



**BSR/ASHRAE/IES Addendum af  
to ANSI/ASHRAE/IES Standard 90.1-2022**

**Public Review Draft**

# **Proposed Addendum af to Standard 90.1-2022, Energy Standard for Sites and Buildings Except Low- Rise Residential Buildings**

**Second Public Review (November 2024)  
(Draft Shows Proposed Independent Substantive  
Changes to Previous Public Review Draft)**

This draft has been recommended for public review by the responsible project committee. To submit a comment on this proposed standard, go to the ASHRAE website at [www.ashrae.org/standards-research--technology/public-review-drafts](http://www.ashrae.org/standards-research--technology/public-review-drafts) and access the online comment database. The draft is subject to modification until it is approved for publication by the Board of Directors and ANSI. Until this time, the current edition of the standard (as modified by any published addenda on the ASHRAE website) remains in effect. The current edition of any standard may be purchased from the ASHRAE Online Store at [www.ashrae.org/bookstore](http://www.ashrae.org/bookstore) or by calling 404-636-8400 or 1-800-727-4723 (for orders in the U.S. or Canada).

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## FOREWORD

This ISC makes corrections to the Addendum af that covers electric motor efficiency, to align with DOE 10 CFR 431.

DOE published a *Federal Register* proposed direct final rule on June 1, 2023, pertaining to energy conservation standards for electric motors that range in size from 1.0 to 750.0 horsepower (0.75 to 559 kW).

DOE published the final rule on October 20, 2023, confirming the effective date and compliance date with the new standards established in the direct final rule, which is required on and after June 1, 2027.

Cost justification: This is a table clean-up that does not require a cost-effectiveness analysis.

***[Note to Reviewers: This public review draft makes proposed independent substantive changes to the previous public review draft. These changes are indicated in the text by underlining (for additions) and ~~strikethrough~~ (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the previous draft are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed substantive changes.]***

## Addendum af to 90.1-2022

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*Modify Section 10.4.1 as follows:*

**10.4.1 Electric Motors.** Electric motors manufactured alone or as a component of another piece of equipment with a rated motor power of 1 hp or more, and less than or equal to ~~200~~750 hp (559 kW), shall comply with the requirements shown in Table 10.8-1 for NEMA Design A motors, NEMA Design B motors, and IEC Design N<sub>2</sub>, NE, NEY, or NY motors, and Table 10.8-2 for NEMA Design C motors and IEC Design H motors. General purpose small electric motors with a~~n~~ rated motor power of 0.25 hp [.18 kW] or more, and less than or equal to 3 hp [2.2 kW], shall have a minimum average full-load efficiency that is not less than as shown in Table 10.8-3 for polyphase small electric motors and Table 10.8-4 for capacitor-start capacitor-run small electric motors and capacitor-start induction-run small electric motors.

Fire pump electric motors shall have a minimum nominal full-load efficiency ~~that is~~ not less than that shown in Table 10.8-5. Air-over electric motors shall have a minimum nominal full-load efficiency not less than that shown in Table 10.8-7 and Table 10.8-8.

Modify Table 10.8-1 as follows (I-P):

**Table 10.8-1 Minimum Nominal Full-Load Efficiency for NEMA Design A, NEMA Design B, and IEC Design N, NE, NEY, or NY Motors (Excluding Fire Pump Electric Motors) at 60 Hz<sup>a,b,c</sup>.**

Motor Horsepower, hp	Manufactured Date	Nominal Full-Load Efficiency, %							
		2-Pole		4-Pole		6-Pole		8-Pole	
		Enclosed	Open	Enclosed	Open	Enclosed	Open	Enclosed	Open
550	<del>All</del> <u>On or after June 1, 2027</u>	95.8	96.2	96.2	96.2	NR	NR	NR	NR
600	<del>All</del> <u>On or after June 1, 2027</u>	95.8	96.2	96.2	96.2	NR	NR	NR	NR
650	<del>All</del> <u>On or after June 1, 2027</u>	95.8	96.2	96.2	96.2	NR	NR	NR	NR
700	<del>All</del> <u>On or after June 1, 2027</u>	95.8	96.2	96.2	96.2	NR	NR	NR	NR
<u>750</u>	<u>On or after June 1, 2027</u>	<u>95.8</u>	<u>96.2</u>	<u>96.2</u>	<u>96.2</u>	<u>NR</u>	<u>NR</u>	<u>NR</u>	<u>NR</u>

...  
 c. NR = no requirement

Modify Table 10.8-1 as follows (SI):

**Table 10.8-1 Minimum Nominal Full-Load Efficiency for NEMA Design A, NEMA Design B, and IEC Design N, NE, NEY, or NY Motors (Excluding Fire Pump Electric Motors) at 60 Hz<sup>a,b,c</sup>.**

Motor standard kilowatt equivalent, kW	Manufactured Date	Nominal Full-Load Efficiency, %							
		2-Pole		4-Pole		6-Pole		8-Pole	
		Enclosed	Open	Enclosed	Open	Enclosed	Open	Enclosed	Open
410	<del>All</del> <u>On or after June 1, 2027</u>	95.8	96.2	96.2	96.2	NR	NR	NR	NR
447	<del>All</del> <u>On or after June 1, 2027</u>	95.8	96.2	96.2	96.2	NR	NR	NR	NR
485	<del>All</del> <u>On or after June 1, 2027</u>	95.8	96.2	96.2	96.2	NR	NR	NR	NR
522	<del>All</del> <u>On or after June 1, 2027</u>	95.8	96.2	96.2	96.2	NR	NR	NR	NR
559	<del>All</del> <u>On or after June 1, 2027</u>	95.8	96.2	96.2	96.2	NR	NR	NR	NR

...  
 c. NR = No requirement.