

ANSI/ASHRAE Addendum c to ANSI/ASHRAE Standard 34-2001

## ASHRAE STANDARD

# Designation and Safety Classification of Refrigerants

Approved by the ASHRAE Standards Committee on January 29, 2003; by the ASHRAE Board of Directors on January 30, 2003; and by the American National Standards Institute on September 25, 2003.

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ISSN 1041-2336



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#### (This foreword is not part of this addendum but is included for information only.)

#### **FOREWORD**

This addendum adds a designation of R-418A to the blend R-290/22/152a (1.5/96.0/2.5) with tolerances of  $(\pm 0.5/\pm 1.0/\pm 0.5)$  and a safety classification of A2. Revised Table 2 and Appendix B incorporate editorial changes identified in the February 7, 2002, Errata Sheet and additional changes from Addendum a and Addendum b to ANSI/ASHRAE Standard 34-2001.

#### ADDENDUM C TO ANSI/ASHRAE STANDARD 34-2001

Add to Table 2 the following entries for R-418A:

## TABLE 2 Data and Safety Classifications for Refrigerant Blends

Refrigerant		Composition		tropic erature	Molecular	Normal Boiling Point <sup>a</sup>		Safety
Number	Composition (Mass %)	Tolerances	(°C)	(°F)	Mass <sup>a</sup>	(°C)	(°F)	Group
<u>418A</u>	R-290/22/152a (1.5/96.0/2.5)	$(\pm 0.5/\pm 1.0/\pm 0.5)$						<u>A2</u>

Add to Table B1 the following entries for R-418A:

## TABLE B-1 Comparison of Safety Group Classifications to Those Under ASHRAE Standard 34-1989

		Safety Group		
Refrigerant Number	<b>Chemical Formula</b>	1989	2001	
<u>418A</u>	R-290/22/152a (1.5/96.0/2.5)	=	<u>A2</u>	

TABLE 2
Data and Safety Classification for Refrigerant Blends

Refrigerant				tropic erature	Molecular Mass <sup>a</sup>	Nor Boiling		Safety Group
Number	Composition (Mass%)	<b>Composition Tolerances</b>	(°C)	(°F)		(°C) (°F)		Group
	Zeotropes							
400	R-12/114 (must be specified)		none	none				A1
401A	R-22/152a/124 (53/13/34)	(±2/+0.5,-1.5/±1)						A1
401B	R-22/152a/124 (61/11/28)	(±2/+0.5,-1.5/±1)						A1
401C	R-22/152a/124 (33/15/52)	(±2/+0.5,-1.5/±1)						A1
402A	R-125/290/22 (60.0/2.0/38.0)	(±2.0/+0.1,-1.0/±2.0)						A1
402B	R-125/290/22 (38.0/2.0/60.0)	(±2.0/+0.1,-1.0/±2.0)						A1
403A	R-290/22/218 (5/75/20)	$(\pm 0.2, -2/\pm 2/\pm 2)$						A1
403B	R-290/22/218 (5/56/39)	$(\pm 0.2, -2/\pm 2/\pm 2)$						A1
404A	R-125/143a/134a (44/52/4)	$(\pm 2/\pm 1/\pm 2)$						A1
405A	R-22/152a/142b/C318 (45/7/5.5/42.5)	$(\pm 2/\pm 1/\pm 1/\pm 2)$						
406A	R-22/600a/142b (55/4/41)	$(\pm 2/\pm 1/\pm 1)$						A2
407A	R-32/125/134a (20/40/40)	$(\pm 2/\pm 2/\pm 2)$						A1
407B	R-32/125/134a (10/70/20)	$(\pm 2/\pm 2/\pm 2)$						A1
407C	R-32/125/134a (23/25/52)	$(\pm 2/\pm 2/\pm 2)$						A1
407D	R-32/125/134a (15/15/70)	$(\pm 2/\pm 2/\pm 2)$						A1
407E	R-32/125/134a (25/15/60)	$(\pm 2/\pm 2/\pm 2)$						A1
408A	R-125/143a/22 (7/46/47)	$(\pm 2/\pm 1/\pm 2)$						A1
409A	R-22/124/142b (60/25/15)	$(\pm 2/\pm 2/\pm 1)$						A1
409B	R-22/124/142b (65/25/10)	$(\pm 2/\pm 2/\pm 1)$						A1
410A	R-32/125 (50/50)	(+0.5,-1.5/+1.5,-0.5)						A1
410B	R-32/125 (45/55)	$(\pm 1/\pm 1)$						A1
411A	R-1270/22/152a (1.5/87.5/11.0)	(+0,-1/+2,-0/+0,-1)						A2
411B	R-1270/22/152a (3/94/3)	(+0,-1/+2,-0/+0,-1)						A2
412A	R-22/218/142b (70/5/25)	$(\pm 2/\pm 2/\pm 1)$						A2
413A	R-218/134a/600a (9/88/3)	$(\pm 1/\pm 2/+0,-1)$						A2
414A	R-22/124/600a/142b (51.0/28.5/4.0/16.5)	$(\pm 2.0/\pm 2.0/\pm 0.5/\pm 0.5, -1.0)$						A1
414B	R-22/124/600a/142b (50.0/39.0/1.5/9.5)	$(\pm 2.0/\pm 2.0/\pm 0.5/\pm 0.5, -1.0)$						A1
415A	R-22/152a (82.0/18.0)	$(\pm 1.0/\pm 1.0)$						A2
416A	R-134a/124/600 (59.0/39.5/1.5)	(+0.5,-1.0/+1.0,-0.5/+0.1,-0.2)						A1
417A	R-125/134a/600 (46.6/50.0/3.4)	(±1.0/±1.0/+0.1,-0.4)						A1
418A	R-290/22/152a (1.5/96.0/2.5)	(±0.5/±1.0/±0.5)						<u>A2</u>
	Azeotropes b							
500	R-12/152a (73.8/26.2)		0	32	99.3	-33	-27	A1
501	R-22/12 (75.0/25.0) <sup>c</sup>		-41	-42	93.1	-41	-42	A1
502	R-22/115 (48.8/51.2)		19	66	112.0	-45	-49	A1

<sup>&</sup>lt;sup>a</sup> The molecular mass and normal boiling point are not part of this standard.

b Azeotropic refrigerants exhibit some segregation of components at conditions of temperature and pressure other than those at which they were formulated. The extent of segregation depends on the particular azeotrope and hardware system configuration.

<sup>&</sup>lt;sup>c</sup> The exact composition of this azeotrope is in question, and additional experimental studies are needed.

d R-507, R-508, and R-509 are allowed alternative designations for R-507A, R-508A, and R-509A due to a change in designations after assignment of R-500 through R-509. Corresponding changes were not made for R-500 through R-506.

## TABLE 2 (Continued) Data and Safety Classification for Refrigerant Blends

503	R-23/13 (40.1/59.9)	88	126	87.5	-88	-126	
504	R-32/115 (48.2/51.8)	17	63	79.2	-57	-71	
505	R-12/31 (78.0/22.0) <sup>c</sup>	115	239	103.5	-30	-22	
506	R-31/114 (55.1/44.9)	18	64	93.7	-12	10	
507A <sup>d</sup>	R-125/143a (50/50)	-40	-40	98.9	-46.7	-52.1	A1
508A <sup>d</sup>	R-23/116 (39/61)	-86	-122	100.1	-86	-122	A1
508B	R-23/116 (46/54)	-45.6	-50.1	95.4	-88.3	-126.9	A1
509A <sup>d</sup>	R-22/218 (44/56)	0	32	124.0	-47	-53	A1

<sup>&</sup>lt;sup>a</sup> The molecular mass and normal boiling point are not part of this standard.

#### (This appendix is not part of this standard but is included for information only.)

#### **APPENDIX B**

#### **Composition of Previous and Current Safety Classifications**

A comparison of the current refrigerant classification system with its predecessor is summarized in Table B1.

TABLE B1
Comparison of Safety Group Classifications to Those Under ASHRAE Standard 34-1989

		Safe	ty Group
Refrigerant Number	Chem	ical Formula 1989	2001
0	CCl <sub>4</sub>	2	-
1	CCl <sub>3</sub> F	1	A1
2	CCl <sub>2</sub> F <sub>2</sub>	1	A1
3	CCIF <sub>3</sub>	1	A1
3B1	CBrF <sub>3</sub>	1	A1
4	CF <sub>4</sub>	1	A1
1	CHCl <sub>2</sub> F	2	B1
2	CHCIF <sub>2</sub>	1	A1
3	CHF3	-	A1
)	CH <sub>2</sub> Cl <sub>2</sub>	2	B2
2	$CH_2F_2$	-	A2
)	CH <sub>3</sub> Cl	2	B2
)	CH <sub>4</sub>	3a	A3
13	CCl <sub>2</sub> FCClF <sub>2</sub>	1	A1
14	CCIF <sub>2</sub> CCIF <sub>2</sub>	1	A1
15	CCIF <sub>2</sub> CF <sub>3</sub>	1	A1
16	CF <sub>3</sub> CF <sub>3</sub>	-	A1
23	CHCl <sub>2</sub> CF <sub>3</sub>	-	B1
24	CHCIFCF <sub>3</sub>	-	A1
25	CHF <sub>2</sub> CF <sub>3</sub>	-	A1
4a	CH <sub>2</sub> FCF <sub>3</sub>	-	A1
42b	CH <sub>3</sub> CClF <sub>2</sub>	3b	A2

Not listed in standard.

b Azeotropic refrigerants exhibit some segregation of components at conditions of temperature and pressure other than those at which they were formulated. The extent of segregation depends on the particular azeotrope and hardware system configuration.

<sup>&</sup>lt;sup>c</sup> The exact composition of this azeotrope is in question, and additional experimental studies are needed.

d R-507, R-508, and R-509 are allowed alternative designations for R-507A, R-508A, and R-509A due to a change in designations after assignment of R-500 through R-509. Corresponding changes were not made for R-500 through R-506.

NC Listed, but with no safety classification

## TABLE B1 (Continued) Comparison of Safety Group Classifications to Those Under ASHRAE Standard 34-1989

143a         CH <sub>2</sub> CF <sub>2</sub> A2           152a         CH <sub>2</sub> CHF <sub>2</sub> 3b         A2           170         CH <sub>2</sub> CH <sub>3</sub> 3a         A3           218         CF <sub>3</sub> CF <sub>2</sub> CF <sub>3</sub> A1           245fa         CHF <sub>2</sub> CH <sub>2</sub> CF <sub>3</sub> B1           290         CH <sub>3</sub> CH <sub>2</sub> CH <sub>3</sub> A3           C318          CF <sub>3</sub> J <sub>4</sub> -          A1           400         R-12/114          A1           401         R-22/152a/124          A1           401B         R-22/152a/124          A1           402A         R-125/290/22          A1           402B         R-125/290/22          A1           403A         R-290/22/18          A1           403B         R-290/22/18          A1           404A         R-125/193a/134a          A1           405A         R-22/152a/142b/C318          A2           407A         R-32/125/134a          A1           407B         R-32/125/134a          A1           40
170       CH3CH3       3a       A3         218       CF3CF2CF3       -       A1         245fa       CHF2CH2CF3       -       B1         290       CH5CH2CH3       3a       A3         C318       -(CF2)ar       1       A1         400       R-127114       1       A1         401A       R-227152a/124       -       A1         401B       R-227152a/124       -       A1         401C       R-227152a/124       -       A1         402A       R-125/90/22       -       A1         402B       R-125/90/22       -       A1         403A       R-290/22/18       -       A1         403B       R-290/22/18       -       A1         404A       R-125/143a/134a       -       A1         405A       R-22/152a/142bC188       -       NC         406A       R-22/160a/142b       -       A2         407A       R-32/125/134a       -       A1         407B       R-32/125/134a       -       A1         407C       R-32/125/134a       -       A1         407B       R-32/125/134a       -       A1
218         CF <sub>5</sub> CF <sub>2</sub> CF <sub>3</sub> -         A1           245fa         CHF <sub>2</sub> CH <sub>2</sub> CF <sub>3</sub> -         B1           290         CH <sub>3</sub> CH <sub>2</sub> CH <sub>3</sub> 3a         A3           C318         -(CF <sub>2</sub> ) <sub>4</sub> -         1         A1           400         R-12/14         1         A1           401A         R-22/152a/124         -         A1           401B         R-22/152a/124         -         A1           401C         R-22/152a/124         -         A1           402A         R-125/290/22         -         A1           402B         R-125/290/22         -         A1           403B         R-125/290/22/18         -         A1           403A         R-290/22/18         -         A1           403B         R-290/22/18         -         A1           404A         R-125/143a/134a         -         A1           405A         R-22/152a/142b/G318         -         NC           406A         R-22/152a/142b         -         A2           407A         R-32/125/134a         -         A1           407B         R-32/125/134a         -         A1           407C <td< td=""></td<>
245fa       CHF2CH2CF3       3a       A3         290       CH3CH2CH3       3a       A3         C318       4(CF2)4F       1       A1         400       R-12/114       1       A1         401A       R-22/152a/124       2       A1         401B       R-22/152a/124       2       A1         401C       R-22/152a/124       2       A1         402A       R-125/290/22       2       A1         402A       R-125/290/22       2       A1         403A       R-125/290/22       2       A1         403A       R-290/22/18       2       NC         404A       R-125/143a/134a       2       A1         405A       R-22/152a/142b/C318       2       A2         407A       R-32/125/134a       2       A1         407B       R-32/125/134a       2       A1         407C       R-32/125/134a       2       A1     <
290       CH3CH2CH3       3a       A3         C318       -(CF2)4*       1       A1         400       R-12/114       1       A1         401A       R-22/152a/124       -       A1         401B       R-22/152a/124       -       A1         401C       R-22/152a/124       -       A1         402A       R-125/290/22       -       A1         402B       R-125/290/22       -       A1         403A       R-290/22/218       -       A1         403B       R-290/22/218       -       A1         404A       R-125/143a/134a       -       A1         405A       R-22/152a/142b/C318       -       A2         407A       R-32/2600a/142b       -       A1         407B       R-32/125/134a       -       A1         407C       R-32/125/134a       -       A1         407D       R-32/125/134a       -       A1         407E       R-32/125/134a       -       A1         407B       R-32/125/134a       -       A1         407C       R-32/125/134a       -       A1         407A       R-32/125/134a       -       A
C318         -(CF2)4-         1         A1           400         R-12/114         1         A1           401A         R-22/152a/124         -         A1           401B         R-22/152a/124         -         A1           401C         R-22/152a/124         -         A1           402A         R-125/290/22         -         A1           402B         R-125/290/22         -         A1           403A         R-290/22/18         -         A1           403B         R-290/22/18         -         A1           404A         R-125/143a/134a         -         A1           405A         R-22/152a/142b/C318         -         NC           406A         R-22/60a/142b         -         A1           407B         R-32/125/134a         -         A1           407C         R-32/125/134a         -         A1           407B         R-32/125/134
400       R-12/114       1       A1         401A       R-22/152a/124       -       A1         401B       R-22/152a/124       -       A1         401C       R-22/152a/124       -       A1         402A       R-125/290/22       -       A1         402B       R-125/290/22       -       A1         403A       R-290/22/18       -       A1         403B       R-290/22/18       -       A1         404A       R-125/143a/134a       -       A1         405A       R-22/152a/142b/C318       -       NC         406A       R-22/152a/142b/C318       -       A1         407B       R-32/125/134a       -       A1         407B       R-32/125/134a       -       A1         407C       R-32/125/134a       -       A1         407D       R-32/125/134a       -       A1         407E       R-32/125/134a       -       A1         408A       R125/143a/22       -       A1         409A       R-22/124/142b       -       A1
401A       R-22/152a/124       -       A1         401B       R-22/152a/124       -       A1         401C       R-22/152a/124       -       A1         402A       R-125/290/22       -       A1         402B       R-125/290/22       -       A1         403A       R-290/22/218       -       A1         403B       R-290/22/218       -       A1         404A       R-125/143a/134a       -       A1         405A       R-22/152a/142b/C318       -       NC         406A       R-22/2600a/142b       -       A1         407B       R-32/125/134a       -       A1         407C       R-32/125/134a       -       A1         407D       R-32/125/134a       -       A1         407E       R-32/125/134a       -       A1         407E       R-32/125/134a       -       A1         408A       R125/143a/22       -       A1         409A       R-22/124/142b       -       A1
401B       R-22/152a/124       -       A1         401C       R-22/152a/124       -       A1         402A       R-125/290/22       -       A1         402B       R-125/290/22       -       A1         403A       R-290/22/18       -       A1         403B       R-290/22/18       -       A1         404A       R-125/143a/134a       -       A1         405A       R-22/152a/142b/C318       -       NC         406A       R-22/600a/142b       -       A2         407A       R-32/125/134a       -       A1         407B       R-32/125/134a       -       A1         407C       R-32/125/134a       -       A1         407D       R-32/125/134a       -       A1         407E       R-32/125/134a       -       A1         408A       R125/143a/22       -       A1         409A       R-22/124/142b       -       A1
401C       R-22/152a/124       -       A1         402A       R-125/290/22       -       A1         402B       R-125/290/22       -       A1         403A       R-290/22/18       -       A1         403B       R-290/22/18       -       A1         404A       R-125/143a/134a       -       A1         405A       R-22/152a/142b/C318       -       NC         406A       R-22/600a/142b       -       A2         407A       R-32/125/134a       -       A1         407B       R-32/125/134a       -       A1         407C       R-32/125/134a       -       A1         407D       R-32/125/134a       -       A1         407E       R-32/125/134a       -       A1         408A       R125/143a/22       -       A1         409A       R-22/124/142b       -       A1
402A       R-125/290/22       -       A1         402B       R-125/290/22       -       A1         403A       R-290/22/18       -       A1         403B       R-290/22/218       -       A1         404A       R-125/143a/134a       -       A1         405A       R-22/152a/142b/C318       -       NC         406A       R-22/600a/142b       -       A2         407A       R-32/125/134a       -       A1         407B       R-32/125/134a       -       A1         407C       R-32/125/134a       -       A1         407B       R-32/125/134a       -       A1         407B       R-32/125/134a       -       A1         407B       R-32/125/134a       -       A1         407B       R-32/125/134a       -       A1         407E       R-32/125/134a       -       A1         408A       R125/143a/22       -       A1         409A       R-22/124/142b       -       A1
402B       R-125/290/22       -       A1         403A       R-290/22/218       -       A1         403B       R-290/22/218       -       A1         404A       R-125/143a/134a       -       A1         405A       R-22/152a/142b/C318       -       NC         406A       R-22/600a/142b       -       A2         407A       R-32/125/134a       -       A1         407B       R-32/125/134a       -       A1         407C       R-32/125/134a       -       A1         407D       R-32/125/134a       -       A1         407E       R-32/125/134a       -       A1         408A       R125/143a/22       -       A1         409A       R-22/124/142b       -       A1
403A       R-290/22/218       -       A1         403B       R-290/22/218       -       A1         404A       R-125/143a/134a       -       A1         405A       R-22/152a/142b/C318       -       NC         406A       R-22/600a/142b       -       A2         407A       R-32/125/134a       -       A1         407B       R-32/125/134a       -       A1         407C       R-32/125/134a       -       A1         407D       R-32/125/134a       -       A1         407E       R-32/125/134a       -       A1         408A       R125/143a/22       -       A1         409A       R-22/124/142b       -       A1
403B       R-290/22/218       -       A1         404A       R-125/143a/134a       -       A1         405A       R-22/152a/142b/C318       -       NC         406A       R-22/600a/142b       -       A2         407A       R-32/125/134a       -       A1         407B       R-32/125/134a       -       A1         407C       R-32/125/134a       -       A1         407D       R-32/125/134a       -       A1         407E       R-32/125/134a       -       A1         408A       R125/143a/22       -       A1         409A       R-22/124/142b       -       A1
404A       R-125/143a/134a       -       A1         405A       R-22/152a/142b/C318       -       NC         406A       R-22/600a/142b       -       A2         407A       R-32/125/134a       -       A1         407B       R-32/125/134a       -       A1         407C       R-32/125/134a       -       A1         407D       R-32/125/134a       -       A1         407E       R-32/125/134a       -       A1         408A       R125/143a/22       -       A1         409A       R-22/124/142b       -       A1
405A       R-22/152a/142b/C318       -       NC         406A       R-22/600a/142b       -       A2         407A       R-32/125/134a       -       A1         407B       R-32/125/134a       -       A1         407C       R-32/125/134a       -       A1         407D       R-32/125/134a       -       A1         407E       R-32/125/134a       -       A1         408A       R125/143a/22       -       A1         409A       R-22/124/142b       -       A1
406A       R-22/600a/142b       -       A2         407A       R-32/125/134a       -       A1         407B       R-32/125/134a       -       A1         407C       R-32/125/134a       -       A1         407D       R-32/125/134a       -       A1         407E       R-32/125/134a       -       A1         408A       R125/143a/22       -       A1         409A       R-22/124/142b       -       A1
407A       R-32/125/134a       -       A1         407B       R-32/125/134a       -       A1         407C       R-32/125/134a       -       A1         407D       R-32/125/134a       -       A1         407E       R-32/125/134a       -       A1         408A       R125/143a/22       -       A1         409A       R-22/124/142b       -       A1
407B       R-32/125/134a       -       A1         407C       R-32/125/134a       -       A1         407D       R-32/125/134a       -       A1         407E       R-32/125/134a       -       A1         408A       R125/143a/22       -       A1         409A       R-22/124/142b       -       A1
407B       R-32/125/134a       -       A1         407C       R-32/125/134a       -       A1         407D       R-32/125/134a       -       A1         407E       R-32/125/134a       -       A1         408A       R125/143a/22       -       A1         409A       R-22/124/142b       -       A1
407C       R-32/125/134a       -       A1         407D       R-32/125/134a       -       A1         407E       R-32/125/134a       -       A1         408A       R125/143a/22       -       A1         409A       R-22/124/142b       -       A1
407D       R-32/125/134a       -       A1         407E       R-32/125/134a       -       A1         408A       R125/143a/22       -       A1         409A       R-22/124/142b       -       A1
407E       R-32/125/134a       -       A1         408A       R125/143a/22       -       A1         409A       R-22/124/142b       -       A1
408A       R125/143a/22       -       A1         409A       R-22/124/142b       -       A1
409A R-22/124/142b - A1
410B R-32/125 - A1
411A R-1270/22/152a - A2
411B R-1270/22/152a - A2
412A R-22/218/142b - A2
413A R-218/134a/600a - A2
414A R-22/124/600a/142b - A1
414B R-22/124/600a/142b - A1
415A R-22/152a (82.0/18.0) - A2
418A R-290/22/152a <u>-</u> A2
500 R-12/152a 1 A1
501 R-22/12 1 A1
502 R-22/115 1 A1
507A R-125/143a - A1
508A R-23/116 - A1
508B R-23/116 - A1
509A R-22/218 - A1
$CH_3CH_2CH_2CH_3$ 3a A3
600a $CH(CH_3)_2CH_3$ 3a A3
611 CHOOCH <sub>3</sub> 2 B2  - Not listed in standard.

<sup>-</sup> Not listed in standard. NC Listed, but with no safety classification

TABLE B1 (Continued)
Comparison of Safety Group Classifications to Those Under ASHRAE Standard 34-1989

702	$H_2$	-	A3
704	Не	-	A1
717	NH <sub>3</sub>	2	B2
718	H <sub>2</sub> O	-	Al
720	Ne	-	Al
728	$N_2$	-	Al
740	Ar	-	Al
744	$CO_2$	1	Al
764	$SO_2$	2	B1
1140	CH <sub>2</sub> =CHCl	-	NC
1150	$CH_2 = CH_2$	3a	A3
1270	CH <sub>3</sub> CH=CH <sub>2</sub>	3a	A3

- Not listed in standard.
NC Listed, but with no safety classification

### 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 quidelines.

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.