NATO STANDARD

AOP-4624

TECHNICAL PERFORMANCE SPECIFICATION PROVIDING FOR THE INTERCHANGEABILITY OF 30mm x 173 AMMUNITION

Edition A Version 1

DATE
RATIFICATION DRAFT 1

NORTH ATLANTIC TREATY ORGANIZATION

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NATO STANDARDIZATION OFFICE (NSO)

NATO LETTER OF PROMULGATION

date

1. The enclosed Allied Ordnance Publication AOP-4624, Edition A, Version 1, TECHNICAL PERFORMANCE SPECIFICATION PROVIDING FOR THE INTERCHANGEABILITY OF 30 mm X 173 AMMUNITION, which has been approved by the nations in the AC/225 NATO ARMY ARMAMENTS GROUP, is promulgated herewith. The agreement of nations to use this publication is recorded in STANAG 4624.

2. AOP-4624, Edition A, Version 1, is effective upon receipt.

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4. This publication shall be handled in accordance with C-M(2002)60.

Dimitrios SIGOULAKIS
Lieutenant General, GRC (A)
Director, NATO Standardization Office

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RECORD OF RESERVATIONS

CHAPTER	RECORD OF RESERVATION BY NATIONS
Note: The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Document Database for the complete list of existing reservations.	

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RECORD OF SPECIFIC RESERVATIONS

[nation]	[detail of reservation]
Note: The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Document Database for the complete list of existing reservations.	

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CHAPTER 1 AMMUNITION INTERCHANGEABILITY PRINCIPLES

1. The aim of this standard is to standardize 30 mm x 173 ammunition designs to ensure functional interchangeability between NATO Forces on the battlefield.

2. AOP-4624 covers **STEEL-CASED** 30 mm x 173 combat and training ammunition types. It should be noted that this standard does **NOT** cover programmable ammunition. Aluminum-cased ammunition and other ammunition natures are outside the scope of AOP-4624.

3. The following paragraphs in Chapter 2 amplify and interpret the military characteristics and specify the technical performance requirements for designs of 30 mm x 173 ammunition submitted for NATO Qualification to ensure functional interchangeability.

4. Under the scope of this standard, interchangeability is understood if the ammunition is in conformance with the performance, functioning and safety criteria as detailed in AEP-4624, the Manual of Proof and Inspection (MOPI) procedures for 30 mm x 173 ammunition.

5. The ammunition shall function safely and with specified performance out of all NATO Nominated Weapons to provide direct evidence testing of battlefield interchangeability.

6. The ammunition shall comply to the specifications prepared by national government agencies, which as a minimum should be in accordance with AOP-4624 for the performance requirements (Chapter 2 & Annex A) and the referenced dimensions (Annex B).

7. Where appropriate, the ballistic levels cited in Chapter 2 are to be obtained from the standard proof barrels described in Volume 22 of AEP-4624, Manual of Proof and Inspection after correction using the NATO Reference Ammunition.

8. NATO Reference Ammunition shall be used to verify barrel ballistics characteristics and test equipment as defined in Volume 7 of AEP-4624.

9. It should be noted that this standard by itself should not be used for acquisition purposes.

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CHAPTER 2 TECHNICAL PERFORMANCE REQUIREMENTS

1. PROJECTILE EXTRACTION

(AEP-4624, Volume 10)

The remaining projectile pull force (extraction force (N)) of any type of complete cartridge chambered in a gun with a new barrel shall be high enough to prevent a complete separation of the projectile from the cartridge case when extracting the complete cartridge from the gun.

While there is no requirement for a minimum pull force value, this value shall be provided by the manufacturer for information.

2. PRIMER SENSITIVITY

(AEP-4624, Volume 11)

Primer sensitivity shall be evaluated by conducting a two height method, using a ball of 0.510 kg $\pm$ 0.005 kg, and shall meet the following requirements:

2a. All-fire

The percussion primer sensitivity shall be 100 percent fire when impacted with a 0.510 kg ball dropped from a height of 414 mm.

2b. No-fire

The percussion primer sensitivity shall be 100 percent no fire when impacted with a 0.510 kg ball dropped from a height of 114 mm.

The above values shall apply when obtained at ambient temperature.

3. PROPELLANT AND PRIMER MIX COMPOSITION

(AEP-4624, Volume 12)

3a. An analysis of the Propellant and Primer Mix Composition shall be conducted by the nation on the ammunition lot being submitted for Qualification Approval and submitted to the applicable NATO Regional Test Center. NATO does not specify the chemical composition for propellant or primer composition contained in ammunition submitted for NATO qualification.

3b. However, once acceptability of an ammunition design is established and the design is qualified, then all subsequent production of that ammunition design, which bears the NATO Symbol of Interchangeability on the basis of that qualification, must contain the same propellant and primer composition as were identified in the Qualification Approval sample.

4. ENVIRONMENTAL REQUIREMENTS

(AEP-4624, Volumes 13, 14, 15, 16, 18 and 19)

4a. Compliance with the requirements for performance after temporary heating or cooling will be tested by conditioning the ammunition to +52 °C and -46 °C (*AEP-4624, Volumes 13 & 14*) and firing the ammunition at those temperatures (*AEP-4624, Volumes 22* (-46 °C for action time), *24, 25, 26 & 27 and 30, wherever applicable*) as well as during Complete Cartridge Extraction from Gun Test Procedure *(AEP-4624, Volume 10 - with gas-driven cannons only)*.

4b. Compliance with the requirements for performance after prolonged climatic storage will be tested by exposure of the ammunition to appropriate intensified storage cycles (*AEP-4624, Volumes 15 & 16*) and subsequent firing the ammunition at +21 °C (*AEP-4624, Volumes 22, 26 & 27, wherever applicable*).

4c. The ammunition shall function properly and remain in compliance with the requirements for performance, as prescribed in AEP-4624, after having been subjected to temperature and humidity testing (*AEP-4624, Volume 18*) and subsequent firing of the ammunition at +21 °C (*AEP-4624, Volumes 22, 26 & 27, wherever applicable*).

4d. The ammunition shall function properly and remain in compliance with the requirements for performance, as prescribed in AEP-4624, after having been subjected to thermal shock testing (*AEP-4624, Volume 19*) and subsequent firing of the ammunition at +21 °C (*AEP-4624, Volumes 22, 26 & 27, wherever applicable*).

5. WATERPROOF

(AEP-4624, Volume 17)

The ammunition shall function properly and remain in compliance with the requirements for performance, as prescribed in AEP-4624, after having been subjected to waterproof testing and subsequent firing of the ammunition at +21 °C (*AEP-4624, Volume 22*).

6. PACKAGING AND STORAGE – CAPABILITY OF WITHSTANDING TRANSPORTATION (VIBRATION & DROP)

(AEP-4624, Volume 20)

After the ammunition has been subjected to vibration (*AEP-4624, Volume 20*) the ammunition shall remain in a safe condition for handling (listed below) and shall function correctly when fired at +21 °C (*AEP-4624, Volumes 22, 26 & 27 wherever applicable*),

None of the following unsafe conditions are permitted after the vibration test:

6a. Any exudation/discharge containing explosive material.

6b. Any movement of safety devices from the safe condition.

6c. Any loosening of the joints or other physical distortions.

6d. Any reaction, crack or separation of the explosive.

6e. Any movement of any internal component.

7. SALT FOG CORROSION

(AEP-4624, Volume 21)

The ammunition shall function safely and reliably in the NATO nominated weapons after being subjected to salt fog conditioning. Any corrosion of the cartridge must be sufficiently limited to have no effect on the normal functioning of the weapon and ammunition and to ensure that the ammunition is capable of withstanding storage conditions. Firing defects and incidents shall not exceed the levels established in AEP-4624, Volume 30, paragraph 30.6, including the subparagraphs. FIRING DEFECTS AND THEIR CLASSIFICATION (AEP-4624, Volume 8) shall be used for evaluating and categorizing defects and incidents.

8. PRESSURE

(AEP-4624, Volume 22)

8a. The individual corrected peak chamber pressure shall not exceed 520 MPa when the ammunition is conditioned and fired at +52 °C ± 2 °C, +21 °C ± 2 °C or -46 °C ± 2 °C (using an approved transducer).

8b. The corrected mean peak chamber pressure value plus three (3) standard deviations is less than or equal to 460 MPa.

8c. The corrected individual peak port pressure shall be less than 200 MPa.

9. VELOCITY

(AEP-4624, Volume 22)

The velocity requirement for **Full-Calibre Ammunition** is:

1070 m/s, for Bushmaster II & MK44 –30/40
1050 m/s, for Mauser MK 30-2

9a. The nominal muzzle velocity (established by the manufacturer of the ammunition) shall be within ±15 m/s of the required muzzle velocitiy for each respective weapon, when fired at +21 °C ± 2 °C.

9b. The corrected mean muzzle velocity shall not differ by more than 15 m/s from the nominal muzzle velocity.

9c. The standard deviation shall not exceed 10 m/s.

9d. The corrected mean muzzle velocity of the conditioned cartridges shall not degrade by more than 2.5% when compared to the corrected mean muzzle velocity obtained for the unconditioned cartridges.

The velocity requirement for **Sub-Calibre Ammunition** is:

1400 m/s, for Bushmaster II & MK44 –30/40
1380 m/s, for Mauser MK 30-2

9e. The nominal muzzle velocity (established by the manufacturer of the ammunition) shall be within ±15 m/s of the required muzzle velocitiy for each respective weapon, when fired at +21 °C ± 2 °C.

9f. The corrected mean muzzle velocity shall not differ by more than 15 m/s from the nominal muzzle velocity.

9g. The standard deviation shall not exceed 10 m/s.

9h. The corrected mean muzzle velocity of the conditioned cartridges shall not degrade by more than 2.5% when compared to the corrected mean muzzle velocity obtained for the unconditioned cartridges.

10. ACTION TIME

(AEP-4624, Volume 22)

The mean action time plus three (3) standard deviations and the maximum individual action time shall not exceed 10 ms when the ammunition is conditioned and fired at -46 °C ± 2 °C.

11. PRECISION

(AEP-4624, Volume 23)

When fired from a precision barrel at a minimum range of 200 metres, the pooled mean of the horizontal (s_H) and vertical (s_V) standard deviations shall be 0.44 mils or less for Sub-Calibre ammunition and shall be 0.50 mils or less for Full-Calibre ammunition.

12. TRACE PERFORMANCE

(AEP-4624, Volume 24)

For Full-Calibre ammunition:

12a. No more than one (1) projectile may fail to trace for a minimum of three (3.0) seconds when evaluated at ambient (+20 °C ± 5 °C).

12b. No more than three (3) projectiles may fail to trace for a minimum of three (3.0) seconds when evaluated at -46 °C and at +52 °C.

For Sub-Calibre ammunition:

12c. No more than one (1) projectile fails to trace for a minimum of two (2.0) seconds when evaluated at ambient (+20 °C ± 5 °C).

12d. No more than three (3) projectiles fail to trace for a minimum of two (2.0) seconds when evaluated at -46 °C and at +52 °C.

13. FUZE AND SHELL SAFETY

(AEP-4624, Volume 25)

High Explosive (Incendiary) type (HEI-(T); HE-(T)), Armor Piercing High Explosive (Incendiary) type (APHE-(T); APHEI-(T)) and Multi-Purpose type (MP-(T)) cartridges shall have a fuze or a pyrotechnical initiation chain, which performs as follows:

13a. The fuze-configured cartridges (HEI-(T); HE-(T), APHE-(T), APHEI-(T)) shall have an arming delay mechanism resulting in no arming prior to 10 metres of travel downrange from the muzzle when evaluated at -46 °C , +20 °C ± 5 °C, and +52 °C.

13b. Pyrotechnical initiation type cartridges (MP-(T)) shall not be initiated by the resistance of a target, prescribed in AEP-4624 (Volume 25), when fired at a distance of 30 metres downrange from the muzzle when evaluated at -46 °C, +20 °C ± 5 °C, and +52 °C.

14. FUZE AND SHELL FUNCTION

(AEP-4624, Volume 26)

High Explosive (Incendiary) type, Armor Piercing High Explosive (Incendiary) type, Multi-Purpose type cartridges and other cartridge types shall have a fuze or a pyrotechnical initiation chain which arms within 200 metres from the weapon muzzle when evaluated at -46 °C, +20 °C ± 5 °C, and +52 °C. This standard **does not** address inductively set time fuzes used for air bursting munitions.

14a. The ammunition meets the above requirement if no more than one (1) projectile fails to function properly at target impact.

14b. For conditioned ammunition (AEP-4624 Volumes: 13, 14, 15, 16, 18, 19, & 20), no more than two (2) projectiles shall fail to function on the target.

15. SELF-DESTRUCT FUNCTION

(AEP-4624, Volume 27)

The self-destruct test shall be conducted from each NATO nominated weapon the ammunition meets the requirement if:

15a. No projectile self-destructs within two (2) seconds for any test throughout the temperature ranges.

15b. No more than one (1) projectile fails to self-destruct prior to impact in single fire mode.

15c. During burst firing, no more than two (2) projectiles fail to self-destruct for each temperature conditioning prior to impact.

16. TERMINAL EFFECTS

(AEP-4624, Volume 28)

The Sub-Calibre ammunition shall penetrate the target specified in the paragraphs below when conditioned at +20 °C ± 5 °C.

16a. APFSDS, Spaced Armor Target in 60° NATO

The ammunition shall completely penetrate a spaced armor target array consisting of a 10 mm HH front plate placed 60 mm in front of a 30 mm RHA plate placed at 1000 metres from the muzzle. At least one splinter shall perforate a 0.5 mm aluminum witness plate placed 150 mm behind the RHA target plate. All plate materials are defined in AEP-4624, Volume 28.

16b. AP, APDS, FAPIDS, Monobloc Target in 60° NATO

The ammunition shall completely penetrate a target consisting of a 25 mm RHA plate placed at 1000 metres from the muzzle. At least one splinter shall perforate a 0.5 mm aluminum witness plate placed 150 mm behind the RHA target plate. All plate materials are defined in AEP-4624, Volume 28.

17. FIRING TABLE AND BALLISTIC INTERCHANGEABILITY

(*AEP-4624, Volume 29*)

For Full-Calibre ammunition:

17a. The ammunition results shall be within ± 0.5 mils of the Generic Firing Table (AEP-4624, Volume 29 - Annex A) for each NATO Nominated Weapon out to 1500 metres.

For Sub-Calibre ammunition:

17b. The ammunition results shall be within ± 0.5 mils of the Generic Firing Table (AEP-4624, Volume 29 - Annex A) for each NATO Nominated Weapon out to 2000 metres.

For Training ammunition:

17c. The ammunition results shall be within ± 1.0 mils of the Generic Firing Table (AEP-4624, Volume 29 - Annex A) for both sub calibre and full calibre ammunition for each NATO Nominated Weapon out to 1000 metres.

19. FUNCTION AND CASUALTY

(AEP-4624, Volume 30)

Ammunition is to function in, and cause to function satisfactorily, the NATO Nominated Weapons. The number of firing defects charged against the test ammunition shall be compared with the levels permitted in Tables 8.1 and 8.2 (AEP-4624, Volume 8) for each NATO Nominated Weapon evaluated individually.

The ammunition shall have met the requirement if:

19a. The number of defects meets the acceptable quality level as specified in Tables 8.1 and 8.2 for each NATO nominated weapon.

19b. The cyclic rate, as measured during the burst firings, meets the nominated weapon's safe rate of fire specified in Volume 5.

20. SABOT DISCARD HAZARD ASSESSMENT

(*AEP-4624, Volume 31*)

The Sub-Calibre cartridge parts; metallic (aluminum) pusher base, sabot segments, or other metallic or plastic parts (fragments), heavier than 1 gram, shall remain within a 30° zone (symmetric about the weapon target line) as prescribed in AEP-4624, Volume 31 - Annex A, out to a range of 180 m when fired at 0° gun elevation from all NATO Nominated Weapons positioned approximately 2.0 m above level ground. Sabot pusher bases are allowed to exceed in range the length described in Volume 31 - Annex A, as long as the parts remain in the angular safety zone.

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ANNEX A TABLE OF REQUIREMENTS FOR 30 mm x 173 AMMUNITION

For detailed requirements regarding safety and performance and test-requirements for the 30 mm x 173 ammunition, see the specified AOP-4624 paragraphs and AEP-4624 Volumes mentioned in the table below for each test in the AEP-4624 in general.

PARA. #	PERFORMANCE REQUIREMENTS	TEMP	VALUES	UNITS	AEP-4624 VOL. #
	PROJECTILE EXTRACTION				
1	The test is fulfilled if each inert test cartridge can be extracted from the gun without full separation of the projectile from the cartridge case.	+20 °C (± 5 °C) -46 °C +52 °C	Provided by the manufacturer (For Information Only)	N	**10**
	PRIMER SENSITIVITY *(with 0.510 kg ball)*				
2a	All-Fire Height (100%)	+20 °C (± 5 °C)	414	mm	**11**
2b	No-Fire Height (100%)	+20 °C (± 5 °C)	114	mm	**11**
	PROPELLANT AND PRIMER MIX COMPOSITION				
3	NATO does not specify the chemical composition for propellant or primer mix composition contained in ammunition submitted for NATO qualification. Once acceptability of an ammunition design is established and the design is qualified, then all subsequent production of that ammunition design, which bears the NATO Symbol of Interchangeability on the basis of that qualification, must contain the same propellant and primer composition as were identified in the Qualification Approval sample.	-	National Requirement	-	**12**
	WATERPROOF				
5	The ammunition shall comply with EPVAT requirements after subject to waterproof testing.	+21 °C	see AEP-4624, Vol.22	-	**17**
	VIBRATION				
6	The ammunition shall comply with EPVAT, Fuze and Shell Function, and Self-Destruct requirements after subject to vibration testing.	+21 °C	see AEP-4624, Vol. 22, 26 & 27	-	**20**

PARA. #	PERFORMANCE REQUIREMENTS	TEMP	VALUES	UNITS	AEP-4624 VOL. #
	SALT FOG CORROSION				
7	The ammunition shall comply with Function & Casualty requirements after subject to salt fog exposure.	+20 °C (± 5 °C)	see AEP-4624, Vol. 30	-	**21**
	CHAMBER PRESSURE				
8a	Individual Corrected Peak Chamber Pressure	+21 °C -46 °C +52 °C	≤ 520	MPa	**22**
8b	Maximum Corrected Mean Chamber Pressure + 3 Std Dev	+21 °C -46 °C +52 °C	≤ 460	MPa	**22**
	PORT PRESSURE				
8c	Corrected Individual Port Pressure	+21 °C -46 °C +52 °C	≤ 200	MPa	**22**
	VELOCITY				
	Full-Calibre Ammunition Muzzle Velocity	=	1070 / 1050 (weapon-specific)	m/s	**22**
9a	The ammunition shall have a nominal muzzle velocity (established by the manufacturer of the ammunition) within ± 15% of the generic nominal velocity for each nominated weapon.	+21 °C	± 15%	m/s	**22**
9b	Corrected Mean Velocity Δ from Nominal Velocity	+21 °C -46 °C +52 °C	≤ 15	m/s	**22**
9c	Standard deviation	+21 °C -46 °C +52 °C	≤ 10	m/s	**22**
9d	Corrected Mean Muzzle Velocity Δ from Treated & Untreated Samples	+21 °C -46 °C +52 °C	≤ 2.5%	--	**22**

PARA. #	PERFORMANCE REQUIREMENTS	TEMP	VALUES	UNITS	AEP-4624 VOL. #
	Sub-Calibre Ammunition Muzzle Velocity	=	1400 / 1380 (weapon-specific)	m/s	**22**
9e	The ammunition shall have a nominal muzzle velocity (established by the manufacturer of the ammunition) within ± 15% of the generic nominal velocity for each nominated weapon.	+21 °C	± 15%	m/s	**22**
9f	Corrected Mean Velocity Δ from Nominal Velocity	+21 °C -46 °C +52 °C	≤ 15	m/s	**22**
9g	Standard deviation	+21 °C -46 °C +52 °C	≤ 10	m/s	**22**
9h	Corrected Mean Muzzle Velocity Δ from Treated & Untreated Samples	+21 °C -46 °C +52 °C	≤ 2.5%	--	**22**
	ACTION TIME				
10	Maximum Individual Action Time	-46 °C	≤ 10	ms	**22**
10	Mean Action Time + 3 Std Dev	-46 °C	≤ 10	ms	**22**
	PRECISION				
	Full-Calibre Ammunition @ 200m				
11	Horizontal Standard Deviation	+21 °C	≤ 0.50	mils	**23**
11	Vertical Standard Deviation	+21 °C	≤ 0.50	mils	**23**
	Sub-Calibre Ammunition @ 200m				
11	Horizontal Standard Deviation	+21 °C	≤ 0.44	mm	**23**
11	Vertical Standard Deviation	+21 °C	≤ 0.44	mm	**23**
	TRACER PERFORMANCE				
	Full-Calibre Ammunition				
12a	No more than one (1) projectile fails to trace for the minimum time required.	+20 °C (± 5 °C)	≥ 3.0	s	**24**
12b	No more than three (3) projectiles fail to trace for the minimum time required.	-46 °C +52 °C	≥ 3.0	s	**24**
	Sub-Calibre Ammunition				
12c	No more than one (1) projectile fails to trace for the minimum time required.	+20 °C (± 5 °C)	≥ 2.0	s	**24**
12d	No more than three (3) projectiles fail to trace for the minimum time required.	-46 °C +52 °C	≥ 2.0	s	**24**
	FUZE AND SHELL SAFETY				

PARA. #	PERFORMANCE REQUIREMENTS	TEMP	VALUES	UNITS	AEP-4624 VOL. #
	HEI-(T); HE-(T); APHE-(T); APHEI-(T) MP-(T)				
13a	Fuze-configured cartridges shall have an arming delay mechanism resulting in no arming (0 projectiles) prior to 10 metres of travel downrange from the muzzle.	+20 °C (± 5 °C) -46 °C +52 °C	0 Projectiles	--	**25**
13b	Pyrotechnical initiation type cartridges shall not be initiated (0 projectiles) by the resistance of a target (per AEP-4624, Vol. 28) when fired at a distance of 30 metres downrange from the muzzle.	+20 °C (± 5 °C) -46 °C +52 °C	0 Projectiles	--	**25**
	FUZE AND SHELL FUNCTION				
	HEI-(T); HE-(T); APHE-(T); APHEI-(T); MP-(T)				
14a	Cartridges shall have a fuze or a pyrotechnical initiation chain which arms within 200 metres from the weapon muzzle. No more than one (1) projectile can fail to function properly at the target.	+21 °C -46 °C +52 °C	≤ 1 Projectile	--	**26**
14b	Cartridges shall have a fuze or a pyrotechnical initiation chain which arms within 200 metres from the weapon muzzle. After conditioning per Volumes 15, 16, 18, 19, and 20, no more than two (2) projectiles shall fail to function on the target.	+21 °C	≤ 2 Projectiles	--	**26**
	SELF-DESTRUCT FUNCTION				
15a	No projectile self-destructs within 2 seconds for any test throughout the temperature ranges.	+21 °C -46 °C +52 °C	0 Projectiles	--	**27**
15b	No more than one (1) projectile fails to self-destruct prior to impact in single fire mode.	+21 °C	≤ 1 Projectile	--	**27**
15c	During burst firing, no more than two (2) projectiles fail to self- destruct for each temperature conditioning prior to impact.	+21 °C -46 °C +52 °C	≤ 2 Projectiles	--	**27**
	TERMINAL EFFECTS				
	APFSDS, Spaced Armor Target in 60° NATO				
16a	The ammunition shall completely penetrate a spaced armor target array consisting of a 10 mm HH front plate placed 60 mm in front of a 30 mm RHA plate placed at 1000 metres from the muzzle.	+20 °C (± 5 °C)	see AEP-4624, Vol. 28 (ANNEX A)	--	**28**
	AP, APDS, FAPIDS, Monobloc Target in 60° NATO				

PARA. #	PERFORMANCE REQUIREMENTS	TEMP	VALUES	UNITS	AEP-4624 VOL. #
16b	The ammunition shall completely penetrate a target consisting of a 25 mm RHA plate placed at 1000 metres from the muzzle.	+20 °C (± 5 °C)	see AEP-4624, Vol. 28 (ANNEX A)	--	**28**
	FIRING TABLE AND BALLISTIC INTERCHANGEABILITY				
	Full-Calibre Ammunition				
17a	The ammunition results shall be within ± 0.5 mils of the Generic Firing Table (Vol .29 Annex A) for each NATO Nominated Weapon out to 1500 metres.	+20 °C (± 5 °C)	± 0.5	mils	**29**
	Sub-Calibre Ammunition				
17b	The ammunition results shall be within ± 0.5 mils of the Generic Firing Table (Vol .29 Annex A) for each NATO Nominated Weapon out to 2000 metres.	+20 °C (± 5 °C)	± 0.5	mils	**29**
	FUNCTION & CASUALTY				
	Ammunition is to function in, and cause to function satisfactorily, the NATO Nominated Weapons.				
19a	The number of defects meets the acceptable quality level as specified in Tables 8.1 and 8.2 for each NATO nominated weapon.	+21 °C -46 °C +52 °C	see AEP-4624, Vol. 8, Tables 8.1 & 8.2	--	**30**
19b	The cyclic rate, as measured during the burst firings, meets the nominated weapon's safe rate of fire specified.	+21 °C -46 °C +52 °C	see AEP-4624, Vol. 5	rpm	**30**
	SABOT DISCARD HAZARD ASSESSMENT				
20	The Sub-Calibre cartridge parts, heavier than 1 gram, shall remain within a 30° zone (symmetric about the weapon target line) as prescribed in AEP-4624, Volume 31 - Annex A, out to a range of 180 m.	+21 °C	see AEP-4624, Vol. 31 (ANNEX A)	--	**31**

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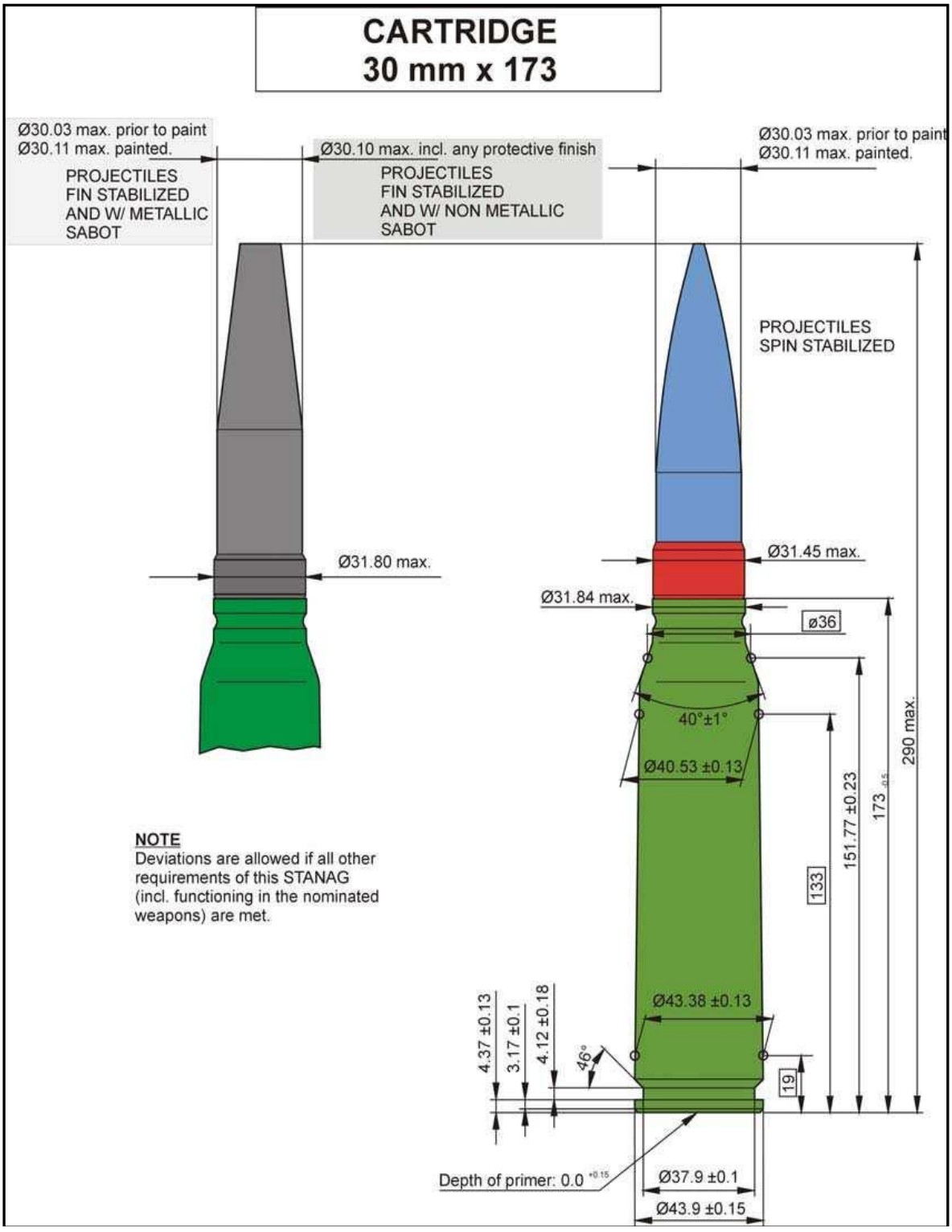
ANNEX B 30 mm x 173 STANDARDIZATION DRAWINGS

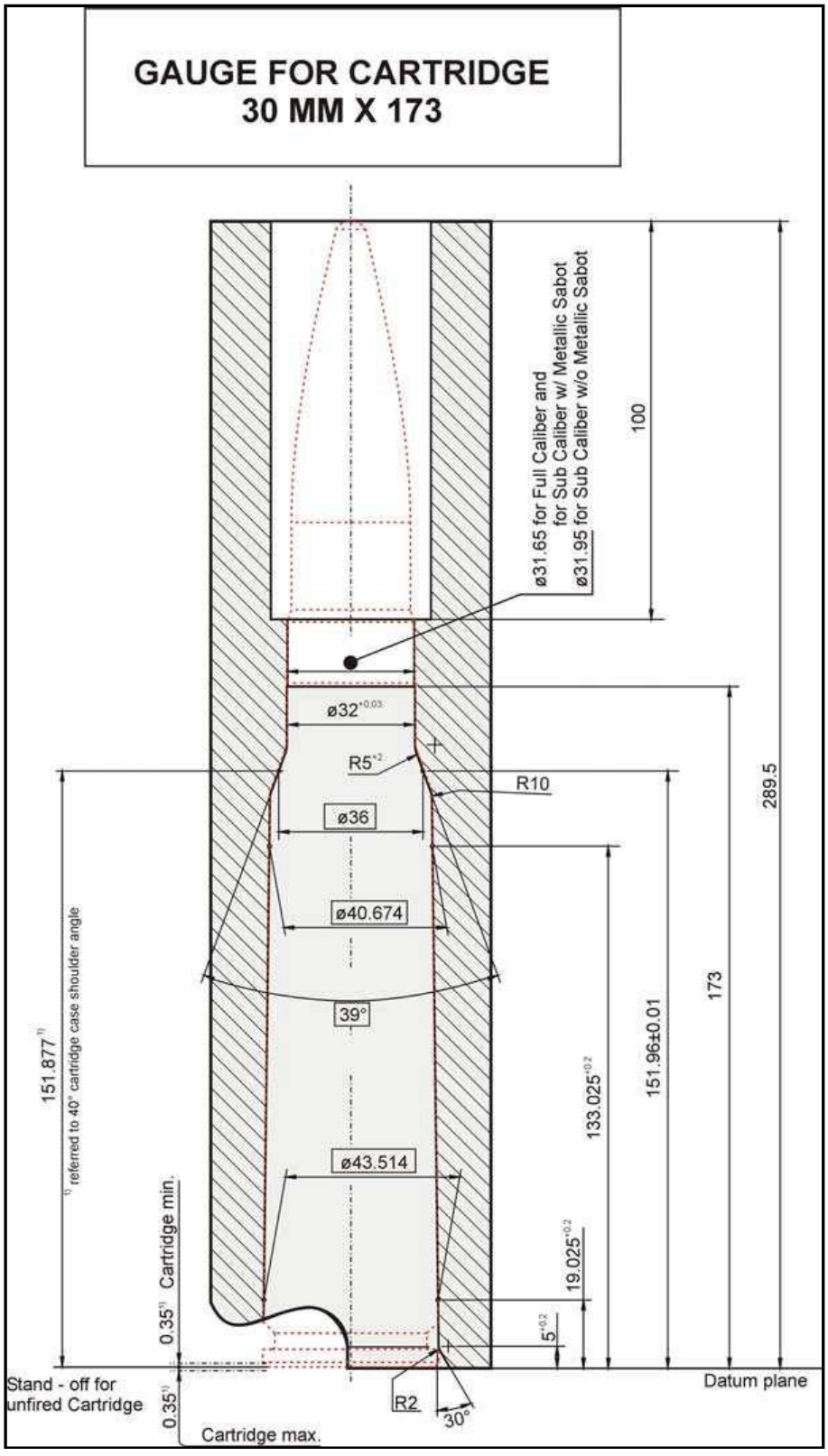
The dimensions of the overall 30 mm x 173 Cartridge can be found on the next page (B-2).

Please note the following:

Note 1: The drawing is for reference only and is NOT to be used for manufacture, dimensions are for guidance only.

Note 2: Deviations are allowed if all other requirements of AEP-4624 (incl. functioning in the NATO Nominated Weapons) are met.


CARTRIDGE
30 mm x 173
Ø30.03 max. prior to paint
Ø30.11 max. painted.
PROJECTILES
FIN STABILIZED
AND W/ METALLIC
SABOT
Ø30.10 max. incl. any protective finish
PROJECTILES
FIN STABILIZED
AND W/ NON METALLIC
SABOT
Ø30.03 max. prior to paint
Ø30.11 max. painted.
PROJECTILES
SPIN STABILIZED
Ø31.80 max.
Ø31.45 max.
Ø31.84 max.
ø36
40°±1°
Ø40.53 ±0.13
290 max.
151.77 ±0.23
173 -0.5
133
NOTE
Deviations are allowed if all other
requirements of this STANAG
(incl. functioning in the nominated
weapons) are met.
Ø43.38 ±0.13
4.37 ±0.13
3.17 ±0.1
4.12 ±0.18
46°
19
Depth of primer: 0.0 +0.15
Ø37.9 ±0.1
Ø43.9 ±0.15


GAUGE FOR CARTRIDGE
30 MM X 173
ø31.65 for Full Caliber and
for Sub Caliber w/ Metallic Sabot
ø31.95 for Sub Caliber w/o Metallic Sabot
100
ø32+0.03
R5+2
R10
ø36
ø40.674
39°
ø43.514
289.5
173
151.96±0.01
133.025+0.2
19.025+0.2
5+0.2
151.877[1]
[1] referred to 40° cartridge case shoulder angle
0.35[1] Cartridge min.
0.35[1]
Cartridge max.
Stand - off for
unfired Cartridge
R2
30°
Datum plane

AOP-4624(A)(1)