ANSI/AWWA B130-18
(Revision of ANSI/AWWA B130-13)

American Water Works Association

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AWWA Standard

Membrane Bioreactor Systems

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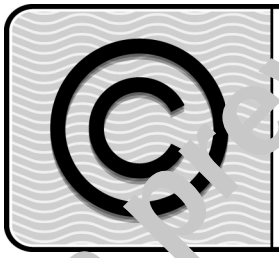

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Committee Personnel

The AWWA Standards Subcommittee on Membrane Bioreactors, which reviewed and approved this standard, had the following personnel at the time:

Findlay G. Edwards, *Chair*

General Interest Members

D.R. Brown, CDM Smith, Denver, Colo.
W.J. Conlon, Parsons Brinckerhoff Inc., Tampa, Fla.
G.V. Crawford, CH2M, Toronto, Ont., Canada
F.G. Edwards, University of Arkansas Department of Civil Engineering, Fayetteville, Ark.
S.D. Levesque, Black & Veatch, Alpharetta, Ga.
M.L. Pellegrin, HDR Engineering Inc., Austin, Texas

Producer Members

K.P. Lange-Haider, Dow Chemical Company, Minneapolis, Minn.
P.M. O'Connell, Pall Corporation, Cortland, N.Y.
M. Singh, Koch Membrane Systems, Wilmington, Mass.
M.T. Sparks, Kruger Inc., Cary, N.C.
B. Woods, Siemens Water Technologies, Waukesha, Wis.

User Members

H. Seah, Public Utilities Board, Singapore

The AWWA Standards Committee on Membranes, which reviewed and approved this standard, had the following personnel at the time:

Scott D.N. Freeman, *Chair*

General Interest Members

D.R. Brown, CDM Smith, Denver, Colo.
W.J. Conlon, Parsons Brinckerhoff Inc., Tampa, Fla.
F.G. Edwards, University of Arkansas Department of Civil Engineering, Fayetteville, Ark.

S.D.N. Freeman, Black & Veatch, Kansas City, Mo.
M. Graves, Freese and Nichols Inc., Austin, Texas
T.J. McCandless,* Standards Engineer Liaison, AWWA, Denver, Colo.
R. Morgan,* Standards Council Liaison, Beaver Water District, Lowell, Ark.
D.J. Paulson, Water Think Tank LLC, Minnetonka, Minn.
A.J. Slotterback, Burns & McDonnell Engineering, Kansas City, Mo.
H. Steiman, Consultant, Newton, Mass.

Producer Members

P.M. Gallagher, Siemens Industry Inc., Lowell, Mass.
F. Knops, Pentair, Enschede, Netherlands
K.P. Lange-Haider, Dow Chemical Company, Minneapolis, Minn.
B. Mack, Veolia Water Solutions & Technology, Natick, Mass.
M. Singh, Koch Membrane Systems, Wilmington, Mass.
J. Swiezbin, Pall Corporation, Cortland, N.Y.

User Members

A.M. Bankston, Minneapolis Water Works, Minneapolis, Minn.
J.T. Morris, Metropolitan Water District, San Marino, Calif.
A. Rogers, Keokuk Municipal Water, Keokuk, Iowa
H. Seah, Public Utilities Board, Singapore
T. Suydam, San Diego County Water Authority, Escondido, Calif.

* Liaison, nonvoting

Contents

All AWWA standards follow the general format indicated subsequently. Some variations from this format may be found in a particular standard.

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Foreword

This foreword is for information only and is not a part of ANSI/AWWA B130.*

I. Introduction.

I.A. *Background*. The purpose of ANSI/AWWA B130 is to provide purchasers with a standard for the purchase and installation of membrane bioreactor (MBR) treatment systems.

A wealth of information about MBRs and their design is available from various sources, including *Journal - AWWA*, *Water Treatment Plant Design,*† *Water Quality and Treatment,*‡ and other references listed in appendix A.

I.B. *History*. The MBR process was introduced by the late 1970s, as soon as commercial-scale ultrafiltration (UF) and microfiltration (MF) membranes were available. The concept of replacing the settling tank of the conventional activated-sludge process with a filtration membrane was attractive, but it was difficult to justify the use of such a process because of the high cost of membranes, low economic value of the product (tertiary effluent), and the potentially rapid loss of performance caused by membrane fouling.

The breakthrough for the MBR came in 1989 with the idea of submerging membranes in the bioreactor. Until then, MBRs generally had the separation device located external to the reactor (side-stream MBR).

Regulatory concerns may or may not be the primary driver for the use of MBR treatment systems, but in all cases the regulations must be assessed for applicability.

This MBR standard is intended to aid purchasers in the selection and procurement of MBR treatment systems and in the regulatory permitting process. This standard should be considered as a guideline with minimum requirements to ensure the required elements of planning, procurement, selection, construction, and commissioning of an MBR-based treatment system. However, its proper application requires it to be coupled with a thorough professional review of the specific water treatment case and site-specific conditions.

The AWWA Standards Council authorized a new AWWA standard for membrane biological treatment systems on Mar. 2, 2009, and assigned the task of development to the AWWA Standards Committee on Membrane Standards.

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* American National Standards Institute, 25 West 43rd Street, Fourth Floor, New York, NY 10035.

† *Water Treatment Plant Design*, 5th Ed., AWWA and ASCE, McGraw-Hill (2012).

‡ *Water Quality and Treatment: A Handbook on Drinking Water,* 6th Ed., Edzwald, J.K., ed., AWWA, McGraw-Hill (2011).

The first edition of the new standard ANSI/AWWA B130-13, Membrane Bioreactor Systems, was approved by the AWWA Board of Directors on Jan. 20, 2013. The standard was approved and promulgated in the course of the activities of the AWWA Standards Committee on Membrane Standards. This edition was approved on Jan. 20, 2018.

II. Special Issues. This standard has no applicable information for this section.

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 items should be provided by the purchaser:

1. Standard used—that is, ANSI/AWWA B130, Membrane Bioreactor Systems, of latest revision.
2. Details of other federal, state or provincial, and local requirements (Sec. 4.1.1).
3. Required spare parts (Sec. 4.6.6.1).
4. Repair, replacement, and retesting requirements (Sec. 5.1).
5. Plant inspection requirements (Sec. 5.2.2).
6. Request for a copy of a written quality control and inspection practices (Sec. 5.2.3).
7. Installation requirements (Sec. 5.3.5).
8. Definition of responsibilities during startup (Sec. 5.3.1.1).
9. Demonstration testing requirements (Sec. 5.5.3)
10. Performance testing requirements (Sec. 5.5.4).
11. Performance test report requirements (Sec. 5.5.5).
12. Affidavit of compliance requirements (Sec. 6.3).

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

IV. Major Revisions. There were no major revisions in this edition compared to the previous edition of this standard. There have been minor revisions, including to scope and to the feedwater quality characteristics that would be required or optional for design tasks.

V. 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 email at standards@awwa.org.

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Membrane Bioreactor Systems

SECTION 1: GENERAL

Sec. 1.1 Scope

This standard sets minimum requirements for membrane bioreactor (MBR) systems, including associated processes such as membrane aerated biofilm reactor (MABR) systems and anaerobic MBR systems, for water reclamation, water recovery, and/or wastewater treatment systems.

Sec. 1.2 Purpose

The purpose of this standard is to provide a minimum set of requirements for MBR systems used for water reclamation, water recovery, and/or wastewater treatment systems. This standard is intended to assist with the design, procurement, installation, and commissioning of MBR systems.

Sec. 1.3 Application

This standard can be referenced for design, procurement, installation, and commissioning of MBR systems used for water reclamation, water recovery, and/or wastewater treatment systems.