



CEN Workshop 10 – European Handbook for Defence Procurement

Expert Group 3: Fuels and Lubricants

Final Report

Brussels, June 30, 2011



TABLE OF CONTENTS

List of members.....	3
1. References and vocabulary.....	4
2. Introduction.....	4
2.1 Generic	4
2.2 Specific	5
3. Scope.....	6
3.1 Definition	6
3.2 Presentation of best standards	7
4. Reduction process	7
5. Recommendations for best practice	8
6. Recommendation for future standardization.....	11
7. Conclusions	11



List of members

CEN Member	Name	Company / MoD
FR	Samuel BOREY	Ministère de la Défense samuel.borey@essences.defense.gouv.fr
FR	François BALAY	Bureau de normalisation du pétrole francois.balay@bnpe.net
IT	Enzo DAGUANNO	Ministero della Difesa enzo.daguanno@aeronautica.difesa.it
IT	Giuliano CIOCCOLO	Ministero della Difesa giuliano.cioccolo@aeronautica.difesa.it
UK	Harry MOONEY	Minister of Defence DESSEDSTAN-SPM3@mod.uk
UK	Ged PALMER	Hydac Technology Ltd Ged.Palmer@hydac.co.uk
POL	Jaroslav SARNECKI	Instytut Techniczny Wojsk Lotniczych jaroslav.sarnecki@itwl.pl
DE	Alfred Kling (convenor)	Bundesamt für Wehrtechnik und Beschaffung AlfredKling@bwb.org
FR	Karim BENMEZIANE (secretary)	Bureau de Normalisation de l'Aéronautique et de l'Espace benmeziane@bnae.asso.fr



1. References and vocabulary

As for CEN WS 10 methodology references and previous phase documents:

- CEN WS10 Expert Group 3 Phase I results
- CEN WS10 N 0018: General framework paper.
- CEN WS10 N 0022
- CEN WS10 N 0027 Rev3

As for Fuels and Lubricants references:

Expert Group 3 has not identified an international or European standard regarding POL products terminology. The reason is that POL Products are generally technically defined.

Therefore, their definitions are precisely the technical specification governing their procurement and use. In the framework of EHDP and EG 3 recommendations, these technical specifications are provided by the national or international specifications related to the NATO Code Number as in STANAG 1135.

2. Introduction

2.1 Generic

The European Commission requested the European Committee for Standardization to establish Workshop 10 to improve the efficiency and enhance the competitiveness of European Defence Industry. Eight Experts groups have been set up in February 2007 with the objective to extend the applicability of EHDP (European Handbook for Defence Procurement).

The EHDP has been prepared by Experts Groups reporting to CEN Workshop 10. This document is a guide designed as a tool for anyone involved in the European Defence procurement contractual negotiations.

The primary target audiences for the Handbook are:

- The staff in the Ministries of Defence (MoD) who are producing procurement specifications and invitations to tender
- The staff in Defence suppliers who are responding to those requirements



EHDP is designed to provide Defence Procurement Agencies and Defence Industries with a preferential list of selected recommended standards qualified as best practice ones to be included in armament contracts together with concise recommendations for an optimum use of those standards in such a Defence Procurement context.

These types of resulting informative data should be used in the acquisition process by MoD and in the development process by Industry such that system will be built and operated better and cheaper.

The aim of a recommendation is to develop good practices in the domain addressed by the Expert Group and to assist the final user in using recommended best practices standards in the best cost-effective way:

- Increasing the controlled use of existing standardization, a necessity to harmonize European practices used by Defence procurement stakeholders.
- The objective is to deploy a common approach through Nations Procurement agencies about an optimized utilization of standards : civil ones and military ones, the possible limitations of civilian standards with respect to military applications,... to provide a useful guide to all stakeholders involved in Defence procurement process
- Description of how to implement standards successfully in armament contracts
- The overall result will be a better use of standards in armament contracts

Recommendations are, during the drafting process, designed to allow EHDP final users to be provided with the right information for timely and quickly acquiring the best control in writing standards clauses related to the selected material, in armaments contracts.

That's why the volume of recommendations will be accordingly fully compatible with respect to EHDP vocation and purpose.

2.2 Specific

Fuels and lubricants (also designated as Petroleum, Oil, and Lubricants) is the Key Area identified by Expert Group 3 (thereafter EG3).



Due to the global nature of fuels and lubricants Defence procurement, EG3 has agreed to use NATO STANdarization AGreement (STANAG) as top level best practices standards to specify procurement requirements in the field of Fuels and Lubricants. It has appeared that the reduction process was a part of the development of these top level STANAG dealing with interchangeability of Petroleum, Oil and Lubricants (POL) products, interoperability of POL products with new equipments, and quality control of Petroleum products.

This document aims at providing recommendations on the use of those Best Practice Standards in European Defence procurement in the field of fuels and lubricants products.

3. Scope

3.1 Definition

The aim for selecting “best practice” standards in the field of Petroleum, Oil and Lubricants (POL) products is:

- To minimize number of POL products needed especially in theatre,
- To ensure the delivery of national troops and cross servicing
- To minimize the danger of mistake

EG3 members also participating in the NATO Fuels and Lubricant Working Group agreed to select “top level” standards to ensure:

- interchangeability of POL products
- interoperability between POL products and equipments
- quality surveillance of POL products

Using NATO Code Number - and not commercial off the shelf products - guarantees the sustainability and the security of forces supplies, especially for lubricants products.

When the industry does not use a NATO Code Number in the list of products and regents authorized to be used on a system but a commercial off the shelf reference, forces may be reliant on one supplier. This may be detrimental if this supplier goes bankrupt or if the supplier is not in the country which owns the system.

Lessons learned show that qualifying another lubricant for substitution may be long and expensive.

A NATO Code Number, which is associated to a product specification, ensures supplier diversity, and, if necessary, the contractor can use the associated product specifications for procurement.



3.2 Presentation of best standards

EG 3 experts selected 4 references listed in the Best Practice Standards list (see attached excel file CEN WS 10 N006) according to the General framework paper – CEN WS 10 N 0018.

4. Reduction process

EG3 decided to limit the list of standards to four STANAG, widely recognized by the stakeholders, especially recommended to support contractors with their choices during the procurement process.

Contractors are to be advised that each of those top levels STANAG refer either to other NATO documents (STANAG, AEP, ATP...) or National Specifications of products (both military and civil standards). Nonetheless, these four STANAG describes the fundamental policy rules for fuels and lubricants Defence procurement among European Nations.

Fuels and Lubricants standards chosen are used within nations of the European Union. The only issue about selecting those standards is that not all NATO nations have those best practices standards ratified (ratification is a part of the STANAG acceptance process) and not all European countries are NATO nations. During the discussions among EG3, it has been assured that some of these nations will either ratify those standards in the near future (for NATO Nations) or will agree on the principles behind the set of Best Practice Standards (for non-NATO Nations) selected by EG3 members.

Nevertheless, this kind of issue must be kept in mind when considering supply sources, interchangeability of fuels and lubricants and/or drafting clauses in Defence contracts.

Limitation to top level STANAG standards is partly due to the fact that participating nations have agreed on the principle of an interchangeability chart, revised annually by the Naval, Army, and Aviation Fuel and Lubricants Working Parties within NATO standardization organization.

The best practices standards selected by EG3 are in line with the selection criteria specified in CEN WS 10 N0018.

- The Selected Best Practices Standards are globally recognized.



- Some of the National Specifications of products (or Test Methods) referenced in the Selected Best Practices Standards come from civil context.
- The Selected Best practices Standards either refer to interoperability requirements, interchangeability requirements or quality surveillance performance requirements.

5. Recommendations for best practice

5.1 STANAG 1414: Guidelines to ensure that contractors' design and supply new equipment capable of using standardized fuels, lubricants and associated products

5.1.1 Scope and rationale

The aim of this agreement is to establish a process to enable NATO nations to provide directions to contractors so that they design and supply new equipment capable of using standardized fuels, lubricants and associated products.

STANAG 1414 provides recommendations and requirements to help contractors while drafting system specifications during new equipments design and procurement process. It gives guidelines on the information needed in the specification regarding the use of NATO standardized products in equipments design (as in STANAG 1135 Annex C) as well as requirements regarding the use of non standardized products and the justification to provide in that case.

5.1.2 Implementation Process

- EG 3 recommends contractors to indicate a NATO Code Number in system specifications drafted for design and development in new equipments procurement projects, to ensure interoperability between the new equipments and the products.

5.2 STANAG 4362: Fuel for future ground equipments using compression ignition or turbine engines

5.2.1 Scope and rationale

The aim of this agreement is to specify the types of fuel for use in military ground equipments powered by compression ignition or turbine engines.



STANAG 4362 describes the ability for a land based equipment to be able to use aviation turbine fuel. This compatibility is also called the NATO Single Fuel Policy, providing the acceptable substitution of the Diesel Fuel (F-54) by Turbine fuel aviation kerosene with or without icing inhibitor additive (F-34/F-35).

It is a necessary policy, considering the easier supply of aviation fuel on theatres. Therefore it is a recommended practice for Defence land based system design.

5.2.2 Implementation Process

- EG3 recommends the contractor to indicate a land based equipment to be compatible with aviation turbine fuel F-34/F-35 (as referenced in STANAG 1135) in the specification for procurement or in the invitation to tender.

5.3 STANAG 1135: Interchangeability of Fuels, Lubricants, and associated products used by the army forces of the North Atlantic Treaty Nations

5.3.1 Scope and rationale

The aim of this agreement is to standardize petroleum products intended for use by NATO armed forces. This agreement does not concern gaseous products which are covered by STANAG 7146.

This standard agreement indicates a NATO Code Number for each product. For each NATO Code number, STANAG 1135 lists national specifications which have been agreed by the responsible Working Party (Air, Army, and Navy) as being similar and interchangeable after study and comparison with the guide specification.

The guide specification is a STANAG reference document.

The table also lists products considered as acceptable for substitution, and products that may be used as an emergency substitute. Those products are also referenced with a NATO Code Number.

STANAG 1135 also mentions specific requirements on each product, for instance, when it is available only on civil airport, when it shall not be stored on a warship or when its availability is limited.



The standard also indicates when the product is subject to qualification testing. In other words, STANAG 1135 is the basic catalogue for Fuels and Lubricants Defence Procurement recommended as a first choice to Europe Nations.

5.3.2 Implementation Process

- EG 3 recommends to users defining correspondence tables between specifications listed in STANAG 1135 and supply sources available.
- EG 3 recommends to contractors to be fully aware of the marketing specificities of lubricants supply when writing procurement system specifications (for example by enlarging the terms of use and by considering a possible change of product).
- For a new product, EG 3 recommends to contractors to contact as soon as possible (e.g. during the system specification drafting) the National Defense POL Services to ensure the introduction of a new specification related to the new product, in the STANAG 1135.
- For each NATO Code Number, a recommended practice is to have at least three different homologated suppliers (e.g. products are tested by the Officially Designated Laboratory as compliant with the product specification)

5.4 STANAG 3149: Minimum Quality Surveillance of Petroleum Products

5.4.1 Scope and rationale

The aim of this agreement is to set out the minimum quality surveillance measures for petroleum products used by NATO Armed Forces in peace, crisis and conflict.

STANAG 3149 covers minimum common requirements for quality surveillance, from training of personal to transportation and storage. Minimum sampling and testing for petroleum products, tests required for turbine engine aviation fuel, gasoline automotive, diesel fuel etc are described.

This agreement may allow, upon compliance to both STANAG 3149 and 1135, the use of NATO Markings.

5.4.2 Implementation Process



- EG3 recommends the quality control to be insured by technically responsible structures (National Inspection Authority and Officially Designated Laboratory).
- For greases, EG3 recommends the contractor to be fully aware of the bidder capability to provide certified products. This means that the supplier shall be homologated by the contractor or the National Defense POL Services.
- In the case of imported products, EG3 recommends the contractor to ensure that the product has received qualification by the nation of origin.
- EG3 recommends the testing of products on delivery and during storage.
- For lubricants, EG3 does not recommend commercial off the shelf procurement, but indicates that it should be possible on a case by case basis, provided that the supplier delivers certified products.

6. Recommendation for future standardization

No recommendation for new standardization work in the field of Fuel and Lubricants European Defence Procurement since future works will be done at NATO Level.

7. Conclusions

Fuel and Lubricants Standardization is done at national or international level for specification of technical requirements, testing, and quality surveillance.

In the Fuel domain, specification of products are recognized and used at international level.

This is not the case for lubricants, which is a more fragmented market, driven by high technology needs. Contractors should be encouraged not to use unwise specifications for procurement of lubricants products, to avoid a shortage of supply.

Further work on Fuel and Lubricants standardization will be proceeded either at national level for product specification and test methods or at NATO level within the NATO Standardization Organization for interoperability, interchangeability, Reference Specifications and Quality Surveillance requirements needed for Defence Procurement.

EHPD should be updated making an allowance for future evolutions and review processes of the Selected Best Practices Standards.