ADDENDA

2015 Supplement

ANSI/ASHRAE Addenda a, b, and d to
ANSI/ASHRAE Standard 52.2-2012

Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size

See Appendix for approval dates.

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CONTENTS

2015 Addenda Supplement to ANSI/ASHRAE Standard 52.2-2012, Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size

SECTION **PAGE**

NOTE

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FOREWORD

These proposed MERV table changes are a direct result of a thorough review and series of votes at the committee level to address key issues about the variability of the standard, specifically the MERV 8 through 11 overlap issue and the need for each range to be consistent with the lower limits of the other ranges. These inconsistencies have been a source of legitimate confusion and have been used to abet the known occasional intentional misuse of the data. It is our sincere belief that these steps are critical in the further use of the standard and its data product. Further and substantial changes in the MERV concept are under consideration now and should compliment these proposed changes.

Note: In this addendum, changes to the current standard are indicated in the text by underlining (for additions) and ~~strikethrough~~ (for deletions) unless the instructions specifically mention some other means of indicating the changes.

Addendum a to Standard 52.2-2012

Modify Section 12, replacing Table 12-1, as follows.

12. MINIMUM EFFICIENCY REPORTING VALUE (MERV) FOR AIR CLEANERS

12.2 The minimum final resistance for an air cleaner shall be ~~in accordance with Table 12-1, except that the final resistance shall always be~~ the same as or greater than twice the initial resistance.

12.3 The minimum efficiency reporting value in the specified size ranges and final resistance for reporting purposes shall be in accordance with Table 12-1. Air cleaners with MERV1 to MERV4 (i.e., devices with efficiencies less than 20% in the size range of 3.0–10.0 μm) shall also be tested in accordance with the Dust-Loading Procedure outlined in Section 10.7.2 of this standard before using this system for reporting.

~~**TABLE 12-1 Minimum Efficiency Reporting Value (MERV) Parameters**~~

~~Standard 52.2 Minimum Efficiency Reporting Value (MERV)~~	~~Composite Average Particle Size Efficiency, % in Size Range, μm~~			~~Average Arrestance, %~~
	~~Range 1 0.30–1.0~~	~~Range 2 1.0–3.0~~	~~Range 3 3.0–10.0~~	
~~1~~	~~n/a~~	~~n/a~~	~~$E_3 < 20$~~	~~$A_{avg} < 65$~~
~~2~~	~~n/a~~	~~n/a~~	~~$E_3 < 20$~~	~~$65 \le A_{avg} < 70$~~
~~3~~	~~n/a~~	~~n/a~~	~~$E_3 < 20$~~	~~$70 \le A_{avg} < 75$~~
~~4~~	~~n/a~~	~~n/a~~	~~$E_3 < 20$~~	~~$75 \le A_{avg}$~~
~~5~~	~~n/a~~	~~n/a~~	~~$20 \le E_3 < 35$~~	~~n/a~~
~~6~~	~~n/a~~	~~n/a~~	~~$35 \le E_3 < 50$~~	~~n/a~~
~~7~~	~~n/a~~	~~n/a~~	~~$50 \le E_3 < 70$~~	~~n/a~~
~~8~~	~~n/a~~	~~n/a~~	~~$70 \le E_3$~~	~~n/a~~
~~9~~	~~n/a~~	~~$E_2 < 50$~~	~~$85 \le E_3$~~	~~n/a~~
~~10~~	~~n/a~~	~~$50 \le E_2 < 65$~~	~~$85 \le E_3$~~	~~n/a~~
~~11~~	~~n/a~~	~~$65 \le E_2 < 80$~~	~~$85 \le E_3$~~	~~n/a~~
~~12~~	~~n/a~~	~~$80 \le E_2$~~	~~$90 \le E_3$~~	~~n/a~~
~~13~~	~~$E_1 < 75$~~	~~$90 \le E_2$~~	~~$90 \le E_3$~~	~~n/a~~
~~14~~	~~$75 \le E_1 < 85$~~	~~$90 \le E_2$~~	~~$90 \le E_3$~~	~~n/a~~
~~15~~	~~$85 \le E_1 < 95$~~	~~$90 \le E_2$~~	~~$90 \le E_3$~~	~~n/a~~
~~16~~	~~$95 \le E_1$~~	~~$95 \le E_2$~~	~~$95 \le E_3$~~	~~n/a~~

~~Note: The minimum final resistance shall be at least twice the initial resistance, or as specified above, whichever is greater. Refer to Section 10.7.1.1.~~[45]

TABLE 12-1 Minimum Efficiency Reporting Value (MERV) Parameters

Standard 52.2 Minimum Efficiency Reporting Value (MERV)	Composite Average Particle Size Efficiency, % in Size Range, µm			Average Arrestance, %
	Range 1 0.30 to 1.0	Range 2 1.0 to 3.0	Range 3 3.0 to 10.0	
1	N/A	N/A	$E_3 < 20$	$A_{avg} < 65$
2	N/A	N/A	$E_3 < 20$	$65 \le A_{avg}$
3	N/A	N/A	$E_3 < 20$	$70 \le A_{avg}$
4	N/A	N/A	$E_3 < 20$	$75 \le A_{avg}$
5	N/A	N/A	$20 \le E_3$	N/A
6	N/A	N/A	$35 \le E_3$	N/A
7	N/A	N/A	$50 \le E_3$	N/A
8	N/A	$20 \le E_2$	$70 \le E_3$	N/A
9	N/A	$35 \le E_2$	$75 \le E_3$	N/A
10	N/A	$50 \le E_2$	$80 \le E_3$	N/A
11	$20 \le E_1$	$65 \le E_2$	$85 \le E_3$	N/A
12	$35 \le E_1$	$80 \le E_2$	$90 \le E_3$	N/A
13	$50 \le E_1$	$85 \le E_2$	$90 \le E_3$	N/A
14	$75 \le E_1$	$90 \le E_2$	$95 \le E_3$	N/A
15	$85 \le E_1$	$90 \le E_2$	$95 \le E_3$	N/A
16	$95 \le E_1$	$95 \le E_2$	$95 \le E_3$	N/A

Note: The minimum final resistance shall be at least twice the initial resistance. Refer to Section 10.7.1.1.[45]

Modify Informative Appendix D as follows.

INFORMATIVE APPENDIX D
MINIMUM EFFICIENCY REPORTING GUIDANCE

D2. EXAMPLES

[. . .]

D2.4 "Filter D"—The reporting value for this air cleaner is MERV8 at 0.93.

This minimum performance curve is typical of a media air cleaner currently marketed as a 25% to –30% dust spot filter when tested at 0.93 m^3/s (1970 cfm). The range efficiencies are calculated as follows:

Range	Size	PSE in Range,%	Average PSE,%
1	0.30 to 1.0	5, 6, 6, 8	6
2	1.0 to 3.0	12, 22, 33, 55	31
3	3.0 to 10	70, 78, 84, 90	81

The average efficiency in Range 3 is in the 80% to - below the85% range minimum shown in Table 12-1 for the MERV Group 109-12 category. However, the E2 value is above the 20% required for MERV 8 and below the 35% required for MERV 9. Thus, the MERV of this filter This filter is categorized in the MERV Group 5-8 area because the average in Range 3 is above the MERV Group 1-4 area. The average efficiencies in Ranges 1 and 2 are not used for reporting. Based on the average efficiency of 81% in Range 3, this filter is reported as MERV8 at 0.93.

Modify Informative Appendix J as follows.

INFORMATIVE APPENDIX J
OPTIONAL METHOD OF CONDITIONING A FILTER USING FINE KCL PARTICLES TO DEMONSTRATE EFFICIENCY LOSS THAT MIGHT BE REALIZED IN FIELD APPLICATIONS

[. . .]

J11.3.3 With this appendix, the minimum efficiency reporting value in the specified size ranges and final resistance for reporting purposes shall be in accordance with Table IJ-2.

TABLE J-13 KCl Conditioned Per Appendix J Minimum Efficiency Reporting Value (MERV-A) Parameters

Standard 52.2 Appendix J Minimum Efficiency Reporting Value (MERV-A)	Composite Average Particle Size Efficiency in Size Range, %			Average Arrestance, %
	Range 1 (0.3–1.0 µm)	Range 2 (1.0–3.0 µm)	Range 3 (3.0–10.0 µm)	
1-A	n/a	n/a	E_3-A < 20	A_{avg} < 65
2-A	n/a	n/a	E_3-A < 20	65 ≤ A_{avg} < 70
3-A	n/a	n/a	E_3-A < 20	70 ≤ A_{avg} < 75
4-A	n/a	n/a	E_3-A < 20	75 ≤ A_{avg}
5-A	n/a	n/a	20 ≤ E_3-A < 35	n/a
6-A	n/a	n/a	35 ≤ E_3-A < 50	n/a
7-A	n/a	n/a	50 ≤ E_3-A < 70	n/a
8-A	n/a	n/a	70 ≤ E_3-A	n/a
9-A	n/a	E_2-A < 50	85 ≤ E_3-A	n/a
10-A	n/a	50 ≤ E_2-A < 65	85 ≤ E_3-A	n/a
11-A	n/a	65 ≤ E_2-A < 80	85 ≤ E_3-A	n/a
12-A	n/a	80 ≤ E_2-A	90 ≤ E_3-A	n/a
13-A	E_1-A < 75	90 ≤ E_2-A	90 ≤ E_3-A	n/a
14-A	75 ≤ E_1-A < 85	90 ≤ E_2-A	90 ≤ E_3-A	n/a
15-A	85 ≤ E_1-A < 95	90 ≤ E_2-A	90 ≤ E_3-A	n/a
16-A	95 ≤ E_1-A	95 ≤ E_2-A	95 ≤ E_3-A	n/a

TABLE J-2 KCl Conditioned Per Appendix J Minimum Efficiency Reporting Value (MERV-A) Parameters

Standard 52.2 Minimum Efficiency Reporting Value (MERV-A)	Composite Average Particle Size Efficiency, %in Size Range, µm			
	Range 1 (0.30 to 1.0 µm)	Range 2 (1.0 to 3.0 µm)	Range 3 (3.0 to 10.0 µm)	Average Arrestance, %
1-A	N/A	N/A	E_3-A < 20	A_{avg} < 65
2-A	N/A	N/A	E_3-A < 20	65 ≤ A_{avg}
3-A	N/A	N/A	E_3-A < 20	70 ≤ A_{avg}
4-A	N/A	N/A	E_3-A < 20	75 ≤ A_{avg}
5-A	N/A	N/A	20 ≤ E_3-A	N/A
6-A	N/A	N/A	35 ≤ E_3-A	N/A
7-A	N/A	N/A	50 ≤ E_3-A	N/A
8-A	N/A	20 ≤ E_2-A	70 ≤ E_3-A	N/A
9-A	N/A	35 ≤ E_2-A	75 ≤ E_3-A	N/A
10-A	N/A	50 ≤ E_2-A	80 ≤ E_3-A	N/A
11-A	20 ≤ E_1-A	65 ≤ E_2-A	85 ≤ E_3-A	N/A
12-A	35 ≤ E_1-A	80 ≤ E_2-A	90 ≤ E_3-A	N/A
13-A	50 ≤ E_1-A	85 ≤ E_2-A	90 ≤ E_3-A	N/A
14-A	75 ≤ E_1-A	90 ≤ E_2-A	95 ≤ E_3-A	N/A
15-A	85 ≤ E_1-A	90 ≤ E_2-A	95 ≤ E_3-A	N/A
16-A	95 ≤ E_1-A	95 ≤ E_2-A	95 ≤ E_3-A	N/A

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FOREWORD

Currently, ASHRAE Standard 52.2 penalizes the calculated efficiencies for filters when the downstream background counts exceed 5% of the upstream counts. This is done to account for dust that is shed from the filter after loading. However, there are some problems with the current method that need to be addressed. First, the standard does not place any specific limit on the upstream aerosol concentration (other than not overloading the OPC). Thus, upstream aerosol counts can legitimately vary widely among tests using different particle counters. This leads to the possibility for two tests to have the same amount of measured shedding yet result in very different efficiency values. Second, given the potential differences in sizing accuracy between KCl and ASHRAE dust (the carbon black is not sized accurately by OPCs), it is likely that the shedding particles are not actually the same size as the KCl particles that they are being subtracted from. Third, it is not possible to prove that the counts are actually shed by the filter as opposed to some contamination in the sample line or in the test rig after the dust feed.

The revisions below are suggested to give ASHRAE 52.2 the same efficiency calculation across particle counters and upstream concentrations and still require reporting of the downstream particle counts that may indicate particle shedding.

Note: In this addendum, changes to the current standard are indicated in the text by underlining (for additions) and ~~strikethrough~~ (for deletions) unless the instructions specifically mention some other means of indicating the changes.

Addendum b to Standard 52.2-2012

Add the following definition to Section 3.1.

release rate: the particles shedding from a filter after a dust load in particles of a given size released per sample volume.

Revise Section 10.1 as follows.

10.1 Symbols and Subscripts

10.1.1 Symbols

U = upstream counts of each size range (or channel)

D = downstream counts of each size range (or channel)

R = correlation ratio

P = penetration

T = sampling time

V = volumetric flow rate, m^3/s (ft^3/min)

δ_g = standard deviation of a sample

n = number of sample sets

t = t distribution variable

10.1.2 Subscripts

i = sample number

o = observed

c = correlation

b = background

t = testing an air cleaner

u = upstream

d = downstream

e = estimated

lcl = lower confidence limit

ucl = upper confidence limit

n = number of sample sets

pc = particle counter

Revise Section 10 as follows. Renumber accordingly.

10.4 Penetration

10.4.1 The device shall be installed in the test section for determination of air cleaner penetration. For the purposes of this standard, penetration P shall be the fraction of particles that pass through the air cleaner, and the general equation for penetration shall be

$$P = \frac{\text{downstream particle concentration}}{\text{upstream particle concentration}}$$

with the particle generator on and the test device in place.

10.4.2 Background counts shall be ~~made~~ measured before generating test aerosols. Upstream and downstream sampling shall be done sequentially, starting with an upstream sample $U_{1,o,b}$, followed by a downstream sample $D_{1,o,b}$, alternating back and forth. The total number of samples and sample times shall be determined by the data quality requirements in Section 10.6.4, except that the final upstream sample is not needed for background sampling. A difference between upstream sampling time T_u and downstream sampling time T_d is allowable.

10.4.3 Start generating aerosol when background counts are complete. Start sampling with an upstream sample $U_{1,o,t}$, followed by a downstream sample $D_{1,o,t}$, after stabilization of the test aerosol. Take an additional upstream sample $U_{(n+1),o,t}$, following the last downstream sample $D_{n,o,t}$. Sampling times T_u and T_d shall be the same as those used for background sampling.

10.4.4 Aerosol generation shall be turned off and background sampling shall be repeated after completion of the required penetration sampling sets.

10.4.5 Air cleaner penetration shall then be calculated in accordance with Section 10.6.3.

[. . .]

10.6.3.2 The background counts before and after the penetration test shall be simply averaged.

$$\overline{U}_b = \frac{\sum_{i=1 \to n} U_{i,o,b}}{n}$$

$$\bar{D}_b = \frac{\sum_{i=1\to n} D_{i,o,b}}{n} \qquad (10\text{-}15)$$

Where n is the number of background samples taken before and after the penetration test.

10.6.3.3 The observed penetration shall be calculated for each upstream and downstream set using the observed downstream count, the upstream count, the average downstream background count, the average upstream background count, the upstream sampling time, and the downstream sampling time.

$$P_{i,o} = \frac{D_{i,o,t} - \bar{D}_b}{U_{i,e,t} - \bar{U}_b} \cdot \frac{T_u}{T_d}$$ ~~if~~

~~$$\bar{D}_{b,ucl} \le 0.05 \frac{\sum_{i=1\to n} U_{i,o,u}}{n}\left(\frac{T_d}{T_u}\right)$$~~ (10-16~~a~~)

~~$$P_{i,o} = \frac{D_{i,o,t}}{U_{i,e,t}} \cdot \frac{T_u}{T_d} \text{ if}$$~~

~~$$\bar{D}_{b,ucl} > 0.05 \frac{\sum_{i=1\to n} U_{i,o,u}}{n}\left(\frac{T_d}{T_u}\right) \qquad (10\text{-}16b)$$~~

[. . .]

10.6.5 Efficiency. Particle size removal efficiency PSE is determined by

$$PSE = (1 - \bar{P}) \times 100 \qquad (10\text{-}26)$$

[. . .]

10.7.3 Release Rate~~Adjusting for Dust Migration (Reentrainment of Loading Dust)~~

10.7.3.1 Airflow shall be maintained through the device for 20 minutes. ~~A duration of less than 20 minutes is allowable if a release rate of no more than 5% is obtained in each of the particle size ranges.[1]~~Immediately after this 20-minute period, with the airflow on and the aerosol generator off, use the aerosol particle counter to collect downstream particle counts over a period of ten minutes. During this time, at least three samples shall be taken. Calculate the 95% upper confidence limits of the background counts for these values using Equation 10-10.

10.7.3.2 ~~For the purposes of this standard, the release rate is the ratio of the number of released test dust particles from the filter after a dust-loading increment to the average number of upstream aerosol particles challenging the test device during the determination of the efficiency for a specific size range sample from section. The volume is equal to the volumetric flow rate of the particle counter multiplied by the sample time of a single count.~~ The release rate ~~number of loading dust particles released~~ is computed ~~can be expressed~~ as follows:

$$\text{Release rate (\%)} = \frac{D_{b,ucl}}{\frac{\sum_{i=1-n} U_{i,o,u}}{n}}\left(\frac{T_u}{T_d}\right)100 \qquad (10\text{-}29)$$

Where the release rate[1] is expressed in #/m[3], the 95% upper confidence limit is the value calculated in 10.7.3.1, and the V_{pc} is equal to the volumetric flow rate of the particle counter which is multiplied by the sample time of a single count.

10.7.3.3 These values shall be reported for each dust increment and size range. If a dilutor is used in sampling, the counts must be corrected by the dilution factor to reflect the actual in-duct undiluted downstream count.

~~10.7.3.3~~ 10.7.3.4 [. . .]

Modify Section 11 as follows. Renumber where applicable.

11. REPORTING RESULTS

11.1 Test results shall be reported using the test report format shown in this standard. Figures 11-1a through 11-~~1d~~ 1e comprise the complete test report and are examples of acceptable forms. Exact formats are not required, but the report shall include the items shown.

11.2 The summary section of the performance report shall include the following information:

[. . .]

k. Performance curves
   1. A curve in Figure 11-1b format of air cleaner resistance when clean vs. airflow rates from 50% to 125% of test flow
   2. A curve in Figure 11-1c format of PSE for the clean device and for the device at each of the five loading stages
   3. A minimum PSE composite curve in Figure 11-1c format whose data points are the lowest PSEs from the six measurements in each particle size range from the curves of test results (Item k-2 above)

l. Minimum efficiency reporting value (MERV)
   1. The average of the minimum PSE of the four size ranges from 0.30 to 1.0 µm (E_1)
   2. The average of the minimum PSE of the four size ranges from 1.0 to 3.0 µm (E_2)
   3. The average of the minimum PSE of the four size ranges from 3.0 to 10.0 µm (E_3)
   4. MERV for the device

~~1. Partially loaded air cleaners should have a low migration (release) rate for data consistency. Particle counters with high concentration limits make it easier to reach the required release rate~~

1. Optical particle counters are likely to be used to obtain this measure of release rate. Because of the optical properties of the shed dust particles (light absorbing and irregular shape), the sizing of the shed particles as measured by an optical particle counter may be significantly different from their actual physical size. When comparing release rate results, the best comparison will be when the same particle counter is used in all measurements.

Test Data for Release Rate						
Size Range No.	**Geometric Mean of Particle Size Range, μm**	**Release Rate After Loading Stage 1**	**Release Rate After Loading Stage 2**	**Release Rate After Loading Stage 3**	**Release Rate After Loading Stage 4**	**Release Rate After Loading Stage 5**
1	0.35					
2	0.47					
3	0.62					
4	0.84					
5	1.14					
6	1.44					
7	1.88					
8	2.57					
9	3.46					
10	4.69					
11	6.20					
12	8.37					

FIGURE 11-1d Release rate data report form.

m. Release Rate
   1. A data table including the information in Figure 11-1d shall be included

[. . .]

11.3 Inclusion of test data in the summary report is optional. If furnished, it shall consist of all data recorded during the six test runs and shall be formatted similarly to Figure 11-1e~~d~~.

Renumber Figure 11-1d as follows.

FIGURE 11-1~~d~~e Test data report form.

Modify Section C2 as follows.

C2.1 The summary section of a sample performance report on a typical extended-surface media filter is shown in Figures C-1, C-2, and C-3. The circled numbers refer to the explanations that follow.

[. . .]

19. The release rate gives an indication of filter shedding.

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FOREWORD

As a result of ASHRAE RP-1287, relative humidity (RH) was found to be a large contributor to variations in the repeatability and reproducibility of the efficiency of the ASHRAE Standard 52.2-2012 test on particles from 1.0 to 10.0 microns. SSPC 52.2 reviewed the data and performed unfunded research that confirmed the potential influence of the RH. The committee suggests adjusting the mandatory RH for performing the test from 20% to 65% to 45% ± 10%.

Note: In this addendum, changes to the current standard are indicated in the text by underlining (for additions) and ~~strikethrough~~ (for deletions) unless the instructions specifically mention some other means of indicating the changes.

Addendum d to Standard 52.2-2012

Modify Sections 4.2.3, 4.3.2, and Appendix J as follows.

4.2.3 Room air or recirculated air shall be used as the test air source. The temperature of the air at the test device shall be between 10°C and 38°C (50°F and 100°F) with a relative humidity of 45% ± 10%~~between 20% and 65%~~.[1] Exhaust flow shall be discharged outdoors or indoors or recirculated.[2]

[. . .]

4.3.2 The aerosol generator shall be designed to ensure that the KCl particles are dry prior to being introduced into the test duct. The relative humidity of the air flow with the particles shall be less than 50%.

[. . .]

J10.8 To prevent deliquescence of the KCl during conditioning, relative humidity must be maintained below ~~65~~50% in the test duct at all times during the test. Also, the airflow from all particle generators must result in RH ≤ 50% in the air in the rig at all times after mixing has occurred. If the filter is removed from the test duct for any reason during the test, it must be stored in an environment with relative humidity less than 65%.

1. A slight temperature increase with a corresponding decrease in relative humidity will occur as the room air passes through the blower.
2. HEPA filtration of the exhaust flow is recommended when discharging indoors because test aerosol and loading dust may be present.

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INFORMATIVE ANNEX
18-MONTH SUPPLEMENT—ADDENDA TO ANSI/ASHRAE STANDARD 52.2-2012

This supplement includes Addenda a, b, and d to ANSI/ASHRAE Standard 52.2-2012. The following table lists each addendum and describes the way in which the standard is affected by the change. It also lists the ASHRAE and ANSI approval dates for each addendum.

Addendum	Section(s) Affected	Description of Changes*	ASHRAE Standards Approval	ASHRAE BOD Approval	ANSI Approval
a	12; Appendix D; Appendix J	Replaces Table 12-1; modifies language in Section D2.4 to correspond to updated Table 12-1; replaces Table J-2	December 30, 2014	December 30, 2014	December 31, 2014
b	3.1; 10.1; 10.4.2; 10.6.3.2; 10.6.3.3; 10.7.3; 11; C2.1	Adds new definition and symbol; modifies language in Section 10.4.2; clarifies equation in Section 10.6.3.2; replaces equation in Section 10.6.3.3; revises Section 10.7.3 and adds new Section 10.7.3.3; adds language to Section 11.2, revises Figure 11-1d; adds language to Section C2.1	June 28, 2014	July 2, 2014	July 31, 2014
d	4.2.3; 4.3.2; Appendix J	Revises relative humidity language in Sections 4.2.3, 4.3.2, and J10.8	June 28, 2014	July 2, 2014	July 3, 2014

* These descriptions may not be complete and are provided for information only.

NOTE

When addenda, interpretations, or errata to this standard have been approved, they can be downloaded free of charge from the ASHRAE website at http://www.ashrae.org.

POLICY STATEMENT DEFINING ASHRAE'S CONCERN FOR THE ENVIRONMENTAL IMPACT OF ITS ACTIVITIES

ASHRAE is concerned with the impact of its members' activities on both the indoor and outdoor environment. ASHRAE's members will strive to minimize any possible deleterious effect on the indoor and outdoor environment of the systems and components in their responsibility while maximizing the beneficial effects these systems provide, consistent with accepted Standards and the practical state of the art.

ASHRAE's short-range goal is to ensure that the systems and components within its scope do not impact the indoor and outdoor environment to a greater extent than specified by the Standards and Guidelines as established by itself and other responsible bodies.

As an ongoing goal, ASHRAE will, through its Standards Committee and extensive Technical Committee structure, continue to generate up-to-date Standards and Guidelines where appropriate and adopt, recommend, and promote those new and revised Standards developed by other responsible organizations.

Through its *Handbook*, appropriate chapters will contain up-to-date Standards and design considerations as the material is systematically revised.

ASHRAE will take the lead with respect to dissemination of environmental information of its primary interest and will seek out and disseminate information from other responsible organizations that is pertinent, as guides to updating Standards and Guidelines.

The effects of the design and selection of equipment and systems will be considered within the scope of the system's intended use and expected misuse. The disposal of hazardous materials, if any, will also be considered.

ASHRAE's primary concern for environmental impact will be at the site where equipment within ASHRAE's scope operates. However, energy source selection and the possible environmental impact due to the energy source and energy transportation will be considered where possible. Recommendations concerning energy source selection should be made by its members.

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About ASHRAE

ASHRAE, founded in 1894, is a global society advancing human well-being through sustainable technology for the built environment. The Society and its members focus on building systems, energy efficiency, indoor air quality, refrigeration, and sustainability. Through research, Standards writing, publishing, certification and continuing education, ASHRAE shapes tomorrow's built environment today.

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2/15