



# Shock indicator: good practice

## Introduction

It often happens that packages are opened by the end consignee several days after delivery, sometimes only to discover that the goods have suffered irreparable shock damage. If the package itself is not damaged it is difficult to assess whether the goods have been mishandled.

However, the recipient is required to indicate any reservations to the carrier (by letter with return receipt) within 72 hours of delivery for national land transport, 7 days for international land or sea transport and 14 days for air transport.

- How can you check on receipt that the package has not suffered a (disastrous) impact that could not be seen immediately?
- Did you know that on average goods are handled by 18 people during the transport / distribution process?
- How can you find out which link has mishandled the package so that you can target your claim submission effectively and improve service quality?

The use of a shock detector may be the answer to these questions. It is a small sensor which is attached to the package or on the goods themselves. This sensor consists of a bulb which turns red as a result of any acceleration due to shocks, impacts or vibrations that exceed its critical threshold. When it has been triggered the consignee (in transit, or the customer) will be in a position to immediately communicate the necessary reservations on the basis of a confirmed shock. The goods will then be checked by the owner with this advanced knowledge.

The shock detector also has a preventative effect on handling and securing by just being present during loading (fastening, wedging and making fast). Who would risk treating a “fragile” package roughly with the knowledge that it was equipped in this way?

Given that this type of sensor only costs a few euros, why not plan to use it straight away? In order to be effective however it must be used carefully.



Clip



Labels

## Choice of detector

- Choose the sensitivity of the detector (in g) based on the weight and volume of the package. Examples:
  - Small, light package (15 Lbs, 0,5 Cubic Feet) → 100 g
  - Large, heavy package (400 Lbs, 10 Cubic Feet) → 25 g

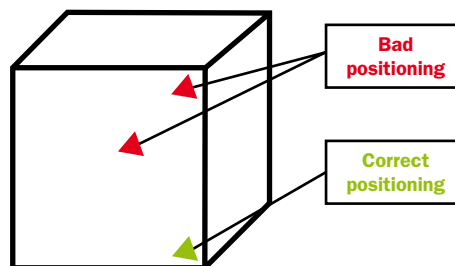
Shipment Size Weight Lbs.	0 – 1 Cubic Feet	1 – 5 Cubic Feet	6 – 15 Cubic Feet	16 – 50 Cubic Feet	50 + Cubic Feet
0 – 10	100 g	100 g	75 g	75 g	50 g
11 – 25	100 g	75 g	75 g	50 g	50 g
26 – 50	75 g	75 g	50 g	50 g	37,5 g
51 – 100	75 g	50 g	50 g	37,5 g	37,5 g
101 – 250	50 g	50 g	37,5 g	37,5 g	25 g
251 – 1,000	50 g	50 g	37,5 g	25 g	25 g
1,000 +	-	37,5 g	25 g	25 g	25 g

### Expected drop height for detector activation

Clip selection / Total weight of the parcel	Yellow	Purple	Red	Orange	Green
< 100 Lbs	-	12 – 18" (0,30 – 0,48 M)	12 – 24" (0,30 – 0,61 M)	24 – 36' (0,61 – 0,91 M)	36 OVER (0,91 – OVER)
> 100 Lbs	6 – 12" (0,15 – 0,30 M)	8 – 16" (0,20 – 0,41 M)	12 – 18" (0,30 – 0,48 M)	-	-

## Placing the detector

- To be reliable, the detector must be placed on the firmest part of the packaging. For large packages, we recommend placing it in one of the package's bottom corners. This is the best position for detecting shocks in the event of a fall, sliding along the ground, impact with the fork of a fork-lift truck, etc. The flexible parts of a packaging can absorb most shocks, or conversely an insignificant surface shocks on a flexible area may triggered the detector.



**Note :** the detector indicates a confirmed shock in the place where it has been positioned; it may be sensible to place (another) one on the sensitive item itself.

## Information and prevention processes

A visible label will inform the addressee (or the transit manager) that the package is **equipped with a shock detector** and how to check whether or not it has been triggered. To prevent the risk of the detectors being pulled out:

- Apply a stamp overlapping the label and the packaging
- Mention the number and type of detectors on the transport document



Provide an **accompanying letter** for the addressee asking them to react **immediately** on receipt if the sensor has been triggered, and specifically:

1. Not to refuse the package
2. To bring the triggering to the carrier's attention and get them to note it in the documents intended for the recipient
3. To check the goods with the advance knowledge of the detector
4. If there is damage, to express reservations in writing

## Other detectors

- **Tipping** detectors. Two per package, to be placed on two consecutive corners at the bottom of the package.
- Some detectors are suitable for **maritime containers** and retain the force of the maximum shock.
- More advanced detectors are designed to analyse more precisely the transport environment faced by your package. These are like **small on-board laboratories** which record the date, time and the intensity of tens of thousands of shock events on the three axes, providing a graphic representation of the larger ones. They may also be equipped with temperature, humidity and pressure options.

### Tipping



### Maritime container



### Advanced

