Metals and Minerals Bulletin

Purpose of Using Seals as Applied by Inspection Companies	Bulletin 22-02 Rev. 0 - 0

Introduction

TIC Council member companies have become aware of instances where seals applied by inspection companies are considered as a solid measure to secure a cargo, as opposed to the tamper evidence function it should have. This document has the objective of clarifying the major scope of sealing and its applications, as well as the limitation that need to be considered when dealing with sealing devices and their use.

References:

- ISO 17712-2013 – Freight Containers – Mechanical seals
- ASTM F1158-2015 – Standard Guide for Inspection and Evaluation of Tampering of Security Seals
- LAUR-03-0269 – Tamper-Indicating Seals: Practices, Problems, and Standard

Seal definition, scope and use.

Seals are devices intended to detect apparent tampering or entry in to sensitive packages or spaces after they have been applied into or onto them. Typically, they are relatively economic and, therefore, it is industry practice to consider seals as an inexpensive way to provide a tampering evidence.

The use of seals is widely adopted by the industry for this aim. Multiple types of seals are available in the market, each one with his own characteristics, limitations, and costs. The aim of this document is not to explore the wide range of seals available, but rather to highlight the benefits and limitation of the seals, and to highlight and bring to the attention of relevant industry players that the actual scope/use of a seal by TIC Council member companies is to validate that a sealed cargo confirms that it has been inspected/sampled. Seals are placed on cargo to confirm the inspection/sampling has been completed

All types of seals must be identifiable by an alphanumeric code, provided by the supplier of the seal, which needs to be unique and traceable along the life of the seal; from its supply, to its application and to its removal.

Seals in the TIC industry.

In the Metals and Minerals industry, seals are typically applied to samples, shipping containers, rotainers, rotaboxes, hold-entries and hatches. The primary aim of the application of seal is to act as confirmation that the said cargo/shipment has been sampled/inspected by a TIC Council member company, and to reduce the possible risk for a cargo/sample to be compromised after it has been sampled/inspected.

Revisions/Reaffirmations	
Rev. 0	November 2022

Different types of inspection services are provided by the TIC Council's Metals and Minerals Committee member companies, which can be mainly divided in two groups: application of TIC Council members branded seals, and supervision of application/removal of third-party seals (such as the shipping lines seals).

Proper protocols are adopted to prevent any possible tampering when members of TIC Council's Metals and Minerals Committee are required to apply their branded seals. Said protocols consists of:

- Specific procedures for the procurement of seals from well identified and approved supplier, providing seals in compliance with ISO 17721.
- Procedures for the seal storage, distribution, and inventory.
- Procedures for the seals handing out to inspectors, their application and possible surplus return.
- Procedures for seals inspection at the time and place of the inspection before removal from the object, as per ASTM F1158 principles.

When TIC Council's Metals and Minerals Committee members are requested to supervise the application/removal of third-party seals, they will only report the facts as noted at the time and place of the inspection. It is unknown to TIC Member the origin of the third-party seals, as well as the compliance to the above-mentioned procedures by the seals owner/supplier.

Benefits and limitations of Seals

Based on prior considerations, a seal can provide a cost-effective level of security when all procedure described are well respected, and when an inspection of the seal is performed with due care at each point of the logistic chain to promptly identify possible signs of tampering or duplication.

However, it is important to note that seals cannot be considered invulnerable to well organized and targeted criminal actions. As stated in the LAUR-03-0269, all seals available in the market can be defeated in a time frame of 3 to 44 minutes, without leaving any evident sign of tampering. A sealing device should be considered as tamper-delaying at best.

Seals can also be bypassed when access to the cargo is reached through different means, for example by removing a panel, a complete door or locking bars, as well as by injecting contaminants through the membrane of a sample bag or the cap of a sample bottle.

Therefore, it is important for TIC Council's Metal and Minerals Committee members to warn the industry players of not overestimating the level of security provided by a seal, and to adopt specific procedures and measures of prevention to limit as much possible the risk of a seal tampering.

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