

TAPA TSR

Locking Systems Guidance V2

A TAPA Trucking Security Requirements Guidance Document for users of TAPA Standards



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1. Introduction

Welcome to the 2nd edition of the Locking Systems Guidance (LSG). TAPA has produced the LSG to provide helpful and supporting information on locking systems for users the TAPA Trucking Security Requirements (TSR) Standard.

The idea for producing a TAPA guide on locking systems came from supply chain security professionals who are also members of TAPA. This guide covers many of the locking system options that are intended for road transport vehicles used in the supply chain industry.

TAPA has included images and information on products in the LSG. These products are available commercially and are considered examples of products that help protect vehicles and their cargoes, other products are available. TAPA does not endorse any of the products included in this document. TAPA cannot specify which product is appropriate for a TAPA TSR security level.

The purpose of this document is to:

- Provide additional detailed information on locking system solutions not covered in the TSR.
- Provide users with locking system categories that will help in selection and identification of suitable products.
- Provide suppliers examples of locking systems and their intended use

This document will be reviewed and updated as necessary, providing TSR users with up-to-date information on locking systems. The latest version will be available to download from the standards section of the TAPA website.

2. About TAPA

Cargo crime is one of the biggest supply chain challenges for manufacturers of valuable, high risk products and their logistics service suppliers.

The threat is no longer only from opportunist criminals. Today, organized crime rings are operating globally and using increasingly sophisticated attacks on vehicles, premises, and personnel to achieve their aims.



TAPA is a unique forum that unites global manufacturers, logistics suppliers, freight carriers, law enforcement agencies, and other stakeholders with the common aim of reducing losses from international supply chains. TAPA's primary focus is theft prevention through the use of real-time intelligence and the latest preventative measures.



TAPA GLOBAL HOME

Welcome to the Transported Asset Protection Association (TAPA), the world's leading supply chain resilience and security association.

To go to the homepage of any of our three regional associations, please click on the relevant area of the world map for:

[TAPA Americas](#)

[TAPA Europe, Middle East & Africa \(EMEA\)](#)

[TAPA Asia Pacific](#)




<p>1997 FOUNDED</p> <p>TAPA aims to ensure the integrity and resilience of global supply chains, enabling sustainable supply chain risk management and loss prevention through the adoption of proven industry security standards, the gathering and sharing of threat and loss intelligence, training, networking and collaboration with all stakeholders to ensure the secure movement and supply of goods for businesses and consumers.</p>	<p>28000 INCIDENTS REPORTED (2017-2021)</p> <p>TAPA members have access to our searchable Incident Notification Service (INS) database containing intelligence on over 28,000 cargo theft incidents. By increasing their awareness of crime hotspots, the M.O. used by cargo thieves, and the products targeted, to help them secure supply chains and support their own in-house resilience programmes.</p>	<p>1400 MEMBER COMPANIES & PARTNERS</p> <p>As the world's leading supply chain security and resilience Association, TAPA's fast-growing membership includes leading global brands and SMEs all looking to benefit from the Association's industry standards, training, threat intelligence, secure route planning, networking and communications tools and opportunities.</p>
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TRANSPORTED ASSET PROTECTION ASSOCIATION
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TAPA's Mission

TAPA's mission is to help protect members' assets by minimizing cargo losses from the supply chain. TAPA achieves this through the development and application of global security standards, recognized industry practices, technology, education, benchmarking, regulatory collaboration, and the proactive identification of crime trends and supply chain security threats.

3. TSR Overview

Locking systems are an important layer for protecting road transport vehicles and their cargo. However, it should be clear that they are just one of many countermeasures to be considered when selecting the deterrents and physical security measures to protect drivers, vehicles, and their cargo. Therefore, TAPA recommends to its members and the industry to adopt TAPA TSR as the standard for goods to be transported by road. Achieving TAPA TSR certification means that the operators road transport operations have been approved by an accredited certification body (TSR 1-3) or by TAPA (TSR 3).

The table below is from TSR 2020 and shows the road transportation options or modules available for certification.

Table 1

Ref#	Module	Description	Level	Auditor Type
6.3.1	Hard sided Truck	Truck + rigid body trailer	1, 2, or 3	IAB AA
6.3.2	Soft sided Truck	Truck + curtain sided trailer	3	IAB AA
6.3.3	Rigid Vans/Fixed Body Trucks	Van or truck with dedicated cargo compartment	1, 2, or 3	IAB AA
6.3.4	Sea Container	Road transport segment only	1, 2, or 3	IAB AA

The TSR requires a layered approach to protecting vehicles and includes:

- Scalable security levels to assist the operator in the selection risk mitigation countermeasures.
 - TSR Level 3 provides basic countermeasures and procedures that help to provide deterrents and protection for vehicles from criminal interest.
 - TSR Levels 1 and 2 provide more robust countermeasures and procedures and are more suited to protect high value and/or vulnerable loads.
 - Where the vehicle is deemed to be at high risk the then TSR can also be used for additional enhancements to cover electronic monitoring, security escorts, additional locking controls and IT/Cyber threat measures

TAPA TSR – Locking systems and the TSR standard.

TAPA is not a testing and compliance organisation and therefore cannot certify, confirm, or reject any security products that are used to help operators meet the requirements of TAPA security standards. Despite claims by some providers of locking systems, no locking systems have been certified by TAPA to meet TAPA standards. This does not mean that suitable locking systems are not available, it just means TAPA cannot certify or endorse them. Identifying locks that meet or exceed TAPA TSR requirements can sometimes be a challenge for auditors and the end users. TAPA TSR describes the features and capabilities that a locking system is required to meet as part of the certification audit. This is what is currently required in the TSR for locking systems:

Level 1 = High-quality, stainless, or hardened steel, heavy weight high security locking device permanently installed on all cargo compartments doors. No chains, cables, light-weight bars, removable bolts/brackets etc. to be used. Locking devices must be utilized and locked during the entire journey.

Level 2 = High-quality, stainless or hardened steel, heavy weight high security locking device permanently installed on all cargo compartment doors OR use of temporary devices such as chains, cables, light-weight bars, removable bolts/brackets etc. to be used. Locking devices must be utilized and locked during the entire journey.

Level 1 & 2 = Locks must be:

- Electronically, automatically or manually operated
- Unique (duplicated codes/keys/passwords to open different locks not permitted)
- Locks and fixing devices must be able to withstand substantial force and be tamper evident.

Level 3 = Doors secured in line with LSP's/ Applicant's own internal policy.

There are also requirements for seals, which can be used to complement the locking system:

As with locking systems no seals have been certified by TAPA to meet TAPA requirements. TAPA TSR levels 1, 2 & 3 require that tamper evident seals be used on all direct, non-stop shipments. Seals shall be certified to ISO 17712 (I, S or H classification). The LSP/Applicant shall have a documented procedure in place to ensure the seals are controlled and who (user, warehouse operator or LSP etc.) is responsible for applying and removing the seals.

In addition, the TSR has optional locking enhancements that can be added to the certification:

- Internal or protected door hinges on cargo compartment doors.
- Cargo compartment doors cannot be opened independently, first door must hold the second door in place.
- Cargo compartment fitted with internal rear door lock-down system, operated remotely.

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4. Vehicle Threats and Risk Assessment

Transporting cargo by road is efficient but threats and risks must be managed.

The value and attractiveness of cargo transported by road has been referenced in many supply chain studies. It is generally accepted that up to 80% of all supply chain losses occur during the road transport segments and nearly 60% of incidents take place when the vehicle is parked. The value and accessibility of goods that can easily be turned into cash attracts both opportunist and serious organised criminals. Modern road cargo transportation methods must be timely and cost efficient to meet the demands of the manufacturers, the logistic service suppliers, and consumers. However, appropriate security countermeasures should be considered when designing and managing road transportation systems. Protecting the driver, the vehicle and the cargo being carried should be the designed into the transportation methodology being used (e.g. TAPA Standards). It is through good design and planning that deterrents can be introduced that help prevent or minimise impacts of cargo loss.

The external threat

Just as security professionals complete risk assessments to protect road transport vehicles and their cargo. Criminals are also carrying out their risk assessment. Is the risk of being caught worth the potential reward? When it comes to attacking vehicles, criminals do not like to make noise, take too long to access their target cargo, or be interrupted. In most incidents organized criminals will have the knowledge to

- Attack the vehicle when it is in a vulnerable location
- Access the cargo compartment by defeating or avoiding the physical measures in place.
- Have a plan for neutralizing or ignoring any electronic sensors they know will be in place.
- Calculate how much time they need to complete their operation and make their escape with their targeted cargo.

The opportunist threat

The lack of secure parking locations or the transport providers reluctance to use them, often result in vehicles parking in inappropriate unsecured locations. These unsecured locations are often targeted by opportunist criminals. Incidents can occur regardless of the driver taking a rest in their vehicle cab or being or absent from the vehicle. The vehicles onboard security is often the only protection and the locking system provides the first line of defence against the criminal.

The internal threat

Often the easiest way for a criminal to gain access to the cargo is with the assistance of a person from within the Logistics Service Suppliers own organization. It is an unfortunate fact that employee's collaboration with criminals is still a common risk. Procedures to control shipping information, keys, pin codes and unsupervised access to the cargo are also important factors to consider in protecting the cargo from internal threat.

The impact

The consequences of not considering the threat from criminal enterprise unfortunately go far beyond the value of a stolen cargo. Injuries to drivers, significant supply chain disruption and loss of revenues are all potential impacts that can result from a successful criminal incident.

Data, data, data

The availability of good data is crucial to the risk assessment and preplanning for protecting cargo transported by road. The location and details of historic criminal activity are key considerations when designing suitable countermeasures for a transport vehicle. Therefore, identification of criminal hotspots, use of safe routes, best available parking locations and pre-approved rest stops should all be part of the risk assessment process.

Suitable and sufficient management systems

Management commitment to support security policy and procedures in place that enforce the selection of the mitigation options should be in place as standard practice.

Locking systems - Designing out the risks.

Vehicle locking systems should be designed to assist in supporting the basic security principles of deter, detect, delay, respond and when used in conjunction with additional security measures such as electronic sensors and alarms can provide a high level of confidence in the security design. Unsuitable locking systems such as plastic seals or low-grade padlocks/chains etc. will invite the attention of criminals. Even minor upgrades in locking systems could improve protection of the cargo. Examples to consider are:

- Protecting the cargo compartment door and lock v the lock mechanism
- Permanently installed heavy duty lock v enclosed padlock
- Enclosed padlock v a bolt seal,
- Bolt seals v a plastic seal
- Padlock v a no lock policy.

Risk assessment

Most security practitioners will advise use of a risk assessment process to help select the countermeasures that can help mitigate the threat of theft to an acceptable level. The selection of a suitable locking system should be aided by the risk assessment process.

- What features/protection the locking system must provide
- The consequences of the locking system being defeated.
- Does the locking system compliment the measures that support the protection of the driver, the vehicle, and the cargo? These can include a combination of pre-defined emergency/operational procedures, physical locking systems, alarm sensors, tracking/signalling technology
- Supporting procedures that allow for event management and emergency response.

While this LSG is focused on locking systems, when completing a vehicle risk assessment, it is equally important to consider all the areas that can be exploited by perpetrators looking to steal the vehicle and/or its load. Therefore, expanding the risk assessment to cover these areas is highly recommended.

- Cargo compartment integrity: Are the doors, sides, floor and roof of the cargo compartment satisfactory for the type of cargo the vehicle is required to transport?
- As TSR provides 3 levels of security, has the right level been selected for protecting the driver, the vehicle and the cargo?
- Are there any unique threats that need to be considered for a particular route? These could include transiting a high risk area, specific intelligence of criminal threats or network infrastructure problems such as roadworks, bad weather or civil action.

5. Case Study On Secured Container Security

Security Level TSR1 – Road Container Transport

With the Revision of the TSR 2020 standard, TAPA introduced the Modular option where the LSP/Applicant can select which transportation option best suits their needs. The inclusion of a “Road Container” option was the most challenging. Meeting the requirements of TSR level 1 could only be achieved with the use of approved waivers and/or installing permanent modifications to the container. It was hoped that the industry would recognize a demand for TSR 1 road container modes of transport and provide TAPA with innovative solutions. This document provides the results of such a collaboration between TAPA EMEA, an Independent Audit Body, a subject matter expert, and a Logistics Service Provider to source and implement a TSR 1 Road Container Solution.

Although welcomed by the industry, the introduction of the TSR Sea Container Road module has created a challenge to introduce TSR level 1 as an achievable option. While a standard truck and container chassis can be upgraded by the operator to comply with TAPA standards, the containers are in most cases owned by a leasing or shipping line company and no permanent modifications are possible to the container to achieve TSR 1. This results in the following barriers to overcome to achieve a TSR 1 certification status:

- A sea- container has no installation to power for electronic locking and GPS/GSM systems.
- In normal use, a container is not securely attached to the trailer or chassis.
- Permanent modifications or drilling holes in the container can only be undertaken if the container is owned by the shipper or with a written agreement from the leasing or shipping company. Any unauthorized modifications to a leased or third-party owned container will result in high repair charges after returning the empty container to its owner.

This study set out to see if practical solutions could be found to provide a TSR 1 Certification for a sea container road transport operation.

Background

Prior to this study, to meet the permanently fixed lock installation requirements for TSR Level 1, sea container transportation, the LSP's only option was to provide a modified sea container with a permanently installed/welded lockbox, containing a shielded lock with a unique key. This solution is still a requirement for the study, but the installation should be completed by the owner/provider of the container to ensure no liability for unauthorized modifications arises. Lockbox containers are often used for stationary container storage where additional security is needed and where the containers are rarely transported. The use of a lockbox on containers intended for road transport is a viable solution when used in conjunction with other measures to improve container protection and achieve TSR level 1.

The applicable physical requirements from TSR level 1 requires (also see section 9 TSR):

- High-quality, stainless or hardened steel, heavy weight high security locking device permanently installed on all cargo compartments doors. No chains, cables, light-weight bars, removable bolts/brackets etc. to be used. Locking devices must be utilized and locked during the entire journey.
- Locks must be:
 - Electronically, automatically, or manually operated
 - Unique (duplicated codes/keys/passwords to open different locks not permitted)
 - Locks and fixing devices must be able to withstand substantial force and be tamper evident.



- LSP/Applicant must have detailed and documented protocol in place that includes:

- Tracking loaded trailers/containers when tethered to a truck and when uncoupled by criminal action or in error.
- 24/7 monitoring
- The ability to geofence routes and parking locations
- Documented response protocols for handling emergencies
- A tracking device must be installed on the trailer/container in a covert location. The device can be installed internally or externally
- When trailers/containers are being utilized, tracking devices must report events to include:
 - Untethering (unhooking) of the trailer/chassis
 - Device tampering of any of the installed security systems.
 - Truck/trailer/container stoppage
 - Tracker battery status
- When trailers/containers are being utilized tracking devices must be equipped with a battery back-up capable of maintaining the signalling capacity of the tracker for not less than 24 hours at a “reporting” rate of not less than one “reporting” every five minutes while the trailer is untethered.
- Unauthorized opening of cargo compartment doors sends signal to AMC.
- Unauthorized opening of cargo compartment doors activates an audible (acoustic) high decibel alarm.

Therefore, meeting the TSR 1 requirements by sourcing equipment that is intended for or can be adapted for container use can be achieved but it is important that the **solution is certifiable and working with TAPA and/or the Independent Audit Bodies to validate the solution is an important consideration.**

Generally, when referring to containers this article is referring to Sea Containers such as 20' - 40' - 45' DV (ISO Dry Van), USA 48' or 52' or Reefer containers. Except for the doors, these types of containers all have an excellent design for resistance against attacks.

- Steel sheet thickness of sidewalls and roof (Ca. 1.8mm) of Sea Containers is roughly double that of Car sheet and gives more resistance compared to normal Semi-Trailer sidewalls and roof.
- The under-structure floor is stronger, and the cross-member distance is so narrow, that a person cannot pass through.
- Reefer containers and Reefer- Semi-Trailer bodies have a comparable excellent resistance to almost any attack.

Below is a list of unique challenges to overcome in the selection of equipment regarding TSR 1 container compliance.

- Availability of containers equipped with a permanently installed lockbox
- Limited options to connect the container and the chassis to a GPS tracking system.
- Container may be loaded or unloaded when the container is not fixed to the chassis. TSR does not cover this scenario (not road transport) and the LSP should avoid or introduce special security measures to cover such circumstances.

Case Study Solution - Technical aspects to meet the TSR1 requirements

During the study and to meet the intent of TSR1 requirements special attention was given to selecting and incorporating equipment that achieves a TSR 1 compliant truck, trailer, and container.

This included ensuring the truck's alarm systems were effective, the transmission of associated signals, additional telematics systems/equipment fitted to the container chassis, and the monitoring of the container doors.

Equipment and systems were specified as follows:

Additional necessary equipment:

- Door bar lock
- Door sensor (TSD)
- Saddle Coupling Lock
- Padlock for Container (Lock Box)
- Chassis GPS
- Padlock for King Pin or latch protection

For this case study, the vehicle telematics installed in the tractor unit is not only monitoring the cab doors, but also any movement, manipulation or opening of the container doors. The alarm system is combined with an acoustic warning signal. If activated the driver a short time to confirm and unarm the system. Once the alarm system is triggered it initiates communications. A GPS position is automatically sent to the Alarm Monitoring Centre (AMC). The AMC can reset the alarm system by following a secure standard procedure. This requires a phone call between the security service provider/ traffic planning department and the driver. The driver must verify with a password.

If the driver is not attainable or does not say the right password, the security company sends the police to his location. The truck then can be located through the geo-position of the vehicle.

Implementation of additional locks



For further security, a special high-security Door Bar lock is installed. The features of this Lock are: The claws are forked and must be placed over the 2 door bar distance holders. The connecting bar, between these claws, are constructed of material that is resistant against drilling and flexing.

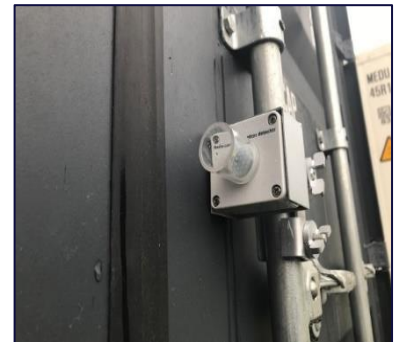


Beam locks provided by the client were also installed on the container offering additional security protection.

Installation of light barriers

In addition to the listed safety measures, a device is attached that creates a light barrier between the two inner door bars. The device is connected via a safe, not manipulable Wi-Fi connection to the alarm control inside the vehicle cab.

If the light barrier is activated in the event of a door attack attempt, the alarm system of the vehicle is instantly triggered.



Installation of additional chassis GPS in Telematics



To protect the container itself from being stolen by lifting it off the chassis, an additional alarm system is installed. A motion detector fixed on the chassis framework registers any weight difference, with or without the container. When the container is lifted, a signal is immediately sent to the alarm system in the vehicle cab GPS/GSM.

Installation of additional King Pin / Latch Protection



To detect and deter the chassis being stolen, a lock with a sensor is installed. It connects the trailer with the driver's cabin through the saddle plate. The alarm is activated when an unauthorized decoupling occurs and sends an alarm to the vehicle cab and the AMC.



The case study team concluded that the equipment used provided an acceptable anti-theft deterrent and physical protection to the vehicle, chassis and container. Used in conjunction with the driver and AMC response procedures the above-mentioned proposals meet the intent and requirements for a TSR 1 container road transport. This solution could be incorporated by an LSP into their TSR 1 Certification plans.

A practical solution

- The container is equipped with a solid, pre-installed "Lock Box ".
- The lockbox to be locked with a padlock, see TAPA TSR LSG document for examples. The Lock Box holds the container doors together.
- Use an additional movable Door- Bar- Lock. However, this lock must be fitted over the door bar distance holders of the right and left door. The locks claws must be forked to achieve that.
- A battery-powered motion sensor to be fitted on the left door, controlling the right door movements.
- This sensor must have a Blue Tooth, GSM, Infrared or another communication unit, which communicates with a receiver unit in the cabin of the truck, for onward communication to an Alarm and Monitoring Centre for further action.
- The alarm system battery status is to be constantly monitored and communicated.
- The container must be firmly connected to a chassis. Firmly, in this case, means either welded or electronically held in place or monitored. The latter is possible by making use of modern air suspension chassis, weighing the container and acknowledging the weight difference. An unauthorized lift of the container must trigger an alarm via the chassis GPS/GSM fixed unit to the AMC.
- This chassis-located sensor device should also detect an unauthorized untethering of the chassis.

Please note that the above proposal is a variation of the case study to demonstrate alternatives do exist. In addition to this option, there are many other alternatives that could be explored and discussed with TAPA.

6. Locking Systems

It is reasonable to expect that a good locking system will ensure the door to the cargo compartment remains locked and closed until opened by authorised means. When we refer to a locking system in this document, we are not just focused on a single type of lock, cable, chain, bar, bolt etc. We are focused on all the component parts that create the locking system. This may also include elements of the cargo compartment, the cargo compartment door and any other associated devices that hold the door closed.

Fit for purpose

The enemy of the road transport criminal is time and noise. By installing high quality locking systems, you are deterring some criminals from even trying to make an attempt.

To be considered:

- The locking system could be installed in or on suitable doors and/or frames of the vehicle, so that the cargo compartment door and frame are incorporated into the locking system providing additional protection to the vehicle.
- High security locks should not be able to be detached from the vehicle by cutting or forcing the adjacent fixings. Examples of a robust installation include use of concealed bolts and/or the lock being welded to steel plates or similar, attached to the vehicle.
- Fit for purpose can also mean the combination of requirements changes depending on the vehicle, its load and routes being used. High grade steel locks affixed to external door bars may be judged as sufficient if the vehicle does not stop before reaching its destination. However, if the vehicle must stop one or more times on route, this may create an opportunity for a criminal attack. Trailer external door bars, the door bar fixings or the door hinges can easily be cut rendering the lock ineffective. In this example, the use of just a high-grade lock may not be sufficient to deter an attack. The locking system could be upgraded with additional features such as sensors connected to the telematics system and/or a different locking solution incorporated into the design of the door and frame could be considered.

Quality and conformance tests

There are a wide range of suitable locking systems available for road transport vehicles and vans from a large number of suppliers. Unless you are a lock system expert or have access to one, the message is “user beware”. Use reputable suppliers and/or expert consultants to source your locking needs. Unfortunately, there are many questionable locking solutions that at first glance may appear to be adequate, but in fact may do little to deter or delay criminals in their desire to access the vehicle cargo compartment. Users with a limited knowledge of locking systems may often look for products that come with a conformance test certificate. Official test certificates for lock products are a good indication of quality and can help you to source products (see 7.2). Tested products will indeed offer some assurance that the locking systems they are considering meet or exceed their expectations. You should know however, that the conformance test process can fall short in proving the complete locking system is fit for its intended purpose. This can happen when only part of that product has been tested and not the complete design. Testing is often restricted to traditional padlocks and key cylinders. These are single components that are incorporated into the overall locking system. It could be the associated lock fixings are untested or unsuitable for their intended purpose.

Locking System Categories

In this document in we have categorized locking systems into five areas. The features included in this document are not TAPA requirements but are good indications of what to look for when selecting suitable products. In addition to traditional locking systems, we also provide examples of specialist or customized locking systems that can immobilize the vehicle or use other innovative means to secure the cargo compartment.

Locking systems have been categorized as follows and include features that should be considered when selecting suitable products.

Table 2: Locking system categories (CKOS)

1. Conventional Key Operated Systems	
a. Cylinders	
<ul style="list-style-type: none"> i. Preferably certificated to: EN/BS/DIN/CEN12320 Grade 5, or ASTM 883-5 Type P01 or Alternative. ii. Captive Key when unlocked. iii. Minimum of Key Differs: 30.000. iv. Corrosion resistant to ISO 9227. v. Locking Cycles Grade 5: 75.000. vi. Shackle to be hardened to Ca. 3.500kg/ 7.700 LBS cutting force. vii. Testing Institutes accredited to DIN/EN/ISO/IEC 17065. viii. Devices, Bracket or HASP are housings for Cylinders / Padlocks or Electronically Powered Locking Pins. 	
b. Housings	
<ul style="list-style-type: none"> i. Device, Bracket or HASP are housings for Cylinders / Padlocks or Electronically Powered Locking Pins. ii. Devices material to be: Stainless steel, Surface Hardened Steel, Casted Steel. iii. Devices to be robust, either milled, welded or casted with minimum 7 mm between outer gladding and the mechanical cylinder part (Barrel). iv. Heavy weight Devices (minimum 6kg) consist of 2 elements: <ul style="list-style-type: none"> 1. Device, Bracket, HASP 2. Locking Cylinder or Locking Cylinder inside a Padlock 	
c. Application/Product Types	
<ul style="list-style-type: none"> i. Cargo compartment doors <ul style="list-style-type: none"> a. Swing Doors: Both doors locked. The right door is permanently locked, the left door externally or internally held behind the right door. <ul style="list-style-type: none"> i. Door bar lock (removable) ii. Permanently fixed door-to-door lock iii. Permanently fixed lock door-to-frame lock iv. Hinge protection by adding fixed pins near the hinges, inside the cargo compartment. Locked during the entire journey. b. Rollup/Shutter Doors: Cannot be forced, even with help of a forklift. Locked during the entire journey. <ul style="list-style-type: none"> i. Permanently fixed locking system ii. Removable locking system iii. Sliding door: Permanently fixed locking system c. key management in place 	

Table 3: Locking system categories (KOS)

2. Keyless Operated Systems	
a. Application/Product Types	
i. Cargo compartment doors	
a. Swing Doors: Both doors locked. The right door is permanently locked, the left door externally or internally held behind the right door.	
i. Permanently fixed door-to-door lock	
ii. Permanently fixed lock door-to-frame lock	
iii. Hinge protection by adding fixed pins near the hinges, inside the cargo compartment. Locked during the entire journey.	
iv. Remotely operated electronic locking system (by third party)	
v. Driver operated electronic locking system (verification procedures in place)	
b. Rollup/Shutter Doors: Cannot be forced, even with help of a forklift. Locked during the entire journey.	
i. Permanently fixed. Remotely operated electronic locking system (by third party)	
ii. Permanently fixed. Driver operated electronic locking system (verification procedures in place)	

Table 4: Locking system categories (Seals)

3. Seals	
a. ISO 17712 - Uniform procedures for the classification, acceptance, and withdrawal of mechanical freight container seals.	
i. 17712 I = Indicative – not recommended for security application	
ii. 17712 S = Security – not recommended for security application	
iii. 17712 H = High Security – CTPAT minimum	
a. E Seals	
i. Permanently fixed. Integrated electronic seal and locking device. Variants include remote controlled release or keys pads. See also Table 2.	
ii. Removable. Used in place of a conventional ISO 17712 seal. Variants include remote controlled release or keys pads	
c. Application/Product Types. Seals are not a suitable as a locking device on their own, their main purpose is as an indication of tampering.	
i. Cargo compartment doors	
a) Swing Doors: Both doors locked. The right door is permanently locked, the left door externally or internally held behind the right door.	
i. Bolt seals class H.	
ii. One-way bracket seals class H. Steel door bar, bracket and locking cable.	
iii. Cable seals class H.	
b) Rollup/Shutter Doors:	
i. Cable seals class H.	

Table 5: Locking system categories - Customized Locking Systems

4. Customized Locking Systems	
a. Application/Product Types	
i.	<p>Cargo compartment doors</p> <p>a) Swing Doors: Both doors locked. The right door is permanently locked, the left door externally or internally held behind the right door.</p> <p style="margin-left: 20px;">i. Permanently fixed. Locking systems integrated with telematics systems.</p> <p style="margin-left: 20px;">ii. Permanently fixed. Multi-point door locking system.</p> <p style="margin-left: 20px;">iii. Hinge protection by adding fixed pins near the hinges, inside the cargo compartment. Locked during the entire journey.</p> <p>b) Rollup/Shutter Doors: Cannot be forced, even with help of a forklift. Locked during the entire journey.</p> <p style="margin-left: 20px;">i. Permanently fixed. Locking systems integrated with telematics systems.</p> <p>c) Sliding door: Permanently fixed locking system</p> <p style="margin-left: 20px;">i. Permanently fixed. Locking systems integrated with telematics systems.</p> <p style="margin-left: 20px;">ii. Permanently fixed. Multi-point door locking system.</p>

Table 6: Locking system categories - Immobilizing Systems

4. Immobilizing and Monitoring Systems	
c. Application/Product Types	
i.	<p>Vehicle</p> <p>a) Air-brake locks. key operated.</p> <p>b) Engine shut off device. Vehicle stationary activation</p>
ii.	<p>Trailer</p> <p>a) King pin lock. Key operated</p> <p>b) Draw bar locks. Key operated</p> <p>c) Swap-body/landing gear locks. Key operated</p>

7. Frequently Asked Questions

When you compare the road transport vehicles and methods of securing them in the Americas v EMEA or APAC you will often see different vehicle types and locking systems solutions available in one region but not in the others. This is further compounded by a lack of global locking system conformance standards that can be applied to the whole locking system and not just the component parts.

The situation is clearer on seals as ISO 17712 provides a classification system that is widely followed and required by CTPAT and TAPA requirements. It is still the case that many seals used today are of the wrong type for the cargo that is being transported or are being used as a locking device which is not their primary purpose.

This section seeks to provide comment on some of the questions we receive on locking systems and seals.

7.1. How can I ensure a locking system suppliers products are suitable for my needs?

Response: Ask your supplier for certification and testing evidence for the products you are considering. It is the lock manufacturer who invests time and effort in obtaining test certificates to validate and promote their products. Once tested by an accredited testing institution (ISO/IEC 17065), the lock should display the test number that was issued with the certificate.

Many specialist locking systems cannot be tested by conventional means because they incorporate several components that cannot be tested as part of a complex lock design. These locks may still have test certificates for the cylinder and padlock components, but the casing, hasps, bolts, and other fixing components may not have been strength or tamper tested. Reputable suppliers of specialist locking systems (with or without partial component test certificates) will have additional material, including customer endorsements available to support the quality of their products.

Sourcing lower cost, unbranded or an unknown manufacturers product can lead to unsuitable or unreliable products being purchased.

7.2. Do global conformance tests for road transport vehicles locking systems exist?

Response: Internationally recognized tests for road cargo transport vehicles locking systems do not exist. Assessment and test criteria for locking components that may be used in road transport vehicles locking systems are available. These standards are used by accredited testing institutions (ISO/IEC 17065) and will produce test certificates for padlocks and cylinders that meet the appropriate assessment and test criteria.

These include (there are others test standards with similar/same requirements) CEN 1303 - to establish assessment and test criteria for the measuring of a key cylinder's resistance to physical attack, key security, fire resistance and durability. Following the test, the cylinder will be graded. The security grading test will be for resistance to drilling, resistance to chisel attack (no of blows), resistance to extraction (pulling) and the torque resistance.

CEN 12320 –An assessment and test criteria for the measuring of padlocks and their fittings resistance to physical attack typically used by criminals. The locks are graded up to level 6. The higher the grade the stronger the lock. The padlock will be used in conjunction with a hasp, staple, door bolt, outer casing, or other fitting. These fittings are not normally tested and can become the weak point in the locking system.

7.3. Apart from test certificates and a supplier's customer endorsements are there other features that can help in the selection of a good locking system for a road transport vehicle?

Response:

- The locking system should visually deter interest in the vehicle (heavy, hard to defeat, seek a softer target)
- Locking system design features will require significant time to defeat with hand tools or portable power tools

- Will create noise whilst being attacked
- When selecting a suitable locking system, in addition to the locking device it is equally important to pay attention to the quality of the hasp/bracket/housing that the lock will be attached to.

7.4. What does it mean when I see a suppliers locking system product advertised as CTPAT or TAPA compliant?

Response: TAPA does not certify or endorse any lock suppliers' products. If a lock supplier state that their products are TAPA compliant, this is their assessment that their products are suitable for use to meet TAPA requirements and not an endorsement by TAPA.

7.5. How can I ensure High Security Seal products are suitable for my needs?

Response: To ensure a High Security Seal meets the necessary requirements. It must be certified as ISO 17712 and marked with an "H". To validate the seal is genuine you should ask your supplier to provide evidence and ISO certificates that includes the following:

- The manufacturer of the seal is certified to ISO 9001
- An accredited testing institution (ISO/IEC 17065) has tested the seal by performing tests against the ISO 17712 scope and have produced a certificate of conformance for the seal.
 - The mechanical strength of the seal and its resistance to tampering must meet or exceed the requirements of Clauses 5 and 6 of High-Security Seal category.

8. Useful links

8.1. TAPA Members - Security Service Providers (locking systems)

- <https://www.imbema.com/>
- <https://www.maplefleetservices.co.uk/>
- <http://www.protect-vehicle.eu/>
- <https://www.zf.com/>
- <https://autida.com/>
- <https://sternkraft.com/en/>
- <http://www.multiprotexion.com/>
- <http://www.babaco.com>
- <http://www.m-protect.net/>
- <https://www.blockshaftgroup.it/en/>
- <https://www.contguard.com/>



8.2. Information on Standards



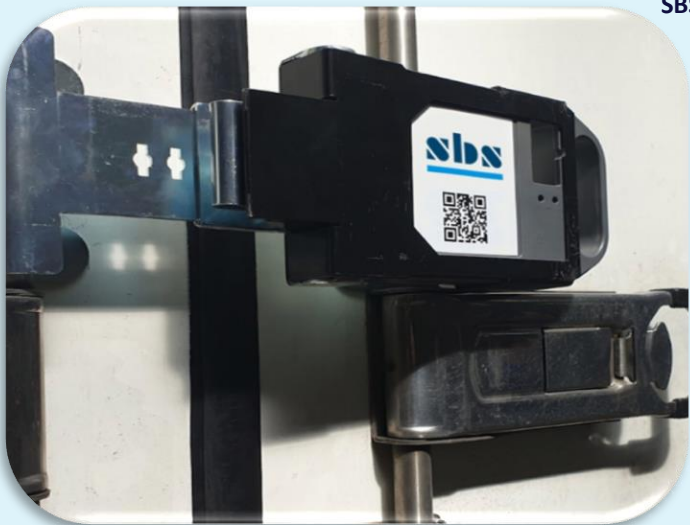
- **ISO 17712** www.iso.org/standard/62464.html
- **CEN 1303 Cylinders** www.locksonline.co.uk/community/what-is-bs-en-1303-cylinder-locks-explained.html
- **CEN 12320 Padlocks** www.locksonline.co.uk/community/bs-en-12320-the-new-updated-standard-for-padlocks.html




9. Appendix A:




Locking Systems Examples

9.1. Conventional Key Operated Systems

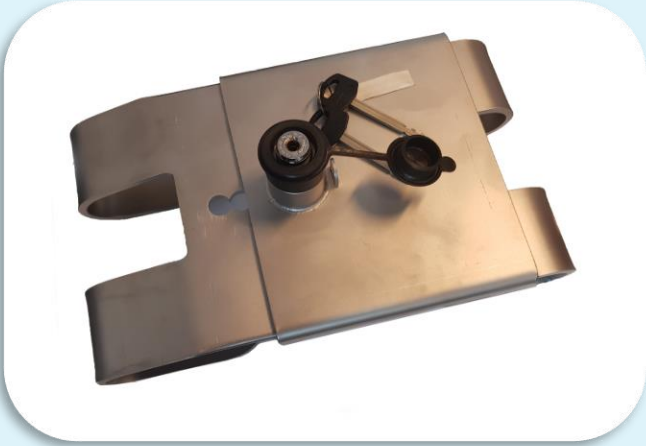


Ref CKOS	Product	Description
CKOS - 01	BDL	Lock using a padlock that connects the steel door plate to a stainless-steel housing which can be welded to the chassis or bolted to the left-hand door.
		<p>SBS Security & Safety Products BV https://www.imbema.com/</p> 
CKOS - 02	Turtle	Lock consists of two parts: one part on the left-hand door and one on the right-hand door, which are locked using a padlock. Made of stainless steel for better protection.
		<p>SBS Security & Safety Products BV https://www.imbema.com/</p> 

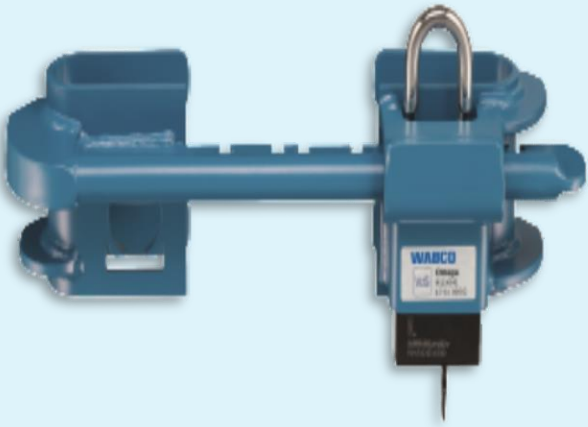


<p>CKOS - 03</p>	<p>Python</p>	<p>Heavy substitute for BDL, consists of a closed housing incorporating a padlock clamp, making it impossible to lose the padlock</p>	 <p>SBS Security & Safety Products BV https://www.imbema.com/</p>
<p>CKOS - 04</p>	<p>Cobra</p>	<p>Heavy adjustable lock suitable for trailer and container doors with locking bars and closed with a high-quality padlock.</p>	 <p>SBS Security & Safety Products BV https://www.imbema.com/</p>
<p>CKOS - 05</p>	<p>Mobile-E-Trailer lock</p>	<p>The E-trailer lock is a mobile lock for trailer doors with locking bars. The frame of the device is locked with a block lock and (SMS) alarms are triggered if it is opened nevertheless.</p>	 <p>SBS Security & Safety Products BV https://www.imbema.com/</p>




<p>CKOS - 06</p>	<p>Rhino Container lock + SCM padlock</p>	<p>Detachable lock specially for container semi-trailers which is attached across a special strip on the lower frame of the trailer using a high-quality padlock PL7000 or PL358 and blocks opening of the container door.</p>
		<p>SBS Security & Safety Products BV https://www.imbema.com/</p>
<p>CKOS - 07</p>	<p>BDL - Barn Door Lock</p>	<p>Externally mounted for swing doors. Manual locking and unlocking.</p>
		<p>Maple https://www.maplefleetservices.co.uk/</p>
<p>CKOS - 08</p>	<p>Turtle - Barn Door Lock</p>	<p>Robust, heavy-duty, external mounted on swing doors. Manual locking and unlocking.</p>
		<p>Maple https://www.maplefleetservices.co.uk/</p>


<p>CKOS - 09</p>	<p>Cobra Container Lock</p>	<p>Flexible, heavy-duty container door <u>bar</u> lock</p>
		<p style="text-align: right;">Maple https://www.maplefleetservices.co.uk/</p>
<p>CKOS - 10</p>	<p>Freight Lock</p>	<p>Internally mounted, heavy duty, multi point locking application pneumatic operated. Locks when door is closed.</p>
		<p style="text-align: right;">Maple https://www.maplefleetservices.co.uk/</p>
<p>CKOS - 11</p>	<p>Slam Secure</p>	<p>Robust, exterior mounted key operated Slam Lock</p>
		<p style="text-align: right;">Maple https://www.maplefleetservices.co.uk/</p>

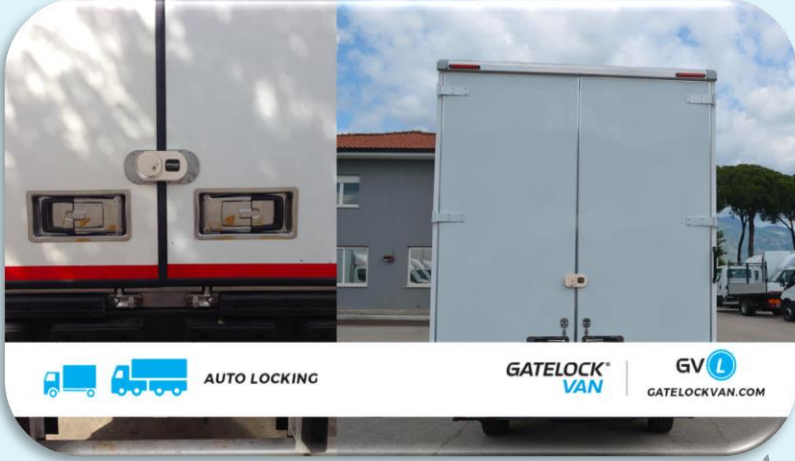

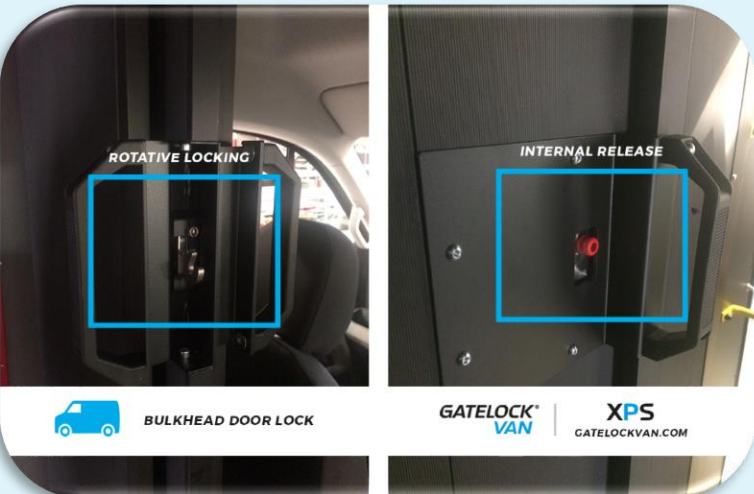
<p>CKOS-12</p>	<p>BondLock</p>	<p>Powerful and versatile locking mechanism installed on the inside of the cargo area, suitable for all vehicle and door types.</p> <p style="text-align: right;">Maple https://www.maplefleetservices.co.uk/</p> 
<p>CKOS-13</p>	<p>PV-02 CUBE Trailer Lock</p>	<p>Revolving doors and containers universal lock with high class ABLOY PL358 padlock</p> <p style="text-align: right;">DG CORP / Protect-Vehicle Security http://www.protect-vehicle.eu/</p> 
<p>CKOS-14</p>	<p>PV-04 INOX STRONG Container Lock</p>	<p>strong version, 8 mm thickness, universal Door Bar Lock 230-480 mm, stainless steel</p> <p style="text-align: right;">DG CORP / Protect-Vehicle Security http://www.protect-vehicle.eu/</p> 

<p>CKOS-15</p>	<p>PV-04 INOX DUO Container Lock</p>	<p>double protection fixed on door bars semi-trailer 250-370mm / stainless steel</p> <p>DG CORP / Protect-Vehicle Security http://www.protect-vehicle.eu/</p> 
<p>CKOS-16</p>	<p>PV-12 SR-2 LAMBERET Trailer Lock</p>	<p>Anti-Theft Lock dedicated to SR2 Lamberet Trailer / stainless steel</p> <p>DG CORP / Protect-Vehicle Security http://www.protect-vehicle.eu/</p> 
<p>CKOS-17</p>	<p>INLOCK Basic Lock</p>	<p>Permanently installed internal blockade (manual mechanical), certified ABLOY insert in set</p> <p>DG CORP / Protect-Vehicle Security http://www.protect-vehicle.eu/</p> 

<p>CKOS-18</p>	<p>Omega</p>	<p>Omega is a flexible tamper-proof designed mechanical door locking system for use with door bars.</p> <p>ZF Group - CVCS https://www.zf.com/</p> 
<p>CKOS-19</p>	<p>TSR-2fiXX</p>	<p>TSR-2fiXX is a stainless steel fixed mounted door locking system for swing doors providing an anti-drill protection.</p> <p>ZF Group - CVCS https://www.zf.com/</p> 
<p>CKOS-20</p>	<p>TLB</p>	<p>TBL is a fixed, mechanical, padlock operated door lock system that can also be used for insulated doors.</p> <p>ZF Group - CVCS https://www.zf.com/</p> 



<p>CKOS-21</p>	<p>TTB</p>	<p>TTB is a fixed mechanical padlock solution for swing doors of a mixed or screwed and welded design.</p> <p>ZF Group - CVCS https://www.zf.com/</p> 
<p>CKOS-22</p>	<p>Truck Lock II</p>	<p>Automatic lock in which the catch plate can be welded or bolted to the truck body which makes it compatible with various body types such as steel or aluminium. Locks when door is closed</p> <p>Babaco Alarm Systems Inc http://www.babaco.com</p> 
<p>CKOS-23</p>	<p>Truck Lock III</p>	<p>This is a replacement for the easily defeated factory installed J-Hook. Truck-Lok III® is made from stainless steel body and constructed with a high security cylinder. The unit locks when door is closed.</p> <p>Babaco Alarm Systems Inc http://www.babaco.com</p> 



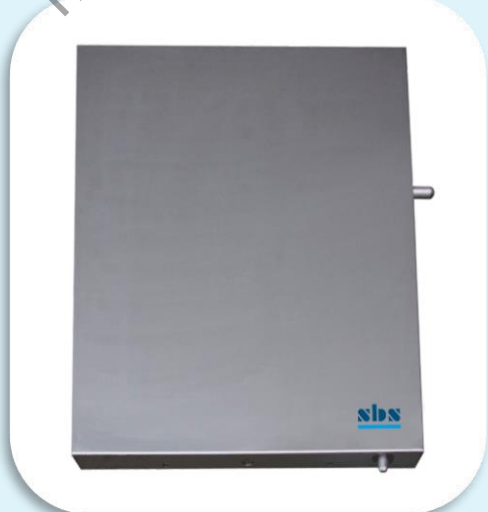
<p>CKOS-24</p>	<p>Truck Lock V</p>	<p>This solution for trucks with swing outdoors, this lock locks every time the door is closed, and the handle is put in the secure position.</p> <p>Babaco Alarm Systems Inc http://www.babaco.com</p>
<p>CKOS-25</p>	<p>Seal Lock</p>	<p>This is a unique device that combines a high security padlock with a patented design enclosure. The SEAL LOK® when placed on a door and locked provides protection against tampering and the door hardware being cut.</p> <p>Babaco Alarm Systems Inc http://www.babaco.com</p>
<p>CKOS-26</p>	<p>GATELOCK VAN MEDIUM</p>	<p>High security Lock for LIGHT COMMERCIAL VEHICLES with emergency release on loading area.</p> <p>Blockshaft https://www.blockshaftgroup.it/en/</p>  <p>GATELOCK VAN AUTO LOCKING GATELOCKVAN.COM</p>

<p>CKOS-27</p>	<p>GATELOCK VAN LARGE</p>	<p>High security Lock for BOX VAN & TRUCKS</p> <p style="text-align: right;">Blockshaft https://www.blockshaftgroup.it/en/</p> 
<p>CKOS-28</p>	<p>GATELOCK VAN CONTAINER DOORS LOCK (GVLC)</p>	<p>High Security Lock for CONTAINERS</p> <p style="text-align: right;">Blockshaft https://www.blockshaftgroup.it/en/</p> 
<p>CKOS-29</p>	<p>BULKHEAD DOOR LOCK (XPS)</p>	<p>High Security Lock for BULKHEAD DOOR on LCV's</p> <p style="text-align: right;">Blockshaft https://www.blockshaftgroup.it/en/</p> 

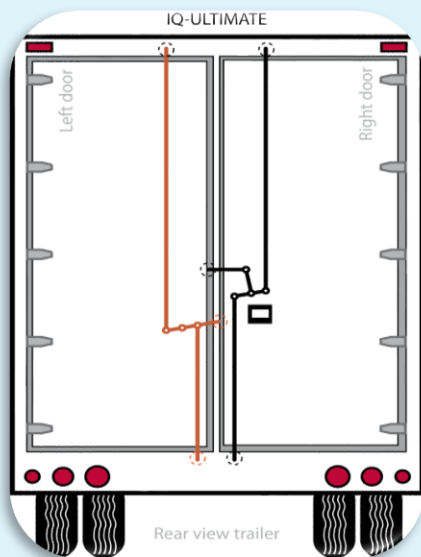
CKOS-30	ROLL-UP DOOR LOCK (XRS)	High Security Lock for ROLL-UP door of BOX VAN & TRUCKS
	 <p>Blockshaft https://www.blockshaftgroup.it/en/</p>	




9.2. Keyless Operated Systems

Ref KOS	Product	Description
KOS-01	Integritas	Integrated electronic seal and locking system with full audit trail and access control capabilities. Self-powered solution enabling simple installation.
	 <p>Maple https://www.maplefleetservices.co.uk/</p>	
KOS-02	FreightLock IQ	High security multi point locking solution with electronic seal. Featuring full audit trail and access control capabilities
	 <p>Maple https://www.maplefleetservices.co.uk/</p>	

<p>KOS-03</p>	<p>Cooler-Guard</p>	<p>Cyber-secured, keyless modular system, manual locking/slam-lock. No; batteries, -power supply or -cables in doors. Audit trail, lock status with GPS.</p> <p style="text-align: right;">Autida AB https://www.autida.com</p>
 <p>The image shows a white rectangular lock system mounted on a metal surface. It features a black handle on the left and a black rectangular lock mechanism on the right with the 'Cooler-Guard' logo.</p>		
<p>KOS-04</p>	<p>ELB-Lock</p>	<p>ELB-Lock is an electronic door locking system enabling advanced security operations, which is invisibly installed and inaccessible from outside.</p> <p style="text-align: right;">ZF Group - CVCS https://www.zf.com/</p>
 <p>The image illustrates the ELB-Lock system installed on a trailer. It shows a central lock mechanism on the door, a control panel with a keypad, and a power supply unit. A Wi-Fi symbol indicates wireless connectivity. A 'WABCO' logo is visible on the trailer's side.</p>		
<p>KOS-05</p>	<p>Inlock IQ Pro</p>	<p>Locking system consisting of a fully automatic pneumatically operated lock on the right trailer door with 20 mm thick pins.</p> <p style="text-align: right;">SBS Security & Safety Products BV https://www.imbema.com/</p>
 <p>The image shows a large, dark grey rectangular lock system mounted on a metal surface. It has a simple, industrial design with a small handle on the right side and the 'sbs' logo at the bottom.</p>		

<p>KOS-06</p>	<p>Inlock IQ Ultimate</p>	<p>Locking system consisting of a fully automatic pneumatically operated lock on the trailer doors with locking bolts on the top and bottom of the doors.</p> <p>SBS Security & Safety Products BV https://www.imbema.com/</p>
<p>KOS-07</p>	<p>Hornet</p>	<p>Locking system that does not reduce the loading capacity or insulation values of the trailer. A fully automatic pneumatically operated lock at the frame of the trailer with locking bolts in the bottom of the doors.</p> <p>SBS Security & Safety Products BV https://www.imbema.com/</p>
<p>KOS-08</p>	<p>Mamba</p>	<p>Mechanical lock with an electronic access control system which is used to lock and seal the shutter door of your trailer or container. Protects the door itself instead of the hook of the door. Lock opens via an app on telephone (traditional padlock also possible).</p> <p>SBS Security & Safety Products BV https://www.imbema.com/</p>









<p>KOS-09</p>	<p>GATELOCK VAN MEDIUM</p>	<p>Electro-mechanical High Security Lock for LCV's operated with RFID tag/transponder or by TRUCK MONITORING CENTER</p> <p>Blockshaft https://www.blockshaftgroup.it/en/</p> 
<p>KOS-10</p>	<p>GATELOCK VAN LARGE</p>	<p>Electro-mechanical High Security Lock for LCV's operated with RFID tag/transponder or by TRUCK MONITORING CENTER</p> <p>Blockshaft https://www.blockshaftgroup.it/en/</p> 
<p>KOS-11</p>	<p>BULKHEAD DOOR LOCK (XPS)</p>	<p>Electro-mechanical High Security Lock for LCV's operated with RFID tag</p> <p>Blockshaft https://www.blockshaftgroup.it/en/</p> 

9.3. Seals

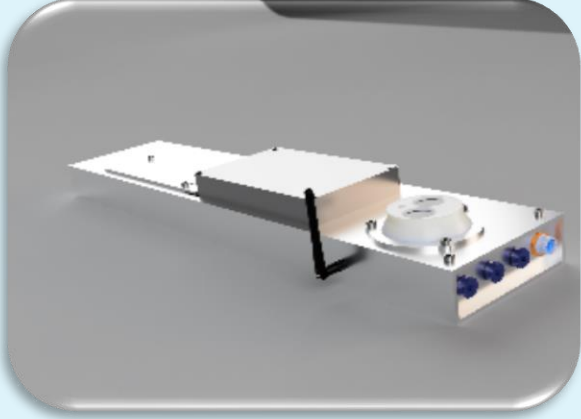


Ref S	Product	Description
S-01	Tallift IQ	Access control with sealing number to block opening of the tailgate SBS Security & Safety Products BV https://www.imbema.com/
S-02	E-Containerlock	Plug & Play GPS tracking unit with block lock for trailers, semi-trailers and containers with or without locking bars on the outside. SBS Security & Safety Products BV https://www.imbema.com/
S-03	E-Containerguard	Mobile device with GPS which can be integrated quite easily with the seals of a shipping container, sending real time alerts to monitoring portal when seals are broken and doors opened. SBS Security & Safety Products BV https://www.imbema.com/






<p>S-04</p>	<p>SP-4</p>	<p>Protects a container's customs seal against cutting. Integrated Duro F30 block lock.</p> <p>SBS Security & Safety Products BV https://www.imbema.com/</p> 
<p>S-05</p>	<p>Integriseal</p>	<p>A self-powered, lockable, electronic seal</p> <p>Maple https://www.maplefleetservices.co.uk/</p> 
<p>S-06</p>	<p>Integritas</p>	<p>Integrated electronic seal and locking system with full audit trail and access control capabilities. Self-powered solution enabling simple installation.</p> <p>Maple https://www.maplefleetservices.co.uk/</p> 

<p>S-07</p>	<p>One Way</p>	<p>Single-use keyless door lock and sealing system that requires a steel rope and bolt which are physically severed to open</p> <p>ZF Group - CVCS https://www.zf.com/</p> 
<p>S-08</p>	<p>Seal Protector</p>	<p>The device provides protection against tampering with an exposed Seal. The unit covers and protect seal and accommodates any Padlock</p> <p>Babaco Alarm Systems Inc http://www.babaco.com</p> 
<p>S-09</p>	<p>Smart lock--LOKIES</p>	<p>An innovated IoT based padlock which can be opened remotely via a smartphone with Bluetooth connectivity, Manages multiple users with different access authorizations, keeps a full log of when it was opened.</p> <p>Contguard https://www.contguard.com/</p> 

9.4. Keyless Operated Systems / Immobilizing Systems


Ref IMS	Product	Description
IMS-01	SafeWay FX2	Attack proof Artificial Intelligence internal and external CCTV with remote access, human recognition, unauthorized cargo movement detection, up to 6 cameras
	 <p style="text-align: right;">Sternkraft https://sternkraft.com/en/</p>	
IMS-02	SafeWay Global	New Age Truck CAN GPS Tracker with LTE CAT1 recognizes which trailer is connected, what is temperature and humidity and trailer door status
	 <p style="text-align: right;">Sternkraft https://sternkraft.com/en/</p>	
IMS-03	Andis 1100 KingPin Lock	Heavy duty, high security, King-Pin Lock that is manufactured to withstand a wide variety of attacks,
	 <p style="text-align: right;">Maple https://www.maplefleetservices.co.uk/</p>	




<p>IMS-04</p>	<p>SafeConnect IQ</p>	<p>High Security Trailer Immobilization</p> <p style="text-align: right;">Maple https://www.maplefleetservices.co.uk/</p> 
<p>IMS-05</p>	<p>DriveLock</p>	<p>Driver recognition system that protects unattended vehicles against theft & unauthorized movement</p> <p style="text-align: right;">Maple https://www.maplefleetservices.co.uk/</p> 
<p>IMS-06</p>	<p>W45</p>	<p>The W45 is a flexible solution designed to prevent unattached swap bodies from being picked up without authorisation.</p> <p style="text-align: right;">ZF Group - CVCS https://www.zf.com/</p> 




<p>IMS-07</p>	<p>King Pin C</p>	<p>King Pin C prevents the theft of unattached semi-trailers while having the secondary function of clearly identifying them.</p> <p>ZF Group - CVCS https://www.zf.com/</p> 
<p>IMS-08</p>	<p>Drawbar C</p>	<p>Drawbar C is a mechanical pin lock system designed to prevent the theft of drawbar trailers.</p> <p>ZF Group - CVCS https://www.zf.com/</p> 
<p>IMS-09</p>	<p>Andis 1200</p>	<p>Ring lock (38/40mm eyes) for draw-bar trailers. Steel body with thick rubber coating and a high security Abloy cylinder.</p> <p>SBS Security & Safety Products BV https://www.imbema.com/</p> 

IMS-10	Alligator	Lock for trailers with a towing eye (also Swiss towing eye). High attack resistance steel locking house with integrated padlock.	 <p>SBS Security & Safety Products BV https://www.imbema.com/</p>
IMS-11	Andis 1100	Lock for standard 2" kingpins. Covers the mounting bolts completely. Steel body with thick rubber coating, high security Abloy cylinder	 <p>SBS Security & Safety Products BV https://www.imbema.com/</p>



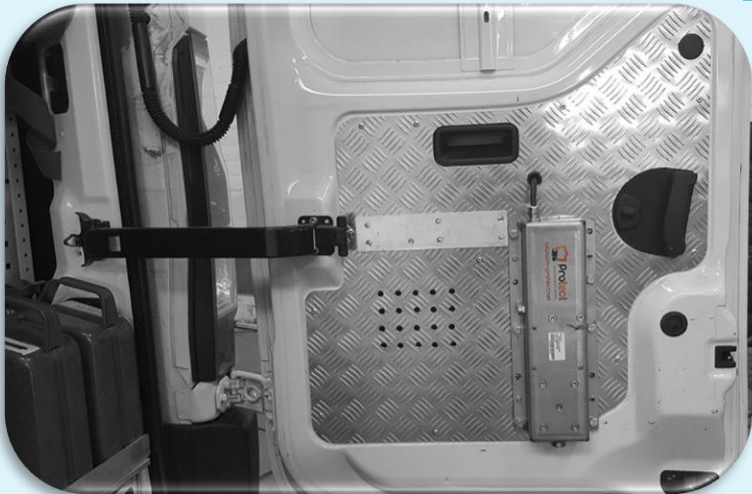
9.5. Customised Locking Solutions

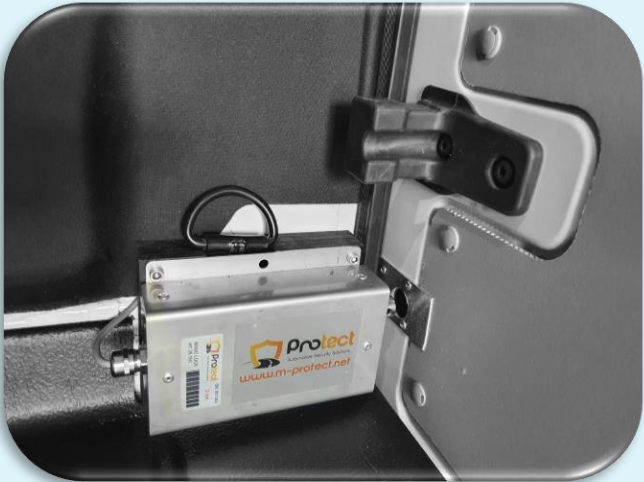
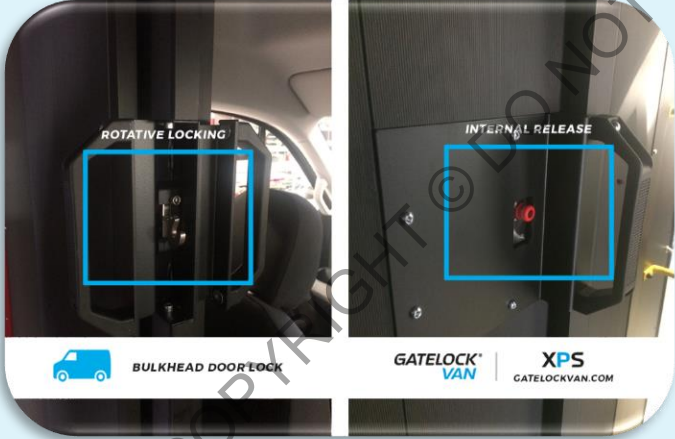
Ref CLS	Product	Description
CLS-01	PV-06 FX King Pin Lock	Protection blocking the pin of the semi-trailer - KING-PIN
	 <p>DG CORP / Protect-Vehicle Security http://www.protect-vehicle.eu/</p>	
CLS-02	Secured trailer solution	The SBS secured trailer solution consists of electronic trailer locks, an access control system, burglar alarm systems, GPS

		<p>tracking equipment, cutting detection in the side walls of the trailer and a monitoring portal.</p> <p>SBS Security & Safety Products BV https://www.imbema.com/</p> 
<p>CLS-03</p>	<p>All in door</p>	<p>All in Door collects the best security devices in a single and solid ready-to-install solution</p> <p>Multiprotexion Srl http://www.multiprotexion.com/</p> 
<p>CLS-04</p>	<p>Lock Matix</p>	<p>Lock Matix is a security system preserving your products and certifying delivery</p> <p>Multiprotexion Srl https://www.multiprotexion.com/</p> 

<p>CLS-05</p>	<p>FreightLock IQ</p>	<p>High security multi-point locking solution with electronic seal and audit trail. Flexible solution that can be tailored for bespoke requirements</p> <p style="text-align: right;">Maple https://www.maplefleetservices.co.uk/</p> 
<p>CLS-06</p>	<p>BondLock</p>	<p>Powerful and versatile locking mechanism installed on the inside of the cargo area, suitable for all vehicle and door types.</p> <p style="text-align: right;">Maple https://www.maplefleetservices.co.uk/</p> 
<p>CLS-07</p>	<p>PV-10 Swap Body Lock</p>	<p>Anti-Theft Swap-Body Lock</p> <p style="text-align: right;">DG CORP / Protect-Vehicle Security http://www.protect-vehicle.eu/</p> 

<p>CLS-08</p>	<p>PV-07 Towing Eye Lock</p>	<p>Trailer Ring Lock for eyes of draw-bar trailers</p> <p>DG CORP / Protect-Vehicle Security http://www.protect-vehicle.eu/</p> 
<p>CLS-09</p>	<p>FreightLock IQ</p>	<p>High security multi point locking solution with electronic seal. Has full audit trail and access control capabilities</p> <p>Maple https://www.maplefleetservices.co.uk/</p> 
<p>CLS-10</p>	<p>GPS Seal Protector</p>	<p>Automatic notification of seal access provides time and location of each seal opening and closing event</p> <p>Babaco Alarm Systems Inc http://www.babaco.com</p> 

<p>CLS-11</p>	<p>LB3 Lock w Digital Seal</p>	<p>High security automatic roll up door lock integrated with Digital Cargo Seal</p>  <p>Babaco Alarm Systems Inc http://www.babaco.com</p>
<p>CLS-12</p>	<p>LB5 Lock with Digital seal</p>	<p>High security automatic swing outdoor lock integrated with Digital Cargo Seal</p>  <p>Babaco Alarm Systems Inc http://www.babaco.com</p>
<p>CLS-13</p>	<p>LimoLock</p>	<p>The LimoLock is a heavy-duty, high-end electronic security lock for any door type, operating stand-alone or connected.</p>  <p>M-Protect NV http://www.m-protect.net</p>

<p>CLS-14</p>	<p>BasicLock</p>	<p>Electric locking system operating through a keypad or remote control</p> <p>M-Protect NV http://www.m-protect.net</p> 
<p>CLS-15</p>	<p>BBULKHEAD DOOR LOCK (XPS)</p>	<p>High Security Lock for BULKHEAD DOOR on LCV's</p> <p>Blockshaft https://www.blockshaftgroup.it/en/</p> 
<p>CLS-16</p>	<p>ROLL-UP DOOR LOCK (XRS)</p>	<p>High Security Lock for ROLL-UP door of BOX VAN & TRUCKS</p> <p>Blockshaft https://www.blockshaftgroup.it/en/</p> 