



Shock and tilt indicators

SORBIS GROUP



Why do companies use shock and tilt indicators during transportation of goods?

Many companies know that products should be handled with care during storing and transportation. To control and fix the level of physical effects on the package during storing and transportation special appliances are used:

- 1) Shock indicator allows you to define the level of physical effect suffered by the package;
- 2) Tilt indicator allows you to confirm the fact that the cargo was transported in the correct position.

The main destination of indicators is to fix the violation of transportation terms allowing presentation of official claims to the shipper, including repayment of damage.

SORBIS GROUP specializes in production of various protective means for products during storing and transportation, namely: sorbents, desiccants and moisture indicators, as well as supplies shock and tilt indicators for products of any industry.

The companies cooperating with SORBIS GROUP always receive products of the highest quality and within the shortest terms - this is mainly due to the huge experience gained during 11 years of work at this market and an individual approach to each client.

SHOCK INDICATOR (damage indicator)

Shock indicators are disposable numbered appliances used to control transportation conditions of equipment, parts and finished products. They are stuck to the package of cargo that requires careful handling.

SHOCK INDICATOR (damage indicator) is a colored sticker with a warning inscription and an element registering various impact effects. All shock indicators are supplied with an information card of an indicator (ICI). ICI is an additional sticker that is fixed to the package along with the indicator and warns that the cargo is under control, as well as contains an instruction in case if the indicator came into action is found at the delivered cargo.

Operating principle: in case of a shock (for instance, a clash, fall or jolting) exceeding the certain value, the indicator is activated and the registering element is colored in red. Such appliances can be used at any method of transportation: motor transportation, railroad transportation, marine transportation and air transportation).

The indicator has various degree of sensibility. There are three methods for selection of an optimal indicator:



Methods for selection of the optimal SHOCK INDICATOR (damage indicator)

- 1) According to the maximal impact pressure allowed for transported cargoes. Should the shipping documents indicate a precise value of maximal impact pressure, select the model that has most approximate value.
- 2) According to the weight and volume of cargo. See Table No.1
- 3) According to the minimal drop height of the cargo. In this case one should define the value of height (in an experimental way) when the cargo is damaged in case of a fall. See Table No.2

Table No.1

Weight, kg \ Volume, m ³	0 - 0.03m ³	0.03 - 0.14m ³	0.14 - 0.42m ³	0.42 - 1.42m ³	1.42+m ³
0 - 4.56kg	100G	100G	75G	75G	50G
4.56 - 11.34kg	100G	75G	75G	50G	50G
11.34 - 22.68kg	75G	75G	50G	50G	37G
22.68 - 45.36kg	75G	50G	50G	37G	37G
45.36 - 113.40kg	50G	50G	37G	37G	25G
113.40 - 453.59kg	50G	50G	37G	25G	25G
453.59+kg		37G	25G	25G	25G

Table No.2

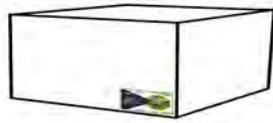
Weight, kg	Modification				
	25G	37G	50G	75G	100G
Up to 45	-	30 - 48 cm	30 - 60 cm	60 - 91 cm	Over 91 cm
Over 45	15 - 30 cm	20 - 40 cm	30 - 48 cm	-	-

Rules for placement and installation of SHOCK INDICATOR (damage indicator)

I.



1



2



3



4

- 1) The indicator is placed in the upper right corner at the longer vertical side of the package.
- 2) The indicator is placed in the lower right corner of the longer vertical side of the package, in 30-60 cm from the floor.
- 3) Two indicators are fixed at the two opposite sides, cornerwise. Such placement is used at the packages which length exceeds the width several times.
- 4) Two indicators are placed at the vertical side at the upper right and left corners. Such placement is used at high packages which weight exceeds 110 kg.

II.

When installing the indicator remove the protective layer from the glueline and fix the ICI to the clean and dry surface of the package. Then remove the film from the indicator and place it at the ICI, in the intended place. After this, write down the indicator's number in the shipping documents.



Assembled indicator



- To prevent incorrect readings of the indicator, one should not:
- 1) place it at the springy places of the package, namely, the upper surface and in the middle of the upper surface of the package, as these places vibrate during transportation and can disperse the impact energy or, on the other hand, cause a false activation of the indicator.
 - 2) Place it at the wrapping film and fastening elements.

TILT INDICATOR

Tilt indicator is a disposable numbered appliance reacting on vertical deviation (inclination, overturn, overthrow) of transported products, parts or equipment. TILT INDICATOR is stuck to the package of cargo which should be handled with care.

TILT INDICATOR is a colored sticker with a warning inscription and an element registering tilt within the set range. All tilt indicators are supplied with an information card of an indicator (ICI).

ICI is an additional sticker that is fixed to the package along with the indicator and warns that the cargo is under control, as well as contains an instruction in case if the indicator came into action is found at the delivered cargo.

When using this indicator from SORBIS GROUP you can be absolutely sure that during transportation your cargo was in the correct position.

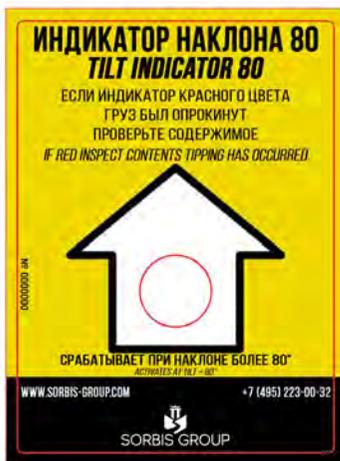
Activation

To activate a tilt indicator you should remove the protective film.

Installation

Ready-to-install TILT INDICATOR should be fixed at the upper corner of the cargo's or package's side surface, while the cargo or the package should be placed vertically. The indicator should be fixed in such a way as to ensure strictly horizontal position of its name. As the indicator shows change of position during transportation only for the flat surface it is fixed to, then to control the tilt at two various places one should use two TILT INDICATORS. Put the indicator(s) number into the shipping documents.

Depending on the requirements to the indicator you should select one of the next models:



TILT INDICATOR 80



TILT INDICATOR 180

Operating principle:

1) TILT INDICATOR 80

When recording vertical deviation exceeding 80 degrees, the indicator opening is discolored to red. To install the indicator remove the protective film from ICI and place it at the clean and dry surface of the package. Then remove the film from the glue line and fix the indicator to ICI.

2) TILT INDICATOR 180

The indicator fixes vertical deviation varying from 30 to 80 degrees and 180 degrees. The indicator contains 3 elements. The upper element shows counterclockwise deviation angle: when the angle is increased the ball moves in cells with marked gradient (30, 40, 50, 60, 70, 80 degrees). - The lower element shows clockwise deviation angle. Operating principle of this element is completely the same as the upper element has. - The element located between the upper and lower elements shows overturn of cargo by 180 degrees: the ball falls out of the central part of the ring.

When installing the indicator remove the protective film from the glueline and stick it to the tare. Then remove the film from ICI and place it at the clean and dry surface near the indicator.

TILT INDICATOR 80 with ICI



TILT INDICATOR 180 with ICI



To prevent incorrect readings of the indicator, one should not:

- 1) place it at the springy places of the package, namely, the upper surface and in the middle of the upper surface of the package, as these places vibrate during transportation and can disperse the impact energy or, on the other hand, cause a false activation of the indicator.
- 2) Place it at the wrapping film and fastening elements.

Example use of indicators



Prices for indicators:

1) DAMAGE INDICATOR (shock indicator)

Price: 3.53 €/piece VAT incl. from 500 pcs.

Price: 3.84 €/piece VAT incl. from 300 pcs.

Price: 4.29 €/piece VAT incl. from 100 pcs.

Price: 4.54 €/piece VAT incl. from 50 pcs.

2) TILT INDICATOR 80

Price: 2.49 €/piece VAT incl. from 500 pcs.

Price: 2.66 €/piece VAT incl. from 300 pcs.

Price: 2.97 €/piece VAT incl. from 100 pcs.

Price: 3.44 €/piece VAT incl. from 50 pcs.

3) TILT INDICATOR 180

Price: 4.23 €/piece VAT incl. from 500 pcs.

Price: 4.38 €/piece VAT incl. from 300 pcs.

Price: 4.66 €/piece VAT incl. from 100 pcs.

Price: 4.78 €/piece VAT incl. from 50 pcs.

Conclusion

SHOCK INDICATORS (damage indicators) and TILT INDICATORS are of demand among various enterprises working in the next areas:

- 1) Manufacturers of various equipment and ready-made products;
- 2) Maintenance depots, as well as servicing companies;
- 3) Retail companies;
- 4) Cargo-carrying and logistics companies.

The next features ensure popularity of these items:

- 1) Simple use;
- 2) Universal nature of product;
- 3) Reliability;
- 4) Low cost.

These qualities ensure the relevant advantages:

In terms of quality:

Protection of products during storing and transportation due to simple detection of packages in which the products (parts, equipment, etc.) may be damaged, including simple control of hidden internal defects, and this allows you to decrease the risk that the client will be supplied with products damaged during transportation or that you will receive products with hidden defects.

In terms of logistics:

Use of indicators simplifies the search of risk areas where cargos are damaged during transportation, as well as gives an unprejudiced evaluation of applied package's reliability. Thus you decrease the loss of products during transportation until products are received by the client;

In terms of finances:

Due to the above-described qualities the company reduces both the damage from loss of products and the damage from supply from defective products to clients, as well as obtains a more profitable control method compared with cost of electronic devices.

In terms of marketing:

A competitive advantage, as well as reduction in the number of claims.

SORBIS GROUP products

SORBIS 219 B+
DESICCANT-MOISTURE ABSORBER



SORBIS 219-T
DESICCANT-MOISTURE ABSORBER



SORBIS 511
MOISTURE INDICATOR



INDICATING MOISTURE STRIP



SORBIS 317 VK
DESICCANT-MOISTURE ABSORBER



SORBIS 317-TP
DESICCANT-MOISTURE ABSORBER



SORBIS DRY
FOR PROTECTION OF CONTAINERS



OXYGEN ABSORBERS



SORBIS 235
DESICCANT-MOISTURE ABSORBER



SORBIS 435
DESICCANT-MOISTURE ABSORBER



SHOCK AND TILT INDICATORS



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