

Appendix 4 to Annex B

C21 MULTI-CALIBRE SNIPER WEAPON SYSTEM

SYSTEM ACCEPTANCE TEST



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NOTICE

This documentation has been reviewed by the technical authority and does not contain controlled goods. Disclosure notices and handling instructions originally received with the document must continue to apply.

1. **Scope**

1.1. **Purpose**

This document describes the System Acceptance Testing (SAT), referred to in Annex B, that must be conducted by the Contractor to verify that the initial contracted quantities of Multi-Caliber Sniper Weapons (MCSWs) meet the requirements of the contract.

2. **General**

The Contractor must conduct SAT using the initial contracted quantities of MCSW Systems produced to the requirements of the contract, in order to verify compliance against a list of Requirements listed in Tables 1 and 2.

2.1. **MCSW Systems for SAT**

2.1.1. The MCSW Systems that will be used for SAT will be randomly selected by Canada from the initial contracted production lot of 25 MCSW Systems. The number of required MCSW Systems is detailed in each Test.

2.1.2. The Contractor must furnish their own bipod, scope and scope rings for SAT.

2.2. **Facility and Location**

All SAT activities must be conducted at the Contractor's (or sub-contractor) facilities and with the Contractor's (or sub-contractor) test equipment, at a time and location agreed upon by Canada.

2.3. **Canada's Participation**

The Contractor must conduct all SAT activities under the presence of Canada's representatives.

2.4. **Ammunition**

2.4.1. All ammunition for SAT testing must be provided by the Contractor.

2.4.2. Ammunition used is defined as follows:

- a. GM308M2: Federal Gold Medal Sierra MatchKing, 308 WIN, 175 grain Cartridge; and
- b. GM338LM: Federal Gold Medal Sierra MatchKing, 338 Lapua Magnum, 250 grain Cartridge.

2.4.3. If different ammunition is to be used during SAT, the Contractor must receive approval from the Technical Authority to do so.

2.5. Failures during SAT

- 2.5.1. The Contractor must investigate, at no cost to Canada, all failures and deficiencies during SAT.
- 2.5.2. The Contractor must provide a Failure Investigation report IAW CDRL 008 and DID SE-005 on the findings of the investigation, with possible recommendations and solutions.
- 2.5.3. All recommendations and solutions proposed by the Contractor must be accepted by Canada. In the event the recommended solutions proposed by the Contractor are not accepted by Canada the contract will be terminated for default.

2.6. SAT Report

- 2.6.1. The Contractor must provide a SAT Report IAW CDRL 007 and DID SE-004.

2.7. SAT Success Criteria

- 2.7.1. The SAT is considered successful when all tests listed under Tables 1 and 2 of this Appendix are found to be successful.


Table 1: SAT Compliance Checklist to Annex B			
Ref. (Annex B)	Requirement	Method of Verification	Compliant (Y/N)
5.2.1 a	The Contractor must stamp or laser engrave a unique serial number on the Rifle receiver.	Visual inspection in accordance with Attachment 1, Test 1.	
5.2.1 b	The Contractor must stamp or laser engrave the Rifle serial number on both calibre Barrels.	Visual inspection in accordance with Attachment 1, Test 1.	
5.2.1 c	The serial number format must be YYMCXXXXX where “YY” is the year of manufacture, “MC” is the MCSW designation assigned by Canada and “XXXXX” is the unique serial number of the Rifle starting at 00001 and ending at 00229	Visual inspection in accordance with Attachment 1, Test 1.	
5.2.3	The Contractor must stamp or laser engrave a serial number on the bolt handle that matches the last 3 digits of its corresponding Rifle serial number.	Visual inspection in accordance with Attachment 1, Test 1.	
5.2.4 a	The Contractor must stamp or laser engrave the Rifle designation “C21 Multi-Calibre” on the chassis;	Visual inspection in accordance with Attachment 1, Test 1.	
5.2.4 b	<p>The chassis must be marked IAW Figure 2 to identify the MCSW as a Canadian Armed Forces weapon;</p>  <p>Figure 2: Distinctive Canadian Armed Forces Markings.</p>	Visual inspection in accordance with Attachment 1, Test 1.	
5.2.4 c	The Contractor must stamp or laser engrave “C21 7.62mm” on the barrel for 7.62mm calibre configuration	Visual inspection in accordance with Attachment 1, Test 1.	

Table 1: SAT Compliance Checklist to Annex B			
Ref. (Annex B)	Requirement	Method of Verification	Compliant (Y/N)
5.2.4 d	The Contractor must stamp or laser engrave “C21 .338 LM” on the barrel for .338 Lapua Magnum configuration	Visual inspection in accordance with Attachment 1, Test 1.	
5.2.4 e	The Contractor must stamp or laser engrave “7.62mm” on the bolt head for 7.62mm calibre and “.338 LM” on the bolt head for .338 Lapua Magnum	Visual inspection in accordance with Attachment 1, Test 1.	
5.2.4 f	The Contractor must stamp or laser engrave “7.62mm” on the magazine for 7.62 calibre configuration;	Visual inspection in accordance with Attachment 1, Test 1.	
5.2.4 g	The Contractor must stamp or laser engrave “.338 LM” on the magazine for .338 Lapua Magnum configuration	Visual inspection in accordance with Attachment 1, Test 1.	
5.2.5	The Contractor must stamp or laser engrave a proof mark on all pressure bearing components.	Visual inspection in accordance with Attachment 1, Test 1.	
8.4.2	Proof of the Rifle’s precision must be held with each Rifle’s QA documentation.	Visual inspection in accordance with Attachment 1, Test 1.	

Table 2: SAT Compliance Checklist to Annex C			
Ref. (Annex C)	Requirement	Method of Verification	Compliant (Y/N)
3.1.1.9	The colour of the major external surfaces of the Rifle must be Coyote Tan with a Matte finish, or an alternative color approved by Canada. All other components of the Rifle can be either black or the same color as the Rifle.	Visual inspection in accordance with Attachment 1, Test 1.	
3.2.1	The Transit Case must be a rigid case equipped with molded custom inserts.	Visual inspection in accordance with Attachment 1, Test 2.	
3.2.2	The Transit Case must store the entire MCSW System.	Visual inspection in accordance with Attachment 1, Test 2.	
3.2.3	The Transit Case must store the Rifle with the optical scope, muzzle brake and bipod mounted, and with all recoil pad spacers mounted and cheek piece fixed in a user-required position.	Visual inspection in accordance with Attachment 1, Test 2.	
3.2.4	The Transit Case must store the Rifle with the 12 O'clock NATO Accessory Rail facing the Transit Case handle.	Visual inspection in accordance with Attachment 1, Test 2.	
3.2.5	The colour of the Transit Case must be Tan or Black.	Visual inspection in accordance with Attachment 1, Test 2.	
3.2.6	The Transit Case must be provided with a hinged cover.	Visual inspection in accordance with Attachment 1, Test 2.	
3.2.7	The Transit Case must be equipped with hinged latches to securely close the case.	Visual inspection in accordance with Attachment 1, Test 2.	
3.2.8	The Transit Case must be provided with a padlock hasp to secure the contents.	Visual inspection in accordance with Attachment 1, Test 2.	
3.2.9	The Transit Case must be provided with a folding handle on its long side for carrying by hand.	Visual inspection in accordance with Attachment 1, Test 2.	
3.2.10	The Transit Case must be provided with wheels located on one of the short edges for pulling the case.	Visual inspection in accordance with Attachment 1, Test 2.	

Table 2: SAT Compliance Checklist to Annex C			
Ref. (Annex C)	Requirement	Method of Verification	Compliant (Y/N)
3.2.11	The Transit Case must be provided with a folding handle, or integrated handle on the opposite end to the wheels for pulling the case.	Visual inspection in accordance with Attachment 1, Test 2.	
3.2.12	The Transit Case must be equipped with a pressure release valve.	Visual inspection in accordance with Attachment 1, Test 2.	
3.2.13	The Transit Case must operate without physical damage and without degradation of performance in all low temperature environments associated with the C0, C1, C2 (-46°C min) climatic regions as described in STANAG 4370, AECTP 200, AECTP 230, Leaflet 2311/1 and Leaflet 2311/2.	Certification or Test Report by Transit Case OEM. AECTP 300, Ed 3, Method 303, Low Temperature, Procedure IIa, Operation (constant temperature) and Procedure III, Manipulation Test, or Equivalent Test Method, conducted at a minimum C2 meteorological air temperature (-46°C) is a sufficient means to demonstrate compliance to this requirement.	
3.2.14	The Transit Case, fully loaded with the MCSW System, must protect the contents from damage when dropped from a height of 1.5 m onto a concrete backed 5cm thick plywood surface at uncontrolled ambient conditions in the following orientations: a. Bottom side; b. Hinge side; c. One end; and d. One corner. Note: a. The drops may be spread over two cases.	Certification or Test Report by Transit Case OEM. AECTP 400, Method 414, Procedure I, or Equivalent Test Method, is a sufficient means to demonstrate compliance to this requirement.	

Table 2: SAT Compliance Checklist to Annex C			
Ref. (Annex C)	Requirement	Method of Verification	Compliant (Y/N)
3.2.15	The Transit Case must not show any signs of leakage or water penetration into the interior where the equipment is being stored when submersed in 1 m of water for 30 minutes.	Certification or Test Report by Transit Case OEM. AECTP 300, Method 307, or Equivalent Test Method, is a sufficient means to demonstrate compliance to this requirement.	
3.3.2.1	The Sling must be the Tab Pinnacle Rifle Sling, part number PRS,E,C,F, NSN 1005-01-664-0176.	Visual and Physical verification in accordance with Attachment 1, Test 1.	
3.3.3.8	The colour of the external surfaces of the Suppressor must be Coyote Tan with a Matte finish, or an alternative color approved by Canada.	Visual and Physical verification in accordance with Attachment 1, Test 1.	
3.3.3.11	The Suppressor must be fitted with a MANTA suppressor sleeve to help reduce mirage.	Visual and Physical verification in accordance with Attachment 1, Test 1.	
3.1.1.2	The Rifle must be compatible with NATO 7.62 x 51mm ammunition in one configuration, and with .338 Lapua Magnum ammunition in another configuration.	Testing in accordance with Attachment 1, Test 3.	
3.5.1.1	The MCSW in the NATO 7.62 x 51mm configuration, with the Suppressor attached, must achieve an Average Mean Radius of 1.2cm or less for 5 groupings of 5 rounds at a range of 100m.	Testing in accordance with Attachment 1, Test 4.	
3.5.1.2	The MCSW in .338 Lapua Magnum configuration, with the Suppressor attached, must achieve an Average Mean Radius of 1.2cm or less for 5 groupings of 5 rounds at a range of 100m.	Testing in accordance with Attachment 1, Test 4.	

Table 2: SAT Compliance Checklist to Annex C			
Ref. (Annex C)	Requirement	Method of Verification	Compliant (Y/N)
3.5.3.1	Every assembled Rifle must be proof tested IAW AC/225(LG/3-SG/1)D/14, para 2.1.4.2 in each calibre configuration, inspected, and have proof marks on all pressure bearing components.	Visual and Physical verification in accordance with Attachment 1, Test 1.	
3.5.6.1	The MCSW in the NATO 7.62 x 51mm configuration must achieve a MPI shift of no more than 29.1mm at a range of 100m between two groupings of five rounds, where the first grouping of 5 rounds is fired with the suppressor attached, and the second grouping is fired after removing and re-attaching the barrel, without removing the suppressor.	Testing in accordance with Attachment 1, Test 4.	
3.5.6.2	The MCSW in the .338LM configuration must achieve a MPI shift of no more than 29.1mm at a range of 100m between two groupings of five rounds, where the first grouping of 5 rounds is fired with the suppressor attached, and the second grouping is fired after removing and re-attaching the barrel, without removing the suppressor.	Testing in accordance with Attachment 1, Test 4.	
3.5.6.3	The MCSW in the NATO 7.62 x 51mm configuration must achieve a MPI shift of no more than 29.1mm at a range of 100m between two groupings of five rounds, where the first grouping of 5 rounds is fired with the suppressor attached, and the second grouping is fired after removing and re-attaching the suppressor.	Testing in accordance with Attachment 1, Test 4.	

Table 2: SAT Compliance Checklist to Annex C			
Ref. (Annex C)	Requirement	Method of Verification	Compliant (Y/N)
3.5.6.4	The MCSW in the .338LM configuration must achieve a MPI shift of no more than 29.1mm at a range of 100m between two groupings of five rounds, where the first grouping of 5 rounds is fired with the suppressor attached, and the second grouping is fired after removing and re-attaching the suppressor.	Testing in accordance with Attachment 1, Test 4.	
3.6.1	All assemblies and sub-assemblies of the MCSW with identical part numbers must be completely interchangeable for the service life of the weapon without affecting fit, form, function, precision and safety, for both calibre configurations.	Testing in accordance with Attachment 1, Test 5.	
3.8.1	The serial number for the suppressor must be visible when the mirage mitigation cover is attached.	Visual inspection in accordance with Attachment 1, Test 1.	