# QAM 12020: Suspect/Counterfeit Item (S/CI) Program

## Revision History:

| Author | Description of Change | Revision Date |
|---|---|---|
| Rafael Coll | Initial release of Chapter 12020 transfers Procedure 1006, from the former Office of Quality and Best Practices, into QAM. | September 2013 |

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# 1.0 INTRODUCTION

It is Fermilab's policy to make every reasonable effort to prevent the use of suspect/counterfeit items (S/CI) to ensure personnel protection, public safety, and environmental integrity, while safeguarding investments that affect the Laboratory's mission. This program describes the activities required to identify and control the use of suspect/counterfeit items at Fermilab.

# 2.0 SCOPE

All new and existing items, equipment, products, or parts at Fermilab are within the scope of this document.

# 3.0 DEFINITIONS

**Counterfeit item –** An item that has been copied or substituted without legal right or authority to do so or one whose material, performance, or characteristics are knowingly misrepresented by the vendor, supplier, distributor, or manufacturer.

**Nonconforming item –** Any item that does not meet specified requirements.

**Suspect item -** An item identified through visual inspection, testing, or other means that does not appear to conform to established Government or industry-accepted specifications or national consensus standards. Or, nonconforming items whose documentation, appearance, performance, material, or other characteristics may have been knowingly misrepresented by the vendor, supplier, distributor, or manufacturer.

*Note (1): By definition, for an item to be considered S/CI, it must first be nonconforming to specified requirements. Therefore all confirmed S/CI are nonconforming items but all nonconforming items are not necessarily S/CI.*

*Note (2): Purchasing equipment from what is defined as reputable companies is not in itself protection against S/CI. Many reputable companies purchase components from outside suppliers and may fall victim to unscrupulous practices.*

# 4.0 RESPONSIBILITIES

## 4.1 Laboratory Director

- Approves the S/CI Program.
- Holds management accountable for implementation of and compliance with this program.
- Appoints the Fermilab Quality Assurance Manager as the Fermilab site S/CI Program Manager.

## 4.2 Fermilab Quality Assurance (QA) Manager

- Oversees the Fermilab S/CI Program and serves as the S/CI Program Manager.

- Provides support to line management, S/CI Coordinators, Senior Safety Officers (SSOs), and Quality Assurance Representatives (QARs) in resolving open S/CI issues.
- Recommends what notification to the DOE Site Office is required.
- Requests subject matter expert (SME) guidance from the relevant laboratory safety subcommittee chairs when S/CI discoveries or reports require a laboratory response.
- Provides periodic status reports to the Fermilab Assurance Council, the Laboratory Director, line managers, and others as appropriate.
- Maintains training materials and provides training as required.

### 4.3 Division/Section/Center Heads and Project Managers (D/S/C/P)

- Ensure compliance with this procedure for their areas of responsibility including flow down of requirements and awareness.
- Provide personnel as appropriate to implement this procedure.
- Ensure individuals within their D/S/C/P are trained in S/CI where required.
- Appoint S/CI Coordinators as appropriate.

### 4.4 Suspect / Counterfeit Item Coordinators

- Coordinate S/CI inspections with line management.
- Work with the supervisor, engineering, Environment, Safety, Health, & Quality (ESH&Q) Section, Procurement or other subject matter experts, to investigate reported S/CI.
- Verify suspect parts are segregated or isolated from inadvertent use.
- Notify ESH&Q if parts are deemed a safety risk, even if they conform to specifications.

### 4.5 Division/Section/Center/Project Quality Assurance Representatives (QAR's)

- Ensure Quality Assurance Manager, line management, and SSO's are advised of the disposition of the S/CI.
- Ensure required entries are made to iTrack and ensure reported S/CIs are tracked through to completion.

### 4.6 Supervisors, Construction Coordinators, and Task Managers

- Notify appropriate line management and S/CI Coordinator of potential S/CI.
- Determine training requirements.
- Ensure that S/CI-related information is provided to all employees, subcontractors and users working under their direction as appropriate, either through formal training or documented transfer of information by an S/CI-trained Fermilab employee.

### 4.7 Employees and Users

- Be vigilant to detect and report suspect/counterfeit items according to Fermilab procedures.

- Be aware of the consequences of incorporating suspect/counterfeit material into the operations of the laboratory.
- Be aware of the various items that are likely to be suspect/counterfeit as appropriate for their job duties.
- Attend training in S/CI awareness as it pertains to their work.
- Notify their immediate supervisor when a potential S/CI is discovered.

# 5.0 PROCEDURE FOR CONTROLLING IDENTIFIED S/CI

This section describes the step by step procedure for managing S/CI upon identification. For a discussion of items which are prone to be counterfeited, refer to Appendix 1.

*Note 1: Fermilab personnel SHALL NOT contact the supplier of a potential S/CI without concurrence from the ESH&Q Section Head and the Business Services Section Head, or their designated alternates.*

*Note 2: A nonconforming item is not automatically suspect unless there is evidence suggesting that it meets the definition of a suspect item or counterfeit item in Section 3.*

**Suspect/Counterfeit Item Management Procedure**

**5.1** Identification of S/CI
An individual identifies a potential S/CI, stops work associated with the S/CI, and notifies his/her immediate supervisor.

**5.2** Segregate S/CI and Notify QAR, SCI Coordinator
The supervisor notifies the appropriate QAR and S/CI Coordinator of the S/CI, segregates the S/CI where practicable and identifies the item with an "S/CI Tag" to prevent further use.

If it is not practicable to segregate the item (due to the nature of the item or because it is installed), line management will notify others in the area about the presence of S/CI. The supervisor ensures that work associated with the item is not resumed until an investigation has been completed and the item has been evaluated by engineering or some other subject matter expert (SME). The engineer or SME will assist in determining the items final disposition.

**5.3** Is there a safety risk?
The supervisor and S/CI Coordinator determine if there is a safety risk present.

5.3.1 If there is no potential safety risk present, go to step 5.4.

5.3.2 If there is a potential safety risk present, the QA Manager and SSO shall be notified immediately by line management. The S/CI Coordinator and SSO proceed with an investigation and determine what potential safety-related risks are posed by the S/CI. The QA Manager and line management must be notified with the conclusions of the safety risks identified during the investigation so that if further actions can be taken if necessary.

**5.4** Enter S/CI in iTrack

5.4.1 The QAR has the responsibility to enter the item into iTrack, including determination of any safety risks and actions taken from step 5.3.2. The iTrack item number shall be recorded on the S/CI tag, if possible.

**5.5** Investigate S/CI

5.5.1 The S/CI Coordinator and line management, with SME and engineering participation as appropriate, complete an investigation and reach a conclusion indicating whether the item is suspect/counterfeit or just nonconforming. Two conditions must be met to conclude that the item is suspect/counterfeit:

5.5.1.1 It must be nonconforming to requirements specified during procurement, and

5.5.1.2 Its documentation, appearance, performance, material, or other characteristics may have been knowingly misrepresented.

**5.6** Determine Disposition

5.6.1 Disposition of the S/CI is recommended by engineering and/or SME based on evaluation of the likelihood of injury to personnel, damage to the environment, damage to other equipment, and other technical and operational considerations.

5.6.2 The disposition recommendation is sent to the QA Manager for approval, and then communicated to line management and SSO's by the QAR.

5.6.2.1 If the S/CI is determined to be suspect or counterfeit the QA Manager determines whether it is communicated through the DOE complex, and if it is destroyed or retained for future training purposes.

5.6.2.2 If the S/CI is determined to be simply nonconforming then line management shall follow procurement procedures to notify the vendor of the nonconforming item.

**5.7** Update iTrack

The QAR updates iTrack with the final disposition of the S/CI and what actions were taken, and ensures the item is closed out.

**Suspect/Counterfeit Item Notification Received By Fermilab**

- If the QAR receives a "response required" notice from the ESH&Q Section of S/CI discovered elsewhere, they will contact their line management to ensure an inspection is conducted. If S/CI is discovered during the inspection, the S/CI Coordinator and line management ensure that it is managed in accordance with the procedures outlined in the section above.

- If the S/CI notice from ESH&Q Section does not indicate "response required", it is for awareness only and local management will determine if any action is required.

## 6.0 RECORDS

Records are maintained in the iTrack database that will include a description of steps taken to rectify the S/CI situation.

## 7.0 REVIEW CYCLE

This procedure shall be reviewed for accuracy and relevance on a five year cycle.

Document Owner- Fermilab QA Manager
Reviewers- ESH&Q Head, S/CI Coordinators, QARs, SSOs, SMEs
Approver- Laboratory Director

## 8.0 PROGRAM DOCUMENTS

- Fermilab Environment Safety & Health Manual (FESHM) Chapter 3010, Significant and Reportable Occurrences
- DOE O 414.1D Quality Assurance/ Contractor Requirements Document, Attachment 2 Section 4 – DOE-Wide Suspect/Counterfeit Item Prevention Process (WSS)
- DOE G 414.1-3/ Suspect Counterfeit Items Guide

# 9.0 TECHNICAL APPENDICES

## 9.1 Appendix 1 - Identifying Suspect/Counterfeit Items

Items prone to be counterfeited:

- Moderate - or low-cost, high-demand / high turnover use items
- Items easily copied by secondary market suppliers
- Items that often bypass the vendor (seller or manufacturer) and are drop shipped to the requestor
- Items that are not typically inspected
- Items that are sold by un-authorized distributors

Typical Suspect/Counterfeit Items are:

- Used, rebuilt, or reconditioned items sold as new
- Fraudulently marked or labeled as being manufactured by a recognized reputable company, or certified by a regulatory or certifying agency
- Manufactured with misrepresented inferior materials, or processes that create a potential for failure and exposure to hazards.

Industrial types of items, materials, parts, and components that have been counterfeited include, but are not limited to:

- Hoists, as well as other hoisting, lifting, and rigging equipment
- Valves, pipe, pipe fittings, plates, couplings, plugs, spacers, nozzles, supports, hangars, and flanges
- Preformed metal, elastomers (O-rings, seals), spare replacement kits from suppliers other than the original equipment manufacturer, weld-filler material, diesel generator speed governors, pumps
- Fasteners: Metallic screw, nut, bolt, or stud having internal or external threads with a nominal diameter of 1/4 inch (6 mm) or greater. Washer that is through-hardened or represented as meeting a consensus standard that calls for through-hardening, and that is grade identification marked or represented as meeting a consensus standard that requires grade identification marking. e.g., J429 standard for automotive and related industries - below grade 5 (plus grade 8.1 studs) no grade-mark required. However, all bolts and screws shall bear the manufacturer identification symbol.
- Electrical equipment and devices, including circuit breakers, transformers, fuses, relays, resistors, capacitors, semiconductors, connectors, switch gear, power supplies, inverters, transmitters, and motors
- Metal plates, bars, shapes, channel members, and other structural items
- Welding rods and electrodes

The listing of commercial grade items that have been counterfeited is extensive. Following is a partial listing:

- Batteries: household, camera, and cell-phone
- Extension cords
- Surge suppressors
- Fire extinguishers
- Automotive components, including oil filters and brake pads
- Computer components, semiconductors, software
- Pharmaceuticals

***Disclaimer***
This appendix provides information on individual components identified as suspect or suspect/counterfeit. Without additional information, the manufacturers or suppliers identified should not be considered as to have engaged in any wrongdoing. It is not necessarily a negative reflection on a supplier or manufacturer if their products are reported as suspect/counterfeit items (S/CI). Reputable manufacturers and suppliers have a vital interest in preventing the manufacture and distribution of S/CI associated with their names. The supplier or manufacturer may have been victimized and is pursuing S/CI associated with its products in an aggressive, prudent, and professional manner to get these items off the market. Therefore, each particular case must be examined on its own merit without making premature conclusions about the fault or culpability of the manufacturer or supplier whose name is associated with the S/CI.

**The following is an update to the Suspect Item Indicator list found in DOE G 414.1-3 and the DOE Suspect/Counterfeit Item Awareness Training manual.**

**SUSPECT ITEM INDICATOR LIST**
**Note:** This information alone does not constitute an item or material as being S/CI. Further research, such as a review of purchase orders, specifications, and certification / documentation is required before an item can be categorized as S/CI.

**I. GENERAL INDICATORS**
Visual Inspection

- Nameplates, labels, or tags have been altered, photocopied, or painted over; are not secured well; are unusual in location and method of attaching; have incomplete data; or are missing.
- Preprinted labels that show typed entries.
- Item has wear marks or scratches on external surfaces.
- Obvious attempts at repair or beautification have been made, such as excess painting or wire brushing; evidence of hand-painting (touch-up), painted stainless steel; non-ferrous metals (e.g., copper, brass, bronze) are clean and bright indicating recent polishing.
- Handmade parts are evident; gaskets are rough-cut; shims and thin metal part edges show evidence of cutting or dressing by hand tools (filing, hacksaw marks, tin snips, or nippers).
- Assembled items fit poorly.
- Metallic items are pitted or corroded.

- Heat discoloration marks.
- Casting markings have been ground off and the item has been re-stamped with other markings.
- Configuration is not consistent with other items from the same supplier or varies from that indicated in supplier literature or drawings.
- Inconsistency between vendor (seller or manufacturer) name on the item, and the shipping container.

Visual Inspection continued

- Nameplates attached with inconsistent fasteners, such as screws instead of rivets, or a combination of rivets and screws.
- Nameplates attached in a different location than normal.
- Warning labels with grammatical errors and conflicts with information found elsewhere on the packaging.
- Nameplates missing manufacturer's standard markings, stamps, or logos, and with irregular stamping or inconsistent type (font).
- Inconsistent appearances of items in the same shipment.
- Shipping boxes / totes containing mixed batch numbers, expiration dates, and uniform product codes (UPC).
- The item or component matches the description of one that is listed on a suspect item list (e.g., DOE Suspect/Counterfeit Fastener Headmark List).
- Unusual packaging and boxing of items. Packaging is inconsistent with the manufacturer's normal packaging or documentation requirements.
- Questionable or meaningless numbers on the item(s) or packaging.
- Signs of weld repairs
- Country of origin is China[1], Taiwan, India, Korea, or Mexico.
- Underwriters Laboratories (UL) marks missing one or more of the four elements (UL trademark, the word LISTED in capital letters, product identity, and a control number)[2]; a UL mark on the package – but not on the product.

Procurement

- Quoted price for the item is unusually discounted or low.[3]
- Unusual disclaimers, or denials, of responsibility for the accuracy of the test results, etc.
- The supplier is not a manufacturer's authorized distributor.
- Dimensions of the item are inconsistent with the specification requested on the purchase order, and those provided by the manufacturer at the time of the shipment.

1. In 2003, more than 66% of goods seized at ports of entry into this country were traced to China. What are Counterfeiting and Piracy Costing the American Economy. National Chamber Foundation, 2005.

2. Refer to http://www.ul.com/ace/fake.html

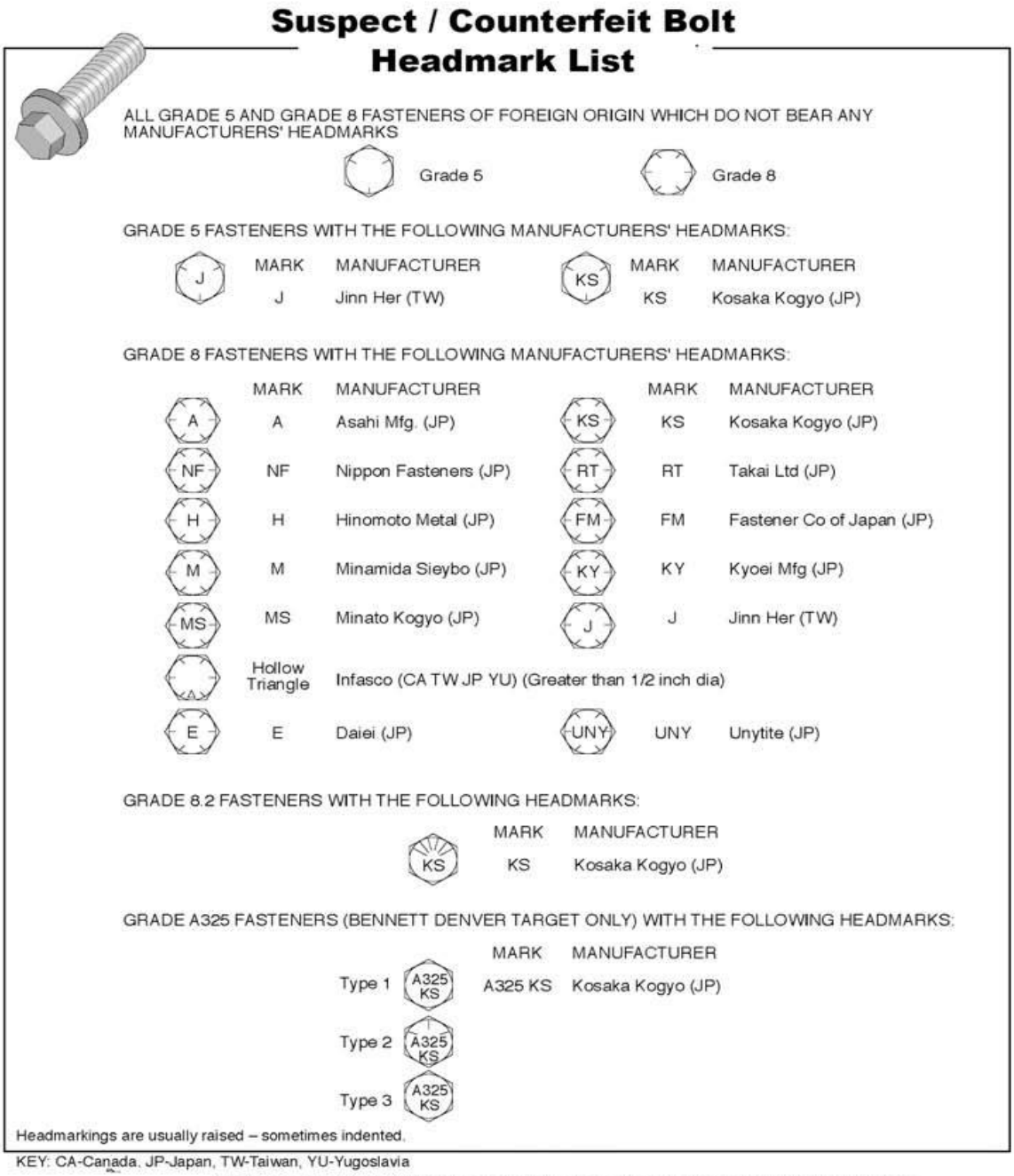
3. There have been reports of counterfeiters raising prices to just below OEM levels in order to prevent such concerns. http://fleetowner.com/mag/fleet_counterfeit_parts_buyer/index.html

## II. DOCUMENTATION

Documentation may be suspect or fraudulent when:

- The use of correction fluid or correction tape is evident.
- Type style, size, or pitch change is evident.
- Documentation is not signed or initialed when required.
- It is excessively faded or unclear (indicating multiple, sequential copying), or data is missing.
- The name of the document approver, or title, cannot be determined; the document has missing or illegible signature, initials; the approvers name and signature does not match.
- Technical data is inconsistent with code or standard requirements.
- Certification or test results are identical between items when normal variations should be expected.
- Document is not traceable to the items procured.
- Corrections are not properly lined-out, initialed and dated.
- Documentation is not delivered as required on the purchase order, or is in an unusual format.
- Lines on forms are bent, broken, or interrupted indicating data has been deleted or exchanged by “cut and paste”.
- Handwritten entries are on the same document where there is typed or preprinted data.
- Text on page ends abruptly and the number of pages conflicts with the transmittal.
- Data on a single line is located at different heights.

## 9.2 Appendix 2 - S/CI Counterfeit Bolt Headmark List



**Suspect / Counterfeit Bolt Headmark List**

ALL GRADE 5 AND GRADE 8 FASTENERS OF FOREIGN ORIGIN WHICH DO NOT BEAR ANY MANUFACTURERS' HEADMARKS

Grade 5 Grade 8

GRADE 5 FASTENERS WITH THE FOLLOWING MANUFACTURERS' HEADMARKS:

| MARK | MANUFACTURER |
|---|---|
| J | Jinn Her (TW) |
| KS | Kosaka Kogyo (JP) |

GRADE 8 FASTENERS WITH THE FOLLOWING MANUFACTURERS' HEADMARKS:

| MARK | MANUFACTURER |
|---|---|
| A | Asahi Mfg. (JP) |
| NF | Nippon Fasteners (JP) |
| H | Hinomoto Metal (JP) |
| M | Minamida Sieybo (JP) |
| MS | Minato Kogyo (JP) |
| Hollow Triangle | Infasco (CA TW JP YU) (Greater than 1/2 inch dia) |
| E | Daiei (JP) |
| KS | Kosaka Kogyo (JP) |
| RT | Takai Ltd (JP) |
| FM | Fastener Co of Japan (JP) |
| KY | Kyoei Mfg (JP) |
| J | Jinn Her (TW) |
| UNY | Unytite (JP) |

GRADE 8.2 FASTENERS WITH THE FOLLOWING HEADMARKS:

| MARK | MANUFACTURER |
|---|---|
| KS | Kosaka Kogyo (JP) |

GRADE A325 FASTENERS (BENNETT DENVER TARGET ONLY) WITH THE FOLLOWING HEADMARKS:

| | MARK | MANUFACTURER |
|---|---|---|
| Type 1 | A325 KS | Kosaka Kogyo (JP) |
| Type 2 | | |
| Type 3 | | |

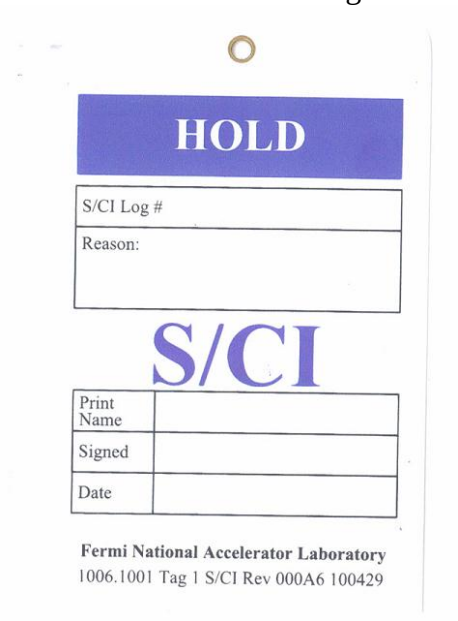
Headmarkings are usually raised – sometimes indented.

KEY: CA-Canada, JP-Japan, TW-Taiwan, YU-Yugoslavia

**ANY BOLT ON THIS LIST SHOULD BE TREATED AS DEFECTIVE WITHOUT FURTHER TESTING.**

## 9.3 Appendix 3 - S/CI Tags

FRONT S/CI Tag




**2650-402500** TAG, S/CI, RIGID VINYL, CUSTOM, 3-1/2 IN. X 5-1/2 IN. X .015 IN., W/ HANGER WIRE ATTTACHED, MFG. COLOR LOV-568 PURPLE, PACKAGE B1, 25 EA. PER PKG., PAMCO P/N MS-GW-MED ONLY -

BACK S/CI Tag