Are current best practices for infection control working? How is your Indoor Air Quality?

At least three factors contriute to the high rate of TB in correctional and detention facilities

1. Disparate numbers of incarcerated persons are at high risk for TB (e.g., users of illicit substances [e.g., injection drugs], persons of low socioeconomic status, and persons with human immunodeficiency virus [HIV] infection). These persons often have not received standard public health interventions or nonemergency medical care before incarceration.

2. The physical structure of the facilities contributes to disease transmission, as facilities often provide close living quarters, might have inadequate ventilation, and can be overcrowded.

3. Movement of inmates into and out of overcrowded and inadequately ventilated facilities, coupled with existing TB-related risk factors of the inmates, combine to make correctional and detention facilities a high-risk environment for the transmission of M. tuberculosis and make implementation of TB-control measures particularly difficult. Despite recent efforts to improve TB-control measures in correctional and detention facilities, outbreaks of TB continue to occur in these settings, and TB disease has been transmitted to persons living in nearby communities.[1]

Introduction to Conversion

3 Step Process

- **Merv 13 Filtration**
- **UVGI**
- **Photocatalytic Oxidation**

In recent years, the incidence of Mycobaterium Tuberculosis (M. tuberculosis) has increased. People spread this disease through the air in minute droplets. A person who has this TB may generate these droplets when he or she coughs, speaks, sings, or spits. Workers who, in the course of their job duties, have close contact with persons with infectious tuberculosis disease are at an increased risk of infection with TB.

Over Crowded? Confined and not enough ventilation? Odors and biologics running rampant?

Photo Catalytic Oxidation

- The Oxidation of Carbon
- The Reduction of Volatile Organic Compounds
- Degradation of Cellular Structure in Pollen, Mold, Bacteria and Virus

Features

- Oxidation/Reduction Reaction, not Capture
- Low Static Pressure Drop .05in @500fpm
- Energy requirements/ general rule .05 to .1 watts per cfm. (at 500fpm.)
- Ease of installation in new or existing retrofit jobs
- Dual use - effective with both BIO and VOC's
- 15 year catalyst life cycle-12,000hr lamp life

Jail Standards

In the jail buildings, the variation in the degree of crowding permitted the outside-air supply per person to be correlated with disease rates. Findings emphasize the importance of designing ventilation systems for correctional facilities that anticipate the possibility of severe overcrowding.
The recent increase in multidrugresistant Mycobacterium tuberculosis and the well-documented association of the transmission of tuberculosis with incarceration also indicate the need to reassess standards for indoor-air quality and other preventive measures in correctional facilities.[2]

TB Cases per 100,000 Prisons Vs Population

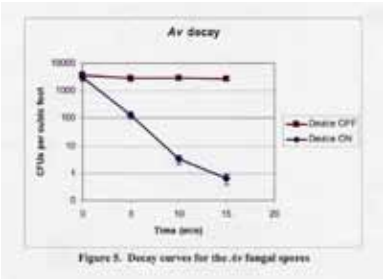
During 1980--2003, the number of incarcerated persons in the United States increased fourfold, from approximately 500,000 in 1980 to approximately 2 million in 2003. A disproportionately high percentage of TB cases occur among persons incarcerated in U.S. correctional facilities. In 2003 at midyear, although 0.7% of the total US population was confined in prisons and jails, 3.2% of all TB cases nationwide occurred among residents of correctional facilities.

1. Prevention and Control of Tuberculosis in Correctional and Detention Facilities: Recommendations from CDC Endorsed by the Advisory Council for the Elimination of Tuberculosis, the National Commission on Correctional Health Care, and the American Correctional Association Published: 08/03/2006

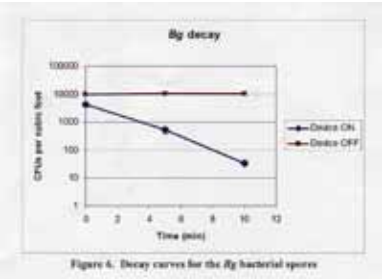
2.New England Journal of Medicine *An Epidemic of Pneumococcal Disease in an Overcrowded, Inadequately Ventilated Jail Volume 331:643-648*

Genesis Air Photocatalysis

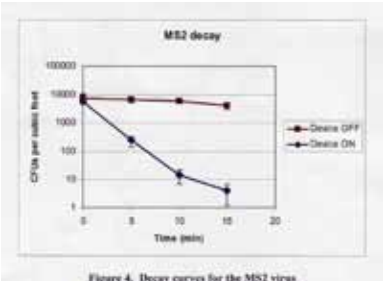
3rd party testing available thru your American Standard Territory Manager



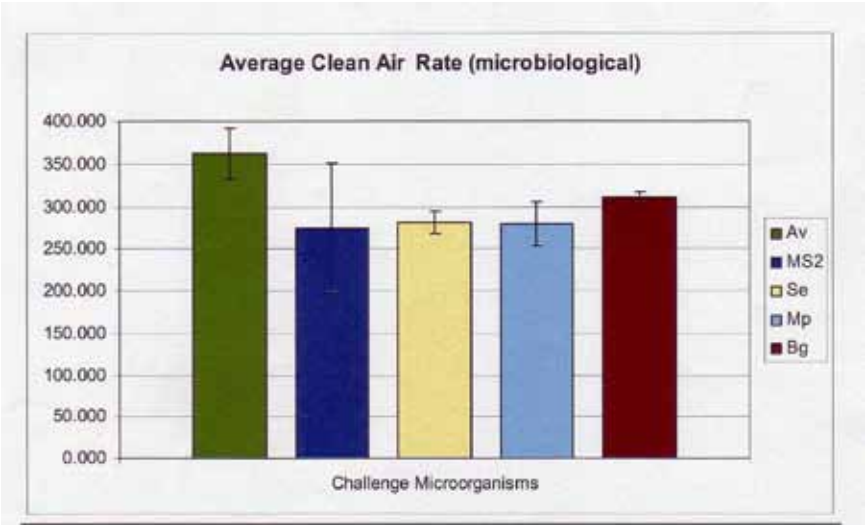
Aspergillus versicolor



Bacillus anthracis

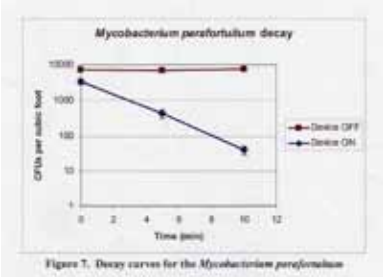


E.Coli

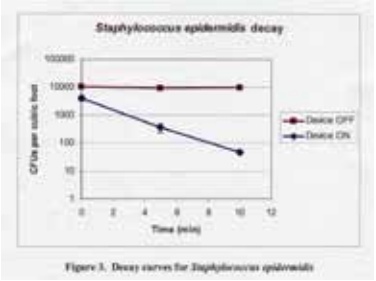


Clean Air Rate Microbiological

Third Party Testing Courtesy of RTI International



Tuberculosis



MRSA

Installations

Federal Law Enforcement
Federal, State & Local Government

Wright-Patterson AFB, Building 5 M-30, Wright Patterson, Ohio
914 Airlift Wing Fire and Crash Rescue Station, Niagara Falls, NY
El Paso VA Clinic, El Paso, Texas
Fort Sam Houston Building 4196, San Antonio, Texas
FLETC Command Building, PT Building, Artesia, New Mexico
Goodfellow AFB Pipeline Dormitory, School Age Facility, San Angelo, Texas
Laughlin AFB Fuel Systems Building, PT Building, Del Rio, Texas
Lackland AFB MP Canine Training Facility, San Antonio, Texas
Marshal Space Flight Center, Huntsville, Alabama
Ohio University, Athens, Ohio
City of Norman Library, Norman, Oklahoma
U.S. Postal Service, Sundown, Texas
Plano Police Department Evidence Room, Plano, TX
Department of Public Safety, Austin, Texas
National Archives and Records Administration, St Louis, Missouri
Ramsey County Prison, Maplewood, Minnesota
Johnson County Communications Center, Kansas City Kansas
George Bush Library, Dallas Texas (In Progress)
Fort Sam Houston Dormitory, San Antonio, Texas
Long Beach Fire Station, Long Beach, California
Norman Police Department, Norman, Oklahoma
Margaret Chase Smith Federal Building, Bangor, Maine

ASHRAE Position Paper, June 2009

Acknowledges that HVAC systems play a role in the dissemination of diseases in buildings

Key points:

Infectious diseases can be transmitted via an airborne path.
Designers have a responsibility to minimize that potential
Dilution ventilation
Building pressure control
Filtration
Oxidative technologies, UVGI, PCO

FIFRA....EPA Est. No 87447--TX--001
FIFRA....EPA Est. No. 8901--NV--001 2006 D & L

California Air Resources Board
(CARB) G-11-040

Contact your local American Standard Territory Manager for more information