

ANSI/AWWA **E110-22**
(First Edition)

AWWA Standard

Solids Handling Pumps for Wastewater Applications

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Approved by American National Standards Institute June 24, 2022.



American Water Works
Association



AWWA Standard

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Foreword

This foreword is for information only and is not a part of ANSI/AWWA E110.*

I. Introduction.

I.A. *Background.* This standard describes the minimum requirements for solids handling rotodynamic wastewater pumps for installation in wastewater treatment and collection systems. Pumps described in this standard are intended for pumping wastewater at the best efficiency point (BEP) rates of flows ranging from 15–40,000 gpm (3.4–9,100 m³/h) at discharge pressures dictated by pump type and discharge conditions. This standard is applicable for driver power ranging from 2–1,500 hp (7–1,100 kW); however, this standard does not include requirements for drivers.

I.B. *History.* This is the first edition of ANSI/AWWA E110, and it was approved by the AWWA Board of Directors on June 10, 2022.

II. Special Issues. It is the responsibility of the user of an AWWA standard to determine that the products described in that standard are suitable for use in the application being considered. Users of solids handling pumps should not expect long-lasting or reliable service unless all aspects of the pump application are defined: operating conditions, environmental conditions, and local ambient conditions. Additionally, the pump and driver unit, baseplate or mounting plate, foundation system, and connecting suction and discharge piping must be designed, installed, and aligned as an integrated system. This standard is for solids handling pumps in wastewater applications in which the pumped fluid passes through the impeller. Pumps requiring flywheels are beyond the scope of this standard. Most solids handling pumps are used in collection system lift stations. These pumps are also used in wastewater treatment plant applications such as influent pump station, return activated sludge, waste activated sludge, and other service. Applications within the wastewater treatment plant may require considerations not covered in this standard.

III. Use of This Standard. It is the responsibility of the user of an AWWA standard to determine that the products described in that standard are suitable for use in the particular application being considered.

III.A. *Purchaser Options and Alternatives.* The following information should be provided by the purchaser:

* American National Standards Institute, 25 West 43rd Street, Fourth Floor, New York, NY 10036.

1. Standard used—that is, ANSI/AWWA E110, Solids Handling Pumps for Wastewater Applications, of latest revision.
2. Size of pump and quantity required.
3. See purchaser options in Sec. 4.
4. Details of federal, state, provincial, territorial, and local requirements (Sec. 4.2).

IV. Modification to Standard. Any modification to the provisions, definitions, or terminology in this standard must be provided by the purchaser.

V. Major Revisions. This is the first edition of this standard.

VI. Comments. If you have any comments or questions about this standard, please call AWWA Engineering & Technical Services at 303.794.7711, FAX at 303.795.7603, write to the department at 6666 West Quincy Avenue, Denver, CO 80235-3098, or e-mail at standards@awwa.org.



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ANSI/AWWA E110-22
(First Edition)

AWWA Standard

Solids Handling Pumps for Wastewater Applications

SECTION 1: GENERAL

Sec. 1.1 Scope

This standard provides minimum requirements for solids handling pumps for installation in wastewater treatment plants and wastewater collection systems. Pumps described in this standard are intended for pumping wastewater having a pH range between 5.5 and 10.0, a temperature range from 33°F to 125°F (1°C to 52°C), and a maximum chloride content of 250 PPM (250 mg/L). The solid content of the wastewater fluid is less than 2% by volume. Driver power range is 2–1,500 hp (1.5–1,119 kW). Rate of flow (at BEP) is 15–40,000 gpm (3.4–9,100 m³/h). Applications with conditions outside of these ranges are beyond the scope of this standard, but pumping equipment may be available for extremes. Check with the pump OEMs. This standard does not include drivers. The maximum steady-state pressure at the pump discharge is limited to the pressure rating for the ANSI/AWWA C115/A21.15.11 class of flange shown for the pump discharge sizes.

Refer to Hydraulic Institute (HI) Standard ANSI/HI 14.1-14.2 for a description of pump types.