



Republic of the Philippines
 NATIONAL POLICE COMMISSION
 NATIONAL HEADQUARTERS PHILIPPINE NATIONAL POLICE
 OFFICE OF THE CHIEF, PNP
 Camp BGen Rafael T Crame, Quezon City

PNP MEMORANDUM CIRCULAR
 NO.: 2020 -055

AUG 26 2020

PROCEDURES IN THE CONDUCT OF TEST AND EVALUATION DURING ELECTRONIC PRE-DELIVERY INSPECTION (e-PDI) OF BALLISTIC EYEWEAR"

1. REFERENCES:

- a. Republic Act (RA) 9184 entitled: "An Act Providing for the Modernization, Standardization and Regulation of the Procurement Activities of the Government and for other Purposes and its Revised Implementing Rules and Regulations (RIRR)";
- b. NAPOLCOM Resolution No. 2018-429 entitled: "Approving the PNP UESB Resolution No. 2018-034 that Prescribed the Minimum Standard Specifications for Ballistic Eyewear;
- c. Performance Specification Military Combat Eye Protection (MCEP) System, MIL-PRF-32432(GL) 9 January 2013; and
- d. Memorandum from TCDS/Chairman, NHQ BAC dated May 4, 2018 with subject: Protocol in the Conduct of the Pre-Delivery Inspection (PDI).

2. RATIONALE:

The Directorate for Research and Development (DRD), as an independent research facility of the PNP, shall conduct test of clothing, materiel, weapons, vehicles, and equipment required by the PNP.

3. SITUATION:

On March 8, 2020, Proclamation No. 922 was issued declaring a State of Public Health Emergency throughout the Philippines due to the local transmission of Corona Virus Disease (COVID-19). In this relation, the Office of the Executive Secretary issued a memorandum implementing community quarantine over the entire National Capital Region (NCR), which was later on elevated to Enhanced Community Quarantine (ECQ) over the entire Luzon effective March 17, 2020.

As an effect of the pandemic, local and international travels were restricted, businesses and works were suspended, except for the identified essential-related works. While the Philippine National Police (PNP) is not restricted to continue with its operational activities, this is not the case in some of its administrative activities, like the conduct of Pre-Delivery Inspection (PDI) abroad for contracts it entered into before the onset of the Covid-19 pandemic. Aside from the international travel restrictions, the DBM also issued National Budget Circular No. 580 mandating among others, the discontinuance of all foreign travels, except for ministerial meetings and

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scholarship/trainings that are grant-funded or undertaken at no cost to the government. For these reasons, the conduct of the actual PDIs abroad were suspended.

In an effort to remedy and cope with the new normal with the end view of implementing the contract for Ballistic Eyewear, the conduct of e-PDI in lieu of the actual travel of the testing team to conduct the PDI was considered for the newly procured 20,855 units. The required test and evaluation is pursuant to the schedule of contract.

4. PURPOSE:

This MC sets forth the procedures in the conduct of Functional Test and Evaluation during e-PDI of Ballistic Eyewear.

5. DEFINITION OF TERMS:

For purposes of this MC, the following terms shall mean:

- a. **Ballistic** - is the science of mechanics that deals with the launching, flight, behavior, and effects of projectiles, especially bullets, gravity bombs, rockets, or the like; the science or art of designing and accelerating projectiles so as to achieve a desired performance.
- b. **Ballistic Eyewear** – is a form of glasses or goggles that protect from small projectiles and fragments.
- c. **Ballistic Fragmentation Characteristics** – the eyewear shall provide ballistics fragmentation protection in all configurations.
- d. **Bids and Awards Committee (BAC)** -- refers to the Bids and Awards Committee established in accordance with Article V of R.A 9184.
- e. **Cavitation** – formation of an empty space within a solid object or body.
- f. **Carrying case** – A carrying case shall be provided for each class of eyewear. Separately sized/designed carrying cases may be used for each class as necessary. The carrying case shall be capable of carrying one MCEP system (eyewear, retaining strap, instruction booklet, cleaning cloth). The carrying case shall easily attach/detach to/from the wearer's equipment belt and load bearing equipment
- g. **Class 1 spectacles** – Class 1 spectacles are defined as eyewear that protects the wearer's eyes from hazards/threats associated with fragmentation and light energy; additional wind/dust protection in the form of a seal around the eye socket or spectacle/frame perimeter is optional.
- h. **Critical area** – is defined as a circle having a 20 mm radius centered on the horizontal centerline and 32 mm from the vertical centerline.

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- i. **Fair Hit** – if the projectile hits within the critical area, if the velocity requirements have been met for the shot, if obliquity requirements have been met for the shot, if the impact location is at least two projectile diameters (.76 cm) away from the edge of a lens, and the projectile does not impact the frame.
- j. **Feet per Second (FPS)** – is a unit measurement of velocity of an object.
- k. **Functional Testing** – primarily focuses in ensuring that the particular equipment work as designed, and that the design sufficiently meets the requirements and quality of the end – user.
- l. **Laboratory** – is a facility that provides controlled conditions in which scientific or technological research, experiments, measurement and/or services may be performed.
- m. **Penetration** – perforation of a witness plate by any part of the test specimen or test bullet, as determined by the passage of light when the witness plate is held up to a 60-W light bulb.
- n. **Perforation** – any impact that creates a hole passing through the lenses. This may be evidenced by any of the following: (1) a hole that passes through of the projectile, a projectile fragment, or an armor fragment on the lenses; (2) a hole that passes through the lenses on critical portion of the lenses being.
- o. **Polycarbonate** – a particular group of thermoplastics. They are easily worked, molded, and thermoformed; as such, these plastics are very widely used in modern manufacturing. They are called polycarbonates because they are polymers having functional groups linked together by carbonate groups (-O-(C=O)-O-) in a long molecular chain.
- p. **Pre-delivery inspection** – Pre-delivery inspection is an inspection carried out by PNP team (by a procuring entity and seller) complemented with test and evaluation, prior to the final delivery of the product.
- q. **Proponent** – suppliers/dealers duly accredited to transact business with the PNP.
- r. **Spalling** – The detachment or delamination of a layer of material in the area surrounding the location of impact, which may occur on either the front or rear surfaces of the armor. Spalling may be a threat mechanism even when penetration of the armor itself is not complete.
- s. **Striking Velocity** – is the speed with which a projectile ends its flight.
- t. **T37 Shaped Projectile** – is a US ballistic projectiles standard for testing protective eye wear.

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- u. **Technical Working Group (TWG)** – a group of people composed of Uniformed and Non-uniformed Personnel of the Directorate for Research and Development (DRD) tasked to facilitate the conduct of test and evaluation of equipment during the post qualification and acceptance.
- v. **Test Parameter** – in its common meaning, is a characteristic, feature, or measurable factor that can help in defining a particular system relative to assessment/analysis. A parameter is an important element to consider in evaluation or comprehension of an event, project, or situation.
- x. **Warranty** – a written guarantee, issued to the purchaser of an object by its manufacturer, promising to repair or replace it if necessary within a specified period of time.

6. GENERAL GUIDELINES:

- a. A dedicated area shall be utilized exclusively for the items to be delivered for purpose of storage, random sampling and for the visual and dimensional evaluation during the e-PDI.
- b. Placement of the items shall be covered with a stacking plan indicating lot/batch size, box and serial number of the items.
- c. All pre-delivered items must be packaged and signed by the Supplier and witnesses immediately after the e-sampling. Separate packaging for the samples to be submitted for FTE, the remaining sample as required by MIL 105E and the rest of the goods.
- d. If applicable, Philippine Government Officials from the Embassy, consulate and cultural office in the country of origin of the items procured are requested to witness the e-PDI.
- e. For third party (laboratory) functional testing, facility testing procedures will be accepted as long as the facility is accredited and capable to conduct the testing and the parameters used are based on the requirements indicated in the schedule of the contract.
- f. The Ballistic Eyewear subject for test and evaluation will be from the randomly selected samples by the e-PDI Team as stated in the schedule of contract.
- g. The e-PDI Team shall choose from the given Lot or batch sample size of the Ballistic Eyewear to be tested and evaluated.
- h. The batch size and serial number of the samples must be recorded for documentation prior sending to the third party facility.
- i. Documents such as Ballistic Eyewear brochure indicating therein the specifications and capabilities of the Ballistic Eyewear, shall be presented during the e-PDI and shall be scanned and shared thru video conferencing.

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- j. All copies of documents presented on video recording during e-PDI shall be submitted thru email for documentation purposes.
- k. Visualizing and accounting should be demonstrated for its functionality for the appreciation of the e-PDI Team.
- l. All noted deficiencies during the e-PDI shall be corrected/complied prior delivery of the Ballistic Eyewear.
- m. All samples subjected to Test and Evaluation during e-PDI shall be included in the delivery of the entire lot.
- n. Supplier and the Testing Facility Management should concur that all Test and Evaluation activities shall be covered by Live Video Streaming.
- o. All Test and Evaluation activities will be observed/witnessed through live video streaming/video conferencing by the e-PDI Team.

7. PROCEDURES:

- a. D-day - 7: The e-PDI Team, in coordination with the Supplier shall provide the NHQ CIA the venue of VTC considering the availability of high bandwidth of internet connection to ensure that no disruption will occur during the e-PDI.
- b. D-day - 5: The NHQ CIA shall issue a Conference Notice to the e-PDI Team.
- c. D-day - 3: The e-PDI Team shall conduct a run-through on the step by step procedure together with the Supplier or his authorized representative/s.
- d. D-day: The e-PDI Team shall randomly select the samples of Ballistic Eyewear from the given lot/batch size sample to undergo visual and dimensional evaluation or inspection. After the visual and dimensional evaluation or inspection through via live teleconferencing, the e-PDI Team together with the supplier shall witnessed the packaging of sample Ballistic Eyewear with signature of authorized personnel present in the storage area which had been passed in the physical inspection to be sent to third party testing facility for functional test and evaluation.
- e. D-day + 1: The e-PDI Team together with the supplier shall witnessed the conduct of test and evaluation of samples Ballistic Eyewear as to its conformity to NAPOLCOM Technical Specifications and PNP test parameters and record the observation.
- f. D-day +3: The e-PDI Team shall deliberate the video recording/result of the actual ballistic performance of sample Ballistic Eyewear.

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8. TEST AND EVALUATION:

Phase I – Visual and Dimensional (*Live Video Streaming*)

- a. Purpose: To determine the physical characteristics, quality and performance of the Ballistic Eyewear and to validate its conformity to NAPOLCOM specifications, test parameters and bidding documents
- b. Procedure: (*Live Video Streaming*)
- 1) Visually and manually inspect the components and parts of the Ballistic Eyewear; and
 - 2) Check the model and labelling requirements as required.

NAPOLCOM Res. No. 2018-429	Test Procedure during e-PDI	Class of Defect
1. Lenses: Polycarbonate	Check the brochure based on Manufacturer's Product technical specifications for material composition of lenses	Major
2. Frames: Based on Manufacturer' Product Brand Specification Brochure as offered	Check the brochure based on Manufacturer's Product technical specifications	Major
3. Ballistics Resistance: Compliant to MIL-PRF 32432 (GL)	Certificate of Compliance or Test Results to MIL-PRF 32432 (GL) for Ballistic resistance of all lenses (clear, including the interchangeable lenses – cloud, black and yellow – left and right impact) conducted by Third Party testing facility specialized and/or capable to test Personal Protective Equipment for eye protection. Test result/certificate must be duly authenticated (Red Ribbon) in case of foreign documents	Major
4. Size: Medium to Large	Perform the adjustment of the strap or movable parts of the Ballistic Eyewear. There shall be a means to adjust the eyewear for proper fit/comfort.	Major
5. Features: 99.9% UVA and UV B Protection and Anti-scratch	<ul style="list-style-type: none"> • Check the brochure based on Manufacturer's Product technical specifications • Manually scrub the lenses using the finger nail. 	Major

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	Note: Multiple/extra lenses must provide ballistic fragmentation and sun/UV protection	
Other Requirements:		
Replacement lenses for the following:		
Indoor/night	Perform the manipulation of the movable parts of the Ballistic Eyewear and don/interchange the lenses onto the frame. The lenses must be fixed and not easily loosen when shaken three times	Major
Outdoor/bright conditions		
Low light/cloudy		
Hard case	Manually check the Eyewear Hard case – any Manufacturer's standard	Major
Microfiber pouch	Manually check the Eyewear Microfiber pouch – any Manufacturer's standard	Major
Microfiber cloth	Manually check the Eyewear Microfiber cloth – any Manufacturer's standard	Major
Elastic headband (Strap)	Elastic headband for both interchangeable and fixed lenses	Major
Resistance to fogging	Certificate from Third party that the lenses shall not fog to the extent that the user will no be able to perform their intended mission in extreme cold weather environment.	Major
Certificate of Distributorship (for Local Partner) from Manufacturer	Check the certification	Major
Workmanship:		
The Eyewear shall be free from dents, blisters, cracks, crazing, slits, holes chipped or sharp corners, and other evidence of inferior workmanship. The eyewear shall not warp or deform, delaminate, discolor, corrode, rust, or crack, nor shall its ballistic fragmentation or optical characteristics be degraded beyond the requirement limits during	Manually inspect the physical appearance of the Ballistic Eyewear	

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operation, shipping, or storage in all climatic categories.		
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Phase II: Ballistic Testing (Laboratory Set-Up): (Live Video Streaming)

a. Test Variables:

	Test Data
Fragment	T37 shaped projectile
Fragment Velocity	640 to 660 ft./sec
Fragment Weight	0.15 caliber, 5.85 (+/- 0.15) grain
Firing Distance	12 to 24 inches

b. Performance Requirements (Resistance to Penetration):

Procedures:

- 1) Ballistic Eyewear lenses (clear, cloud, black and yellow) shall be tested for resistance to ballistic penetration. Penetration by any fair hit shall constitute failure.

Ballistic Eyewear	Test Fragment	Lenses	Nominal fragment mass	Required Hits Per Helmet part at 0° angle	Required Fragment Velocity	Distance of Firing	Findings	Remarks
Level III	T37 shaped projectile	Clear	5.85 (+/- 0.15) grain	1 - Left 1 - Right	640 to 660 ft./sec	12 to 24 inches		
		Black		1 - Left 1 - Right				
		Cloud		1 - Left 1 - Right				
		Yellow		1 - Left 1 - Right				

Certification:

Certification by the Third Party testing facility that actual test was conducted with dates indicated

Note: Projectiles shall be a fragment simulating project (FSP) of shape and dimensions as specified and shall be manufactured from cold rolled, annealed steel conforming to composition 4340H; the projectile hardness shall be Rockwell C30 (+/-2).

c. Live View Streaming:
Procedure:

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- 1) Place the camera on the eye level of the audience showing the set-up of the ballistic testing equipment for Ballistic eyewear.
- 2) A second camera must be positioned showing as-worn position of Ballistic eyewear into the head form prior the actual firing.
- 3) The operator must show to the audience the actual velocity according to the velocity requirement prior the actual testing.
- 4) The third camera must be a wide angle view showing the laboratory set-up including the operator and personnel inside the room.
- 5) The operator must give a signal to the audience before the actual firing into the Ballistic eyewear.
- 6) After the first firing, test item shall be removed after each impact for inspection of both the sample and the witness plate (if any) and any other observations noted. Damage to the witness sheet or eyewear and all observations (i.e. breakage, cracks, complete dislodgement, partial dislodgement, delamination, flaking, etc.) shall be noted.

The test shall be considered a failure if one or more of the following occur:

- a) if the witness sheet is perforated or if there is a complete penetration of the test item;
- b) if the primary lens is cracked, fractured, or shattered;
- c) if one or more fragments become dislodged on the inside of the eyewear (to include coatings);
- d) if an eyewear component needed to retain the eyewear on the head becomes completely separated from the eyewear; and
- e) if the primary lens becomes completely separated from the eyewear.

9. EFFECTIVITY:

This MC shall take effect after 15 days from filing a copy thereof at the UP Law Center in consonance with Section 3, Chapter 2, Book VII of Executive Order 292, otherwise known as the "Revised Administrative Code of 1987," as amended.



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