

# Why look for Details In Weights & Measures Approvals

**Complying with weight and measure regulations has been mandatory in many countries for years. OIML, NTEP and MID approvals ensure the quality of your measuring systems. When selecting a system, make sure the equipment does not have any limitations for use as this can cost you a lot of money.**

## Approvals can have limitations

To be of value an approval needs to be valid for measuring the goods you handle. A typical pitfall is measuring irregular shaped parcels and pallets as if they were cubic. Many automatic systems on the market are only approved to measure regular, solid shapes, while in reality all shipments aren't nice and square.



Before purchasing a dimensioning and weighing system, start by evaluating your goods. What shapes, sizes and wrapping do you normally handle? Taking the time to rigorously analyze the offering on the market and how well the system matches your needs, can be time well spent.

## Which details to look for

Approvals contain a lot of information and technical details. The most important factors which can cause difficulties concern the shipments' shape and wrapping. Some technologies are not good enough for measuring irregular shapes as accurately as required in legal for trade applications. This is normally due to the fact that the instrument cannot see the whole parcel or pallet. This is illustrated under the section "Pallet with protrusions".

Another challenge for some technology used is the capability of measuring black plastic and transparent surfaces which is typical wrapping on pallets.

Here are some examples from approvals to illustrate these limitations:

- The instrument is used to calculate the dimensions of an opaque hexahedron object.
- Garment bags, sacks and other soft, flexible objects with non-cuboidal shapes are not suited for measurement by the instrument
- Transparent objects and objects packed in transparent wrapping (e.g. bubble wrap plastic) are not suited for this type of measuring

Note: Other words commonly used to describe regular shaped objects are: cuboidal, opaque hexadron, rectangular, cubic

**The fewer limitations to the system, the easier it is for you to automate your processes and experience the benefits of automatic dimensioning.**

There are 3 main reasons why details are so important...

**Reason 1:**

**Accurate data is bottom line revenue**

Right systems with the right specifications protect you from losing money caused by inaccurate invoicing. Applying the wrong system on goods it can not handle illustrates this.

So how much money can be lost if you measure an irregular shaped object as cubic?

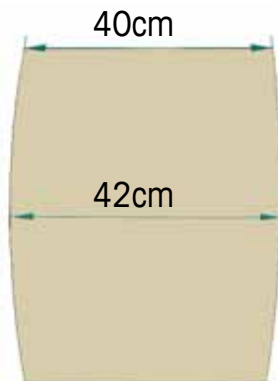
Let's look at some examples and compare how a dimensioner approved for irregular shapes performs, versus one for regular shapes.

**An overfilled cardboard box**

A typical example is a normal box that is slightly overfilled and therefore bulging out approximately 1 cm on all sides. Most people asked would categorize it as regular and consider it to be safe to measure with a scanner for regular shapes. However this decision can cost you money.



The table below illustrates the different results two types of dimensioners can provide:



	Dimensioner Regular shapes	Dimensioner Irregular shapes
Length (cm)	40 cm	42 cm
Width (cm)	40 cm	42 cm
Height (cm)	40 cm	40 cm
Dimensions (cm <sup>3</sup> )	64 000 cm <sup>3</sup>	70 560 cm <sup>3</sup>
<b>Deviation in %</b>		<b>9,3 %</b>

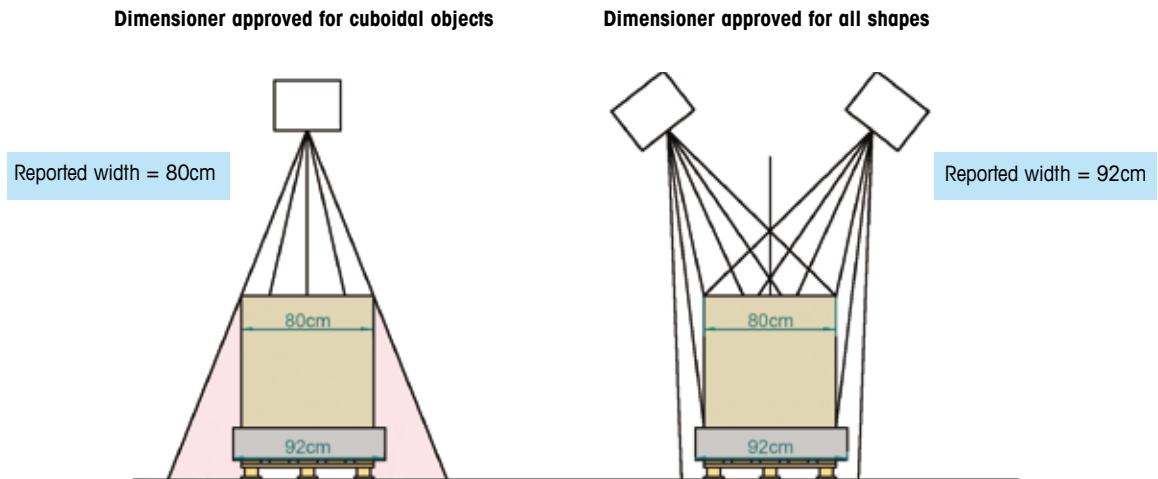
In cases where you actually think you have a regular shaped box, you could underestimate the size of the box by 9,3% through using a dimensioner for regular shapes. The return on investment is obvious when multiplying the number of boxes you have in the same category as the example above. Other similar examples of items you would consider regular are transport suitcases with round edges. They look very square, but some systems which are limited to regularly shaped objects may be fooled by the round edges and underestimate the width of the object.

### A pallet with protrusions

Another example is a pallet with some parts sticking outside the pallet. In this case it is a transport suitcase which has been placed at the bottom of the pallet and the transport suitcase goes over the sides of the pallet. A dimensioner for regulars will only see the top surface of the pallet and the protruding object at the bottom will pass undetected.



This is illustrated in the figure below:



The table below shows how this affects the dimensions.



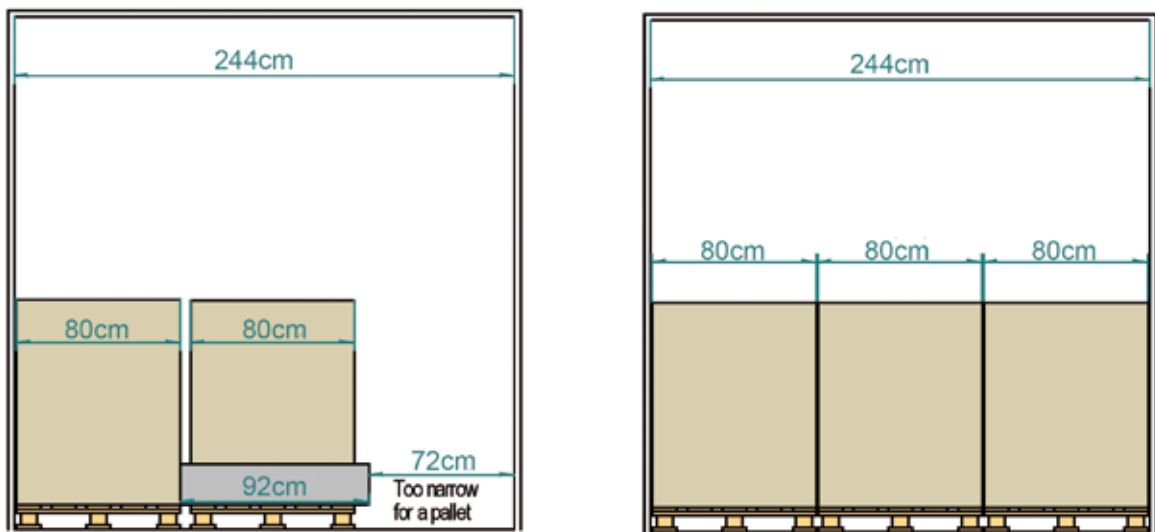
	Dimensioner Regular shapes	Dimensioner Irregular shapes
Length (cm)	80 cm	92 cm
Width (cm)	80 cm	92 cm
Height (cm)	173 cm	173 cm
Dimensions (cm <sup>3</sup> )	1 107 200 cm <sup>3</sup>	1 464 272 cm <sup>3</sup>
<b>Deviation in %</b>		<b>24 %</b>

In this case you mismeasure by 24 % on the size. A quick glimpse at an average freight operation can confirm that pallets are stacked in various ways, and the potential for losing money can be dramatic.

### Charge for the space

Every millimeter counts when it comes to transport and you want to make sure that the person who is sending the pallet is charged for the space the item occupies. This is especially important for pallets, as the cargo room of the trucks is typically 244cm wide in order to accommodate 2 or 3 euro pallets sideways (120cm x 80cm). The pallet in our example will take up the space of two properly stacked pallets, and therefore cause more loss to the transport company than the 24% calculated above. In addition it may leave an empty space around it in the cargo room which requires that it must be secured in order to avoid damages to other cargo or to the truck itself.

The illustrations below show how protrusions affect your cargo room in a truck:



### Minor protrusions

The ability to detect, and include protruding parts on the object in the volumetric calculations is also important. Some systems, although approved for irregular shaped objects, create only a very crude view of the object and therefore may overlook minor details on the object such as the handles and the locks on a transportation case. These protrusions determine how densely the pallets can be stacked in the cargo room and should therefore be included in volumetric calculations. Carriers can also implement a penalty charge to compensate for the inconvenience. Information about how protrusions are handled are not described in much detail in the approval documentations of a system, and therefore the technical specifications from the manufacturer should be studied.

### Reflective wrapping

A system with limitations on measuring parcels and pallets with certain surfaces, like black plastic can also cost you money. The standard accuracy level required by regulatory bodies is 5 mm for parcels and 20 mm for pallets.

If your system is not approved to handle pallets at this level, you have four options:

- Use the dimensions provided by your customer
- Use the dimensions provided by your system anyway
- Measure manually
- Charge by weight only



**Reason 2:****Protect your customers trust**

Over-charging your customers can be just as damaging to your business as under-charging. Even though you can take precautions and only measure shipments that are approved to be measured by the system, there is still a risk of error. Legal for trade approvals should help you in customer disputes and claims. However you can only rely on this if the system is used correctly.

Creating awareness about the risk of losing money through under charging, goes hand in hand with taking over-charging seriously as well. You create a win-win situation when your invoicing processes reflect this.

As long as customers experience that it goes both ways, we have many examples of positive reactions from transport companies which have implemented automation and a new pricing structure based on dimensional weight.

**Reason 3:****Consider the legal consequences**

In most countries, weighing and measuring instruments need to be calibrated once a year by a recognized organization of legal metrology. This is done to secure that the system constantly delivers accurate results. It is the supplier's responsibility to acquire the approvals. However it is the owner of the dimensioning instrument who is responsible for how it is used.

If your country does not have any metrology requirements yet, being prepared for future metrology requirements may turn out to be wise. Twenty nine countries now follow the European Measuring Instruments Directive (MID) which came into force in 2006. This was designed to harmonize the requirements for new measuring instruments by eliminating the regulatory differences at a national level which hinder trade. In North America; NTEP and Measurement Canada (MC) set the standard. You secure your investment by implementing a system with existing international recognized approvals.

**To sum up**

The fewer limitations of the system you use, the less you need to worry about and the more you can benefit from automation. Extra revenue gained through having accurate data on 100% of your goods ensures a rapid return on investment for your system.

METTLER TOLEDO seeks to provide the highest degree of certification of equipment which forms the foundation for every customer invoice. Our vast experience with both national and international metrology has provided us with the widest range of weights and measures approvals in the industry.

**METTLER TOLEDO can help you with metrology requirements. Contact us for a free consultation!**