolled, Carbon, Structural,

 High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability

 2. ASTM C 423 Sound Absorption and Sound Absorption Coefficients by the Reverberation

 Room Method

 3. ASTM D 3273 Standard Test Method for Resistance to Growth of Mold on the Surface of

 Interior Coatings in an Environmental Chamber

 4. ASTM E 580 Installation of Metal Suspension Systems in Areas Requiring Moderate Seismic

 Restraint

 5. ASTM E 1111 Standard Test Method for Measuring the Interzone Attenuation of Ceilings

 Systems

 6. ASTM E 1414 Standard Test Method for Airborne Sound Attenuation Between Rooms

 Sharing a Common Ceiling Plenum

 7. ASTM E 1264 Classification for Acoustical Ceiling Products

B. International Building Code

C. ASHRAE (American Society of Heating Refrigeration and Air Conditioning Engineers)

1. ASHRAE Standard 62.1-2004, Ventilation for Acceptable Indoor Air Quality
2. ASHRAE 52.1, Gravimetric And Dust Spot for Testing Air-Cleaning Devices Used in General Ventilation for Removing Particulate Matter (ANSI Approved).
3. AHSRAE 52.2, Method of Testing General Ventilation Air Cleaning Devices for Removal Efficiency by Particle Size.
4. ASHRAE 145.1, Laboratory Test Method for Assessing the Performance of Gas-Phase Air Cleaning Systems: Loose Granular Media.
5. ASHRAE 145.2, Laboratory Test Method for Assessing the Performance of Gas-Phase Air Cleaning Systems: Air Cleaning Devices.

D. NFPA 70 National Electrical Code

E. ASCE 7 American Society of Civil Engineers, Minimum Design Loads for Buildings and Other Structures

F. International Code Council-Evaluation Services - AC 156 Acceptance Criteria for Seismic Qualification Testing of Non-structural Components

G. International Code Council-Evaluation Services Report - Seismic Engineer Report

 1. ESR 1308 - Armstrong Suspension Systems

I. California Department of Public Health CDPH/EHLB Emission Standard Method Version 1.2 2017

J. LEED - Leadership in Energy and Environmental Design is a set of rating systems for the design, construction, operation, and maintenance of green buildings

K. International Well Building Standard

L. Mindful Materials

M. Living Building Challenge

N. U.S. Department of Agriculture Bio Preferred program (USDA Bio Preferred).

## 1.4 SUBMITTALS

A. Product Data: Submit manufacturer's technical data for each type of acoustical infill unit and suspension system required.

B. Shop Drawings: Layout and details of acoustical infills show locations of items that are to be coordinated with or supported by the infill panels.

## 1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver Armstrong VidaShield UV 24™ Air Purification System and infill units to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other causes.

B. Before installing acoustical infill units, permit them to reach room temperature and a stabilized moisture content.

C. Handle acoustical infill units carefully to avoid chipping edges or damaging units in any way.

## 1.6 WARRANTY

Manufacturer offers a 3-year limited warranty on the Armstrong VidaShield UV 24™ panel.

* Manufacturer warrants Armstrong VidaShield UV 24™ fixtures to be free from defects in materials and workmanship for the specified period beginning on the date of purchase (or date of manufacture when purchase date is in question).
* Warranted for a full year – UV lamp and fans.
* Warranted for 3 years – fixture construction, including ballasts, photocell and failure indicator lamp.
* This warranty does not cover:
	+ Damages to products for reasons beyond Manufacturer’s control, including, but not limited to: power surge, water infiltration, abuse, misuse, accidental damage, vandalism, fire, natural disaster and lightning; Incompatibility with products not supplied by Manufacturer, or other issues not related to materials and manufacture; Installations not in accordance with Manufacturer Installation Instructions, the latest National Electrical Code, Underwriters Laboratory Bulletins, and ANSI Specifications; Labor costs associated with removing, re-packaging for shipment, or reinstalling product.
	+ See warranty accompanying your unit for full details. If you need to submit a claim for a warranty, contact TechLine at 877-276-7876 or techline@armstrongceilings.com.

## 1.7 MAINTENANCE

A. Extra Materials: Deliver extra materials to Owner. Furnish extra materials described below that match products installed. Packaged with protective covering for storage and identified with appropriate labels.

 1. Each unit will be supplied with enough filters to maintain the unit for one year after date of installation.

# PART 2 - PRODUCTS

## 2.1 MANUFACTURERS

A. Air Purification System

 1. Armstrong VidaShield UV 24™

**2.2 Air Purification System**

A. Component:

The Armstrong VidaShield UV 24™ is a patented 2 x 4 troff­er with a UV-C air treatment system. The Armstrong VidaShield UV 24™ is a standalone, ceiling mounted unit. The Armstrong VidaShield UV 24™ draws in untreated air, pushes it through a highly reflective UV chamber with an ultraviolet light set at the wavelength of 253.7 nanometers which inactivates bacteria or fungi that passes over the lamp. Four fans continue to push the air through the unit at approximately 50 cfm. The system works 24/7/365.

B. Armstrong VidaShield UV 24™ Chamber

1. Dimensions – 16” wide x 48" long x 2" high
2. UVC Lamp – One 59w T5HO 22” Lamp w/ 15w of UVC Output
3. Fan System – Ultra Quiet Air Circulation Fans
4. Volume – 50 CFM
5. Generator – Dedicated UV Ballast
6. Air Filter – MERV 6 High Air Flow Particle Filter
7. Light Block – Formed Baffles Prevent UV Light Leaks
8. Safety Lock – Switch Deactivates UV When Accessed

C. Armstrong VidaShield UV 24™ Fixture

1. Dimensions - 24" wide x 48" long x 5" high (UV chamber included)
2. Weight – 34 lbs.
3. Voltage – 120v - 277v 50/60 Hz
4. Housing – Aluminum with a Powder Coat Finish
5. Door LED Light Panel
6. Lumens – 5200
7. Color Temp – 4000k
8. Driver – 0-10 V Dimming \*Wall mounted dimming control provided by others
9. Efficacy – 100lm/W
10. Total Watts – 59W UV Bulb + 4 fans + 60W LED Panel = 125 total watts
11. Acceptable Product: VidaShield UV24 System with LED Light Infill Panel item 52LUVC as manufactured by Armstrong World Industries

 D. Performance

Removal rates for most pathogens are in excess of 90% in the primary configurations. At the

nominal design airflow of 50 cfm, and with a MERV 6 filter and a UV lamp with 15 W of UV output the Armstrong VidaShield UV 24™ System provides overall single pass removal rates of approximately 97% on the average for the 44 airborne nosocomial pathogens. Please contact your Armstrong representative for the complete performance white paper.

## 2.3 ACOUSTICAL INFILL PANEL UNITS

A. Acoustical Panels Type AP

 1. Surface Texture: Medium

 2. Composition: Mineral Fiber

 3. Color: White

 4. Flame Spread: ASTM E 1264; Class A (UL)

 5. Light Reflectance (LR) White Panel: ASTM E 1477; 0.82

 6. Dimensional Stability: HumiGuard Plus

 7. Recycle Content: Post-Consumer - 0% - 1% Pre-Consumer - 39% - 54%

# PART 3 - EXECUTION

## 3.1 EXAMINATION

A. Do not proceed with installation until all wet work such as concrete, terrazzo, plastering and painting has been completed and thoroughly dried out, unless expressly permitted by manufacturer's printed recommendations.

## 3.2 PREPARATION

A. Coordinate Armstrong VidaShield UV 24™ Purification System layout with acoustical ceiling panels, mechanical and electrical fixtures.

B. Coordination: Furnish layouts for preset inserts, clips, and other ceiling anchors whose installation is specified in other sections.

1. Furnish concrete inserts and similar devices to other trades for installation well in advance of time needed for coordination of other work.

## 3.3 INSTALLATION

A. Follow manufacturer installation instructions.

B. Install suspension system and panels in accordance with the manufacturer's instructions, and in compliance with ASTM C 636 and with the authorities having jurisdiction.

## 3.4 ADJUSTING AND CLEANING

A. Replace damaged and broken panels.

B. Clean exposed surfaces of acoustical infill panels, including trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch up of minor finish damage. Remove any infill panel products that cannot be successfully cleaned and or repaired. Replace with attic stock or new product to eliminate evidence of damage.

C. Before disposing of infill panels, contact the Armstrong Recycling Center at 877-276-7876, select option #1 then #8 to review with a consultant the condition and location of building where the infill panels will be removed. The consultant will verify the condition of the material and that it meets the Armstrong requirements for recycling. The Armstrong consultant will provide guidance to facilitate the recycling of the infill panel.

**End of Specification**