

- (4) Designed to operate with either:
 - (i) A 2- or 4-pole induction motor; or
 - (ii) A non-induction motor with a speed of rotation operating range that includes speeds of rotation between 2,880 and 4,320 revolutions per minute and/or 1,440 and 2,160 revolutions per minute; and
 - (iii) In either case, the driver and impeller must rotate at the same speed;
- (5) For ST pumps, a 6-inch or smaller bowl diameter; and
- (6) For ESCC and ESFM pumps, specific speed less than or equal to 5,000 when calculated using U.S. customary units.

(e) For the purposes of paragraph (f) of this section, “WEF” means the weighted energy factor and “hhp” means the rated hydraulic horsepower, as determined in accordance with the test procedure in § 431.464(b) and applicable sampling plans in § 429.59 of this chapter.

(f) Each dedicated-purpose pool pump that is not a submersible pump and is manufactured starting on July 19, 2021 must have a WEF rating that is not less than the value calculated from the following table:

Equipment class		Minimum allowable WEF score [kgal/kWh]	Minimum allowable WEF score [kgal/kWh]
Dedicated-purpose pool pump variety	hhp Applicability		
		Motor phase	
Self-priming pool filter pumps ..	0.711 hp ≤ hhp < 2.5 hp.	Single	WEF = $-2.30 * \ln(\text{hhp}) + 6.59$.
Self-priming pool filter pumps ..	hhp < 0.711 hp	Single	WEF = 5.55, for hhp ≤ 0.13 hp $-1.30 * \ln(\text{hhp}) + 2.90$, for hhp > 0.13 hp.
Non-self-priming pool filter pumps.	hhp < 2.5 hp	Any	WEF = 4.60, for hhp ≤ 0.13 hp $-0.85 * \ln(\text{hhp}) + 2.87$, for hhp > 0.13 hp.
Pressure cleaner booster pumps.	Any	Any	WEF = 0.42.

(g) Each integral cartridge filter pool pump and integral sand filter pool pump that is manufactured starting on July 19, 2021 must be distributed in commerce with a pool pump timer that is either integral to the pump or a separate component that is shipped with the pump.

(h) For all dedicated-purpose pool pumps distributed in commerce with freeze protection controls, the pump must be shipped with freeze protection disabled or with the following default, user-adjustable settings:

- (1) The default dry-bulb air temperature setting is no greater than 40 °F;
- (2) The default run time setting shall be no greater than 1 hour (before the temperature is rechecked); and
- (3) The default motor speed shall not be more than ½ of the maximum available speed.

[81 FR 4431, Jan. 26, 2016, as amended at 82 FR 5742, Jan. 18, 2017]

§ 431.466 Pumps labeling requirements.

(a) *General pumps.* For the pumps described in § 431.464(a), the following re-

quirements apply to units manufactured on the same date that compliance is required with any applicable standards prescribed in § 431.465.

(1) *Pump nameplate*—(i) *Required information.* The permanent nameplate must be marked clearly with the following information:

(A) For bare pumps and pumps sold with electric motors but not continuous or non-continuous controls, the rated pump energy index—constant load (PEI_{CL}), and for pumps sold with motors and continuous or non-continuous controls, the rated pump energy index—variable load (PEI_{VL});

(B) The bare pump model number; and

(C) If transferred directly to an end-user, the unit’s impeller diameter, as distributed in commerce. Otherwise, a space must be provided for the impeller diameter to be filled in.

(ii) *Display of required information.* All orientation, spacing, type sizes, typefaces, and line widths to display this required information must be the same as or similar to the display of the other performance data on the pump’s

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permanent nameplate. The PEI_{CL} or PEI_{VL} , as appropriate to a given pump model, must be identified in the form “ PEI_{CL} _____” or “ PEI_{VL} _____.” The model number must be in one of the following forms: “Model _____” or “Model number _____” or “Model No. _____.” The unit’s impeller diameter must be in the form “Imp. Dia. _____ (in.).”

(2) *Disclosure of efficiency information in marketing materials.* (i) The same information that must appear on a pump’s permanent nameplate pursuant to paragraph (a)(1)(i) of this section, must also be prominently displayed:

(A) On each page of a catalog that lists the pump; and

(B) In other materials used to market the pump.

(ii) [Reserved]

(b) *Dedicated-purpose pool pumps.* For the pumps described in § 431.464(b), the following requirements apply on the same date that compliance is required with any applicable standards prescribed in § 431.465.

(1) *Pump nameplate—(i) Required information.* The permanent nameplate must be marked clearly with the following information:

(A) The weighted energy factor (WEF); and

(B) The dedicated-purpose pool pump motor total horsepower.

(ii) *Display of required information.* All orientation, spacing, type sizes, typefaces, and line widths to display this required information must be the same as or similar to the display of the other performance data on the pump’s permanent nameplate.

(A) The WEF must be identified in the form “WEF _____.”

(B) The dedicated-purpose pool pump motor total horsepower must be identified in one of the following forms: “Dedicated-purpose pool pump motor total horsepower _____,” “DPPP motor total horsepower _____,” “motor total horsepower _____,” “motor THP _____,” or “THP _____.”

(2) [Reserved]

[82 FR 36923, Aug. 7, 2017]

APPENDIX A TO SUBPART Y OF PART 431—UNIFORM TEST METHOD FOR THE MEASUREMENT OF ENERGY CONSUMPTION OF PUMPS

NOTE: Starting on July 25, 2016, any representations made with respect to the energy use or efficiency of pumps subject to testing pursuant to 10 CFR 431.464(a) must be made in accordance with the results of testing pursuant to this appendix.

I. TEST PROCEDURE FOR PUMPS

A. *General.* To determine the constant load pump energy index (PEI_{CL}) for bare pumps and pumps sold with electric motors or the variable load pump energy index (PEI_{VL}) for pumps sold with electric motors and continuous or non-continuous controls, perform testing in accordance with HI 40.6–2014, except section 40.6.5.3, “Test report;” section A.7, “Testing at temperatures exceeding 30 °C (86 °F);” and appendix B, “Reporting of test results;” (incorporated by reference, see § 431.463) with the modifications and additions as noted throughout the provisions below. Where HI 40.6–2014 refers to “pump,” the term refers to the “bare pump,” as defined in § 431.462. Also, for the purposes of applying this appendix, the term “volume per unit time,” as defined in section 40.6.2, “Terms and definitions,” of HI 40.6–2014 shall be deemed to be synonymous with the term “flow rate” used throughout that standard and this appendix. In addition, the specifications of section 40.6.4.1 of HI 40.6–2014 do not apply to ST pumps and the performance of ST bare pumps considers the bowl performance only.

A.1 Scope. Section II of this appendix is applicable to all pumps and describes how to calculate the pump energy index (section II.A) based on the pump energy rating for the minimally compliant reference pump (PER_{STD} ; section II.B) and the constant load pump energy rating (PER_{CL}) or variable load pump energy rating (PER_{VL}) determined in accordance with one of sections III through VII of this appendix, based on the configuration in which the pump is distributed in commerce and the applicable testing method specified in sections III through VII and as described in Table 1 of this appendix.