HEADQUARTERS
PHILIPPINE ARMY
OFFICE OF THE ARMY CHIEF QUARTERMASTER
Fort Andres Bonifacio, Metro Manila

PA SPECIFICATION

QM SPEC NR OE-21PAMC-1
w/ AMENDMENT 2
27 OCT 2020
Interim
SUPERSEDING
QM SPEC NR OE-21PAMC-1
w/ AMENDMENT 1
22 March 2018

PHILIPPINE ARMY MANEUVERABLE CANOPY, MODEL 1, "HARIBON"

1. GENERAL

1.1 Scope – This specification covers general and specific requirements for one type of Personnel Parachute and components consist of a Main and Reserve parachute with Automatic Activation Device (AAD) for the Philippine Army.

1.2 Grade – The finished Military Parachute shall conform to the quality and grade of product prescribed by this specification.

1.3 Type – This specification covers only one type of Personnel Parachute with usage specified in para 1.1.

2. REQUIREMENTS

2.1 First Article – One (1) sample of Military Parachute shall be subjected to a first article inspection in accordance with para 3.1.

2.2 Basic Material

2.2.1 Main Parachute

2.2.1.1 Dome Canopy

Inflated Canopy Diameter	32 feet
Shape	Annular
Number of Gores	30
Canopy Material: Double Ripstop parachute fabric that conforms to PIA-C-2005	
360 degree turn rate	4 – 6 seconds
Rate of Descent	4.5 – 5.5 m/s at 170 kgs (15-18 ft/s at 375 lbs)

2.2.1.2 Suspension Lines

Type and Material	Tubular Braided Nylon Cord (Finger Trap/Splice)
Length	7.0 meters
Tensile Strength	270 kg (minimum)

2.2.1.3 Deployment Bag (D-Bag)

Static Line Length	4.6 – 5 meters
Extension and snap hook	1.5 - 2 meters
Static Line Tensile Strength	1,814 kgs (minimum)

2.2.1.4 Pack Tray Assembly – it shall have a saddle design with multi-directional adjustment that fits a wide range of sizes of jumpers. The pack webbing shall have protection pad collar, comfort pads at the shoulder and the leg straps. The pack closing loop shall have four (4) stainless steel closing rings.

2.2.1.5 Harness Assembly – it shall have a high precision canopy release with quick ejector snap. The harness shall have a minimum tensile strength of 3,175kgs and conform to PIA – W – 4088 type XIII.

2.2.1.6 Riser – it shall be equipped with Steering Lines and Soft toggles. It shall have a length of 75 to 76 cm and a minimum tensile strength of 3,175kgs and conform to PIA – W – 4088 type XIII.

2.2.2 Reserve Parachute

2.2.2.1 Dome Canopy

Inflated Canopy Diameter	24 feet
Number of Gores	24
Canopy Material:	Ripstop parachute fabric that conforms to PIA-C-44378

2.2.2.2 Suspension Lines

Lines Material	Tubular Braided Nylon Cord (Finger Trap/Splice)
Suspension Line Length	5.5 – 6.5 meters
Tensile Strength	270 kgs (minimum)
Number of Suspension Lines	24

2.2.2.3 Pack Tray Assembly – it shall be made of Nylon duck and contains a pack frame for rigidity. The pack tray shall have a dimension of not more than 530mm x 360mm x 170mm. The ripcord shall be positioned at the center.

2.2.2.4 Riser – it shall be equipped with steering lines and soft toggles. It shall have a length of 20 to 25 cm and a minimum tensile strength of 3,175kgs and conform to PIA–W–4088 type XIII on Nylon woven webbing. The Connector Snap shall be made of Cadmium plated with a minimum tensile strength of 225kgs. The steering lines of the Riser shall be steerable with soft toggle lines.

2.2.2.5 Ripcord Assembly – the Ripcord grip shall be made of Cadmium plated steel. The cable shall be flexible steel and resistant to corrosion. The ripcord shall consist of a maximum of two (2) locking pins.

2.2.2.6 Pilot Parachute

Type of Activation	Spring Activated through AAD
Material	Nylon Ripstop – PIA-MIL-C-2005
Shape	Vane Parachute
Type & Material (Suspension Lines)	Tubular Braided Nylon Cord (Finger Trap/Splice)
Tensile Strength (Suspension Lines)	250kgs (minimum)

2.3 Construction and Design

2.3.1 Main Parachute

2.3.1.1 It shall be a Dome Canopy in Annular shape that will not lie flat when spread out. The canopy shall be Olive Drab in color and it shall have a vent hole at the apex to allow some air to flow through the open canopy. It shall have a feature of an anti-inversion net. The printed serial numbers of the canopy shall be the same with the deployment bag.

2.3.1.2 Suspension Lines – it shall be equipped with soft steering toggles. The suspension line shall be continuous and without splices or knots for each length. All lines for one canopy shall be made from the same continuous length of cord.

2.3.1.3 The deployment bag shall be made of cotton, Olive Drab in color and elastic textile. The serial number is printed on the Deployment bag and the static line and snap hook shall be universal. The static line shall be new with shock absorber and inserted protector flap.

2.3.2. Reserve Parachute

2.3.2.1 It shall be a Dome Canopy and Olive Drab in color. It shall have a serialized printed number.

2.3.2.2 The pilot parachute shall consist of at least a pilot chute and ejection device located in the reserve parachute. The ejection device shall be spring activated and shall function accordingly when the reserve parachute is activated.

"2.3.2.3 The system has a military approval in a NATO standard. DELETED".

2.4 Technical Requirements and Performance

2.4.1 Main Parachute

Maximum exit altitude ---------- 15,000 feet ASL
Minimum exit altitude ---------- 400 feet
Maximum exit velocity ---------- 140 - 180 knots
Minimum Exit Velocity ---------- 75 knots
Maximum Wind speed employment ---------- 18 knots
Oscillation ---------- 0 – 2 degrees Vertical
Anti-inversion net ---------- Yes
Weapon Placement ---------- Yes
Maximum number of jumps ---------- No limit (within service life)
Forward speed ---------- 2 – 6 meters/sec
Service Life ---------- 15 Years
Shelf Life ---------- 17 years
Maximum Load weight capacity ---------- 180 kgs
Enclosure with jump & rigger logs ---------- Yes
Other Safety & Security Features:
a) Canopy release protection cover -------- Yes
b) Shoulder Protection collar ---------- Yes
c) Shock absorber on static line ---------- Yes

2.4.2 Reserve Parachute

Maximum Load weight capacity ---------- 180 kgs
Deployment Assistance Device (DAD ---------- Yes
Automatic Activation Device (AAD) ---------- Yes
Rate of Descent ---------- 6 – 7 m/sec
Oscillation ---------- 0 – 2 degrees Vertical
Anti – inversion net ---------- Yes
Service Life ---------- 15 years
Shelf Life ---------- 15 years
Enclosure with jump and rigger logs ---------- Yes
Other Safety & Security Features:
Reserve Canopy is steerable or non-steerable

2.4.2.1 It shall have one kit bag that can put up the Main and Reserve parachutes and the helmet.

2.5 Functional Test and Performance Test

2.5.1 The product shall be put to actual use to determine its serviceability and ensure that the item is in good condition.

2.5.2 The product shall be tested at various conditions on a specified number of frequencies as prescribed in the contract and if deemed practical and necessary.

2.6 Workmanship

2.6.1 Design – the Personnel Parachute and components shall conform to the quality of product established by the specification and documents herein.

2.6.2 Finish – the Personnel Parachute shall be clean, well finished and free from any defect or blemish which may affect its appearance or serviceability. Overall workmanship shall be the best known to the trade. Poor quality sewing of workmanship shall be sufficient ground for rejection of the finished article.

2.6.3 Label – the parts of the parachute shall be labeled such as but not limited to serial number and the date of manufacture. It shall provide user's manual, technical/maintenance manual, parts manual/catalog that contains essential information and data about the product.

2.6.4 Warranty – all items and components of the Military Parachute shall have a minimum of one (1) year warranty.

3. VERIFICATION

First Article Inspection – The contractor shall provide one (1) sample of the Personnel Parachute for visual inspection unless otherwise stated in the contract. Any defect or nonconformance shall be cause for rejection of the first article.

3.1 Inspection

Final inspection of the finished article shall be made either at point of production or at point of delivery or as designated in the Contract of the procuring agency.

3.2 Tests

3.2.1 Government standard method of test to determine compliance with this specification shall be followed whenever or wherever applicable. Potential or prospective bidders are encouraged to become familiar with the scope of test to which the Personnel Parachute will be subjected. The bid samples of the Personnel Parachute shall undergo test and evaluation during post qualification test and acceptance test at authorized testing facility specified in the contract to determine the extent of compliance

with the requirements of this specification insofar as the material requirements and performance are concerned.

3.2.2 The Post Qualification (PQ) Team shall conduct post qualification evaluation and tests (as may be practically necessary), in order to verify, validate, and ascertain whether all statements made and the documents submitted comply with the provisions set forth in this Technical Specification.

3.2.3 The Technical inspection and Acceptance Committee (TIAC) shall conduct inspection and tests (as may be practically necessary), in order to determine the compliance of the item to the required Specifications of the Procuring Entity using the Technical Specifications and corresponding Test and Acceptance Procedures indicated herein.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for Inspection – Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the government. The government reserves the right to perform any of the inspections set forth in the specifications which are deemed necessary to assure that supplies and materials conform to prescribed requirements.

4.2 Responsibility for Compliance. All items must meet all the requirements of Sections 2 and 3. The inspections set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of assuring that all products or supplies submitted to the government for acceptance comply with all the requirements of the contract. Sampling in quality conformance does not authorize submission of known defective material either indicated or actual, nor does it commit the government of defective material.

4.3 Certification of Compliance. When the certificates of compliance are submitted, the Government reserves the right to inspect such items to determine the validity of the certification. The following certification *(In English translation)* shall be provided by the manufacturer from authorized organization/agency such as but not limited to:

a) ISO 9001 or AS 9100
b) Certification of membership from Parachute Industry Association (PIA)

5. PACKING AND PACKAGING

Packing for the Personnel Parachute shall be in accordance with the best method currently being employed by the contractor.

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6. NOTES

6.1 The Military Parachute shall be compliant to NATO standard or its equivalent that has reputable credibility on the standards of manufacturing the product.

6.2 Every material in the parachute system is Mil-Spec material. That means that the highest possible quality standard is met and that those materials will be available on the market always in the same specification.

6.3 The contractor shall provide training/demonstration as to the functions and operational usage of the product to the intended end-users on certain duration as specified in the contract.

6.4 Amendment notations – The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations.

Prepared by:

GENER C CONTILLO
Major, (QMS) PA
Chief, Plans & Research Branch

Recommend Approval:

EDMUNDO S SUFICIENCIA
Colonel, QMS (GSC) PA
Chief

Approved by:

CIRILITO E SOBEJANA
Lieutenant General, PA
Commanding General, PA

HEADQUARTERS
PHILIPPINE ARMY
OFFICE OF THE ARMY CHIEF QUARTERMASTER
Fort Andres Bonifacio, Metro Manila

TEST AND EVALUATION PROCEDURES

PHILIPPINE ARMY MANEUVERABLE CANOPY, MODEL 1, "HARIBON" QM SPEC NR OE-21PAMC-1 with Amendment 2 dated 27 OCT 2020

A. POST QUALIFICATION PROCEDURES

SECTION 1 – GENERAL

1.1 AUTHORITY: The Test and Evaluation (T&E) is being conducted in line with the provisions of the RA 9184.

1.2 OBJECTIVE: The objective of this T&E is to determine and ascertain the compliance of the Bidder with the Lowest Calculated Bid (LCB) on the Technical Specification of PA Maneuverable Canopy, Model 1"HARIBON" QM SPEC NR OE-21PAMC-1 with Amendment 2 (for brevity, "Parachute").

1.3 SCOPE: This T&E Procedures shall apply only for this project of Philippine Army "Parachute".

1.4 METHODOLOGY: The tests include physical inspection and laboratory tests for the Parachute. Records check on the literature of the product will also be conducted as appropriate including third party publications/certifications.

1.5 SAMPLES: One (1) prototype sample (brand new) with complete accessories will be submitted.

SECTION 2 – TEST PROPER

1. PHYSICAL INSPECTION

1.1 Purpose: To determine the conformance of the physical characteristics of the Parachute to the required specifications.

1.2 Procedure: The physical inspection will be conducted at the manufacturer's facility. Standard measuring tools needed for the conduct of physical inspection and dimensional test shall be made available by the supplier.

1.2.1 Visually and manually inspect the completeness of the components (main canopy and reserve parachute) including the accessories of the parachute.

1.2.2 Measure the dimensions and inspect the characteristics of the parachute.

1.2.3 Inspect the Label and serial numberon the major components of the parachute.

1.3 Standard:

1.3.1 Visual Inspection

1.3.1.1 Main Parachute

1.3.1.1.1 Shall have an Annular-shape dome canopy.
1.3.1.1.2 Shall be Olive Drab in color and shall have a vent hole at the apex to allow some air to flow through the open canopy
1.3.1.1.3 It shall have a feature of an anti-inversion net.
1.3.1.1.4 The Main Canopy shall have 30 Gores.
1.3.1.1.5 Shall have Suspension lines with soft steering toggles.
1.3.1.1.6 The suspension lines shall be continuous and without splices of knots for each length.
1.3.1.1.7 All lines for one canopy shall be made from the same continuous length of cord.
1.3.1.1.8 Shall have Deployment Bag made of cotton, Olive Drab in color, and with its printed serial number.
1.3.1.1.9 The static line and snap hook shall be universal.
1.3.1.1.10 The static line shall be new with shock absorber and inserted protector flap.
1.3.1.1.11 It shall have a pack tray assembly.
1.3.1.1.12 Shall have saddle design with multi directional adjustment.
1.3.1.1.13 The pack webbing shall have protection pad collar, comfort pads at the shoulder and the leg straps.
1.3.1.1.14 The pack closing loop shall have four (4) stainless steel closing rings.
1.3.1.1.15 The harness assembly shall have high precision canopy release with quick ejector snap.
1.3.1.1.16 It shall have a riser equipped with steering lines and soft toggles.
1.3.1.1.17 The printed serial numbers of the canopy shall be the same with the deployment bag.

1.3.1.2 Reserve Parachute

1.3.1.2.1 It shall be a dome canopy and Olive Drab in color.
1.3.1.2.2 It shall have 24 gores.
1.3.1.2.3 It shall have twenty four (24) suspension lines.
1.3.1.2.4 The pack tray assembly shall be made of Nylon duck and shall contain a pack frame for rigidity and the ripcord shall be positioned at the center.
1.3.1.2.5 It shall have a riser equipped with steering lines and soft toggles.
1.3.1.2.6 The ripcord assembly shall consist of two (2) locking pins.
1.3.1.2.7 It shall have a Pilot parachute that is spring activated through AAD. The shape shall be Vane Parachute.

1.3.1.2.8 The pilot parachute shall consist of at least a pilot chute and ejection device located in the reserve parachute.

1.3.1.2.9 The ejection device shall be spring activated and shall function accordingly when the reserve parachute is activated.

1.3.1.2.10 Shall have a serialized printed number.

1.3.1.3 It shall have one kit bag that can accommodate the main and reserve parachute and the helmet.

1.3.1.4 The parachute shall have a provision of weapon placement at manufacturer's design.

1.3.1.5 The parachute shall have an enclosure of jump and rigger logs.

1.3.2 DimensionalTest

1.3.2.1 Main Parachute

COMPONENTS	DIMENSIONS
1. Dome Canopy	
Diameter	32 Feet
2. Suspension Lines	
Length	7.0 Meters
3. Deployment Bag	
A. Static Line Length	4.6 to 5 Meters
B. Extension And Snap Hook	1.5 to 2 Meters
4. Riser	
Length	75 to 76 Cm

1.3.2.2 Reserve Parachute

COMPONENTS	DIMENSIONS
1. Dome Canopy	
Diameter	24 Feet
2. Suspension Lines	
Length	5.5 to 6.5 Meters
3. Pack Tray Assembly	
Dimension	530mm x 360mm x 170mm
4. Riser	
Length	20 to 25 cm

2. LABORATORY TEST

2.1 Purpose: To determine the conformance of the submitted swatch samples of the basic material of parachute to the required specifications.

2.2 Procedure:

2.2.1 The proponent shall submit a required quantity or dimension ofswatch sample of basic material that will be subjected to laboratory test to any internationally recognized testing facility which shall be witnessed by the representative of the procuring entity and the Post Qualification Team.

2.2.2 The manufacturer/bidder shall provide company profile and product brochure of the prototype sample for cross checking and technical evaluation to the requirements of the Technical Specification.

2.3 Standard:

2.3.1 The basic material of the canopy shall have the following characteristics:

Canopy	Standards	Requirements
Main Parachute	Double Ripstop PIA-C-2005	Certificate of conformity or test reports from an accredited third party laboratory or manufacturer's facility
Reserve Parachute	Ripstop PIA-C-44378	
Pilot Parachute	Nylon Ripstop PIA-C-2005	

2.3.2 The type and material of all the suspension lines shall beTubular Braided Nylon Cord (Finger Trap/Splice).

Tensile Strength	Requirements	Test Method
Main Parachute		
Suspension Line	270 kg (min)	ASTM D5034; ASTM D2256
Deployment Bag		
Static Line Tensile Strength	1,814 kgs (min)	ASTM D5034; ASTM D2256
Harness Assembly		
Harness	3,175 kgs (min)	ASTM D5034; ASTM D2256
Riser	3,175 kgs (min)	ASTM D5034; ASTM D2256
Reserve Parachute		
Suspension Lines	270 kgs (min)	ASTM D5034; ASTM D2256
Riser	3,175 kgs (min)	ASTM D5034; ASTM D2256
Connector Snap	225 kgs (min)	ASTM D5034; ASTM D2256
Pilot Parachute	250 kgs (min)	ASTM D5034; ASTM D2256
Ripcord Assembly		
Cable	Corrosion Resistant	ASTM B117

3. FUNCTIONAL TEST

3.1 Purpose

3.1.1 To determine the functionality and performance of the parachute by putting it to actual use if it is in accordance to the required standard set forth by the Philippine Army.

3.1.2 To determine the completeness of the samples and the physical state and characteristics.

3.2 Procedure:

3.2.1 The parachute will undergo the test jump at the site to be determined by the supplier and conformed by the PQ Team.

3.2.2 Aircraft for the conduct of actual jump will be provided by the supplier.

3.2.3 Manually inspect the delivered items prior to the actual test jump.

3.2.4 The following performance test will be conducted:

3.2.4.1 The main parachute will be tested using a dummy to determine the overall functionality of the main parachute.

3.2.4.2 The reserve parachute will be tested using a dummy to be activated by Automatic Activation Device (AAD).

3.2.4.3 Actual jump test will be conducted at least three (3) times by the supplier's representative.

3.2.4.4 In case a performance test criteria is not done because it is not practical and unsafe to perform/conduct and will risk the safety of both the end-users and the supplier's representative its compliance shall be determined through cross checking of the product brochure that were submitted by the supplier. Performance test to be waived will be determined by the authorized end-user's representative.

3.3 Standard:

3.3.1 Performance Requirements

3.3.1.1 Main Parachute - The functional and performance test of the parachute was completed without any malfunction, obstruction and discomfort to the jumper and no defects were noted after its usage.

3.3.1.2 Reserve Parachute

3.3.1.2.1 The functional and performance test of the reserve parachute was completed without any obstruction and discomfort to the jumper and no defects were noted after its usage.

3.3.1.2.2 The Automatic Activation Device (AAD) was deployed without malfunction and in accordance to its intended functions and operation.

3.3.2 The main and reserved parachute shall show no sign of delamination, deterioration or ravelling of stitches on the components of the parachute that may affect or risk the life of the user due to succeeding

Table 1– ALLOCATION OF SAMPLES

Parameter	Quantity
1. Physical Inspection	One (1) Prototype Sample (brand new) with complete accessories
2. Dimensional Test	
3. Functional Test	At least one (1) prototype sample with AAD
3. Laboratory Test a. Air permeability b. Tensile Strength c. Corrosion Resistant	Swatch Sample will be in accordance to the requirements of the testing laboratory

Note: *The prototype sample shall include the original product brochure to be used during visual evaluation on some requirements of the characteristics of parachute set forth by the PA.*

B. FINAL ACCEPTANCE

SECTION 1 – GENERAL

1.1 AUTHORITY: The Test and Evaluation (T&E) is being conducted in line with the provisions of the RA 9184.

1.2 OBJECTIVES: The objective of this T&E is for the Final Acceptance Test Procedure *(For brevity, Acceptance Procedure)* of the items to be/was delivered by the winning bidder.

1.3 SCOPE: This Acceptance Procedure will be conducted only on samples of Parachute taken at random by the Technical Inspection and Acceptance Committee (TIAC) on the delivered items. The basic material shall be checked based on the result from a third party test laboratory.

1.4 METHODOLOGY:

1.4.1 The tests will include functional and performance test wherein the product shall be put to actual use to determine its serviceability and ensure that the item is in good condition.

1.4.2 Visual inspection and accounting on the completeness of delivered items shall be conducted.

1.4.3 The Test Result from a third party test laboratory shall be compared to the requirements of the approved specification.

1.5 ACCEPTANCE CRITERIA:The rating that will be applied for this test will be based on Sampling Procedures and Tables for Inspection MIL STD 105E.

1.6 SAMPLES: Refer to Table 1 - Allocation of Samples.

SECTION 2 – TEST PROPER

1. PHYSICAL INSPECTION

1.1 Purpose: To determine the conformance of the physical characteristics of the Parachute to the required specifications.

1.2 Procedure: The physical inspection will be conducted at the delivery site. Standard measuring tools needed for the conduct of physical inspection and dimensional test shall be made available by the supplier.

1.2.1 Visually and manually inspect the completeness of the components (main canopy and reserve parachute) including the accessories of the parachute.

1.2.2 Measure the dimensions and inspect the characteristics of the parachute.

1.2.3 Inspect the Label and serial number on the major components of the parachute.

1.3 Standard:

2.3.1 Visual Inspection

2.3.1.1 Main Parachute

2.3.1.1.1 Shall have an Annular-shape dome canopy.
2.3.1.1.2 Shall be Olive Drab in color and shall have a vent hole at the apex to allow some air to flow through the open canopy
2.3.1.1.3 It shall have a feature of an anti-inversion net.
2.3.1.1.4 The Main Canopy shall have 30 Gores.
2.3.1.1.5 Shall have Suspension lines with soft steering toggles.
2.3.1.1.6 The suspension lines shall be continuous and without splices of knots for each length.
2.3.1.1.7 All lines for one canopy shall be made from the same continuous length of cord.
2.3.1.1.8 Shall have Deployment Bag made of cotton, Olive Drab in color, and with its printed serial number.
2.3.1.1.9 The static line and snap hook shall be universal.
2.3.1.1.10 The static line shall be new with shock absorber and inserted protector flap.
2.3.1.1.11 It shall have a pack tray assembly.
2.3.1.1.12 Shall have saddle design with multi directional adjustment.
2.3.1.1.13 The pack webbing shall have protection pad collar, comfort pads at the shoulder and the leg straps.
2.3.1.1.14 The pack closing loop shall have four (4) stainless steel closing rings.
2.3.1.1.15 The harness assembly shall have high precision canopy release with quick ejector snap.
2.3.1.1.16 It shall have a riser equipped with steering lines and soft toggles.
2.3.1.1.17 The printed serial numbers of the canopy shall be the same with the deployment bag.

2.3.1.2 Reserve Parachute

2.3.1.2.1 It shall be a dome canopy and Olive Drab in color.
2.3.1.2.2 It shall have 24 gores.
2.3.1.2.3 It shall have twenty four (24) suspension lines.
2.3.1.2.4 The pack tray assembly shall be made of Nylon duck and contain a pack frame for rigidity and the ripcord shall be positioned at the center.
2.3.1.2.5 It shall have a riser equipped with steering lines and soft toggles.
2.3.1.2.6 The ripcord assembly shall consist of two (2) locking pins.
2.3.1.2.7 It shall have a Pilot parachute that is spring activated through AAD. The shape shall be Vane Parachute.

2.3.1.2.8 The pilot parachute shall consist of at least a pilot chute and ejection device located in the reserve parachute. The ejection device is a separate item and is not integrated.

2.3.1.2.9 The ejection device shall be spring activated and shall function accordingly when the reserve parachute is activated.

2.3.1.2.10 Shall have a serialized printed number.

2.3.1.3 It shall have one kit bag that can accommodate the main and reserve parachute and the helmet.

2.3.1.4 The parachute shall have a provision of weapon placement at manufacturer's design.

2.3.1.5 The parachute shall have an enclosure of jump and rigger logs.

2.3.2 Dimensional Test

2.3.2.1 Main Parachute

COMPONENTS	DIMENSIONS
1. Dome Canopy	
Diameter	32 Feet
2. Suspension Lines	
Length	7.0 Meters
3. Deployment Bag	
A. Static Line Length	4.6 to 5 Meters
B. Extension And Snap Hook	1.5 to 2 Meters
4. Riser	
Length	75 to 76 Cm

2.3.2.2 Reserve Parachute

COMPONENTS	DIMENSIONS
1. Dome Canopy	
Diameter	24 Feet
2. Suspension Lines	
Length	5.5 To 6.5 Meters
3. Pack Tray Assembly	
Dimension	530mm x 360mm x 170mm
4. Riser	
Length	20 to 25 Cm

2. LABORATORY TEST

2.1 Purpose: To determine the conformance of the submitted test results from a third party test laboratory or manufacturing facility to the required specification.

2.2 Procedure:

2.2.1 The proponent shall submit test results from third party test laboratory or manufacturer's facility for comparison to the technical specification. The test result shall be accompanied by an undertaking from the manufacturer that the materials tested were the same materials used in the manufacture of parachute.

2.3 Standard:

2.3.1 The test report basic material of the canopy shall have the following characteristics:

Canopy	Standards	Requirements
Main Parachute	Double Ripstop PIA-C-2005	Certificate of conformity or test reports from an accredited third party laboratory or manufacturer's facility
Reserve Parachute	Ripstop PIA-C-44378	
Pilot Parachute	Nylon Ripstop PIA-C-2005	

2.3.2 The type and material of all the suspension lines shall beTubular Braided Nylon Cord (Finger Trap/Splice).

Tensile Strength	Requirements	Test Method
Main Parachute		
Suspension Line	270 kg (min)	ASTM D5034; ASTM D2256
Deployment Bag		
Static Line Tensile Strength	1,814 kgs (min)	ASTM D5034; ASTM D2256
Harness Assembly		
Harness	3,175 kgs (min)	ASTM D5034; ASTM D2256
Riser	3,175 kgs (min)	ASTM D5034; ASTM D2256
Reserve Parachute		
Suspension Lines	270 kgs (min)	ASTM D5034; ASTM D2256
Riser	3,175 kgs (min)	ASTM D5034; ASTM D2256
Connector Snap	225 kgs (min)	ASTM D5034; ASTM D2256
Pilot Parachute	250 kgs (min)	ASTM D5034; ASTM D2256
Ripcord Assembly		
Cable	Corrosion Resistant	ASTM B117

3. FUNCTIONAL TEST

3.1 Purpose

3.1.1 To determine the functionality and performance of the parachute by putting it to actual use if it is in accordance to the required standard set forth by the Philippine Army.

3.1.2 To determine the completeness of the items delivered and the physical state and characteristics.

3.2 Procedure:

3.2.1 The parachute will undergo the test jump at the delivery site.

3.2.2 Aircraft for the conduct of actual jump will be provided by the procuring entity.

3.2.3 Performance or Operation Test shall be assisted by the bidders/manufacturer's representative.

3.2.4 Manually inspect the delivered items prior to the actual test jump.

3.2.5 The following performance test will be conducted:

3.2.5.1 The main parachute will be tested using a dummy to determine the overall functionality of the main parachute.

3.2.5.2 The reserve parachute will be tested using a dummy to be activated by Automatic Activation Device (AAD).

3.2.5.3 Initial jump test will be conducted at least three (3) times by the supplier's representative.

3.2.5.4 Remaining quantity of parachute that was selected randomly will be jumped by the end-users.

3.2.5.5 At lest two (2) parachutes among the randomly selected samples will undergo a maximum of thirty (30) jumps to test its durability on series of jumps.

3.2.5.6 In case a performance test criteria is not done because it is not practical and unsafe to perform/conduct and will risk the safety of both the end-users and the supplier's representative its compliance shall be determined through cross checking of the product brochure that were submitted by the supplier. Performance test to be waived will be determined by the authorized end-user's representative.

3.3 Standard:

3.3.1 Performance Requirements

3.3.1.1 Main Parachute

3.3.1.1.1 The functional and performance test of the parachute was completed without any malfunction, obstruction and discomfort to the jumper and no defects were noted after its usage.

3.3.1.1.2 360 degrees turn rate shall be 4 to 6 seconds.

3.3.1.1.3 Rate of Descent shall be 4.5 to 5.5 m/s at 170 kgs.

3.3.1.1.4 Maximum and minimum exit altitude shall be in accordance to the required specification.

3.3.1.1.5 Maximum and minimum exit velocity shall be in accordance to the required specification.

3.3.1.1.6 Maximum wind speed employment shall be in accordance to the required specification.

3.3.1.1.7 Oscillation shall be ranging from 0 to 2% vertical.

3.3.1.1.8 Forward Speed shall be 2 to 6 meters per seconds.

3.3.1.1.9 Maximum Load weight capacity shall be 180 kgs.

3.3.1.2 Reserve Parachute

3.3.1.2.1 The functional and performance test of the parachute was completed without any malfunction, obstruction and discomfort to the jumper and no defects were noted after its usage.

3.3.1.2.2 Deployment Assistance Device (DAD) and Automatic Activation Device shall be functional and operational.

3.3.1.2.3 Rate of Descent shall be 6 to 7 m/sec
3.3.1.2.4 Oscillation shall be ranging from 0 to 2% vertical
3.3.1.2.5 Reserve canopy is steerable or non-steerable.

3.3.1.3 The Main and reserve parachute shall show no sign of delamination, deterioration or ravelling of stitches on the components of the parachute that may affect or risk the life of the user due to succeeding and series of jumps.

Table 1– ALLOCATION OF SAMPLES

Parameter	Quantity
1. Performance Test	13 sets
a. Test Jump using dummy for main parachute	1
b. Test Jump using dummy for reserve parachute activated by AAD	1
c. Initial actual jump testto be conducted by supplier's representative	1
d. Actual jump test to be conducted by the end-user.	10
2. Series of jumps for thirty (30) times	2 sets

Table 2 - ACCEPTANCE CRITERIA

SAMPLE SIZE	GENERAL INSPECTION LEVEL	Table III – B General Inspection Level III Code Letter H ACCEPTABLE QUALITY LEVEL	
		Major (1.0)	**Minor (1.5)**
32	III – Double Sampling Plan for Tightened Inspection	1st (Acc – 0 ; Re – 2) 2nd (Acc – 1 ; Re – 2)	1st (Acc – 0; Re – 3) 2nd (Acc – 3;Re – 4)

3.3.1.4. The type and material used in the components of the parachute shall be in conformance to the Military Standard, Parachute Industry Association (PIA) or NATO standard as required in the specification. The conformance shall be supported by a certification to be submitted by the supplier.

Prepared by:

GENER C CONTILLO
MAJ (QMS) PA
Chief, Plans & Research Branch

Certified Correct:

EDMUNDO S SUFICIENCIA
COL QMS (GSC) PA
Chief