ADVANCED ENGINEERING GROUP

POWER ▪ MOTION ▪ CONTROL

COUNTERFEIT, FRAUDULENT AND SUSPECT ITEMS (CFSI) POLICY

TRAINING NOTES

JUNE 2026

DEFINITIONS:
COUNTERFEIT, FRAUDULENT & SUSPECT ITEMS

Counterfeit

- Counterfeit: items that are intentionally manufactured or refurbished or altered to imitate original products without authorization in order to pass themselves off as genuine.

Fraudulent

- Fraudulent: items that are intentionally misrepresented with intent to deceive, including items provided with incorrect identification, falsified or inaccurate certification. They may also include items sold by entities that have acquired the right to manufacture a specified quantity of an item but produce a larger quantity than authorized and sell the excess as legitimate inventory.

Suspect

- Items where there is an indication or suspicion that they may not be genuine.

Item

- Although 'I' stands for item, it can be a product but can also be a service.

Definitions source: Report No. 2019/005 World Nuclear Association

CONTEXT

According to the Organisation for Economic Cooperation and Development (OECD), international trade in counterfeit and pirated goods more than doubled from around $110 billion in 2000 to $250 billion in 2007, and nearly doubled again to reach $465 billion in 2013. While this represents only 2.5% of international trade in goods, it demonstrates a worrying trend.

A UK government report states that counterfeiting and piracy “has spread from cottage industries producing poor quality, counterfeit fashion accessories and goods, to massive manufacturing plants that can produce cheap copies of everything from home entertainment products and electrical appliances to medicines, car parts and household goods”.

Asian countries account for the largest number of counterfeit and pirated goods exported according to the OECD. Other locations of counterfeiting activity are to be found in Europe and North America, which are also the largest markets for the sale of counterfeits.

Source: Report No. 2019/005 World Nuclear Association

CONTEXT

Attempts to defraud customers occur across the globe, and all industries have examples of such malpractice.

These cases show that there are a number of common factors that may be involved in attempts to sell CFSIs. These include corrupt procurement practices as well as failures in quality control. Another common element is the use of brokers by customers and suppliers, probably to obscure traceability and disguise bribery under the guise of brokerage fees.

Because counterfeiting is itself a complex activity with its own supply chain, the enterprises involved are frequently part of, or pay protection money to, an organized crime group (although this is not always the case).

Shutting down illicit trade routes is clearly a government responsibility, but we can all reduce the likelihood of CFSI infiltration by relying upon reputable shippers and agents in their business activities.

Definitions source: Report No. 2019/005 World Nuclear Association

SPOT THE DIFFERENCE





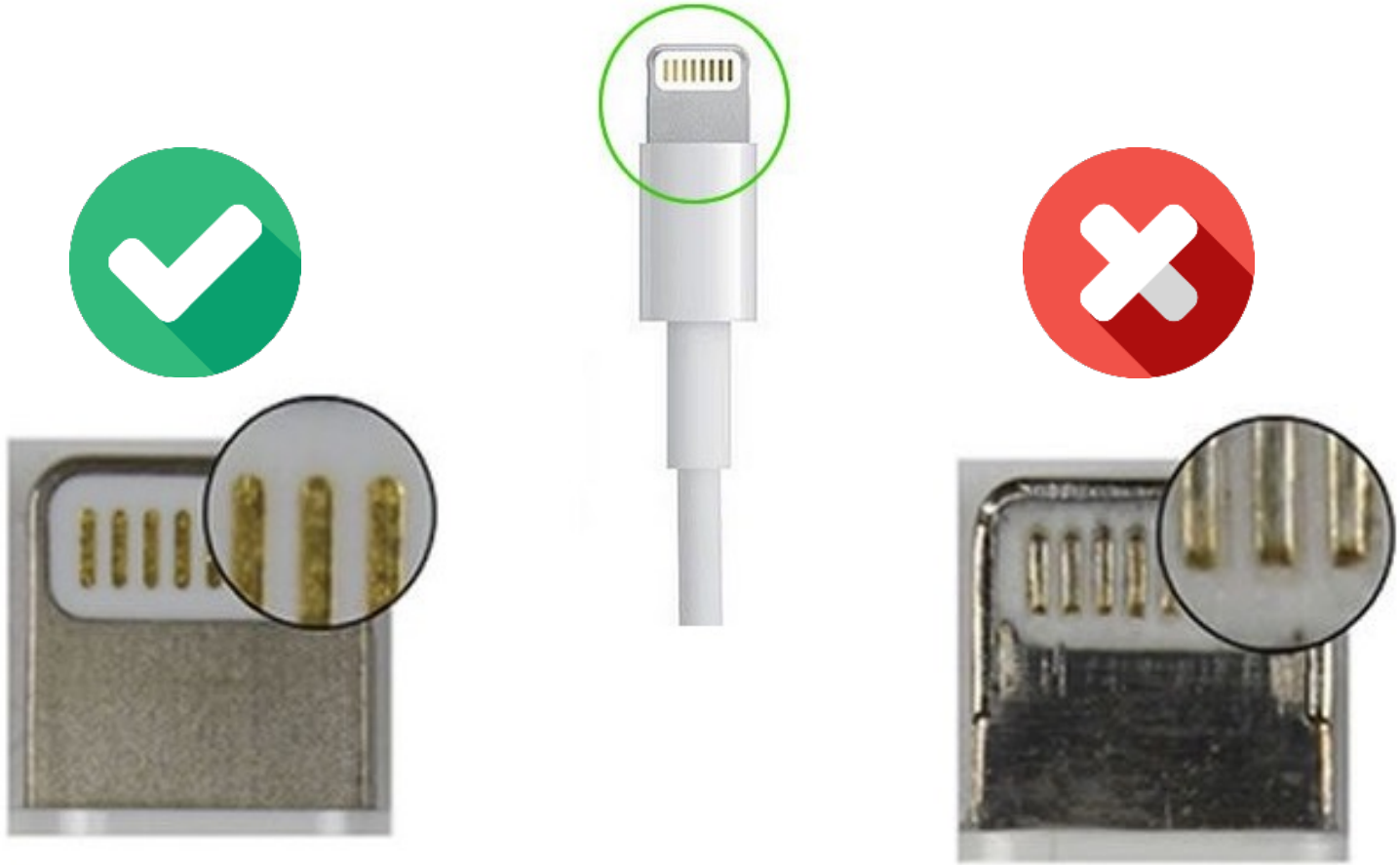
An authentic Duracell Battery has a laser-etched or stamped batch number on it.

This is missing from the counterfeit battery.

The label on authentic Duracell batteries will not peel off.

If the label peels off, you have a counterfeit battery.

SPOT THE DIFFERENCE



Inspect the Lightning connector end

The authentic product is a single piece, smooth and has rounded, smooth contacts.

The counterfeit is multiple pieces, has a rough finish and squared uneven contacts.

SPOT THE DIFFERENCE



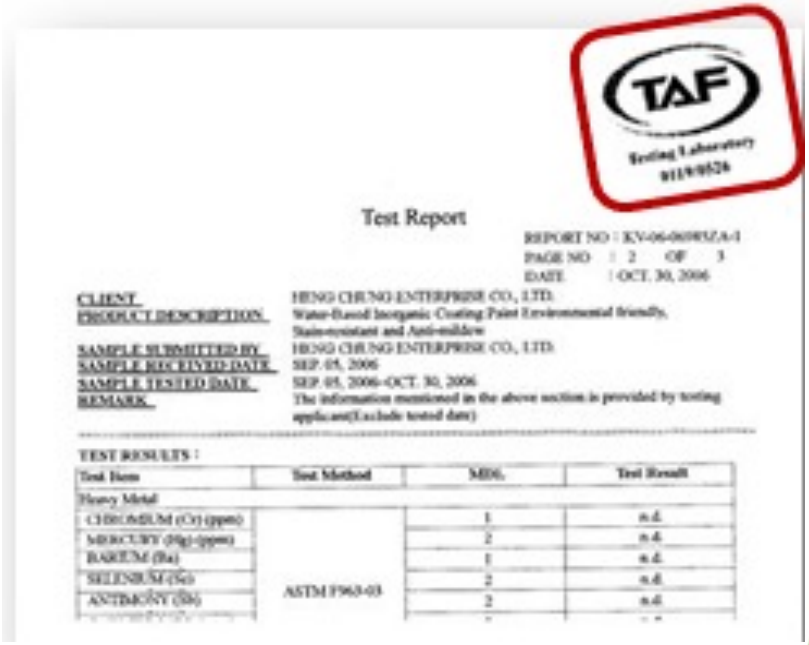
Test Report

REPORT NO : KV-06-060852A-1
PAGE NO : 1 OF 3
DATE : OCT. 30, 2006

CLIENT: HENG CHUNG ENTERPRISE CO., LTD.
PRODUCT DESCRIPTION: Water-Based Inorganic Coating Paint Environmental friendly, Stain-resistant and Anti-mildew
SAMPLE SUBMITTED BY: HENG CHUNG ENTERPRISE CO., LTD.
SAMPLE RECEIVED DATE: SEP. 05, 2006
SAMPLE TESTED DATE: SEP. 05, 2006-OCT. 30, 2006
REMARK: The information mentioned in the above section is provided by testing applicant(Exclude tested date)

TEST RESULTS :

Test Item	Test Item	Test Result
High Temperature Resistance (600℃, 1hr)	CNS 10755(1995)	No blister、swelling and peeling on the surface of specimen
Scrub Resistance(2000 times)		It is endurable to washing test for 2000 times



Test Report

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TEST RESULTS :

Test Item	Test Method	MDL	Test Result
Heavy Metal			
CHROMIUM (Cr) (ppm)	ASTM F963-03	1	n.d.
MERCURY (Hg) (ppm)		2	n.d.
BARIUM (Ba)		1	n.d.
SELENIUM (Se)		2	n.d.
ANTIMONY (Sb)		2	n.d.

Misaligned Logo - On this Test Report, the logo is clearly misaligned making the report un-professional, out of template and suspect.

SPOT THE DIFFERENCE



CE



CE

CE markings may share initials, but they represent fundamentally different concepts.

CE (Conformité Européenne) signifies compliance with rigorous EU regulations, while **CE (China Export)** should be regarded with caution, as it lacks any official regulatory significance within the EU.

SPOT THE DIFFERENCE





Legitimate ((left) and counterfeit (right) Ladish 5” Check Valves at a US Nuclear power plant.

Suspect markings and labelling led to an investigation which found sub-standard material that had no certification

Source: EPRI Progress Report 2009

SPOT THE DIFFERENCE



An example of a counterfeit Walworth gate valve (centre) is much like the other two authentic valves but did not meet product specifications.

source: https://www.nrc.gov/docs/ML2204/ML22040A111.pdf

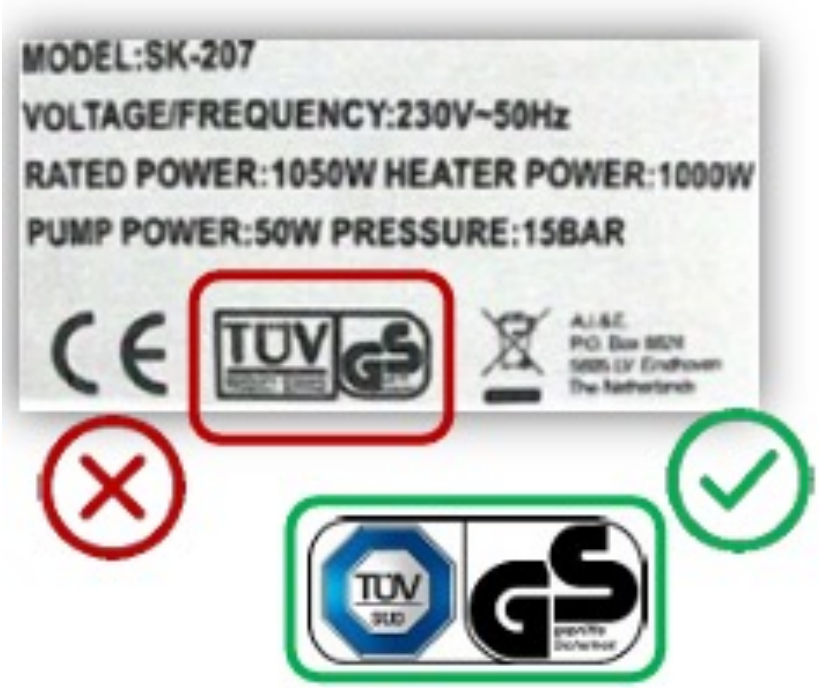
SPOT THE DIFFERENCE

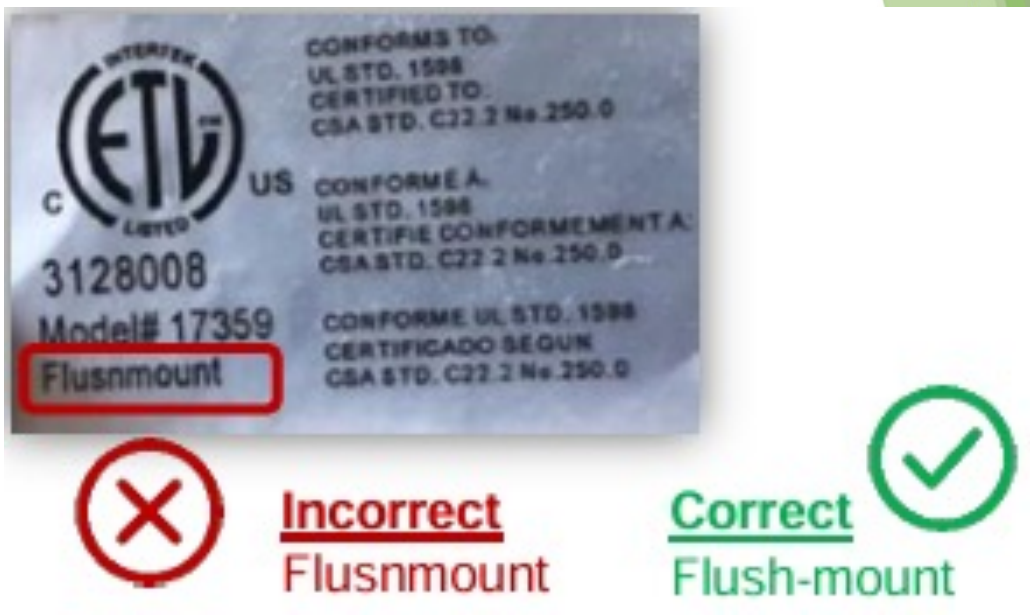
LEFT:
Original Batuvana product with serial numbers on the flange, thick flanges and bolts

RIGHT:
Counterfeit product without serial number on the flange, thin flanges and bolts.



SPOT THE DIFFERENCE



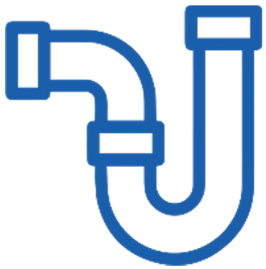


Incorrect Marks or Wording Incorrect use of marks or wording on the products or packaging is a way to spot fraudulent products.

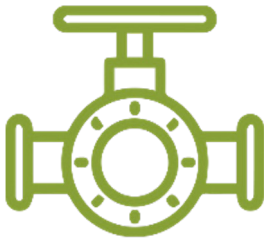
DID YOU KNOW ?



Steel



Pipe Fittings



Valves



Electrical Equipment



Pipes



Circuit Breakers



Cement



Pressure Vessels



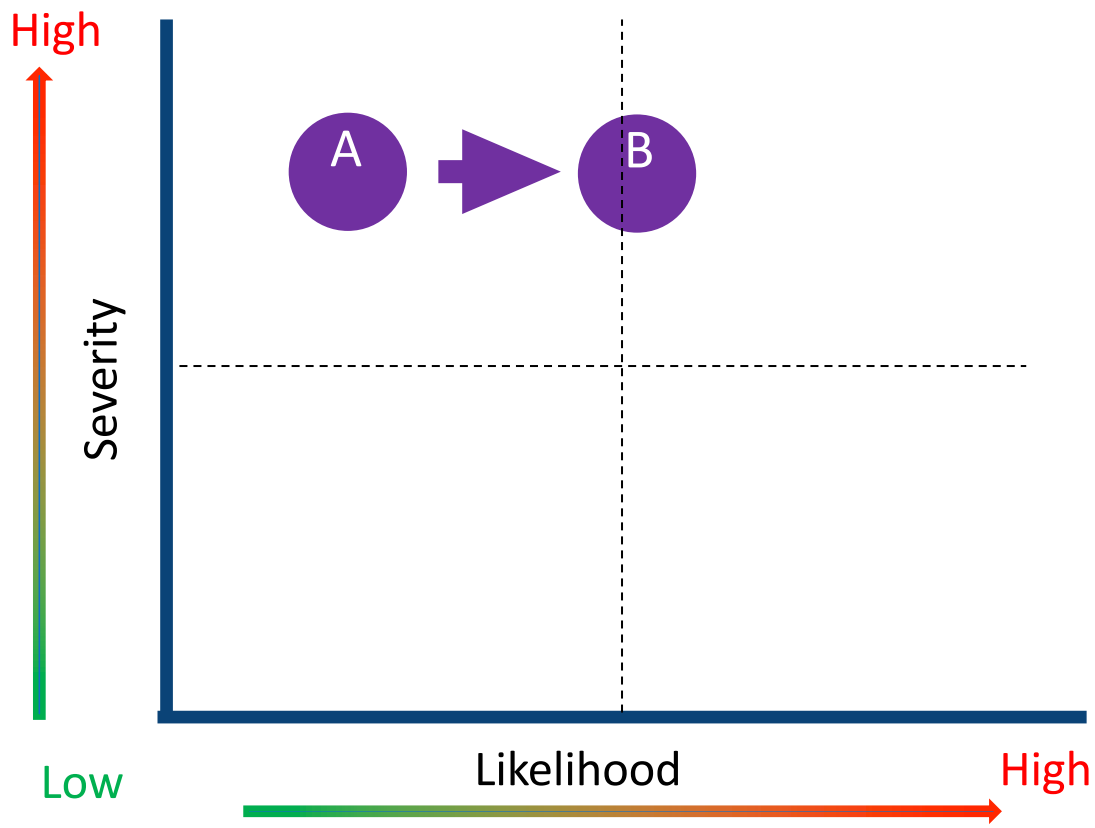
Rotating Equipment Parts



Fastners

Research, conducted by the Construction Industry Institute in 2011, found that raw, substandard steel was the most counterfeited commodity among the materials it inquired about from interviewees. Above is the rest of its Top Ten list.

LIKELEYHOOD....



Risk = Severity x likelihood

Historically CFSI's had a very low Likelihood **(A)** but always a high severity.

Due to the money that can be made and digital innovations the likelihood is increasingly rapidly **(B)**

CONSEQUENCES…



What can be done to prevent this recurring in the future?

- Increased (not excessive) training
- Increased (not excessive) changes to practice
- Increased (not excessive) Inspection

MITIGATION ?

CULTURE

- Promote Awareness – make it a topic that is taken seriously in the business
- Include the Supply Chain – let them know the business is aware and acts on CFSI
- Empower everyone at all levels in the organisation to be able to identify and report CFSI
- Provide Training within the business

RED FLAGS

- Shorter lead times than other suppliers.
- The product / material is known to be susceptible to counterfeiting.
- A suspected CFSI of similar type has been previously reported.
- Sudden availability of obsolete or hard to source goods.
- Prices are cheaper than expected.
- Scrapping or rework of non-conforming products will be extremely costly.
- If it is too good to be true, it probably is …
- The provider is not OEM, authorized distributor or is unknown within the industry.
- Slight differences in packaging or labels, or spelling mistakes.
- The provider of the goods is known to be in poor or declining financial position.

MITIGATION ?

GOOD PRACTICES

- Review, revise and, if necessary, create policies, practices & checklists
  - CFSI Policy
  - Enquiry Process
  - Design Processes
  - Purchasing Processes
  - Supplier Evaluation and Approval Processes
  - Goods Receiving Inspection Processes
  - Non-Conforming Product-Services and Corrective Action Processes

- Design – clearly define technical specifications, critical characteristics and acceptance criteria as early as possible.

- Procurement – Ensure that these requirements are passed down through the Supply Chain as they form an essential part in acceptance of goods upon delivery. **With the rise of online purchasing, the complexity of tackling CFSI in a modern supply chain has increased. Try to source directly with the manufacturer.** Carry out thorough due diligence before engaging with a new supplier. If this isn't possible, find out where non-approved suppliers are sourcing from.

- Goods Receipt & Workflow – Ensure goods and documentation are inspected thoroughly upon receipt as per existing processes and checklists – if in doubt ask! Store materials and WIP in allocated areas and ensure that any CFSI or Nonconforming items are identified, placed in quarantine area and recorded.

MITIGATION ?

- Ensure Inspection & Quality checks are conducted as per process requirements throughout a project/order
- Personnel with QA/QC responsibilities to employ a challenging approach.
- Don’t under-estimate language barriers: make use of local resources, eliminate any misinterpretation.
- Validate everything: company, the equipment, the documents, life-time records etc.
- Use formal checklists to ensure consistency and continuity i.e. Goods In Checklist

MITIGATION ?

- Wrench marks on valve packing glands, nuts, and bolts
- Nameplates attached with screws rather than rivets
- Poor fit between assembled valve parts
- Dirty internals
- Scratched or marred fasteners or packing glands
- Gate valve: gate off-centre when viewed through open end
- Fresh sand-blasted appearance of valve bodies, eyebolts, fittings, stems
- Loose or missing fasteners
- Different types of hand wheels on valves of the same manufacturer
- Some parts (e.g., hand wheels) look newer than rest of the valve
- Improper materials (e.g., bronze nut on a stainless stem)
- Post-manufacturing alteration to identification/rating markings
- Indication of previous joint welding
- Excessive standards markings (e.g. UL, ATEX, API, FM, CGA, AGA) (check manufacturer literature for standards they use)
- Valves will not open or close, even when wrench applied.
- Substandard valves mixed in with standard valves (substitution)

Source: www.hss.energy.gov/CSA/CSP/sci/SCIAwarenessTrainingManual062007.pdf. Appendix B via https://www.valvemagazine.com/articles/suspicious-and-counterfeit-valves-an-avoidable-danger

EXAMPLE…

Flanges received as ‘New’ at a US Department of Energy Site – note clamp marks, different rivet sizes on tags, groove in bolt hole and lack of cleanliness.



CONCLUSION & RECAP

- CFSI is on the increase
- A CFSI incident has significant impacts
- Everyone in the business can play a part in identifying CFSI
- If in doubt ask.

References/Credits:
https://www.nuclearinst.com/write/MediaUploads/SDF%20documents/SCQ/CFSI_Mulitpage_Leaflet_V1.pdf
https://www.energy.gov/sites/prod/files/2014/06/f16/SCI_Training_Manual.pdf
https://www.stork.com/en/news-media/webinars/webinar-counterfeit-fraudulent-and-suspect-items