

# **ANNEX C**

## **C22 MODULAR PISTOL PROJECT**

### **PISTOL TECHNICAL AND PERFORMANCE**

### **SPECIFICATION**



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#### **NOTICE**

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1	SCOPE
1.1	Objective
1.1.1	This technical and performance specification defines the technical and performance requirements for the C22 Modular Pistol Project (C22 MPP) Full Frame pistol.
1.1.2	The C22 MPP must deliver a Full Frame (FF) Modular Pistol designated as the C22 FF pistol to meet all operational and training scenarios in which CAF personnel may be employed.
1.1.3	The C22 FF pistol must be standard Military Off The Shelf (MOTS) or Commercial Off The Shelf (COTS).
1.2	Acronyms and Definitions
1.2.1	Acronyms
AAITP	Advanced Aerospace Threat Identification Program
AECTP	Allied Environmental Conditions Test Publication
FED-STD	Federal Standard
C.I.P.	Commission internationale permanente pour l'épreuve des armes à feu portatives
COTS	Commercial Off The Shelf
FF	Full Frame
GFE	Government Furnished Equipment
GSM	Government Supplied Material
IAW	In Accordance With
ISO	International Standards Organization
MIL-STD	Military Standard
MOTS	Military Off The Shelf
mm	millimeter
MPI	Mean Point of Impact
MPP	Modular Pistol Project
MRI	Machine-Readable Information
NATO	North Atlantic Treaty Organization
OEM	Original Equipment Manufacturer

SAAMI	Sporting Arms and Ammunition Manufacturers Institute
STANAG	Standardization Agreement
TA	Technical Authority
TOP	Test Operations Procedure

## 1.2.2 Definitions

- 1.2.2.1 “C22 FF” is the Canadian designation assigned to ~~configuration of~~ the Modular Pistol being procured under this contract.
- 1.2.2.2 “Class 1 Stoppage” is defined as a stoppage of the C22 FF pistol whereby the operator can return the weapon to an operational condition within 10 seconds using only tools and equipment carried in an operational scenario. This class is often referred to as “correctable by immediate actions”.
- 1.2.2.3 “Class 2 Stoppage” is defined as a stoppage of the C22 FF pistol whereby more than 10 seconds are required using only tools and equipment carried in an operational scenario. This class is often referred to as “operator correctable failures”. The operator must clear these stoppages in less than 10 minutes.
- 1.2.2.4 “Class 3 Stoppage” is defined as a stoppage of the C22 FF pistol whereby the stoppage is not correctable by the operator because it requires a higher level of maintenance or the use of tools and parts that the operator is not authorized to carry on his person. It is correctable at the lowest level organizational maintenance (1<sup>st</sup> or 2<sup>nd</sup> line).

1.2.2.5 ~~“Modular Pistol” is defined as a pistol where the entire trigger group can be removed and dropped into another pistol frame size. The pistol frame could be a different size for the same calibre or a pistol frame for a different calibre pistol. This will allow the army the flexibility to convert between calibre and frame sizes with the purchase of a conversion kit. “Modular Pistol” is defined as a Full Frame (FF) pistol that:~~

1.2.2.5.1 is capable of being converted into a compact configuration;

1.2.2.5.2 is capable of being converted into a sub-compact configuration; and

1.2.2.5.3 fires the same ammunition once converted to the compact or sub-compact configuration.

## 2 APPLICABLE DOCUMENTS

### 2.1 Applicability

- 2.1.1 The following documents form part of this specification to the extent specified and are supportive of the specification when referenced; all other document references are to be considered supplemental information only. In the event of a conflict between the documents referenced and the contents of the specification, then the contents of the specification must take precedence.
- 2.2 Commercially Available Documents
  - 2.2.1 AECTP 300: Climatic Environmental Tests, Edition 3;
  - 2.2.2 MIL-STD 810G: Environmental Requirements and Related Test Methods;
  - 2.2.3 STANAG AC/225 (LG/3-SG/1) D/14: Evaluation Procedures for Future NATO Small Arms Weapon Systems;
  - 2.2.4 STANAG 4090: Small Arms Ammunition (9mm Parabellum);
  - 2.2.5 Mil-Std-1913: Dimensioning of Accessory Mounting Rails For Small Arms Weapons; and
  - 2.2.6 Test Operations Procedure (TOP) 03-2-045A Small Arms - Hand and Shoulder Weapons and Machine Guns.
- 3 TECHNICAL AND PERFORMANCE SPECIFICATION REQUIREMENTS
  - 3.1 Calibre
    - 3.1.1 The C22 FF pistol must be chambered for all 9 x 19 mm Parabellum cartridges dimension IAW Annex A to STANAG 4090.
    - 3.1.2 The C22 FF pistol must be rated to fire all 9 x 19 mm Parabellum ammunition manufactured to the technical performance specifications governing design and acceptance of NATO 9 mm ammunition IAW Annex C to STANAG 4090.
    - 3.1.3 The C22 FF pistol must be rated to fire 9 x 19 mm Parabellum ammunition set to the Sporting Arms and Manufacturers Institute (SAAMI) pressure limit for 9 x 19 mm Parabellum +P ammunition without degradation of safety, performance or reliability.
  - 3.2 Action
    - 3.2.1 The C22 FF pistol must be semi-automatic, recoil-operated, magazine fed and striker fired.
  - 3.3 C22 FF Pistol Physical Characteristics

- 3.3.1 The C22 FF pistol barrel must have a minimum length of 105 mm.
- 3.3.2 The C22 FF pistol barrel must have a maximum length of 125 mm.
- 3.3.3 The C22 FF pistol length must not exceed 220 mm when measured from the furthest forward point to the furthest rearward point on the assembled pistol. This measurement is typically from either the front of the slide assembly or barrel to the rear of the grip and frame housing (beavertail).
- 3.3.4 The C22 FF pistol configured with a medium grip size and an empty magazine that holds a minimum of 17 rounds must weigh less than or equal to 840 g.
- 3.3.5 The C22 FF pistol vertical height must not exceed 145 mm when measured from the bottom of the magazine to the top of the rear sights.
- 3.3.6 The left and right side of the slide to the rear and front of the ejection port must have serrations or grooves that enhance the shooters ability to grasp and cycle the slide in wet weather and while wearing temperate combat gloves NSN 8415-21-921-4341.
- 3.3.7 The C22 FF pistol must have a sight radius of 155 mm or greater when measured from the back of the front sight to the back of the rear sight blade.
- 3.4 Sights
  - 3.4.1 The C22 FF pistol front and rear sights must allow the shooter to acquire proper sight alignment.
  - 3.4.2 The C22 FF pistol must have square-notch horizontal three dot sights IAW Figure 1.
  - 3.4.3 The proper alignment of the C22 FF pistol sights must be consistent with equal height and equal light sight alignment.
  - 3.4.4 The C22 FF pistol sights must have an etched vertical 1.0 mm alignment mark to facilitate rapid sight picture engagement IAW Figure 1 unless the pistol is being delivered with hi-visibility tritium dot front and rear sights.

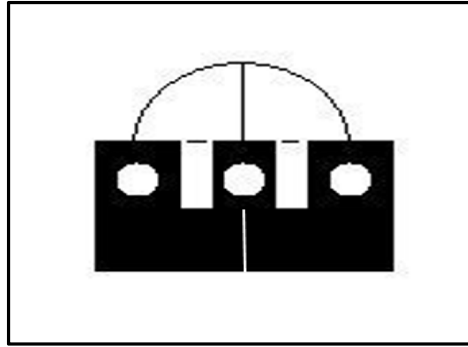


Figure 1: Vertical Alignment Mark

- 3.4.5 The C22 FF pistol sights must withstand 35,000 rounds of endurance firing and be made of steel or an alternative material approved by the TA.
- 3.4.6 The C22 FF pistol rear sight must allow the shooter to perform immediate action drills where the front edge of the rear sight is supported against the edge of a belt or holster or edge of a ballistic shield to cycle the slide.
- 3.4.7 The C22 FF pistol sights must be black and non-reflective.
- 3.4.8 The vertical alignment mark must be the same contrasting colour as the front and rear dots unless the pistol is being delivered with hi-visibility tritium dot front and rear sights in which case the alignment mark is not required.
- 3.4.9 The front and rear sights must be removable using common tools or special tooling available from the Original Equipment Manufacturer (OEM).
- 3.4.10 The windage adjustment must allow for a range of sight adjustment to move the point of impact by at least 75 mm from the point of impact when fired from 25 m.
- 3.4.11 The front and rear sights must not shift once zeroed.
- 3.4.12 The C22 FF pistol must be delivered from the factory zeroed for shooting at 25 m using Cartridge 9mm Ball Cdn Mk 1, NSN 1305-20-000-6943 provided as GSM.
- 3.4.13 The C22 FF pistol sights must be replaceable with ~~available~~-high visibility night sights that glow to permit intuitive target acquisition for tactical low light shooting.

- 3.4.14 The C22 FF pistol slide must be replaceable with a separately demandable slide (which includes a loaded chamber indicator) that is configured so that a commercially available reflex/red dot sight (e.g. Leupold DeltaPoint® Pro, Trijicon RMR® or similar) can be mounted at the rear of the slide in front of the rear sight.~~The C22 FF pistol must have a separately demandable replacement slide configured to mount commercially available reflex/red dot sight (e.g. Leupold DeltaPoint® Pro, Trijicon RMR® or similar) at the rear of the slide in front of the rear sights.~~
- ~~3.4.15 The loaded chamber indicator on a separately demandable replacement slide IAW paragraph 3.4.14 must be located on the top of the slide or on the right side of the slide on the extractor.~~
- 3.5 C22 FF Pistol Markings
- 3.5.1 Each C22 FF pistol delivered to Canada must be stamped or laser engraved with a proof mark on all components exposed to the pressure event using a cartridge that meets the requirement of paragraph 3.18.1.
- 3.5.2 The C22 FF pistol ~~trigger group~~ must be ~~permanently~~ stamped or engraved with a unique serial number using YYKANNNNN format unless an alternative format is approved by the TA. Where YY designates the last two digits of the year of manufacture. KA designates the C22 FF pistol. NNNNN is the unique serial number which starts at 00001 and increments by 1 for each C22 FF pistol delivered to Canada (21KA00001 would be the first pistol manufactured in 2021).
- 3.5.3 The C22 FF pistol ~~trigger group~~ serial number must be visible when the C22 FF pistol is fully assembled.
- 3.5.4 ~~The C22 FF pistol trigger group must be the only component marked with the serial number.~~The unique serial number on a C22 FF pistol that meets the requirements described in 3.5.1, 3.5.2 and 3.5.3 must remain the same when the pistol is converted into a compact or sub-compact pistol configuration.
- 3.5.5 The C22 FF pistol barrel must be stamped or laser engraved with “C22 9 x 19 mm” to designate the pistol frame size designation and calibre.
- 3.5.6 The C22 FF pistol slide must be stamped or laser engraved IAW Figure 2 to identify it as a Canadian Armed Forces pistol.





Figure 2: Distinctive Canadian Armed Forces Markings.

- 3.5.7 The maple leaves ~~at requirement~~required by 3.5.6 must meet the requirements ~~of described at~~ [https://commons.wikimedia.org/wiki/File:Flag\\_of\\_Canada\\_\(construction\\_sheet\\_-\\_leaf\\_geometry\).svg](https://commons.wikimedia.org/wiki/File:Flag_of_Canada_(construction_sheet_-_leaf_geometry).svg)
- 3.5.8 All markings must be permanent for the life of the pistol.
- 3.6 Rails
  - 3.6.1 The C22 FF pistol must have an integral Accessory Mounting Rail IAW Mil-Std 1913 located on the bottom of the pistol ~~forward~~ahead of the trigger guard.
  - 3.6.2 The Accessory Mounting Rail must allow items such as tactical flashlights and laser pointers to be mounted to the pistol.
- 3.7 Trigger Group
  - 3.7.1 ~~The trigger group must be removable as a complete assembly.~~ NOT USED
  - 3.7.2 ~~The trigger group must fit/function in any grip frame housing regardless of slide size or calibre.~~ NOT USED
  - 3.7.3 NOT USED
  - 3.7.4 The trigger pull must be consistent in both length and weight of pull for the first and all subsequent shots.
  - 3.7.5 The trigger must have a quick tactile reset to facilitate faster more consistent shooting.
  - 3.7.6 The trigger pull weight must be no less than 2.5 kgs and not exceed 3.2 kgs.

- 3.7.7 When the C22 FF pistol is loaded tThe trigger must automatically return to its normal forward most position upon release after partial or complete trigger pull.
- 3.7.8 The trigger pull must be measured during production to confirm that it is compliant to the requirement at paragraph 3.7.6.
- 3.7.9 The trigger pull weight for each pistol must be consistent with a maximum deviation of ~~+/-~~ 0.2 kgs measured over 10 trigger pulls from each pistol.
- 3.7.10 The C22 FF pistol trigger group must not be manually adjustable by the operator.
- 3.7.11 The trigger guard must permit the shooter to safely fire the pistol while wearing temperate combat gloves NSN 8415-21-921-4341.
- 3.8 External Slide Lock
  - 3.8.1 The slide lock must retain the slide to the rear position upon firing the last round in the magazine to permit the shooter to rapidly confirm his pistol does not have a round in the magazine or chamber.
  - 3.8.2 The slide lock must be easily disengaged by the shooter while maintaining positive control of the pistol.
  - 3.8.3 The slide lock must be positioned in such a manner that it is unlikely the shooter will inadvertently engage or override the control during normal operation/firing of the pistol.
  - 3.8.4 The slide lock must be ambidextrous and allow both left and right-handed shooters to operate the slide lock in an identical manner.
  - 3.8.5 The slide lock must be disengaged using only the dominant hand thumb.
- 3.9 Safety Mechanism
  - 3.9.1 ~~The C22 FF pistol must have a visible and tactile loaded chamber indicator on the top of the slide.~~The C22 FF pistol must have a visible and tactile loaded chamber indicator that is visible to personnel standing immediately to the right and immediately to the left of the shooter when the shooter is in the shooting position as illustrated in Figure 3.



Figure 3: Right Handed Shooter In The Shooting Position

- 3.9.2 The C22 FF pistol must have a striker deactivation button or other mechanical mechanism that will allow the shooter to disassemble the pistol without having to pull the trigger.
- 3.9.3 If a tool is required to allow the shooter to activate the striker deactivation button this tool must be delivered with each pistol.
- 3.9.4 The C22 FF pistol must not have a manually applied safety mechanism (note that a trigger equipped with a trigger blade safety is not considered a manually applied safety mechanism for the purposes of this solicitation).
- 3.9.5 The C22 FF pistol must not have a manual external thumb, finger, or grip actuated de-cocking device or lever.
- 3.9.6 The C22 FF pistol mechanical safety mechanisms must prevent a loaded pistol from being accidentally discharged under all operational scenarios until such time as the soldier deliberately moves the trigger through a complete length of pull by applying a force to the trigger that exceeds the lower trigger pull force design requirement of 2.5 kgs, which is the minimum acceptable force necessary to discharge the pistol.
- 3.9.7 The C22 FF pistol must have a visible and tactile loaded chamber indicator that is visible to the shooter (left or right handed) when the shooter is in the shooting work space as illustrated in Figure 4.



Figure 4: Right Handed Shooter In The Shooting Work Space

- 3.10 Magazine
- 3.10.1 The magazine must have a minimum of 6 numerically marked witness holes that permit viewing the number of rounds remaining. It is preferred that witness holes exist for each cartridge contained in the magazine starting with cartridge number 4 and showing every cartridge contained in the magazine thereafter.
- 3.10.2 The magazine must positively lock in the magazine well and remain locked until such time as the shooter fully depresses the magazine catch.
- 3.10.3 The follower must move freely in the body of the magazine and it must positively align and feed the top cartridge into the C22 FF pistol to be fired.
- 3.10.4 The magazine must release and fall free from the magazine well when the magazine catch is completely depressed regardless of the number of cartridges contained within the magazine and regardless of the position of the slide (forward or locked to the rear). This is required when the pistol is held with the C22 FF pistol pointed such that the magazine base plate is oriented directly towards the ground.
- 3.10.5 The magazine base plate must be removable to permit the disassembly and cleaning of the magazine assembly.
- 3.10.6 The C22 FF pistol magazine must be drop tested by dropping the fully loaded pistol magazine from a height of 1.2 m, onto a concrete backed, 5

cm thick plywood surface or an alternative test procedure approved by the technical authority using the following four magazine drop impact orientations:

- 3.10.6.1 Follower Down: Cartridges pointing down to the concrete floor;
- 3.10.6.2 Follower Up: Cartridges pointing ~~up~~away from the concrete floor;
- 3.10.6.3 Right Long Side (Horizontal): Right Long Side of the magazine must be oriented as the closest part of the magazine to the concrete floor; and
- 3.10.6.4 Left Long Side (Horizontal): Left Long Side of the magazine must be oriented as the closest part of the magazine to the concrete floor;
- 3.10.6.5 After each drop (3.10.6.1-3.10.6.4) the magazine must remain serviceable (i.e., the magazine can be inserted into a C22 FF pistol, the magazine properly presents and loads a cartridge when the pistol is readied and the pistol can be fired and load the next cartridge without stoppage).
- 3.10.7 The slide lock must retain the slide to the rear position when the slide is manually pulled to the rear and a fully seated empty magazine is in the pistol.
- 3.10.8 The slide lock must not engage and allow the slide to move into battery when the slide is manually pulled to the rear and a fully seated loaded magazine is in the pistol.
- 3.10.9 The C22 FF pistol magazine must self-drain after being submersed in water within 5 seconds following which is can safely fire a cartridge.
- 3.10.10 The C22 FF pistol must hold a minimum of 17 rounds in a double stacking single feed magazine.
- 3.10.11 The C22 FF pistol must be able to fire a chambered cartridge when the magazine is removed.
- 3.11 Magazine Catch Release
  - 3.11.1 The magazine catch release must be located near the area where the trigger guard attaches to the grip frame housing.
  - 3.11.2 The magazine catch release must be ambidextrous to permit use by both right and left-handed shooters. It is allowable for this to be achieved by moving the release from one side of the pistol to the other side.

- 3.11.3 The C22 FF pistol must be delivered with the magazine catch release configured for its release with the right hand (right-handed shooter).
- 3.11.4 The magazine catch release must allow for positive release of the magazine when fully depressed by the shooter.
- 3.12 Grip Frame Housings
  - 3.12.1 The C22 FF pistol must be available in 3 grip frame housing sizes designated as small, medium and large to permit proper handling by shooters with different size hands.
  - 3.12.2 The 3 grip frame housing sizes can be achieved by providing 3 separate grip frame housings or one grip frame housing to which back straps can be mounted to achieve the small, medium and large grip frame sizes.
  - 3.12.3 If back straps are used, they must be positively retained and not come loose or detach from the grip frame housing.
  - 3.12.4 If back straps are used, they must mount seamlessly to the grip frame housing to prevent catching edges of the back straps and pinching of the hand during handling and shooting.
  - 3.12.5 The grip frame housings and back straps must have a textured non-slip surface to permit proper gripping of the pistol in wet weather and while wearing temperate combat gloves NSN 8415-21-921-4341.
  - 3.12.6 The grip frame housings and back straps must be universal for a left or right-handed shooter.
  - 3.12.7 The grip frame housing and back straps must not be secured by screws.
  - 3.12.8 If grip frame housings are utilized, they must have visible permanent markings that identify them as being small, medium or large.
  - 3.12.9 If back straps are utilized, they must have visible permanent markings that identify them as being small, medium or large.
  - 3.12.10 If tools are required to allow the shooter to change the grip frame housing or back straps these tools must be delivered with each pistol.
  - 3.12.11 The grip frame housing must permit the attachment of a lanyard such that it does not interfere with the normal operation of the pistol.

- 3.12.12 The C22 FF pistol must be delivered in a medium grip frame housing size achieved with a medium grip frame size housing or a grip housing to which a medium back strap has been installed.
- 3.12.13 The remaining grip frame housing sizes (small and large) or back strap sizes (small and large) that are not part of the configuration at 3.12.12 must be available as a spare part.
- 3.13 Exterior Finish
- 3.13.1 The exposed parts including grip frame housing, back straps, frame, slide and magazine base plate of the C22 FF pistol must have a non-reflective matte finish that is equivalent in colour to Cerakote GEN II Flat Dark Earth (FDE) HIR-265 and approved by the Technical Authority which can be achieved through any colouring process (such as but not limited to base colour, nitrate coating process, anodizing).
- 3.13.2 All exterior parts must be devoid of gouges, sharp edges or rough areas that could snag on holsters, clothing or cause injury or discomfort to a shooter while manipulating or shooting the pistol.
- 3.13.3 The finish must be durable, meaning that it is abrasion, rust and saltwater corrosion resistant.
- 3.14 Internal Finish
- 3.14.1 All internal surfaces must be void of rough surfaces at critical points of movement and polished as necessary to provide minimal friction and wear to promote functional reliability.
- 3.14.2 Internal parts finish must be durable, meaning that it is abrasion, rust and saltwater corrosion resistant.
- 3.15 Performance
- 3.15.1 The C22 FF pistol must not require major component replacement through its service life of 35,000 rounds where major components are defined as the trigger group and slide assembly (less but not including springs that are subject to defined maintenance/replacement schedules).
- 3.15.2 The C22 FF pistol must have a mean rounds between stoppages rating of 2,000 rounds for Class 1 stoppages.
- 3.15.3 The C22 FF pistol must have a mean rounds between stoppages rating of 2,000 rounds for Class 2 stoppages.

- 3.15.4 The C22 FF pistol must have a mean rounds between failure of 5,000 rounds for Class 3 stoppages.
- 3.15.5 The C22 FF pistol must maintain its precision as specified at paragraph 3.16.1 through its service life of 35,000 rounds without any ~~with no~~ barrel replacement prior to 20,000 rounds.
- 3.15.6 The C22 FF pistol must be operable and able to fire three full magazines in 60 seconds without cooling the pistol.
- 3.16 Precision
- 3.16.1 The C22 FF pistol must achieve a maximum extreme spread of 12 cm when a 5 round grouping is fired from 25 m ~~in an indoor range at 20 deg C ambient temperature~~ using Cartridge 9mm Ball Cdn Mk 1, NSN 1305-20-000-6943 provided as GSM.
- 3.17 Suppressor
- 3.17.1 It must be possible for the shooter to replace the barrel of the C22 FF pistol with a threaded barrel that is fit to receive a suppressor without having to make other changes to the C22 FF pistol other than to install taller sights.
- 3.17.2 A suppressor that can achieve an 18 dB noise reduction must be available for the C22 FF pistol.
- 3.17.3 Other than being taller the suppressor sights must be identical in design to those installed on the C22 FF pistol.
- 3.17.4 The suppressor weight out of the box must be less than 340 g.
- 3.17.5 The precision of the C22 FF pistol must meet the precision requirements at 3.16.1 both with and without the suppressor installed.
- 3.18 High Pressure Test
- 3.18.1 Every assembled C22 FF pistol must be proof tested IAW Commission internationale permanente pour l'épreuve des armes à feu portatives ~~ested~~ (C.I.P.) or SAAMI standards using a high pressure test (proof) cartridge at 130% of the design pressure of a cartridge that meets the requirements of paragraph 3.1.3 or an alternative test standard approved by the technical authority.
- 3.18.2 On completion of proof testing all components exposed to the pressure event must subjected to pass a Magnetic Particle Inspection or an



alternative non-destructive test approved by the TA, to ensure that they have not been deformed or damaged.

- 3.18.3 Every C22 FF pistol that successfully passes proof testing must be marked IAW the requirements of 3.5.1.
- 3.18.4 Every C22 FF pistol that fails proof testing must not be sold to Canada.
- 3.19 Interchangeability
  - 3.19.1 The C22 FF pistol sub-assemblies with identical part numbers must be completely interchangeable for the service life of the pistol without affecting fit, form, function, precision and safety when tested IAW AC/225(LG/3-SG/1)D/14, section 2.18 Interchangeability (1) New Weapon and (2) Worn Weapon or an alternative test approved by the technical authority.
- 3.20 Operational Environments
  - 3.20.1 The C22 FF pistol must be fully operational in MIL-STD-810G climatic conditions A1, A2, A3, B1, B2, B3, C1 and C2 including exposure to environmental conditions ranging from blowing sand and dust of the desert to the brittle arctic cold and corrosive salt of the ocean.
  - 3.20.2 The C22 FF pistol when prepared for low temperature operation, must meet its performance requirements, and fire 20 rounds with no more than one (1) Class 1 Stoppage, during exposure to -46°C IAW AECTP 300, Method 303, Low Temperature, Procedure IIa – Operational Test (Constant temperature with operational tests conducted following stabilization) an alternative test approved by the technical authority.
  - 3.20.3 The C22 FF pistol when prepared for high temperature operation, must meet its performance requirements, and fire 20 rounds with no more than one (1) Class 1 Stoppage, during exposure to +49°C IAW AECTP 300, Method 302, High Temperature Operation – (Including Radiative Heating), Procedure II – High Temperature Operation (Constant temperature with operational tests conducted following stabilization) an alternative test approved by the technical authority.
  - 3.20.4 The C22 FF pistol when prepared for humidity testing must meet its performance requirements, and complete the testing with no more than one (1) Class 1 Stoppage when tested IAW TOP 03-2-045A section 4.5.2 Humidity or AC/225(LG/3-SG/1)D/14 section 2.9.3 Temperature and Humidity an alternative test approved by the technical authority.

- 3.20.5 The C22 FF pistol must have been tested IAW TOP 03-2-045A section 4.5.8 Icing or AC/225(LG/3-SG/1)D/14 section 2.9.4 Icing Test an alternative test approved by the technical authority.
- 3.20.6 The C22 FF pistol must have been tested IAW TOP 03-2-045A section 4.11 Blocked Barrel with the three most likely obstructions to be encountered by a soldier (muzzle obstruction, water filled bore and bullet obstruction) or AC/225(LG/3-SG/1)D/14 section 2.10.3 Obstruction in Barrel or an alternative test approved by the technical authority.
- 3.20.7 The C22 FF pistol when prepared for fresh water immersion testing must meet its performance requirements, and fire 15 rounds with no more than one (1) Class 1 Stoppage when tested IAW TOP 03-2-045A section 4.5.6.a Freshwater Immersion Test or an alternative test approved by the technical authority.
- 3.20.8 The C22 FF pistol when prepared for salt water immersion testing must meet its performance requirements when tested IAW TOP 03-2-045A section 4.5.6.b Saltwater Immersion Test or AC/225(LG/3-SG/1)D/14 section 2.13.4 Salt Water Immersion Test Resistance to Corrosion or an alternative test approved by the technical authority.
- 3.20.9 The C22 FF pistol when prepared for salt water fog testing must meet its performance requirements when tested IAW TOP 03-2-045A section 4.5.7 Salt Fog or AC/225(LG/3-SG/1)D/14 section 2.13.3 Salt Fog Test or an alternative test approved by the technical authority.
- 3.20.10 The C22 FF pistol when prepared for fresh water spray rain testing must meet its performance requirements, and complete the testing with no more than one (1) Class 1 Stoppage when tested IAW TOP 03-2-045A section 4.5.3 Water Spray (Rain) Test or AC/225(LG/3-SG/1) D/14 section 2.13.2 Accelerated Water Spray Test or an alternative test approved by the technical authority.
- 3.20.11 The C22 FF pistol when prepared for mud testing must meet its performance requirements, and complete the testing with no more than one (1) Class 1 Stoppage when tested IAW TOP 03-2-045A section 4.5.5 Mud Test or AC/225(LG/3-SG/1)D/14 section 2.13.7 Mud or an alternative test approved by the technical authority.
- 3.20.12 The C22 FF pistol when prepared must withstand and not be damaged by exposure to weapon cleaning products, liquids, lubricants and insecticides when tested IAW tested IAW TOP 03-2-045A section 4.6 Chemical Compatibility for products item numbers 1,5,6,7,9,10, 13 and

18 or AC/225(LG/3-SG/1)D/14 section 2.17.1 Chemical Resistance for product item numbers 1,5,6,7,9,11,14 and 19.

- 3.21 1.5 Meter Safety Drop
- 3.21.1 The C22 FF pistol in its operational state (full magazine with a primed cartridge in the chamber) must not discharge when dropped 1.5 m, onto a concrete backed, 5 cm thick plywood surface, IAW TOP 03-2-045A section 4.8.2 1.5 Meter (5 Feet) Drop or AC/225(LG/3-SG/1)D/14 section 2.10.8 Safety Drop Test 1.5 Meter or an alternative test approved by the technical authority using the following drop orientations:
  - 3.21.1.1 Muzzle Down: Muzzle must be the closest part of the pistol to the concrete floor;
  - 3.21.1.2 Muzzle Up: Muzzle must be the farthest part of the pistol to the concrete floor;
  - 3.21.1.3 Slide Up (Horizontal): Top of the slide must be the farthest part of the pistol to the concrete floor;
  - 3.21.1.4 Slide Down (Horizontal): Top of the slide must be the closest part of the pistol to the concrete floor;
  - 3.21.1.5 Right Side (Horizontal): Right side of the pistol must be oriented as the closest part of the pistol to the concrete floor;
  - 3.21.1.6 Left Side (Horizontal): Left side of the pistol must be oriented as the closest part of the pistol to the concrete floor.
- 3.21.2 After each drop (3.21.1.1-3.21.1.6) each pistol must fire 15 rounds of ammunition.
- 3.22 C22 FF Pistol Shipping and Storage Carrying Case
- 3.22.1 The shipping and storage carrying case must be opaque so that the contents within the case are not visible when the case is closed.
- 3.22.2 The shipping and storage carrying case must be stackable.
- 3.22.3 The shipping and storage case must have a foam insert that does not absorb water and will separate and secure all system components for storage and transport.
- 3.22.4 The shipping and storage case must be approved for transportation of a pistol on all commercial airlines in Canada and the United States of America.

- 3.22.5 The shipping and storage case must have latches that prevent the case from opening.
- 3.22.6 The shipping and storage case must have a hinged lid that will lay flat when opened.
- 3.22.7 The shipping and storage case must lock with padlock(s) with a shackle diameter of 3 mm or greater through either the case latches or case eyelet(s).~~The shipping and storage case must have a minimum of one padlock hasps sized for padlocks with a shackle diameter of 3 mm or greater.~~
- 3.22.8 The shipping and storage case when locked with padlock(s) ~~installed in available padlock hasps~~ must make it impossible to remove contents by hand.
- 3.22.9 The shipping and storage case must have a carrying handle.
- 3.22.10 The shipping and storage case must securely store items 1, 2 and 4 as defined in Annex B Figure 1.
- 3.22.11 It must be possible to drop the shipping and storage case with all contents at paragraph 3.22.10, onto a concrete backed, 5 cm thick plywood surface, IAW TOP 03-2-045A section 4.8.2 1.5 Meter (5 Feet) Drop with an adjusted drop height of 1.0 meter or AC/225(LG/3-SG/1)D/14 section 2.10.8 Safety Drop Test 1.5 Meter with an adjusted drop height of 1.0 meter or an alternative test approved by the technical authority without resulting in damage to the items contained in the shipping and storage case using the drop orientations described in 3.21 and the storage case must still meet the requirements of 3.22.8.
- 3.23 Holster System
- 3.23.1 The C22 FF pistol must be compatible with various commercially available Holsters Systems meeting the Technical and Performance Specifications detailed in Annex D.

### 3.24 Compact and Sub-Compact Configurations

3.24.1 When the C22 FF pistol is in the “compact configuration” the overall length of the pistol must be at least 12 mm shorter than the overall length of the pistol when in a C22 FF pistol configuration.

3.24.1.1 The C22 FF must have been sold commercially in the compact configuration (or, in the alternative, conversion kits that convert the full frame pistol to the compact configuration must have been sold commercially) by the manufacturer or its resellers to end-user customers

for at least 12 months, as demonstrated through the submission in the bid of invoices from at least 3 customers.

3.24.2 When the C22 FF pistol is in the “sub-compact configuration” the overall height (including magazine) of the pistol must be at least 5 mm shorter than the overall height (including magazine) of the pistol when it is in a compact configuration.

3.24.2.1 The C22 FF must have been sold commercially in the sub-compact configuration (or, in the alternative, conversion kits that convert the full frame pistol to the sub-compact configuration must have been sold commercially) by the manufacturer or its resellers to end-user customers for at least 12 months, as demonstrated through the submission in the bid of invoices from at least 3 customers.