

TCVN 10299-1:2014

1st Edition

**ADDRESSING THE POSTWAR CONSEQUENCES OF
MINE/ERW**

PART 1 : GENERAL PROVISIONS

HANOI - 2014

Table of contents

	Page
FOREWORD	3
INTRODUCTION	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 General requirements	9
4.1 Regulations on procedure to implement a demining project	9
4.2 Regulations on demining operations	10
Appendix A	13
Appendix B	14
Appendix C	15
Appendix D	18

FOREWORD

TCVN 10299-1 :2014 was drafted by the Technical Standard Department of Engineering Command, requested by the Ministry of Defense, appraised by the Directorate for Standards, Metrology and Quality and published by the Ministry of Science and Technology.

TCVN 10299 :2014 – *Addressing the post-war consequences of mine/ERW*, includes 10 parts:

- TCVN 10299-1:2014, *Part 1 : General provisions*;
- TCVN 10299-2:2014, *Part 2: Assessment and Accreditation of demining organizations*;
- TCVN 10299-3:2014, *Part 3: Monitoring and Evaluation of demining organizations*;
- TCVN 10299-4:2014, *Part 4: Non-technical Survey and Technical Survey*;
- TCVN 10299-5:2014, *Part 5: Demining safety*;
- TCVN 10299-6:2014, *Part 6: Clearance of mine/ERW*;
- TCVN 10299-7:2014, *Part 7: Explosive Ordnance Disposal (EOD)*;
- TCVN 10299-8:2014, *Part 8: Medical support for demining operations*;
- TCVN 10299-9:2014, *Part 9: Investigation of demining incidents*;
- TCVN 10299-10:2014, *Part 10: Management of information*;

INTRODUCTION

Conflicts and wars have severely contaminated Vietnam with landmines and other Explosive Remnants of War (ERW). In recent years, great attempts have been made to overcome landmine/UXO consequences and significant results have been achieved. However, the contamination status remains heavy, resulting in constant mine/ERW accidents. A preliminary survey in 2002 revealed that landmine/UXO still affect all 63 provinces and cities. Among them, 9,284 out of 10,511 communes are contaminated by landmine/UXO. The total area of contamination is 6.6 million hectares which accounts for 21.12% of the whole country's territory.

Landmine/UXO are currently scattered across most provinces in the country and in a variety of terrains: forests and mountains, midland, lowland, both rural and urban areas, in the jungles, at the bottoms of lakes, rivers, or coastal areas. Deep-buried landmine/UXO that have existed for decades pose potential risks, and severely affect the economy, human life, and social order. In addition, landmines/UXO containing toxic chemicals have caused serious pollution to the environment and have had significant impacts on community health.

As the country undergoes industrialization and modernization, mine action is one of the most important and urgent tasks that require long-term and continuous efforts in order to ensure the safety of citizens, economic structure, and national defense. Demining is particularly dangerous because it threatens the safety of human beings and property, political security, and social order. Therefore, it requires specialized forces with basic training, high technical expertise, adequate demining assets, and scientific organization.

Over the past years, mine action in Vietnam has been conducted by various demining operators and organizations. When necessary, in each case of demining operations, the Vietnamese government and Ministry of Defense have issued regulations, Standard Operating Procedures (SOPs), norms and guidelines documents regarding the implementation of mine action operations.

"National Mine Action Standards" (VNMAS) have been issued with a goal to meet current requirements, in order to ensure coordination with international standards and achieve consensus within Vietnam's mine action sector. This document provides comprehensive regulations for all relevant mine action operations in Vietnam.

Addressing the post-war consequences of mines/ERW - Part 1 : General provisions

1 Scope

The general provisions specify general provisions that are to be used in the implementation procedures of mine action projects and activities to address the postwar consequences of mines/ERW.

2 Normative references

The following normative references are vital for the application of these standards. For dated references, the cited version shall be applied. For undated references, the latest edition of the normative documents referred to shall be applied, including amendments or supplements (if any).

- TCVN 10299-2:2014, *Part 2: Assessment and Accreditation of demining organizations*;
- TCVN 10299-5:2014, *Part 5: Demining safety*;
- TCVN 10299-6:2014, *Part 6: Clearance of mine/ERW*;
- TCVN 10299-7:2014, *Part 7: Explosive Ordnance Disposal (EOD)*;
- TCVN 10299-8:2014, *Part 8: Medical support for demining operations*;

3 Terms and definitions

3.1

Explosives

A substance or mixture of substances which, under external influences, is capable of rapidly releasing energy in the form of gases and heat.

3.2

Bomb

A type of weapon that uses the power of explosives, incendiary substances, chemical toxics, viruses, nuclear energy, ammunition fragmentation or other factors such as: intoxication, radioactive infection, radiation, seismic impact dropped or launched by aircrafts aiming for destruction, injury and/or killing purposes within a specified area.

3.3

Mine

TCVN 10299-1:2014

A type of repositied weapon that uses the power of explosives, mine case fragmentation, incendiary substances, chemical toxics, or nuclear energy. Mines will explode upon direct or indirect contact with targets causing destruction, injury or imposing obstacles within the impact scope such as: radiation, intoxication, vision restriction.

3.4

Unexploded ordnance

Items containing explosives.

3.5

Investor

Individuals or organizations accredited by a competent authority to conduct UXO/Landmine clearance projects.

3.6

National mine action authority

The government entity charged with the responsibility for the regulation, management and coordination of mine action operations in Vietnam.

3.7

Demining worksite

Any workplace where demining activities are undertaken.

3.8

Demining project

A set of proposals related to the investment of the implementation of mine action activities at specified areas with a goal of releasing these areas from mine/ERW threats.

3.9

Munition

Military products containing explosives, flammables or other special items used to directly attack personnel and technical facilities, destroy buildings or used for other purposes such as lighting, propaganda leaflets, or creation of smoke, etc.

3.10

Safety corridor

The area stretching from the edge of the construction/facility footprint to the outward boundary of the demining area.

3.11**Mine clearance task**

The component of construction work that merely involves the clearance of mines/ERW, in order to release that area from the danger of mines/ERW before commencing any operational work.

3.12**Hazardous area**

A generic term for an area perceived to have mines and/or ERW.

3.13**Suspected hazardous area (SHA)**

An area suspected to have a mine/ERW hazard.

3.14**Confirmed hazardous area (CHA)**

An area within a suspected hazardous area which has been confirmed to be contaminated or identified through a survey to likely be contaminated.

3.15**Minefield**

An area of ground containing mines laid with or without a pattern.

3.16**Non-minefield area**

An area outside the minefield, containing mines/ERW left after the war at different levels due to different actions of involved parties.

3.17**Offshore mines hazardous area**

Areas formerly laid with mines, torpedoes, anti-landing explosive objects following a patterned or non-patterned manner.

3.18**Offshore non-mines hazardous area**

An area outside offshore mines hazardous areas containing different UXO/Landmines left after the war, resulting from different actions of involved parties.

3.19**Special area**

Former demolition sites or former stockpiles that have exploded for several times, surrounding military base, military posts, former battlefields; some areas in the Northern border with overlapping layers of mines.

TCVN 10299-1:2014

3.20

Inspection

The activity to confirm that technical specifications meet the requirements.

3.21

Probability check

An inspection done in a certain area at any location within the demining area prior to non-technical survey, technical survey and clearance.

3.22

Mine detector

A specialized electronic device designed to detect metal objects or objects containing metal under the ground at a shallow depth (typically up to 0.6m).

3.23

Bomb locator

A specialized electronic device designed to detect metal objects or objects containing metal under the ground at a greater depth (typically up to 5m).

3.24

Signal density

The average number of signals is calculated on a per hectare basis.

3.25

Post-clearance inspection

The examination, consideration and evaluation of the quality of a demining operation in comparison with relevant technical methods, operational approaches, standards or specifications.

3.26

Donors

All sources of funding such as governments, UN agencies, individuals, NGOs that finance the Vietnamese government or mine action organizations within Vietnam's territory.

3.27

Prodding

A manual tool (primitive tool) to detect UXO/Landmines under the ground.

3.28

Signal

A magnetic (or non-magnetic) material under the ground or under the water surface including iron, steel, metal pieces and UXO/landmine fragments, etc. that can be detected by people or detectors.

3.29

Personal Protective Equipment (PPE)

Equipment and clothing manufactured using special materials to protect deminers from one or more health safety risks during the demining process.

4 General requirements

4.1 Regulations on the procedures to implement a demining project

4.1.1 The sequence of implementation of demining work shall be similar to basic construction work, including two stages:

4.1.1.1 Drafting of initial estimation for demining project (clearance task) in the preparation stage and;

4.1.1.2 Implementation of demining work during project execution process.

4.1.2 Drafting of initial estimation.

4.1.2.1 Based on the demining area and demining unit price, the investor drafts the initial estimation for the demining project (clearance task)

4.1.2.2 The initial estimation of the demining project (clearance task) is calculated into the total project investment.

4.1.2.3 Submission of project document for approval.

4.1.3 Implementation of demining work during project execution:

4.1.3.1 The investor prepares a written request for demining work, including:

- Name of project
- Location
- Investor
- Demining area;
- Source of funding; and
- Progress requirement.

4.1.3.2 Written request for demining should be sent along with a copy of the decision on project investment from the investor to NMAA for handling.

4.1.3.3 Based on the written request from the investor and level of contamination at project location, NMAA assigns clearance tasks to demining organizations which are qualified enough to implement the project (in terms of surveying, technical operational plans and estimation, monitoring, supervision and evaluation and explosive ordnance disposal)

4.1.3.4 For projects with a large demining area and limited time of completion, two or more organizations should collaborate to implement demining work.

TCVN 10299-1:2014

4.1.3.5 Based on NMAA's decisions on work assignment, the investor sub-contracts with assigned demining organizations for implementation.

4.1.3.6 Implementation:

4.1.3.6.1 In addition to the data retrieved from the national database center, the demining organizations are to conduct a non-technical survey and technical survey for each demining project (clearance task) prior to deployment.

4.1.3.6.2 Non-technical survey and technical survey results shall serve as the basis for preparation of the technical operational plan and estimation of the demining project (clearance task) to be submitted to the competent authority for approval.

4.1.3.6.3 The technical operational plan and estimation (See Appendix B, C,D) and the statement requesting assessment and approval of technical operational plan and estimation (See Appendix A) should be sent to NMAA for assessment and approval.

4.1.3.6.4 Upon the approval of technical operational plan and estimation, the demining organizations are to prepare an execution plan to be submitted to their superior for approval and field deployment of demining project.

4.1.3.6.5 The demining organizations shall send written notifications of the implementation of demining work to the military office and local authority for consistent management.

4.1.3.6.6 Upon receipt of notifications, relevant organizations and agencies shall bear responsibility for facilitating the implementation of demining operations in a smooth and quick manner while ensuring safety and progress.

4.1.3.6.7 UXO/Landmine collected during the demining process must be handled by specialized teams as defined in TCVN 10299-7:2014.

4.1.3.7 Upon completion of demining work, the investor in coordination with NMAA is to organize the acceptance of cleared land and project settlement. The acceptance content is specified in TCVN 10299-5:2014.

NOTE: A demining organization is not allowed to implement two of the following contents at the same time in the same demining project (clearance task): survey, technical operational plan and estimation; implementation; monitoring and evaluation; explosive ordnance disposal.

4.2 Regulations on demining operations

4.2.1 Demining organization

4.2.1.1 The organization must obtain a working license granted by the competent authority. See TCVN 10299-2:2014 for the procedures concerning obtaining a working license.

4.2.1.2 Only when the technical operational plan and implementation plan have been approved by the competent authority, are demining organizations allowed to commence their work. The work carried out during the execution process must follow the approved technical operational plan.

4.2.1.3 The implementation steps must be well-organized and consistent with the sequence and SOP. The SOP (must not) be changed during the implementation process. When it is necessary to modify any step in the approved procedure, there should be written agreement from the competent authority.

4.2.1.4 The site manager must possess the qualifications stipulated in the regulation and must be appointed prior to deployment.

4.2.1.5 The demining organization is to be responsible for technical status, comply with guidelines and safety requirements while using demining equipments.

4.2.1.6 At a demining worksite, if there are more than one organization involved in demining operations, the main operator (must) cooperate with the others to propose general guidelines for safety and occupational health for implementation. A monitoring board should be established to check for quality.

4.2.1.7 There should be adequate facilities to cater to the daily needs of staff at the demining worksite, such as: separate areas for eating, sleeping, bathing, etc.

4.2.1.8 Each demining shift shall last a maximum of 6 hours and those using demining equipments are not allowed to work two consecutive shifts per day.

4.2.1.9 Clean and sufficient water must be provided for all staff at the demining worksite.

4.2.2 Demining equipment

4.2.2.1 Only demining equipment specified in TCVN 10299-6:2014 is to be used. Changing of demining equipment is not allowed

4.2.2.2 The supplement of new equipment to the demining process must comply with legal regulations concerning demining equipment, product quality and must be approved by the competent authority.

4.2.2.3 All demining equipment and other necessary devices must be tested in procedures specified by the authority and shall be checked before each working shift to ensure quality and safety.

4.2.3 Demining staff

4.2.3.1 Demining staff must be at least 18 years old and satisfy health requirements specified by the medical authority.

4.2.3.2 Team leaders, deminers, supervisors and medical staff shall possess basic training and receive additional training before working. More details can be found in TCVN 10299-6:2014 and TCVN 10299-8:2014.

4.2.3.3 Team leaders and supervisors must always be present at the demining worksite and conduct regular checks to ensure compliance with the technical operational plan, SOP and safety rules. They must also understand the scope and volume of demining, and be able to decide to re-clear areas where demining quality is not guaranteed. They are responsible for the volume and quality of work conducted. Deminers must use PPE as per regulation.

4.2.3.4 Only deminers who can swim are allowed to conduct underwater and sea demining. They should be equipped with lifebuoys and other necessary tools as per regulation.

TCVN 10299-1:2014

4.2.3.5 Before each working shift, deminers shall check the technical status of all equipment before commencing work.

4.2.3.6 Staff shall not move around freely at the demining worksite, unauthorized people and vehicles are prohibited from entering the demining area..

4.2.3.7 Avoid gathering a large number of people while handling signals.

4.2.3.8 Deminers are not allowed to bring mines/ERW collected to their home or accomodation.

4.2.3.9 Smoking or using stimulant drinks such as wine, alcohol beer is prohibited before and during the demining process.

TRANSLATED BY IC-VVAF

Appendix A

(Informative)

Request for assessment of technical operational plan and estimation of UXO/Landmine clearance

(HEAD OF UNIT)

**SOCIALIST REPUBLIC OF VIETNAM
Independence – Freedom - Happiness**

No.:

(Place), day month year

STATEMENT

Request for assessment and approval of technical operational plan and estimation of UXO/Landmine clearance

Name of project:

Location:

To:

- Based on the decisions of the competent authority who has approved the development of project (name of project).
- Based on the decisions on the work assignment of regarding the implementation of demining project (name of project).
- Based on the technical operational plan and estimation of UXO/Landmine clearance for (name of project) prepared by (name of organization).

(Superior of demining organization) submits to.....for assessment and approval of technical operational plan and estimation for UXO/Landmine clearance for (name of project) conducted at.....

Total demining areaHa, including

- In-land:Ha,

- Underwater:Ha.

Estimated value for assessment:

(In words:.....)

Investor:

Representative by (if any):

Source of funding:

HEAD OF UNIT

(Signed and sealed)

Cc:

Appendix B

(Informative)

Cover page for technical operational plan and estimation for UXO/Landmine clearance

NAME OF SUPERIOR OF DEMINING ORGANIZATION

NAME OF DEMINING ORGANIZATION

**RECORD ON
TECHNICAL OPERATIONAL PLAN AND ESTIMATION**

NAME OF PROJECT:

TASK: **UXO/Landmine clearance**

LOCATION:

INVESTOR:

DEMINING ORGANIZATION:

YEAR

Appendix C

(Informative)

Technical operational plan for demining operations

(HEAD OF UNIT)

**SOCIALIST REPUBLIC OF VIETNAM
Independence – Freedom - Happiness**

No.:

(Place), day month year

TECHNICAL OPERATIONAL PLAN

Name of project:

Location:

Task: UXO/Landmine clearance

- Legal basis (Decisions of project investor; Decisions of MOD on work assignment...);
- Basis for preparing technical operational plan;
- Based on the results of non-technical survey and technical survey at the field

This technical operational plan is prepared by....for.project... at....., as follows:

I. TASK & REQUEST FOR IMPLEMENTATION

1. Task

.....

a. Location

.....

b. Scope and depth of clearance:

.....

2. Request for implementation

.....

II. BACKGROUND

1. General features

.....

2. Contaminated situation

.....

3. Topography, geology, hydrology

.....

4. Population in demining area

.....

III. VOLUME OF WORK

1. Demining area and volume of work

.....

2. Total volume of demining work

No	Items	Unit	Volume	Note
1	Manual ground clearance...% of total demining area (in-land)	ha		
2	Using mine detectors to detect landmines to the depth of 0.3 m from the ground. Type of signal density...	ha		
3	Digging and removing encountered signals to 0.3m deep. Contaminated level...	Signal		
4	Using bomb detectors to detect bombs from 0.3m to 5m	ha		
5	Digging and removing encountered signals to 3m deep. Contaminated level....	m ³		
6	Digging and removing encountered signals to 5m deep. Contaminated level....	m ³		
7	Using bomb detectors to detect bombs to the depth of 0.5m from the bottom of water body.	ha		
8	Marking signals encountered up to the depth of 0.5 m	Signal		
9	Diving and removing encountered signals up to the depth of 0.5m	Signal		
10	Using bomb detectors to detect bombs to the depth of 0.5m 5m from the bottom of water body.	ha		
11	Marking signals encountered up to the depth of 0.5m 5m	Signal		
12	Diving and removing encountered signals up to the depth of 0.5m 1m	Signal		
13	Diving and removing encountered signals up to the depth of 1m 5m	Signal		

IV. METHODS OF IMPLEMENTATION

Part 1: In-land demining

.....

Part 2: Underwater demining

.....

V. IMPLEMENTATION PLAN

1. Personnel

.....

2. Equipment

.....

3. Progress

.....

VI. LOGISTICS

1. Personnel and communication assurance

.....

2. Facility assurance

.....

3. Health assurance

.....

4. Quality assurance

.....

5. Notes

.....

VII. PROPOSALS

.....

PREPARED BY

HEAD OF UNIT

(Signed and sealed)

TRANSLATED BY IC-VNAF

Appendix D

(Informative)

Estimation for UXO/Landmine clearance

(HEAD OF UNIT)

**SOCIALIST REPUBLIC OF VIETNAM
Independence – Freedom - Happiness**

No.:

(Place), day month year

EXPLANATION OF ESTIMATION

Name of project:

Location:

Task: UXO/Landmine clearance

Part 1: Legal basis for development of estimation

.....

Part 2: Basis for identifying estimated value

1. Volume of work

.....

2. Norm, unit price

.....

3. Costs in proportion

.....

Part 3: Total estimated value

Total estimated value:.....

(In words:.....)

(Summary and detailed analysis of estimation attached herewith))

..... **request** the assessment and approval of technical operational plan and estimation by
.....to serve as the foundation for the next steps.

PREPARED BY

HEAD OF UNIT

(Signed and sealed)

SUMMARY OF ESTIMATION

Name of project:

Location:

Task: UXO/Landmine clearance

(Attached to technical operational plan No....day....month....year.....)

No	Items	Symbol	Description	Total
I	Direct cost			
1	Material cost	VL	According to analysis of estimation	
2	Labor cost	NC	According to analysis of estimation	
3	Machine cost	M	According to analysis of estimation	
4	Other direct costs	TT	$1.5 \%*(VL+NC+M)$	
	Sub-total	T	VL+NC+M+TT	
II	Overhead cost	C	40 %*NC	
III	Taxable cost	TL	5.5 %*(T+C)	
	Estimated cost before tax	Z	T+C+TL	
IV	Other costs	K	K1+....+Kn	
1	NTS, TS, operational planning	K1 %*Z	
2	Tents	K2 %*Z	
3	Assessment	K3 %*Z	
4	Inspection, monitoring	K4 %*Z	
5	Destruction of UXO/Landmine	K5 %*Z	
...	Kn %*Z	
	Estimated cost	H	Z+K	
V	VAT	VAT %*H	
	Estimated cost after tax	Q	H+VAT	
	Rounding			
In words:				

PREPARED BY

HEAD OF UNIT

ANALYSIS OF ESTIMATION

Name of project:

Location:

Task: UXO/Landmine clearance

(Attached to technical operational plan No....day....month....year.....)

No	Work items	Unit	Volume	Unit price (VND)			Total (VND)		
				VL	NC	M	VL	NC	M
I	In-land demining (1+2+3+4+5+6)								
1	Manual ground clearance...% of total demining area (in-land)	ha							
2	Using mine detectors to detect landmines to the depth of 0.3m from the ground. Type of signal density...	ha							
3	Digging and removing encountered signals to 0.3m deep. Contaminated level...	Signal							
4	Using bomb detectors to detect bombs from 0.3m to 5m	ha							
5	Digging and removing encountered signals to 3m deep. Contaminated level....	m ³							
6	Digging and removing encountered signals to 5m deep. Contaminated level....	m ³							
II	Underwater demining (7+8+9+10+11+12)								
7	Using bomb detectors to detect bombs up to the depth of 0.5m from the bottom of water body	ha							
8	Using bomb detectors to detect bombs up to the depth of 0.5m 5m from the bottom of water body	ha							
9	Marking signals encountered at all depths.	Signal							

No	Work items	Unit	Volume	Unit price (VND)			Total (VND)		
				VL	NC	M	VL	NC	M
10	Diving and removing encountered signals up to the depth of 0.5m	Signal							
11	Diving and removing encountered signals up to the depth of 0.5m 1m	Signal							
12	Diving and removing encountered signals up to the depth of 1m 5m	Signal							
	Total (I+II)								

PREPARED BY

HEAD OF UNIT

(Signed and sealed)

TRANSLATED BY ICMAE