

NATO UNCLASSIFIED
NORTH ATLANTIC TREATY ORGANIZATION
ORGANISATION DU TRAITE DE L'ATLANTIQUE NORD

MILITARY AGENCY FOR STANDARDIZATION (MAS)
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MAS/261-NAV/4248

18 February 1988

To : See distribution list overleaf

Subject : STANAG 4248 NAV (EDITION 1) - PURIFIED WATER FOR MAIN
BATTERY SYSTEMS OF SUBMARINES

Reference : AC/141(IEG/6)SG/4-D/29 dated 13 May 1986

Enclosure : STANAG 4248 (Edition 1)

1. The enclosed NATO Standardisation Agreement which has been ratified by nations as reflected in page iii is promulgated herewith.
2. The reference listed above is to be destroyed in accordance with local document destruction procedures.
3. AAP-4 should be amended to reflect the latest status of the STANAG.

ACTION BY NATIONAL STAFFS

4. National staffs are requested to examine page iii of the STANAG and, if they have not already done so, to advise the Defence Support Division through their national delegation as appropriate of their intention regarding its ratification and implementation.



A.J. MELO CORREIA
Major-General, POAF
Chairman, MAS

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STANAG 4248
(Edition I)

NORTH ATLANTIC TREATY ORGANIZATION
(NATO)



MILITARY AGENCY FOR STANDARDIZATION
(MAS)

STANDARDIZATION AGREEMENT

SUBJECT : PURIFIED WATER FOR MAIN BATTERY SYSTEMS OF SUBMARINES

Promulgated on 18 February 1988

A handwritten signature in cursive script, which appears to read "A.J. Melo Correia".

A.J. MELO CORREIA
Major-General, POAF
Chairman, MAS

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(Edition 1)

RECORD OF AMENDMENTS

No.	Reference/date of amendment	Date entered	Signature
1-3		1-7-05	

EXPLANATORY NOTES

AGREEMENT

1. This NATO Standardization Agreement (STANAG) is promulgated by the Chairman MAS under the authority vested in him by the NATO Military Committee.
2. No departure may be made from the agreement without consultation with the tasking authority. Nations may propose changes at any time to the tasking authority where they will be processed in the same manner as the original agreement.
3. Ratifying nations have agreed that national orders, manuals and instructions implementing this STANAG will include a reference to the STANAG number for purposes of identification.

DEFINITIONS

4. Ratification is "The declaration by which a nation formally accepts the content of this Standardization Agreement".
5. Implementation is "The fulfilment by a nation of its obligations under this Standardization Agreement".
6. Reservation is "The stated qualification by a nation which describes that part of this Standardization Agreement which it cannot implement or can implement only with limitations".

RATIFICATION, IMPLEMENTATION AND RESERVATIONS

7. Page iii gives the details of ratification and implementation of this agreement. If no details are shown it signifies that the nation has not yet notified the tasking authority of its intentions. Page iv (and subsequent) gives details of reservations and proprietary rights that have been stated.

Agreed English/French Texts

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(Edition 1)

NAVY

NATO STANDARDIZATION AGREEMENT
(STANAG)

PURIFIED WATER FOR SUBMARINE MAIN LEAD ACID BATTERIES

ANNEX A: Test for Impurities

RELATED DOCUMENTS: STANAG 4287 - Electrolyte for Submarine Main Lead Acid Batteries

AIM

1. The aim of this Agreement is to facilitate the provision of purified water for submarine main lead acid batteries of participating NATO Navies in NATO Naval Bases.

AGREEMENT

2. Participating nations agree that the purified water for submarine main lead acid batteries will be stocked and provided to submarines(1) of NATO Navies in NATO Naval Bases according to the following specifications.

3. Purified water for the dilution of the electrolyte or the refilling of cells is to be distilled or deionized water.

4. The following specified requirements shall be met:

- (a) The purified water must be odourless. When viewed through a 300 mm column the water must be clear and colourless. No oil traces shall be visible.
- (b) The pH value shall be greater than 5 and shall not exceed 7.
- (c) The conductivity shall not exceed 10 micro Siemens per centimetre when produced; the conductivity will increase during storage, it should be tested immediately prior to delivery to the submarine and shall then not exceed 30 micro Siemens per centimetre.
- (d) Oxidizable organic substances shall not exceed an amount which corresponds to a consumption of 20 mg potassium permanganate per litre $KMnO_4$.

(1) Purified water as described in this STANAG may also be used for any lead acid battery

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(e) The total residue after evaporation at 100°C shall not exceed 10 mg/dm³.

(f) The impurity level of manganese shall not exceed 0.1 mg/dm³.

IMPLEMENTATION OF THE AGREEMENT

5. This STANAG is implemented when nations have distributed instructions to NATO Naval Bases in their area to deliver purified water which conforms with the above specifications.

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ANNEX A to

STANAG 4248

TESTS FOR IMPURITIES

In order to achieve a confirmed quality, i.e., the standard set out in the STANAG, the following tests have been found acceptable.

A-1

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Amendment 2

TESTS FOR IMPURITIES

Test / Impurity	Test method / Document
(a) Clarity	Visual: Odorless, colourless, clear, no oil traces shall be visible.
(b) pH-value	Measuring with a pH meter having an accuracy of 0,1 units
(c) Conductivity	- Measuring with a conductivity meter, accuracy of at least 1uS/cm to 30uS/cm. - British Standard 4974 Appendix H (exceeds the pH-value of 7)
(d) Oxidizable organic substances	French Standard NFT 90-018
(e) Residue after evaporation	French Standard NFT 90-029
(f) Manganese	- Atomic absorption, alternatively - British Standard 4974 Appendix A