REFERENCE STANDARD RS 14
HEATING AND COMBUSTION EQUIPMENT

*LIST OF REFERENCED NATIONAL STANDARDS

**NfIPA No. 90B Standard for the Installation of Warm Air Heating and Air Conditioning and Ventilating Systems, As Modified……………………………………………………………..1996


ANSI/NfIPA Standard for the Installation of Oil Burning No. 31 Equipment........................................1983


ANSI/ASME Boiler and Pressure Vessel Code, Sections I, IV and VIII........................................1986


ANSI-Z21.3 Hotel and Restaurant Gas Ranges and Unit Broilers...............................................................1982

ANSI-Z21.5.1 Gas Clothes Dryers, Volume I, Type 1 Clothes Dryers............................................................1982


ANSI-Z21.8 Installation of Domestic Gas Conversion Burners.................................................................1984

ANSI-Z21.10.1 Gas Water Heaters, Volume I. Storage Water Heaters with Input Ratings of 75,000BTU per Hour or less.................................................................1987

ANSI-Z21.10.3 Gas Water Heaters, Volume III — Storage with Input Ratings above 75,000 BTU per Hour, Circulating and Instantaneous Water Heaters.................................................................1987


ANSI-Z21.17 Domestic Gas Conversion Burner.........................................................................................1984


ANSI-Z21.24 Metal Connectors for Gas Appliances..............................................................................1987


ANSI-Z21.31 Gas Counter Appliances, and Addenda Z21.31a-1978........................................1975


ANSI-Z21.44 Gas-Fired Gravity and Fan Type Direct Vent Wall Furnaces, and Addenda Z21.44a-1985...1985

ANSI-Z21.45 Flexible Connectors of Other than All Metal Construction for Gas Appliances, and Addenda Z21.45a-1987..................................................................................................1985


ANSI-Z21.47 Gas-Fired Central Furnaces (Except Direct Vent Central Furnaces)..........................1987

ANSI-Z21.48 Gas-Fired Gravity and Fan Type Floor Furnaces.........................................................1986

ANSI-Z21.49 Gas-Fired Gravity and Fan Type Vented Wall Furnaces..............................................1986

ANSI-Z21.50 Vented Decorative Gas Appliances..................................................................................1986


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*As enacted but “ANSI-UL-875” probably intended.  
**As enacted but “Household Electric Storage Tank Water Heaters” probably intended.  
††As enacted but “1983” probably intended.
Reference Standard 14

ANSI/ASTM-D93 Method of Test for Flash Points by Pensky-Martens Closed Tester…………… 1985
*SMACNA Fibrous Glass Duct Construction Standard, as Modified……………………………………………… 1992
**SMACNA HVAC Duct Construction Standards – Metal and Flexible, as Modified………………. 1995
**SMACNA HVAC Air Duct Leakage Test Manual, as Modified………………………………………. 1985

Note: Wherever in these standards reference is made to the "National Electrical Code" the work so covered shall meet the requirements of the Electrical Code of the City of New York.

*946-87 BCR; Local Law 80-1989
**DOB 5-4-02

REFERENCE STANDARD RS 14-1
The appendices to ANSI/NFIPA No. 90 B-96 are not part of this Reference Standard. These are for informational purposes only.
Wherever reference is made to the "National Electrical Code" it shall be changed to read "Electrical Code of the City of New York."
The New York State Energy Conservation Construction Code also regulates the design and construction of heating, ventilating, and air conditioning systems in New York City.

STANDARD FOR THE INSTALLATION OF WARM AIR HEATING AND AIR CONDITIONING SYSTEMS

ANSI/NFIPA No. 90 B-1996, AS MODIFIED

Delete the NOTICE.
Delete asterisks from all section numbers having them.
Material in [brackets] is to be deleted.
Underlined material is new.
** * denotes unchanged text.
Section numbers are from ANSI/NFIPA No. 90 B-1996.

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Chapter 1 General

1-1 Scope. This standard shall apply to all systems for the movement of environmental air in structures that[.]
are otherwise exempted by Section 27-777(b) of the Administrative Code, or whose heating systems are subject to Section 27-812 of the Administrative Code.
[(a) Serve one- or two-family dwellings; or
(b) Serve spaces not exceeding 25,000 ft³ (708 m³) in volume in any occupancy.
Exception: Buildings of combustible construction over three stories in height shall be in accordance with NFPA 90A, Standard for the Installation of Air Conditioning and Ventilating Systems.]"
Reference Standard 14

(a) A Class 1 air filter is one which, when clean, does not contribute fuel when attacked by flame, and emits only negligible amounts of smoke when tested in accordance with RS 13-15.

(b) A Class 2 air filter is one which, when clean, burns moderately when attacked by flame or emits moderate amounts of smoke or both when tested in accordance with RS 13-15.


Authority Having Jurisdiction. [The organization, office, or individual responsible for approving equipment, an installation, or a procedure.] The Commissioner of the Department of Buildings or his designee.

* * *

Listed - Equipment, materials or services included in a list published by an organization acceptable to the "authority having jurisdiction" and concerned with evaluation of products or services that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states either that the equipment, material or service meets identified standards or has been tested and found suitable for use in a specified purpose.

NOTE: The means for identifying listed equipment may vary for each organization concerned with product evaluation, some of which do not recognize equipment as listed unless it is also labeled. The "authority having jurisdiction" should utilize the system employed by the listing organization to identify a listed product.

Noncombustible Material. [A material that, in the form in which it is used and under the conditions anticipated, cannot ignite, burn, support combustion, or release flammable vapors when subjected to fire or heat. When tested in accordance with ASTM E 136, Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 Degrees C, materials that successfully pass the test shall be considered noncombustible.] See subchapter 2 of the Building Code for definition.

* * *

[Should. Indicates a recommendation or that which is advised but not required.]

* * *

Chapter 2  System Components

* * *

2-1.1.1 Supply ducts shall be:

(a) Class 0 or Class 1 rigid or flexible air ducts tested in accordance with UL 181/96, Standard for Safety Factory-Made Air Ducts and Air Connectors; or

(b) Of sheet metal having a nominal thickness as shown in Table 2-1.1.1.

Exception No. 1: Supply ducts that are completely encased in not less than 2 in. (51 mm) of concrete in a floor slab shall not be required to meet the requirements of 2-1.1.1, except within 2 ft (0.61 m) of the furnace supply plenum and within 2 ft (0.61 m) of a vertical connection to a riser or register.

Exception No. 2: Supply ducts for a separate air cooling system, not interconnected to any warm air heating system, serving a single-family dwelling shall not be required to meet the requirements of 2-1.1.1, provided that they are not closer than 2 ft (0.61 m) to any furnace or its supply plenum, boiler, or other heat-producing appliances and that they comply with 2-2.1.1, 2-2.1.3, 2-2.2, 2-2.3, and 2-2.4 as specified for return ducts.

Exception No. 3: Vibration isolation connectors in duct systems shall be made of approved flame-retardant fabric or shall consist of sleeve joints with packing of approved noncombustible material. The fabric shall not exceed 10 in. (254 mm) in length in the direction of airflow.

Exception No. 4: A Class 0 or Class 1 rigid or flexible air duct shall not be used as a vertical air duct that is more than two stories in height.

Exception No. 5: A Class 0 or Class 1 rigid or flexible air duct shall not be used in an air duct containing air at a temperature in excess of 250°F (121°C).

2-1.1.2 Supply ducts shall be installed in conformance with:

(a) Class 0 or Class1 rigid or flexible air ducts tested in accordance with UL 181/96, Standard for Safety Factory-Made Air Ducts and Air Connectors; or

(b) Of sheet metal having a nominal thickness as shown in table 2-1.1.1

(c) SMACNA Fibrous Glass Duct Construction Standards;

(b) RS 14-22 [SMACNA HVAC Duct Construction Standards — Metal and Flexible;]

(d) SMACNA Installation Standards for Residential Heating and Air Conditioning Systems.]

2-1.2 Air Connectors. Air connectors are limited-use, flexible air ducts that shall not be required to conform to the requirements for air ducts, provided they conform to the following provisions:

(a) Air connectors shall conform to the requirements for Class 0 or Class 1 connectors when tested in accordance with UL 181/96, Standard for Safety Factory-Made Air Ducts and Air Connectors.

(b) Class 0 or Class 1 air connectors shall not be used in ducts containing air at temperatures in excess of 250°F (121°C).

(c) An air connector run shall not exceed 14 ft (4.3 m) in length.
(d) Air connectors shall not pass through any wall, partition, or enclosure of a vertical shaft that is required to have a fire resistance rating of 1 hour or more.  
(e) Air connectors shall not pass through floors.  
(f) Air connectors shall be installed in conformance with the conditions of their approval.

2-3.1.2 Duct coverings and linings shall not flame, glow, smolder, or smoke when tested in accordance with ASTM C 411/97, Standard Test Method for Hot-Surface Performance of High-Temperature Thermal Insulation, at the temperature to which it is exposed in service. In no case shall the test temperature be below 250°F (121°C).

2-3.2 Joints. Joints and seams shall be fastened securely and made substantially airtight. Slip joints shall have a lap of at least 1 in. (25.4 mm) and shall be fastened individually (see Figure 2-3.2). Tape shall be permitted to be used for sealing joints but, where exposed to the air in the system, it shall not be more combustible than fabric complying with [NFPA 701, Standard Methods of Fire Tests for Flame-Resistant Textiles and Films] RS 7-3.

Closure systems for use with rigid air ducts tested in accordance with UL 181/96, Standard for Safety Factory-Made Air Ducts and Air Connectors, shall have been tested and listed in accordance with UL 181A/94, Standard for Safety Closure Systems for Use with Rigid Air Ducts and Air Connectors, and used in conformance with the conditions of the listing.

2-3.5.1 Registers shall be constructed of metal or shall conform with the following:

(a) Registers shall be made of a material classified as 94 HB when tested as described in UL 94/96, Standard for Safety Test for Flammability of Plastic Materials for Parts in Devices and Appliances.

(b) Floor registers shall resist, without structural failure, a 200-lb (90.7-kg) concentrated load on a 2-in. (51-mm) diameter disc applied to the most critical area of the exposed face of the register. For this test, the register shall be at a temperature not less than 165°F (74°C) and shall be supported in accordance with the manufacturer's instructions.

2-3.5.3 Fittings connecting the registers to the duct system shall be constructed of metal or material that complies with the requirements of Class 0, Class 1, or Class 2 ducts in UL 181/96, Standard for Safety Factory-Made Air Ducts and Air Connectors.

4-1.3.3 Liquid adhesive coatings used on filters shall have a flash point not less than 325°F (163°C) in accordance with [ASTM D 93, Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester] RS 14-13.

4-1.3.4 All air filters shall be kept free of excess dust and combustible material. Unit filters shall be renewed or cleaned when the resistance to airflow has increased to two times the original resistance or when the resistance has reached a value of recommended replacement by the manufacturer. A permanently installed draft gauge shall be provided for this purpose. Where the filters are of the automatic liquid adhesive type, sludge shall be removed from the liquid adhesive reservoir regularly.


4-2 Electric Wiring and Equipment.

Electric wiring and equipment shall be adequate for safe operation and shall be installed in accordance with [NFPA 70, National Electrical Code®] the New York City Electrical Code. In addition, a disconnecting means shall be installed within sight and easy reach in the ungrounded leads of each power circuit to electrically operated components that are in unprotected locations and in other locations not readily accessible for service.

4-3.2 Fan Control for Stoker-Fired Furnaces.

Where a warm air furnace equipped with a fan to circulate the air is stoker-fired, it also shall be equipped with an automatic overrun control to start the fan when the air in the furnace bonnet or at the beginning of the main supply duct at a point not affected by radiated heat.
reaches a temperature not higher than 200°F (93°C) after the stoker and fan (in its normal operation) have been shut down as a result of a satisfied thermostat. If a manual disconnect is installed in the air circulating fan electrical circuit, it shall be installed to deenergize both the fan and the stoker simultaneously. **Solid fuel may be used only as permitted by Local Law 93/85.**

**4-3.4 Thermostatically Controlled, Hand-Fired, Solid-Fuel Burning Furnaces.**

Hand-fired, solid-fuel burning furnaces on which the furnace draft is controlled by a thermostat shall be equipped with the following:

(a) A fail-safe 250°F (121°C) limit control installed not more than 10 in. (254 mm) above the top surface of the heat exchanger in a supply plenum that extends at least 12 in. (305 mm) above the top surface of the heat exchanger; and

(b) A barometric draft control operated by draft intensity and permanently set to limit the draft to a maximum intensity of 0.13 in. (32.4 Pa) of water gauge. A fail-safe limit control is a limit control that automatically checks the furnace in the event of power failure or shutoff or that automatically checks the furnace when a temperature of 250°F (121°C) is reached, whether or not power is available.

(c) Solid fuel may be used only as permitted by Local Law 93/85.

**4-3.5 Air-Circulating Fan Controls.**

Where a hand-fired, solid-fuel burning furnace is equipped with a fan to circulate the air, it shall be equipped with fan controls as required for stoker-fired furnaces by 4-3.2. Solid fuel may be used only as permitted by Local Law 93/85.

* * *

**Chapter 5 Referenced Publications – Delete**

Appendix A – Delete

Appendix B - Delete

*DOB 5-4-02;946-87 BCR; 938-80 BCR

**REFERENCE STANDARD RS 14-2**


**REFERENCE STANDARD RS 14-3**

ANSI/NFipA No. 31 1983 -Standard for the Installation of Oil Burning Equipment.

Section 1-5 Air for combustion and ventilation.

**REFERENCE STANDARD RS 14-4**


**REFERENCE STANDARD RS 14-5A**


Section I Power Boilers

Section IV Heating Boilers

*Rule HG-614 LOW - WATER FUEL CUTOFF*

(a) Each automatically fired hot water boiler shall have an automatic low-water fuel cutoff which has been designed for hot water service, and it shall be so located as to automatically cut off the fuel supply when the surface of the water falls to the level established in (b) below. (see Fig. HG-703.2).

(b) As there is no normal waterline to be maintained in a hot water heating boiler, any location of the low-water fuel cutoff above the lowest safe permissible water level established by the boiler manufacturer is satisfactory.

(c) A coil-type boiler or a watertube boiler requiring forced circulation to prevent overheating of the coils or tubes shall have a flow-sensing device installed in the outlet piping in lieu of the low-water fuel cutoff required in (a) above to automatically cut off the fuel supply when the circulating flow is interrupted.

**REFERENCE STANDARD RS 14-5B**


†1045-83 BCR
††REFERENCE STANDARD RS 14-6

ANSI-Z21.3-1982 - Hotel and Restaurant Gas Ranges and Unit Boilers.
ANSI-Z21.5.1-1982 - Gas Clothes Dryers, Volume I, Type 1 Clothes Dryers.
ANSI-Z83.2-1977 - Gas Atmosphere Generators.
ANSI-Z83.3-1971 - Gas Utilization Equipment in Large Boilers, and Addenda Z83.3a-1972, Z83.3b-1976.
ANSI-Z83.4-1985 - Direct Gas-Fired Make-Up Air Heaters, and Addenda Z83.4a-1986.
ANSI-Z83.6-1982 - Gas-Fired Infrared Heaters, and Addenda Z83.6a-1984, Z83.6b-1985.

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ANSI-Z83.7-1974 - Gas-Fired Construction Heaters.
ANSI-Z83.8-1985 - Gas Unit Heaters, and Addenda Z83.8a-1986.
ANSI-Z83.9-1986 - Gas-Fired Duct Furnaces.
ANSI-Z83.11-1986 - Gas Food Service Equipment - Ranges and Unit Broilers.
ANSI-Z83.15-1986 - Gas Food Service Equipment - Kettles, Steam Cookers and Steam Generators.
ANSI Z96.2/UL 296-1980 - Oil Burners, August 1985 Revision.
ANSI B130.1/UL 343-1986 - Pumps for Oil-Burning Appliances.
UL 586-1985 - Test Performance of High Efficiency, Particulates Air-Filters Units.
ANSI Z95.2/UL 731-1975 - Oil-Fired Unit Heaters, January 1985 Revision.
UL 733-1975 - Oil-Fired Air Heaters and Direct-Fired Heaters, August 1985 Revision.
*UL 867-1981 - Electrostatic Air Cleaners.
††1946-87 BCR
*As enacted but “UL 867-1980” probably intended.
**As enacted but “Household Electric Storage Tank Water Heaters” probably intended.
† As enacted but “UL-1555-1983” probably intended.
††† As enacted but “ANSI/UL 875-1983” probably intended.

*REFERENCE STANDARD RS 14-7
*1045-83 BCR

**REFERENCE STANDARD RS 14-8
**946-87 BCR; 938-80 BCR

*REFERENCE STANDARD RS 14-9
*1045-83 BCR

**REFERENCE STANDARD RS 14-10
**946-87 BCR; 938-80 BCR

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REFERENCE STANDARD RS 14-11

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REFERENCE STANDARD RS 14-14
ANSI/ASTM-C64 1972 - Specifications for Refractories for Incinerators and Boilers (Reapproved 1977)
### REFERENCE STANDARD RS 14-15

**MINIMUM INSTALLATION FOR HEAT PRODUCTION EQUIPMENT**

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<tr>
<td>of Casing</td>
<td>Air Bonnet</td>
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<td>or Plenum</td>
<td>or Plenum</td>
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#### Residential Type Equipment for Installation in Large Room

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<td>Automatic gas          6 — 18 6 6</td>
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<tr>
<td>(all water walled or jacketed)</td>
<td>Solid                6 — 48 6 6</td>
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#### Furnaces, Central –

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<tr>
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<tr>
<td>Solid                                                              18 18 48 18 18</td>
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<td>Electric                                                           6 6 18 6 6</td>
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#### Furnaces, Floor

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<th>Automatic oil or comb. gas-oil 36 — 12 12 12</th>
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#### Heat Exchanger —

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#### Radiator Type

| Gas with double metal or ceramic back. | 36 — 36 12 12 |

#### Ranges —

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<tbody>
<tr>
<td>Cooking Stoves</td>
<td>Firing</td>
</tr>
<tr>
<td>(vented or unvented)</td>
<td>Opp.</td>
</tr>
<tr>
<td>Gas</td>
<td>30°F</td>
</tr>
<tr>
<td>Solid-clay-lined firepot</td>
<td>30°F</td>
</tr>
<tr>
<td>Solid-unlined firepot...</td>
<td>30°F</td>
</tr>
<tr>
<td>Electric</td>
<td>30°F</td>
</tr>
</tbody>
</table>

#### Clothes Dryers that conform to applicable standards

<table>
<thead>
<tr>
<th>Gas</th>
<th>6 — 24 0 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric</td>
<td>6 — 24 0 0</td>
</tr>
</tbody>
</table>

#### Commercial-Industrial Type Low Temperature Equipment (Any and all physical sizes except as noted)

<table>
<thead>
<tr>
<th>Boilers and Water Heaters-100 cu. ft. or less (any psi steam)</th>
<th>All fuels 18 — 48 18 18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any size (50 psi or less)</td>
<td>All fuels 18 — 48 18 18</td>
</tr>
</tbody>
</table>
### Reference Standard 14

<table>
<thead>
<tr>
<th>Equipment Type</th>
<th>CLEARANCES (in.)</th>
<th>EQUIPMENT</th>
<th>From Top and Sides of Warm-Air Bonnet or Plenum</th>
<th>From Front</th>
<th>From Back</th>
<th>From Sides</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Commercial-Industrial Medium Temperature Equipment</strong></td>
<td></td>
<td>Boilers and water heaters-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Over 50 psi or Over 100 cu. Ft.</td>
<td></td>
<td>All fuels</td>
<td>48</td>
<td>96</td>
<td>36</td>
<td>36</td>
</tr>
<tr>
<td>Over med. Temp. industrial equipment-All sizes</td>
<td></td>
<td>All fuels</td>
<td>48</td>
<td>36</td>
<td>96</td>
<td>36</td>
</tr>
<tr>
<td>Incinerators — All sizes</td>
<td></td>
<td>All fuels</td>
<td>48</td>
<td>96</td>
<td>36</td>
<td>36</td>
</tr>
<tr>
<td><strong>Industrial type High-Temperature Equipment</strong></td>
<td></td>
<td>High temperature equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All sizes</td>
<td></td>
<td>All fuels</td>
<td>180</td>
<td>360</td>
<td>120</td>
<td>120</td>
</tr>
</tbody>
</table>

**Notes for Reference Standard RS 14-15:**

* See reference standard RS 14-16 for reduction of clearance.
* Large rooms are those that are large in comparison to the size of the equipment and have a volume equal to at least 12 times the total volume of a furnace and at least 16 times the total volume of a boiler. If the actual ceiling height of a room is greater than 8 ft., the volume of a room shall be figured on the basis of a ceiling height of 8 ft.
* The minimum dimension shall be that necessary for servicing the equipment, including access for cleaning and normal care, tube removal, etc.
* If the equipment is encased in brick, the 18 in. clearance above and at sides and back may be reduced to not less than 12 in.
* If the equipment is encased in brick the clearance above may be reduced to not less than 36 in., and at sides and back may be reduced to not less than 18 in.
* To combustible material or metal cabinet. If the underside of such combustible material or metal cabinet is protected with asbestos millboard at least 1/4 in. thick covered with sheet metal of not less than no. 28 U.S. Standard gauge*, the distance may be reduced to not less than 24 in.

* As enacted but "gage" probably intended.
**REFERENCE STANDARD RS 14-16**  
**REDUCED MINIMUM CLEARANCES FOR EQUIPMENT, USING SPECIFIED FORMS OF PROTECTION**

<table>
<thead>
<tr>
<th>Specified Form of Protection</th>
<th>Reduced Clearances (in.)</th>
<th>Where the Required Clearance with no Protection is:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>36 in.</td>
<td>18 in.</td>
</tr>
<tr>
<td></td>
<td>Side</td>
<td>Rear</td>
</tr>
<tr>
<td>(a) 1/4 in. asbestos millboard spaced out 1 in.</td>
<td>30</td>
<td>18</td>
</tr>
<tr>
<td>(b) 28 gauge *sheet metal on 1/4 in. asbestos millboard</td>
<td>24</td>
<td>18</td>
</tr>
<tr>
<td>(c) 28 gauge *sheet metal spaced out 1 in.</td>
<td>18</td>
<td>12</td>
</tr>
<tr>
<td>(d) 28 gauge *sheet metal on 1/8 in. asbestos millboard spaced out 1 in.</td>
<td>18</td>
<td>12</td>
</tr>
<tr>
<td>(e) 1 1/2 in. asbestos cement covering on heating equipment</td>
<td>18</td>
<td>12</td>
</tr>
<tr>
<td>(f) 1/4 in. asbestos millboard on 1 in. mineral fiber bats reinforced with wire mesh or equivalent</td>
<td>18</td>
<td>12</td>
</tr>
<tr>
<td>(g) 22 gauge *sheet metal on 1 in. mineral fiber bats reinforced with wire or equivalent</td>
<td>18</td>
<td>12</td>
</tr>
<tr>
<td>(h) 1/4 in. asbestos cement board or 1/4 in. asbestos millboard</td>
<td>36</td>
<td>36</td>
</tr>
<tr>
<td>(i) 1/4 in. cellular asbestos</td>
<td>36</td>
<td>36</td>
</tr>
</tbody>
</table>

Notes:

a Except for the protection described in (e), all clearances shall be measured from the outer surface of the equipment to the combustible material disregarding any intervening protection applied to the combustible material.

b Spacers shall be of non combustible material. Applicable to the combustible material, unless otherwise specified, and covering all surfaces within the distance specified as the required clearance with no protection.

*As enacted but probably "gage" intended.
### REFERENCE STANDARD RS 14-17

**MINIMUM EQUIPMENT FOUNDATION MOUNTINGS REQUIREMENTS**

**COMBUSTIBLE CONSTRUCTION**

<table>
<thead>
<tr>
<th>Exceptions Base (in.)</th>
<th>Type of Protection Mounted on Combustible Surface</th>
<th>Open Clearances Under Applying To:</th>
<th>Solid Fuel-Firing Side at Ash Removal Side (in.)</th>
<th>Extension of Protection Beyond Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low temperature equipment</td>
<td>1/4 in. asbestos</td>
<td>18</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>3/8 in. asbestos millboard covered with no less than 0.24 Mfg’s Standard *Gauge Sheet</td>
<td>8</td>
<td>6</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>4 in. of hollow clay or concrete tile</td>
<td>4</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>2 courses of 4 in. hollow clay or concrete tile covered with 3/16 in. steel plate</td>
<td>0</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td>Medium temperature equipment</td>
<td>4 in. of hollow clay or concrete tile</td>
<td>24</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td>Boilers, furnaces, and warm air furnaces for heating one-family dwellings; and to floor mounted unit heaters</td>
<td>1/4 in. asbestos millboard covered with not less than 0.24 Mfg’s Standard *Gauge Sheet</td>
<td>4</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td>Commercial or restaurant type cooking equipment</td>
<td>4 in. of hollow clay or concrete tile</td>
<td>18</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>A metal baffle between burner and floor</td>
<td>8</td>
<td>6</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>3/8 in. asbestos millboard</td>
<td>4</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>4 in. of hollow clay or concrete tile</td>
<td>0</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>2 courses of 4 in. hollow clay or concrete tile covered with 3/16 in. steel plate</td>
<td>0</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td>Domestic type floor mounted cooking and rm. heating eqpt... such as, stoves, heaters, fuel fired steam or hot water radiators and hot water</td>
<td>A metal baffle between burner and floor</td>
<td>18</td>
<td>0</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>1/2 in. asbestos millboard covered with not less than No. 24 Mfg’s Standard *Gauge Sheet</td>
<td>4</td>
<td>0</td>
<td>18</td>
</tr>
</tbody>
</table>

**Notes for Combustible Construction:**
- Hollow tile shall be set with ends unsealed and joints matched so as to provide for the circulation of air through the tile. Where two courses of hollow tile are required, the tiles courses shall be laid at right angles to each other with the ends unsealed and joints matched so as to provide for the circulation of air through each course.
- Low temperature equipment with a water cooled base and a grate area of less than 3 sq. ft., or low temperature equipment in which the combustion chamber is located at least 12 in. above the floor, may rest directly on a sheet metal base of not less than no. 14 manufacturer’s standard *gauge* sheet steel without heat insulation on combustible construction.
- Where the floor protection used does not provide a monolithic surface of steel, concrete, or cement, the side or surface where ashes are removed or where traffic or other usage would wear the protection away shall be covered with no. 24 manufacturer’s standard *gauge* steel sheet or equivalent material.
- *As enacted but "gage" probably intended.*

### MINIMUM EQUIPMENT FOUNDATION MOUNTINGS REQUIREMENTS

**NONCOMBUSTIBLE CONSTRUCTION**

<table>
<thead>
<tr>
<th>Equipment Classification</th>
<th>Fuels</th>
<th>Fire Resistance Rating</th>
<th>Extension Beyond Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Temperature</td>
<td>All fuels</td>
<td>2 hr.</td>
<td>18 in. on all sides</td>
</tr>
<tr>
<td>Medium Temperature</td>
<td>Gas and liquid fuels</td>
<td>3 hr.</td>
<td>3 ft. on all sides</td>
</tr>
<tr>
<td></td>
<td>Solid fuels</td>
<td>3 hr.</td>
<td>3 ft. on all sides and 8 ft. on firing side and ash removal side</td>
</tr>
<tr>
<td>High Temperature</td>
<td>All fuels</td>
<td>4 hr.</td>
<td>10 ft. on all sides and 30 ft. at front or side where hot products are removed</td>
</tr>
</tbody>
</table>
Reference Standard 14

*REFERENCE STANDARD RS 14-18
*Local Law 80-1989

*REFERENCE STANDARD RS 14-19
*Local Law 80-1989

*REFERENCE STANDARD RS 14-20
*Local Law 80-1989

*REFERENCE STANDARD RS 14-21
UL 1482-1988 - Standard for room heaters, solid fuel type (September 1988 Revision).
*Local Law 80-1989

*REFERENCE STANDARD RS 14-22

Modifications:
1) Ducts shall be constructed in accordance with Section 2-3.1 of Reference Standard RS 13-1; Chapter 2 of Reference Standard RS 13-4; or Chapter 2 of Reference Standard RS 14-1; as applicable.

*DOB 5-4-02; Local Law 80-1989