



**National Institute of Justice**

**Body Armor Manufacturer's Workshop**

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# Introduction

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## Topics:

- FIT: Hard Armor Test Protocol (Surveillance)
- Body Armor Quality Management System (BA-QMS)

# Follow-up Inspection and Testing (FIT)

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- FIT is the NIJ CTP's surveillance program for ballistic body armor.
- Its purpose is the “systematic iteration of conformity assessment activities as a basis for maintaining the validity of the statement of conformity”. (ISO/IEC 17000)
- Involves periodic inspections of manufacturing locations, their records and selecting samples for surveillance testing.

# Hard Armor Initial Type Testing for Determination of Compliance

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## Level III

- All samples conditioned per Section 6
- 4 panels (24 shots) P-BFS Testing
- 4 panels (24 shots) BL Testing
- No perforations permitted at fair hit velocity

## Level IV

- All samples conditioned per Section 6
- 4-24 panels (24 shots) P-BFS Testing
- 2-12 panels (12 shots) BL Testing
- No perforations permitted at fair hit velocity

# Hard Armor FIT

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## Level III

- ~~All samples conditioned per Section 6~~
- ~~4 2 panels (24 12 shots) P-BFS Testing~~
- ~~4 panels (24 shots) BL Testing~~
- No perforations permitted at fair hit velocity

## Level IV

- ~~All samples conditioned per Section 6~~
- ~~4-24 panels (24 shots) P-BFS Testing~~
- ~~2-12 panels (12 shots) BL Testing~~
- No perforations permitted at fair hit velocity

# Hard Armor FIT (page 2)

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## Level III

- 2 panels(12 shots) Perforation Testing
- No perforations permitted at fair hit velocity

## Level IV

- 4 panels (4 shots) Perforation Testing
- No perforations permitted at fair hit velocity

# Hard Armor FIT Costs

Single onsite inspection (minimum of 1)	1	\$	800
Time onsite (minimum of 1 hour)	hrs	\$	200
Additional Admin. Fee (minimum of 1)		\$	100
Shipping costs (estimate)		\$	75
Testing Charge per Armor Model		\$	Under Review
Short Notice Scheduled Inspection (less than 2 weeks)		\$	500

# Hard Armor Surveillance

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Questions?



# Body Armor Quality Management System (BA-QMS)

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- The purpose of a BA-QMS is to provide additional confidence that applicants are managing body armor manufacturing processes appropriately to better meet the needs law enforcement practitioners and the requirements of the NIJ CTP.
- Operating an NIJ approved BA-QMS also provides confidence that armor is being consistently manufactured according to build sheets provided to the NIJ CTP during initial determination and permits extending time between inspections.

# BA 9000

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- In cooperation with ANSI-ASQ National Accreditation Board (ANAB), a program for accrediting certification bodies (CBs) for a BA-QMS was developed.
- CBs would then certify body armor manufacturer's compliance with the BA-QMS requirements (BA 9000)
- Unfortunately, because of the limited number of body armor applicants participating in the NIJ CTP and the expense to become accredited, the financial incentive for certification bodies to participate was lacking.

# BA 9000 Alternative

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- Incorporates the requirements of ISO 9001 applied to the manufacture of body armor.
- Addresses additional concerns related to body armor such as:
  1. Raw Material quality control
  2. Material preservation (throughout manufacture process)
  3. Control of records related to conformity assessment

# BA-QMS Inspection (page 1)

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## ISO 9001 Certificate

- Can manufacturer provide a current copy of ISO 9001 Certificate?
- Is the certificate currently valid?
- Does certificate cover the location of the inspection?
- Does the scope of the ISO 9001 Certificate include the manufacture of body armor?

# BA-QMS Inspection (page 2)

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## BA-QMS Documentation Demonstrating:

- acceptance criteria for raw ballistic materials is based upon lot testing which includes ballistic tests
- acceptance criteria for raw materials used for panel covers is based upon lot testing
- preservation of raw ballistic materials (from humidity, temperature, contamination, rough handling, ultraviolet radiation)
- preservation of armor throughout the assembly process (from humidity, temperature, contamination, rough handling, ultraviolet radiation)

# BA-QMS Inspection (page 3)

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## BA-QMS Documentation Demonstrating (cont.):

- control of body armor build sheets (construction details)
- control of NIJ Standards
- control of records for model applications to the NIJ CTP
- control of records for communications with NIJ or the NIJ CTP

# BA-QMS Inspection (page 4)

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## BA-QMS Records:

(based on sample model selected for inspection)

- From the final test report for initial model certification (for the model above), record the test identification number and date:
- For the model above, include copies of raw material lot testing traced to samples selected for FIT Testing.

# BA-QMS Inspection (page 5)

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## Inspector Observations:

- Name of employee present on site with responsibility/authority for identifying non-compliances and stopping production
- Are raw ballistic materials protected from humidity, temperature, contamination, rough handling, ultraviolet radiation (sun light)?
- Are ballistic materials protected during assembly from humidity, temperature, contamination, ultraviolet radiation (sun light)?



# Questions?

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## Contact Information

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