

Supervised by the Japan Water Research Center Foundation

Provisions for
Certification of Modules for Drinking Water Use

6th Version

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6th Revision: May 2010



The Association of Membrane Separation Technology of Japan

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11.1 Ministry of Health and Welfare Ordinance No.15, 2000; "Technical Criterion for Water Utility, and its final revision (Abbr: Water Utility Criterion)" Ministry of Health and Welfare Ordinance No.26, on Mar. 6, 2009 (Abstract) Ministry of Health and Welfare Ordinance No.18, on Feb. 17, 2010 (Abstract)	
11.2 Ministry of Health and Welfare Notification, No. 45, 2000 and Notification, No.14, 2002; "Evaluation Test Methods of Equipments and Materials"	

1. Provisions for certification of modules for drinking water use

Provisions for certification of modules for drinking water use

(Object)

Art. 1. The provision intends to determine necessary procedures for certification of modules that are suitable and applicable for drinking water use with sufficient performance and capability.

Association of Membrane Separation Technology, Japan (AMST, hereafter) examines application(s) submitted by an applicant (a module supplier or a seller, etc.) whether its performance and qualities conform to the requirements of the provision, above. When the requirements are conformed, AMST issues a written certification and labels on demand of the applicant. At the same time, AMST discloses the information on the certification to public, especially to water utilities market.

(Subject matter of the certification)

Art. 2 Subject of the provision is membrane module to be used in drinking water utilities.

(Certification Committee of Modules for Drinking Water Use)

Art. 3. Scheme and activities of the "Certification Committee of Modules for Drinking Water Use" (the Certification Committee, hereafter) are as follows:

1) By an assignment of Executive Director of the AMST (Executive Director, hereafter), the certification committee examines quality and performance of applied modules, based on the standards (AMST-001, AMST-002, AMST-003 and AMST-004) for drinking water use.

2) The committee is organized by 8 members.

3) The certification committee members vote mutually and select a chairman of the committee.

The chairman nominates a vice-chairman.

Note: the chairman of the "Chairman of the Membrane Water Purification Committee" can not be the chairman of the certification committee, at the same time.

4) The certification committee meets 4-times a year, principally.

Schedule of the meeting is disclosed in the Home Page of the AMST.

(Appointment of the certification committee members)

Art. 4. Method to appoint of the certification committee members, is as follows:

1) Working term of the member is 6-years.

The chairman of the membrane water purification committee recruits candidates from his committee members and replaces older members of the certification committee, openly, at the beginning of each fiscal year,

2) The chairman asks qualification of the candidates to the steering committee.

3) The membrane water purification committee nominates the candidates when no applicant was available, the steering committee rejected the candidates and more than three applicants were available. Conditions of the nomination are; a person from a member company and no continuous renomination.

4) When a member of the committee resigns during his term, the vacancy can be filled recruiting a candidate openly. The term for the new member is that of the old member.

5) The applicant submits an application letter with his personal history to the chairman of the membrane water purification committee.

(Requirements for the committee member)

Art. 5 The selected certification committee member should have sufficient knowledge and experiences on development of membrane, membrane production, membrane evaluation and module applications.

The member should keep fair and unbiased stand-point for his examination and certification works.

2) The selected member should submit a written oath (Format 7) on duty of secrecy to the chairman.

(Supervision)

Art. 6. The MWP Committee nominates 2 or 3 supervisors under an agreement of the steering committee.

2) The supervisors audit the examination works of the certification committee at fair and unbiased stand-point and advice, if needed.

3) Number of the supervisor is 2-3.

4) Office term of the supervisor lasts 2 years, commencing April 1st. and ending March 31st. of the year after the next year.

(Filing of examination)

Art. 7. Applicant can file an application format (Format 1: Application format for examination of Membrane module for drinking water use), fulfilled with necessary items.

2) The executive director of the AMST issues a receipt (Format 2, Receipt, hereafter) with a reception number to the applicant.

(Commission fee)

Art. 8. The applicant is requested to pay examination, certification fee and expense for issuing certification document. The fee and expense are decided in other part of the Provisions.

(Examination)

Art. 9. The certification committee examines conformity of the applied module by documents, nominated in the Art. 7. The Committee can request additional explanations to the applicant.

2) The Committee convenes an examination meeting and examines the Applications submitted to the AMST by the end of the previous month.

3) The meeting in the previous paragraph can be substituted with a document-only-examination, if all of members agree and the application is related to a trifle change of characteristics of already certificated module.

(Rights for observation of the examination meeting)

Art. 10: Employee of a member company of the AMST can observe the meeting and/or the meeting record.

2) A written request for the observation should be submitted to the chairman of the certification committee by the end of the previous month of the meeting.

Number of access person is maximum 3, at a first-come basis.

Any of the applicant's employees is not allowed to observe when the meeting is examining an application to which the accessor relates.

3) Those who want to observe should submit a document (Format 8, Confidentiality) to the chairman of the certification committee.

(Certification)

Art. 11: The executive director issues the certification documents (Format 5 and/or 6) after the conclusion of the examination meeting and delivers

to the applicant.

(Publication)

Art. 12: The executive director discloses the result of the examination to the JWRC and media for water facility industry.

(Revision and review of the standards)

Art. 13: MWP-committee organizes a standards revision committee (SR-Committee, hereafter) within its organization.

- 2) The SR-committee watches progress and change of the membrane technology and relating regulations. And it revises, as soon as possible, corresponding standards, if necessary.
- 3) Those member companies who retain the certifications under these standards should control their modules within a nominated term to follow the movements in this clause 2.

(Cancellation of the certification)

Art. 14: The executive director can cancel and invalidate any of certifications of related module(s), when the application document(s) on the Art. 7 of have found to contain any falsity.

- 2) The chairman of the certification committee watches the change by the above Art. 13, alerts to related member companies for the matter after a discussion in the certification committee and advises the executive director on cancelation of the certification, if necessary.
- 3) The member or applicant company can do explanation or submit documentation within a certain term to the executive director, when the cancellation is considered after the Art. 14 clause 1 and/or 2.
- 4) The applicant company and/or the certification-owner company should return the certification document back to the executive director, soon after the cancellation of the certification based on the Art. 14-1 or -2.
- 5) The executive director informs the fact of the cancellation to the JWRC and publicates the same on media for water facility industry.

(Discipline)

Art. 15: The executive director issues disciplinary action against the committee member, the supervisor, the record or meeting observer, if he/they violate the confidentiality code.

(Invalidation of the former provisions)

Art. 16: The following documents are invalid after/including July 1st, 2010:

"Standards for Membrane Module for Drinking Water Use" in "Provisions for Certification of Modules for Drinking Water Use, Version 5, dated May 15, 2009"

(Supplementary provision)

Art. 17: MWP Committee is responsible for the future-revision or amendment of this provision under approval of the steering committee.

2) MWP committee will solve "unknown cases" or "doubts in interpretation" of this provision, in its meeting.

3) This provision is valid after (and including) July 1st, 2010.

Format 1.

Application Form for Certification of Membrane Module
for Drinking Water Use
(New, Modification, Supplement)

Date: M/D/Y

Mr. _____

Executive Director of AMST, Japan

Name of Applicant:

Address:

Name of Representative:

Signature:

We, hereby, duly ask Certification of our product; referring to the Art. 7 of the "Provision for Certification of Membrane Module for Drinking Water Use", as follows:

Plant name	
Plant location	

Name of module	
Type of module	
Standard to be referred	AMST-
Explanation documents	Attached (1)
Transcripts of tests	Attached (2)
Language request on certification	<input type="checkbox"/> Japanese <input type="checkbox"/> English

Person in charge:

Name	
Address	
Belongings and position	
Telephone No.	
Facsimile No.	
E-mail	

Format 2

Date: M/D/Y

Reception of Application Form for
Certification of Membrane Module for
Drinking Water Use

Applicant:

Company name:

Representative: Mr.

ASTM, Japan
Executive Director

We have duly accepted your application on certification of
membrane module for drinking water use, dated; M/D/Y.

1. Name & type of membrane module:
2. Date of acceptance: M/D/Y
3. Acceptance number: 膜モ認_____

Note:

You are kindly requested to pay examination fee on the billing statement
enclosed.

No fee will be refund, even if the examination was unsuccessful.

Bill on certification fee will be issued when certification has been
registered.

Accompanying documents to the Application Form for Certification of Membrane Module for Drinking Water Use

1. Number of accompanying documents: One (1) book binded, A4 size and electronic media by PDF.
2. Language: Application form and accompanying documents are limited to Japanese.
3. Attach following documents to the Application Form.

Standard Formats are available for the accompanying documents:

- (1) "Document to explain the membrane module" and
- (2) "Transcripts of tests".

Use the Format 1a) ~ 1d) and Format 4; "Certification of sampling and analyzing"

Further, use Format 3; "Check sheet" for completeness of the application and attach the check sheet of the application.

*Standard formats, Format 1a) ~ 1d), Format 3 and 4 are available in a separate file.

Format 3

Check List (1/2) on Accompanying Documents

Applied standard		AMST-001	AMST-002	AMST-003	AMST-004
0. Cover		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1. Information for membrane module (Attached document 1)					
1.1 Specification of membrane module					
	Type of module	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Filtration mode	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	With or without vessel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Nominal pore size/M.W.cut off , Measurement method / conditions	<input type="checkbox"/>	/	/	<input type="checkbox"/>
1.2 Explanation of objective module					
	Drawing of the outer shape	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Drawing of the structure (include flow direction of liquid and air inside the module, sheling method)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Name of materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Nominal membrane area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.3 Explanation of model module					
	Drawing of the outer shape	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Drawing of the structure (include flow direction of liquid and air inside the module, sheling method)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Name of materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Nominal membrane area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Test result of each test (Attached document 2)					
2.1 Flow diagram of test unit					
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.2 Procedure of each test					
	Filtration capacity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Temperature of feed water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Pressure of feed water , Trans-membrane pressure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Quality of feed water	/	/	Sodium chloride <input type="checkbox"/>	/
	Filtration time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Rejection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Temperature of feed water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Quality of feed water	Turbidity <input type="checkbox"/>	Sodium chloride <input type="checkbox"/>	Sodium chloride <input type="checkbox"/>	Cryptosporidium parvum Oocyst substitute tracer <input type="checkbox"/>
	Pressure of feed water , Trans-membrane pressure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Filtration flux or filtration flow rate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Filtration time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Microbe rejection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	/
	Bacteria concentration in the feed water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	/
	Temperature of feed water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	/
	Filtration time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	/
	Pressure of feed water , Trans-membrane pressure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	/
	Pressure of feed water , Trans-membrane pressure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	/
	Repeated measurement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	/

Check List (2/2) on Accompanying Documents

Applied standard		AMST-001	AMST-002	AMST-003	AMST-004
	Elution test	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Wetting / conditioning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Purified water quality (conductivity, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Eluent water quality (pH, hardness, alkalinity, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Elution temperature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Elution time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Location of eluate sampling, date, person who sampled (Format 4. Certification of sampling and analyzing)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Transcripts of tests by the Registered Analyzing Organization	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Pressure resistance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Test conditions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Pressurizing term	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Max. size module	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3 Test results report					
	Filtration capacity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Temp. / Press. Compensation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Rejection	Turbidity	Sodium chloride	Sodium chloride	Cryptosporidium parvum Oocyst substitute tracer
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Microbe rejection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Elution test	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Transcripts of tests by the Registered Analyzing Organization	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Sampling of eluate (Format 4. Certification of sampling and analyzing)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Normalization of analytical data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Analyzing method	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Pressure resistance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Structure		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Format 4

Certification of sampling and analyzing

Date: M/D/Y

ASTM, Japan
Committee of Modules for Drinking Water Use
Chairman: Mr.

Analytical Organization

We certificate following items were duly carried out.

1.Sample	Extract solution	
2.Location of sampling	Address & company name	
3. Date of sampling		
4.Person in charge	Name	
	Position	

Format 5

Certification of Membrane Module Conforming to Standards (AMST-)
for Drinking Water Use

Name of membrane module:

Type of membrane module:

Name of Applicant:

Address:

The module mentioned above was examined in the Committee of
Modules for Drinking Water Use, AMST.

The Committee agrees that the module is conforming with Standards,
AMST-○.

Certification number: 膜モ認第 ○○○○

Standards applied to: AMST-○○○ (Version-6)

Date: M/D/Y

Association of Membrane Separation

Technology, Japan

Executive Director:

Format 6

Certificate on Membrane Module Standards for Drinking Water Use

Name of membrane module: ○○○○
Type of membrane module: ○○○○
Name of the applicant: ○○○○
Address of the applicant: ○○○○

The Evaluation Committee for Drinking Water Membrane Module has studied the applicability of the above membrane module product against the standards related to the Membrane Module Criteria, and judged that the above-mentioned product meets its criteria. Accordingly, the committee hereby certifies that the above-mentioned product is complying with the requirements of the standards.

Approved number: 膜モ認第 ○○○○

Standards applied to: AMST-○○○ (Issue 6)

Date:○○○○

The Association of Membrane Separation Technology
of Japan

The Evaluation Committee for Drinking Water
Membrane Module

President

(Sign)

Format 7

To: Chairman of Membrane Water Purification Committee
(AMST)

Covenant

I, hereby, oath that I will not disclose nor divulge those information which I could know through activities of the Certification Committee of Modules for Drinking Water Use to any third party

Date: M/D/Y

Company name and Position:

Telephone No.:

e-mail:

Registered residence address:

Name and signature:

Association of Membrane Separation Technology, Japan

Chairman of the Membrane Water Purification
Committee

Mr. _____

Format 8

To: Chairman of Membrane Water Purification Committee
(AMST)

Covenant

I, hereby, oath that I will not disclose nor divulge those information which I could know through reading the note and/or attending the meeting of the Certification Committee of Modules for Drinking Water Use to any third party

Date: M/D/Y

Company name and Position:

Telephone No.:

E-mail:

Residence address:

Name and signature:

Association of Membrane Separation Technology, Japan

Chairman of the Certification Committee of Module for Drinking
Water Use

Mr. _____

Interpretation on the position of AMST on the Certification, based on the "Provisions for Certification of Modules for Drinking Water Use"

1. The certification document issued by AMST certifies that all evaluation data on the module, submitted by the applicant to us, are conforming to the requirements of the provision but not guarantees performance and quality of the product.
2. AMST owes no responsibility to any of quotation or application of this AMST-001 Standards for other application fields than Drinking Water Use, whole or partially.

3. Addition or improvement of the issued certification

1) One can request modification of the issued certification (with revised new AMST-○ or additional new type number(s)) when:

- (1) The issued module is correspondent to any new water quality requirements by the government and,
- (2) An additional module type, with same module name, structure and material, is placed in the market.

2) One can request modification of the issued certification only when alteration of module is trifle one and does not include change of membrane material, membrane area, structure, etc.

The module with modified certification can not use same product name nor same product type number as before.

4. Where to call

Postal code: 103-0004

Address: TS BLD. 2 FL., 3-12-11 Higashi-nihonbashi, Chuo-ku, Tokyo,

Name: Association of Membrane Separation Technology, Japan

Tel: +81-3-6712-0191 Facsimile: +81-3-6712-0192

e-mail: info@amst.gr.jp

Business time: Tuesday, Thursday. 10.00~17.00 (Closed on National Holiday)

2. AMST-001

Standard of MF and UF modules for Drinking Water Use

2. AMST-001

Standards of MF and UF-modules for Drinking Water Use

1. Scope of applications

The standards are applied to MF modules and UF modules for drinking water use.

2. Definition of terms

Definitions of terms, used in the standards, are as follows, and depend on the reference documents nominated below:

- (1) Objective module: i.e. Module to be examined and certified
- (2) Model module: Module prepared for quality and performance examination test only and conforms to conditions (1), (2), (3) and (4) in § 5.1.1-2)
- (3) A/V ratio: Nominal membrane Area / Eluent Volume
- (4) Reference Documents
 - * Drinking Water Filtration Method Membrane Dictionary¹ (Japan Water Research Center, revised version, Mar. 2003)
 - * Ministry of Health and Welfare Ordinance No.15 (2000) and its final revision; "Technical criterion for water utility (Abbr: Water utility criterion)"
 - * Ministry of Health and Welfare Notification No.45 (2000) "Evaluation test methods of equipments and materials (Abbr: Elution test)"
 - * Water Purification Technology Guide Line (JWRC, 2000)

3. Performance and quality

3.1 Flux

Water flux of the membrane is more than $0.5\text{m}^3/\text{m}^2/\text{d}$, when tested under conditions given in §5.2 Water filtration test.

3.2 Turbidity rejection

Turbidity of the filtrate sample is less (and including) than 0.05 deg., when tested under conditions given in §5.3, Turbidity challenge test.

3.3 Bacteria rejection

Number of colony is less (and including) than 10 CFU/mL, when tested under

conditions given in §5.4 Bacteria challenge test.

3.4 Eluates

All difference values between analytical data and control data conform to figures given in Table 1-1, when tested following to §5.5 Material test.

In the case of a model module was used for the test, normalization of data are needed, by methods shown in § 5.5.7 and follow to the rule above.

3.5 Pressure resistance

No leak and/or no other abnormalities, when tested following §5.6 Pressure test.

4. Structure

Module structure meets following requirements, at minimum.

- (1) No break, nor deform of vessel and no membrane break, easily
- (2) No short pass between primary and secondary side of the membrane
- (3) Easy cleaning and easy drain-out of waste water

5. Test methods