

RSA



Revised Standards for Agricultural Vehicles

RSA Guide

Effective 1 January 2016

Údarás Um Shábháilteacht Ar Bhóithre
Road Safety Authority

RSA Guide

Revised Standards for Agricultural Vehicles

Effective 1 January 2016

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Introduction

This booklet has been developed as a guide for farmers, contractors, manufacturers and the general farming community to the revised safety standards for agricultural vehicles. These revised standards take effect from 1 January 2016 for all agricultural vehicles – that is, both new and existing.

The revised standards for agricultural vehicles apply to four particular areas, namely:

- Braking,
- Lighting and visibility,
- Weights, dimensions and coupling, and
- Plating and speed rating.

Section 1 contains a glossary of terms which lists and explains some general terminology common to all of the four areas. You might find it useful to refer to this glossary as you read through the booklet.

Section 2 explains why the standards have been revised and gives a summary of the improvements in the four areas which will be affected by the changes.

Sections 3, 4, 5 and 6 give detailed information on the revised standards for each area. Each of these sections begins with a glossary of terms which relate specifically to the section topic, and ends with a list of frequently asked questions with practical advice on how you can achieve compliance.

Section 7 lists useful contacts and sites where you can get more information if you need it.

Section 8 is an Appendix which contains detailed summary tables of the national weight limits being introduced for agricultural tractors and trailers.

Section 1 – Glossary of Terms

General Terminology

an agricultural tractor:

- has at least two axles,
- has a design speed of 6 km/h or more (this figure is the vehicle's maximum design speed as specified by the manufacturer),
- has been designed especially to draw and work with other equipment attachments,
- has been designed for and is used for agricultural, fisheries, forestry or horticultural work, or to draw agricultural trailers or other equipment,

An agricultural tractor could also be a tractor that has been adapted for agricultural, fisheries, forestry or horticultural work, or a tractor that is equipped with one or more passenger seats.

agricultural trailer:

a trailer intended mainly to be drawn by an agricultural tractor and intended mainly to carry loads or to process materials used in connection with agriculture, fisheries, forestry or horticulture work. To be classified as an 'agricultural' trailer, it should be able to carry a load of at least three times its own weight.

Other pieces of interchangeable towed equipment – for example, slurry tankers, manure or fertiliser spreaders, grain chaser bins and so on – can also be called agricultural trailers. However, these pieces of interchangeable towed equipment do not have to comply with the new requirements for weights, dimensions, couplings, plating and speed discs. They also don't need to be fitted with side and rear reflective markings or a rear 'LONG VEHICLE' sign.

axle:

an axle is a bar or shaft on which a wheel or pair of wheels rotates. See Figure 1 below.



Figure 1: Axle (Image Courtesy of Granning Axles)

axle spacing:

axle spacing is the distance from the centre of one axle to the centre of the next axle. See Figure 2 below where 'X' is the axle spacing. If a trailer is fitted with more than two axles and the spacing between them is not equal, the spacing between the two axles closest together is taken to be the axle spacing.

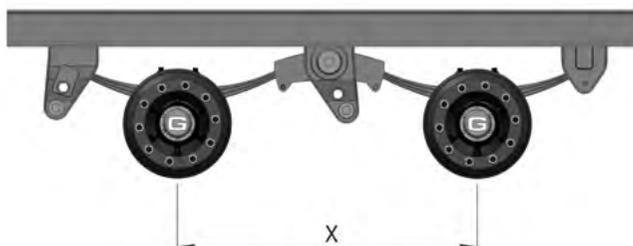


Figure 2: Axle Spacing (Image Courtesy of Granning Axles)

centre-axle trailer:

a trailer where the axle (or group of axles) is positioned close to the centre of gravity of the trailer. This means that when the trailer's load is spread evenly, the load imposed on the vehicle drawing it is no more than 10% of the maximum weight of the load or 1000kg – whichever is less.

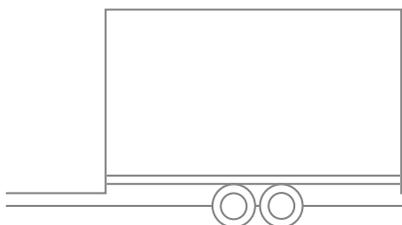


Figure 3: Drawing of a centre axle trailer

design gross vehicle weight - DGWW:

The DGWW of a vehicle is its gross weight laden with the heaviest load it can carry according to the design specifications. The manufacturer or their authorised distributor usually state what the DGWW of a vehicle is.

drawbar trailer:

a trailer that has at least two axles and a towing device that can move up and down with the trailer which keeps the load imposed on the towing vehicle at less than 100kg.

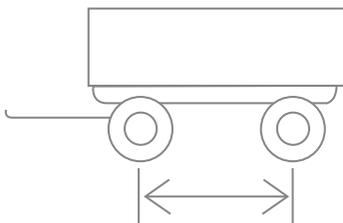


Figure 4: Drawing of a drawbar or balanced trailer.

fully mounted agricultural equipment:

interchangeable machinery that is mounted on the tractor's three-point linkage and that is fully raised from the ground. Fully mounted equipment can't move in a different direction to the tractor. A small plough, a power harrow or a fertiliser spreader are examples of fully mounted agricultural equipment.

interchangeable towed equipment:

any piece of equipment that is used in agriculture, fisheries, forestry or horticulture and which is designed to be drawn by an agricultural tractor. This equipment is attached by a drawbar or lift arms – that is, it is not mounted on the three-point linkage. If it is equipment that can carry a load, its DGWW as specified by the manufacturer should be no more than three times the weight of the equipment itself.

Examples of interchangeable towed equipment include grass mowers, balers and trailed soil cultivation equipment.

laden weight:

the weight of a vehicle or trailer when carrying a load.

rigid drawbar trailer:

has one axle or a group of axles positioned off centre. The 'rigid' drawbar doesn't move or swivel which imposes extra load on the drawing vehicle.

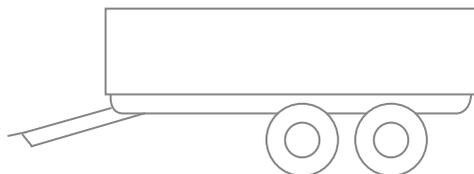


Figure 5: Drawing of a typical rigid drawbar or unbalanced trailer.

self-propelled agricultural machine:

a machine that can be driven under its own power and which is designed specifically to perform agricultural, fisheries, forestry or horticultural work. For example, a combine harvester or silage harvester.

tandem axle trailer:

a trailer that has two axles which are spaced no more than 2.5 metres apart. Section 8 of this booklet gives the weight limits for tandem axle agricultural trailers.

triaxle trailer:

a trailer that has three axles with the first and third spaced no more than 3.7 metres apart. Section 8 of this booklet gives the weight limits for triaxle agricultural trailers.

unladen weight:

for a tractor, unladen weight means the weight of the tractor without the driver or optional accessories such as front or rear weights, tyre ballast, mounted implements and so on. However, the weight of fluids such as oil, fuel and coolants is included, as is the weight of the roll-over cage or cab.

In the case of an agricultural trailer, the unladen weight is the weight of the trailer itself with no load.

vintage agricultural tractor:

a vintage tractor is a tractor over 30 years old.

Section 2 – Why are Revised Standards being introduced?

Revised standards are being introduced because the current regulations are outdated. Over the years, agricultural vehicles have become bigger, faster and more powerful, and are now used for a variety of jobs that the current regulations don't cover.

Starting in 2008, the Road Safety Authority (RSA) carried out a major review of the law and the policy and practices relating to using agricultural vehicles on public roads. This review included a public consultation process.

The revised changes are more suitable for modern agricultural vehicles in terms of their compliance with critical road safety standards in the areas of braking, suspension systems, tyres and lighting as well as the weights for which the vehicles are designed.

Most correctly maintained tractors already comply with the revised standards being introduced. Those that do not comply are likely to need only small adjustments – for example, fitting a flashing amber beacon or a new manufacturer's plate showing the axle weights and the maximum weight of the load the vehicle can tow.

For the moment, the revised changes cover the four areas listed – namely:

- Braking,
- Lighting and visibility,
- Weights, dimensions and coupling, and
- Plating and speed rating.

The RSA originally proposed other changes such as compulsory roadworthiness testing for agricultural vehicles and restricting agricultural vehicles from using motorways. They also proposed making changes to driver testing and licensing for new Category W (agricultural tractor and works vehicle) licence holders. No changes are being made to these areas at this time, but they will likely be considered in the future.

Summary of improvements

A summary of the revised standards coming into force on 1 January 2016 is as follows:

- Agricultural vehicles that travel at speeds over 40km/h will need a more powerful braking system. Most correctly maintained tractors which have come into use in the past 30 years already meet these requirements.
- Agricultural vehicles will need to be equipped with appropriate lighting systems, flashing amber beacons and reflective markings.
- Trailers carrying weights over 19 tonnes for tandem axles and 22.5 tonnes for triaxles or travelling at speeds over 40km/h, will need a plate showing the trailer's weight and dimensions. They will also need a speed disc.
- New national weight limits are being introduced. These limits will allow tractors and trailers which don't have plates to remain in use but at limits which are safe for such vehicles. Combinations of tractors and trailers, where either of them is unplated, will not be allowed to tow more than three times the tractor's unladen weight.

Plated tractors and trailer combinations will be able to operate at higher weight limits of up to 24 tonnes for tandem axles and 34 tonnes for triaxles if they meet certain other requirements, namely:

- they must be fitted with a flexible suspension system,
- to they must be fitted with flotation tyres for operation at 10 tonnes per axle in the case of a tandem axle trailer or 9 tonnes per axle in the case of a triaxle trailer, and
- they must be fitted with a steered or steering axles if they have an axle spacing of 1.8 metres or greater

Some types of interchangeable towed equipped such as slurry tankers, manure or fertiliser spreaders and grain chaser bins will be exempt from compliance with the revised national weight limits and plating requirements.

Section 3 – Braking

Braking – Terminology

anti-lock braking system: or ABS is part of a vehicle or trailer's main braking system which automatically stops the wheels 'locking' during braking. This gives the wheels better hold on the road surface and gives a driver more control.

anti-lock braking ('Category A'): 'Category A' anti-lock braking systems are only required on trailers with a Design Gross Vehicle Weight (DGWV) of more than 10,000kg that are manufactured on or after 1 January 2016, and which are designed to be drawn at speeds over 60 km/h.

These systems must be capable of controlling the wheels on each side of the trailer independently.

braking efficiency: is the braking effort expressed as a percentage of the DGWV of the vehicle, or in the case of a trailer, the weight transmitted to the road surface by the trailer axle(s).

$$\text{Braking_Efficiency(\%)} = \frac{\text{Braking_force_exerted_by_the_wheels}}{\text{Vehicle weight}} * 100$$

For example, if a tandem axle trailer weighing 16 tonnes across its two axles exerts 2 tonnes of braking force on each of them, the trailer has a braking efficiency of 25%. Under the new regulations, agricultural trailers with a speed rating of 40km/h or less must have a minimum of 25% braking efficiency on the service brake.

How is the braking efficiency calculated?

The braking force (4 tonnes - that is 2 tonnes x 2 axles) is divided by the weight of the trailer (16 tonnes) and multiplied by 100.

$$\text{Braking_Efficiency(\%)} = \frac{4}{16} * 100 = 25\%$$

However a tandem axle trailer weighing 16 tonnes across its two axles with a speed rating more than 40km/h must have a minimum of 45% braking efficiency on the

service brake. Therefore, it must achieve an average of 3.6 tonnes of braking force on each axle (7.2 tonnes in total).

$$\text{Braking_Efficiency(\%)} = \frac{7.2}{16} * 100 = 45\%$$

If you are unclear about calculating the braking force, you could contact the vehicle's manufacturer or their authorised distributor.

breakaway brake: a breakaway brake fitted to a trailer is a braking device that is capable of automatically stopping the trailer if it becomes detached from the drawing vehicle while moving.

continuous braking: braking of a combination of vehicles when the energy used for braking the vehicle and trailer comes from one source. For example, a tractor with hydraulic brakes towing a trailer with hydraulic brakes and both braking systems are inter-connected.

emergency brake: an emergency brake is a back-up braking system which the driver can use if the main braking system is faulty or fails completely. Usually it is activated in the same way as the main braking system – that is, by pressing the brake pedal. Under the new law, an emergency brake is only legally required on tractors capable of speeds over 40km/h.

load sensing: load sensing adjusts the force of the brake to match the load being carried. Trailer braking systems are designed to ensure they can brake efficiently when the trailer is laden. Without load sensing, the brake force would likely be too great when a trailer is unladen. This could cause the wheels to lock, cause severe wear to the tyres, or even cause the trailer to become unstable when the brakes are applied. Load sensing resolves these issues by matching the brake effort to the load being carried.

It is important to note that fitting an anti-lock braking system to a trailer is not an acceptable substitute for load sensing as a way of avoiding over braking when the trailer is empty.

However, trailers fitted with Electronic Braking Systems (EBS) will be acceptable in this regard. EBS is similar to having both ABS and load sensing operating at the same time, and it has a better reaction time.

overrun braking: overrun braking is a type of braking system that uses a sliding mechanism within the trailer coupling to let the drawbar move back and forth relative to the trailer. See Figure 6 on next page.



Figure 6: Trailer Fitted with an Overrun Braking System. (RSA Library Image)

When the brakes are applied on the towing vehicle and it slows or stops, the trailer keeps moving (overruns). This movement automatically slides the overrunning mechanism which causes it to pull a brake rod which applies the trailer brakes. The sliding mechanism contains a damper to even out the braking shock. It is the overrunning – or, the inertia – of the trailer that provides the force to apply the trailer brakes.

This braking system is also called ‘inertia’ braking. ‘Inertia’ when used to describe a trailer’s braking system means that it is the trailer’s own movement that activates the brake, working on the principles of inertia that a body in motion continues moving and needs a force to stop it.

Typically, this type of braking system is fitted to light trailers designed to be drawn by cars, vans or jeeps. Sometimes, though, it may be fitted to agricultural trailers and interchangeable towed equipment with a DGVW of not more than 3,500kg, or 5,000kg if they are to be drawn at speeds of 40km/h or less. An example of an agricultural trailer which may be fitted with this type of braking system would be one for transporting a combine header.

parking brake: a parking brake – or hand brake – is a mechanical braking system that is used to stop the vehicle from rolling when parked.

It is important to note that some agricultural tractors may be fitted with braking systems whereby, when the parking brake is applied, the service brake on the trailer or trailers attached is also applied to prevent them all from rolling. This gives the driver time to leave the cab of the tractor and apply the trailer’s parking brake. With systems where the tractor’s parking brake also applies the trailer’s service brake, the driver must still leave the cab and manually apply the trailer’s own parking brake. This is usually a lever which is normally located near the trailer’s drawbar.

semi-continuous braking: semi-continuous braking means a brake system that has two energy sources that are operated independently of one another. One energy source may come from the tractor's hydraulic system and the other from the tractor's electrical system. For example, a tractor with hydraulic brakes towing a trailer with air brakes (two separate braking systems) whereby the tractor is fitted with a hydraulic-to-air brake conversion kit that is used to supply air for the trailer's braking system which is powered from the tractor's electrical system.

service brake: a service brake is a vehicle's main braking system which is used during normal driving. This brake must be of the continuous or semi-continuous type. It is typically operated by foot by the driver from their driving seat. The service brake is mechanically separated from the parking brake or emergency braking system.

The service brake of an agricultural trailer is usually connected to the tractor by hydraulic or pneumatic hoses and is simultaneously applied to the trailer when the driver presses the brake pedal in the tractor cabin. Hydraulic braking systems use pressurised oil to operate the brakes, whereas pneumatic braking systems use pressurised air. Pneumatic systems are more common on agricultural tractors and their trailers that are capable of operating at speeds over 40km/h.

Braking

Agricultural vehicles, especially those that can travel over 40km/h, must be fitted with safe and efficient braking systems to reduce road safety risks. Trailers being drawn must be the right size and weight for the vehicle drawing them and they should also be able to cope with the speed of the towing vehicle. They must be well maintained so that they don't cause braking problems for the towing vehicle. Agricultural vehicles towing trailers can jack-knife if the braking system is worn or fails completely.

In order to address these issues, revised braking requirements will apply to all agricultural tractors and their trailers (both new and existing) from 1 January 2016.

The term 'agricultural trailer' refers to trailers drawn behind agricultural tractors which are being used for agricultural, fisheries, forestry or horticultural purposes; and includes pieces of interchangeable towed equipment that can carry three or more times their own unladen weight as specified by the manufacturer.

Therefore, the revised braking requirements will apply to more than just trailers. They will also apply to equipment such as slurry tankers, fertiliser or manure spreaders, grain chaser bins and so on.

For example, a slurry tanker with a maximum laden weight of 20 tonnes and an unladen weight of 6 tonnes must comply with the revised braking requirements because its maximum loaded weight (as specified by the manufacturer) is more than three times its unladen weight.

Revised Braking Requirements for Agricultural Tractors

Agricultural tractors already in use will most likely comply with the requirements if their braking systems have been properly maintained.

A summary of the minimum braking performance requirements for tractors is listed in Table 1. Braking efficiency is expressed as a percentage. The percentage represents the amount of braking force needed to safely slow or stop a vehicle in relation to its DGWV and the speed it's travelling at. These braking efficiencies will apply to both new and existing agricultural tractors from 1 January 2016.

Minimum Braking Performance Requirements for Agricultural Tractors	
Speed rating up to 40km/h	Speed rating over 40km/h
Service Brake - 25% Parking Brake - 16%	Service Brake - 45% Emergency Brake - 22.5% Parking Brake - 16%

Table 1: Minimum Braking Performance Requirements for Agricultural Tractors Applicable from 1 January 2016

Revised Braking Requirements for Agricultural Trailers

Agricultural trailers already in use might need to be altered to meet the new requirements, particularly if they are to be drawn at speeds over 40km/h.

A summary of the minimum braking performance requirements for trailers is listed in Table 2. The figure quoted for the service brake performance is based on the weight transmitted to the road surface by the trailer axle(s). The breakaway (automatic brake if the trailer becomes detached while moving) and parking brake performances in the table below are based on the DGWV of the trailer. These will apply from 1 January 2016.

Minimum Braking Performance Requirements for Agricultural Trailers	
Trailers with a speed rating up to 40km/h and a Design Gross Vehicle Weight (DGWV) more than 5,000kg.	Trailers with a speed rating over 40km/h and a Design Gross Vehicle Weight (DGWV) more than 3,500kg.
Service Brake (25%) Breakaway Brake (13.5%) Parking Brake (16%)	Service Brake (45%) Breakaway Brake (13.5%) Parking Brake (16%)

*Table 2: Minimum Braking Performance Requirements for Agricultural Trailers
Applicable from 1 January 2016.*

The revised standards also require that all agricultural trailers which are manufactured from 1 January 2016 and are capable of being towed at speeds over 40km/h must be equipped with:

- pneumatic (air) braking systems incorporating load sensing to match the brake effort with the load being carried and apply an appropriate braking force.
- a breakaway brake to automatically stop the trailer if it becomes detached while moving.

Trailers which are manufactured from 1st January 2016 that can be towed at speeds over 60km/h must also be equipped with ABS – anti-lock braking systems.

However, agricultural trailers manufactured before to 1 January 2016 that are not designed to be drawn at a speed of more than 40km/h may be fitted with a second coupling device (for example, a chain or wire rope) instead.

Agricultural trailers and interchangeable towed equipment manufactured before 1 January 2016 that are designed to be drawn at speeds over 40km/h and which are not fitted with a breakaway brake have until 1 January 2016 to comply with the revised standards.

Finally, if overrun braking systems are fitted to low-speed, custom-made agricultural trailers or pieces of interchangeable towed equipment with a Design Gross Vehicle Weight (DGWV) not exceeding 5,000kg, they must have a braking efficiency of a minimum of 49% for the service brake and 16% for the parking brake. These figures are based on the DGWV of the vehicle.

If you are unsure as to whether your vehicles comply with these revised standards, we recommend you contact the vehicle manufacturer or their authorised distributor for advice. A list of Frequently Asked Questions containing some practical advice on achieving compliance with the revised standards is included below.

Braking – Frequently Asked Questions

1. Which vehicles do these revised braking regulations apply to?

The revised braking requirements will apply to agricultural tractors and agricultural trailers – that is, to tractors and trailers used for agricultural, fisheries, forestry or horticultural purposes.

It is important to remember that, with braking systems, the term ‘agricultural trailer’ includes pieces of interchangeable towed equipment that can carry three or more times their unladen weight, as specified by the manufacturer. For example, slurry spreaders, manure or fertiliser spreaders and grain chaser bins and so on.

For example, a slurry tanker with an unladen weight of 6 tonnes and a maximum laden weight of 20 tonnes must comply with the revised braking requirements because the laden weight at 20 tonnes is more than three times the unladen weight of 6 tonnes. When calculating these figures, the manufacturer’s specification for the maximum laden weight (DGWW) and unladen weight must always be used.

2. When are the revised braking regulations coming into force?

From 1 January 2016 for all agricultural vehicles, both new and existing.

3. What are the ABS (Anti-Lock Braking System) requirements for agricultural trailers designed to be drawn at a speed exceeding 60km/h?

Every new agricultural trailer manufactured on or after 1 January 2016, which is designed to be drawn at a speed over 60 km/h must be fitted with an anti-lock braking system complying with the construction and performance requirements of EC Braking

Directive 71/320/EEC as amended by Commission Directive 98/12/EC, or of UN/ECE Regulation 13.09.

It is important to note that where the DGWW of the agricultural trailer is more than 10,000kg; a Category A anti-lock braking system (ABS) must be fitted. This is an ABS that controls the braking of the wheels independently on each side of the trailer.

For more information, check with the vehicle manufacturer or their authorised distributor.

4. Why is a higher braking performance required at over 40km/h?

The 40 km/h speed threshold has been chosen to improve road safety. It is also similar to the current UK national requirements. This revised standard is less demanding than other proposed braking standards contained in EC Regulation (EU) No. 167/2013.

5. Are there penalties for non-compliance with the revised braking standards?

Yes. If you don't comply with the revised standards, you could receive a court summons. If you're convicted, you could be fined (up to €2,500), be given a prison sentence, or both. With the exception of where it can be shown that the use of the vehicle is unauthorised, both the owner of the vehicle and whoever is driving it when the offence is recorded can be fined.

6. What are the braking requirements for agricultural tractors?

Agricultural tractors designed to travel at speeds over 40km/h must be equipped with service, emergency and parking brakes which are capable of certain braking efficiencies. The same applies to agricultural tractors designed to travel at speeds under 40km/h, except they are not required to have an emergency brake and the service brake efficiency is lower. The braking efficiencies for both categories are given in Table 1 above.

7. Are there any exemptions for older tractors?

No. However, older tractors are generally incapable of going over 40km/h and will, most likely, already satisfy the minimum braking efficiencies required – that is, 25% for the service brake and 16% for the parking brake, provided they have been correctly maintained.

8. If I am using my agricultural tractor to draw an agricultural trailer equipped with an anti-lock braking system (ABS), do I need to have the appropriate ISO electrical connector for powering it fitted to my tractor?

If an ISO7638 electrical connector has been fitted to the rear of a tractor and the tractor is drawing a trailer equipped with ABS, the connector must be used. However, if the tractor is not fitted with the ISO connector, and the tractor is being used to draw an ABS-equipped trailer, a means of powering the ABS system must be provided. This can be done using the trailer's brake light circuit.

9. What are the revised braking requirements for agricultural trailers?

Agricultural trailers designed to be drawn at speeds over 40km/h must be equipped with service, breakaway and parking brakes which are capable of certain braking efficiencies. Trailers in this category that are manufactured on or after 1 January

2016 must also be equipped with pneumatic braking systems including load-sensing capability. Those manufactured on or after 1 January 2016 which are designed to be drawn at speeds over 60km/h must be equipped with anti-lock braking systems (ABS).

Agricultural trailers designed to be drawn at speeds under 40km/h must be equipped with service and parking brakes with that are capable of certain braking efficiencies.

These braking requirements and efficiencies for agricultural trailers are given in Table 2 above.

All agricultural trailers, irrespective of their speed rating, which are manufactured on or after 1 January 2016 must also be fitted with a breakaway brake. Trailers already in use designed to be drawn at speeds over 40km/h, and which don't already have a breakaway brake fitted, have until 1 January 2016 to become compliant.

However, older trailers, provided they are designed to be drawn at speeds of 40km/h or less, can be fitted with a secondary coupling consisting of a chain or wire rope.

10. I manufacture agricultural trailers. Is there any way I can have the braking performance checked on the trailers I produce?

Usually, the braking performance figures will be given to you by your axle supplier and will be accurate provided all the other parts you use (for example, hoses, actuators) are the right size and quality. Nevertheless, if you want to get the manufacturer's specifications confirmed, you can take the vehicle to your local HCV Test Centre and get a brake test done. There will likely be a fee for this. This is a private arrangement between yourself and the centre. There is no fixed fee outlined in the law for this type of voluntary test.

11. My tractor is designed to travel at speeds over 40km/h, but I'm not sure if my trailer's braking system can cope with speeds over 40km/h. How do I find this out?

You should contact the original manufacturer or their authorised Irish distributor for advice. If the original manufacturer is no longer in business, you could contact another manufacturer who makes similar equipment. They may be able to examine the vehicle for you to see what work needs to be done (if any) to achieve compliance for operation at speeds over 40km/h. They may also be able to give you an estimate of how much any work might cost.

12. What if my trailer or piece of interchangeable towed equipment, for technical or financial reasons, cannot be fitted with a pneumatic braking system incorporating load sensing functionality?

There is no requirement to retrofit these systems to trailers and interchangeable

towed equipment manufactured before 1 January 2016. However, it may mean, due to the performance of the braking system already fitted, that the trailer should not be used at speeds over 40km/h.

13. What if my trailer or piece of interchangeable towed equipment, for technical or financial reasons, cannot be fitted an anti-lock braking system (ABS)?

There is no requirement to retrofit ABS to trailers and interchangeable towed equipment designed to be drawn at speeds over 60km/h which were manufactured before 1 January 2016.

14. After 1 January 2016, is it acceptable for trailers (or pieces of interchangeable towed equipment) equipped with load sensing devices to display settings on the plate for just two loading conditions – ‘unladen’ and ‘laden’?

Yes. However, a manually set device for adjusting and displaying settings between ‘unladen’ and ‘laden’ conditions is not permitted.

15. After 1 January 2016, is it acceptable for trailers (or pieces of interchangeable towed equipment) to be fitted with manual slack adjusters?

Yes, but only for trailers and pieces of interchangeable towed equipment which are designed to be drawn at speeds of 40km/h or less.

Trailers and pieces of interchangeable towed equipment which are designed to be drawn at speeds over 40km/h and with a DGWV of more than 3,500kg must be fitted with a pneumatic braking system whether or not a hydraulic braking system is also fitted. This means that automatic slack adjusters are required on such trailers and pieces of interchangeable towed equipment. This is in compliance with the construction and performance requirements of Directive 71/320/EC (as amended by Commission Directive 98/12/EC).

16. I want to upgrade the brakes on an existing trailer so that I can operate at speeds over 40km/h. What should I do?

You should contact the original trailer or interchangeable towed equipment manufacturer or their authorised Irish distributor. If the original manufacturer is no longer in business, you could contact another manufacturer of similar equipment. They may be able to examine the vehicle for you to see what work (if any) needs to be done to achieve compliance for operation at speeds over 40km/h. They may also be able to give you an estimate of how much any work might cost.

17. My trailer or piece of interchangeable towed equipment was built in the farm workshop. How do I go about achieving compliance with the revised braking standards?

If your trailer or a piece of interchangeable towed equipment was built in a farm workshop and you want to find out if it meets the braking requirements for operation at speeds over 40km/h, you should get advice from a competent person – for example, a manufacturer of similar equipment. They may be willing to examine the trailer and carry out any work that needs to be done to make it compliant with the revised standards relating to braking, plating and speed rating.

18. My trailer has timber sides and was never equipped with brakes. Even if it had brakes, my tractor has no way of powering them. How do I comply with these new regulations?

When braking regulations were put in place over 50 years ago, a provision was inserted whereby, since 1 July 1969, only trailers with a laden weight of more than 3.5 tonnes require brakes. This figure increases to 5 tonnes for trailers where the drawing vehicle is designed to travel at speeds of 40km/h or less. This, therefore, applies to the majority of older tractor and trailer combinations.

This provision is still in force, so, if your tractor is designed to travel at speeds of 40km/h or less, you can draw a trailer with a laden weight of 5 tonnes or less without brakes. This is only the case if, when laden, the trailer does not exceed three times the tractor's unladen weight. If your tractor is designed to travel at speeds over 40km/h, you can only draw a trailer with a laden weight of 3.5 tonnes without brakes.

However, you should ensure that your trailer is equipped with a secondary coupling – that is, a safety chain, wire rope or other similar connection. Also, if the trailer doesn't have a parking brake, you should carry wheel chocks which can be used to hold the trailer stationary when it's uncoupled.

By way of an example, a Massey Ferguson 35 tractor with an unladen weight of 1.4 tonnes is limited to towing a trailer with a laden weight not exceeding 4.2 tonnes (three times the tractor's unladen weight) unless the original manufacturer or their authorised distributor can provide certification proving otherwise. The trailer component of this combination does not need brakes; however, it must be equipped with a secondary coupling consisting of a chain or wire rope, and, if the trailer is not equipped with a handbrake, wheel chocks must be provided.

19. I have interchangeable towed equipment (a baler, crop sprayer, grass rake and so on) in my yard that has no brakes. Do the revised braking standards apply to these types of towed vehicles?

No. The revised standards only apply to such equipment if it was fitted with brakes by the original manufacturer.

However, if a braking system has been fitted, and provided the vehicle is designed to be drawn at speeds of 40km/h or less, the service brakes must be capable of generating minimum brake efficiencies of 25% and the parking brake 16%. A breakaway brake or a secondary coupling must also be fitted.

Furthermore, if a braking system has been fitted, and the vehicle is designed to be drawn at speeds over 40km/h, it must have a service brake with an efficiency of at least 45%; a breakaway brake with an efficiency of at least 13.5% and a parking brake with an efficiency of at least 16%.

20. I bought a trailer with a pneumatic braking system and I want to draw it with an agricultural tractor at speeds over 40km/h. The tractor itself has a hydraulic braking system. Is it legal to have this combination of pneumatic and hydraulic systems?

Yes, provided your tractor satisfies the service, emergency and parking brake performance required for operation at speeds above 40km/h (see Table 1) and provided you fit a hydraulic-to-air conversion kit and mount it on the rear of the tractor. The trailer must also satisfy the braking performance requirements necessary for operation at speeds in excess of 40km/h (see Table 2).

21. My tractor can travel at speeds over 40 km/h and it is fitted with a hydraulic braking system. I plan to buy a new trailer after 1 January 2016 and I want to be able to continue to use my existing tractor to draw the trailer at speeds over 40km/h. What are my options?

The regulations state that trailers manufactured from 1 Jan 2016 which are designed to be drawn at speeds over 40km/h must be fitted with pneumatic braking systems whether or not a hydraulic braking system is also fitted. Therefore, you have two options:

1. Buy a trailer equipped with a pneumatic braking system only and a hydraulic-to-pneumatic brake conversion kit for your tractor, or
2. Buy a trailer equipped with both hydraulic and pneumatic braking systems and use the hydraulic braking system when the trailer is being drawn by your tractor which itself has a hydraulic braking system. If this trailer is being drawn by a tractor equipped with a pneumatic braking system, you would then use the pneumatic braking system on the trailer.

Choosing either of these options means you can continue to operate at speeds over 40km/h using your existing tractor. However, if you choose Option 2, you will need to confirm with the trailer manufacturer that when the hydraulic braking system is in use, it meets the performance requirements (including breakaway brake requirement) necessary for operation at speeds over 40km/h.

For example, the trailer manufacturer may choose to fit two authorisation plates and speed discs to the trailer, one pair displaying the trailer's maximum speed rating when the hydraulic braking system is in use, and the other pair for when the pneumatic braking system is in use.

22. I plan to buy a new trailer before 1 January 2016 but I don't want to spend more money on retrofitting later on. What should I do to ensure that it will comply with the revised requirements?

If you plan purchasing a new trailer (or a piece of interchangeable towed equipment where the Design Gross Vehicle Weight (DGWV) is more than three times the unladen weight (as specified by the manufacturer), you should:

- a. Get confirmation from the equipment supplier that they are aware of the revised requirements.
- b. Ensure that the new equipment you're thinking about buying will match the speed capabilities of your current tractor(s).
- c. Think about the speed capability of your tractor – is it likely to increase in the future if you buy a new trailer?

Remember, a new trailer is likely to outlast two or three replacement tractors over its useful life. While higher spec brakes may initially cost more, they will cost less to run and be much safer in the long term.

23. I plan to buy a new 50km/h tractor before 1 January 2016 and I want to be able to use it at the maximum speed for which it has been designed. I am worried that my current trailed equipment may not meet with the revised standards for operation at speeds over 40km/h. What should I do?

Before buying a new tractor with a design speed over 40km/h, you should have your current trailed equipment fleet **inspected by a competent person**. This could be a representative of the original manufacturer or one of their authorised distributors – doing this could help to **prevent possible problems** occurring that could make your trailed equipment non-compliant with the revised standards.

24. I need some advice regarding the maintenance of the braking systems fitted to the agricultural trailers in my yard. Where should I go?

You should consult a competent person – for example, a representative of the original manufacturer or one of their authorised distributors. You should never attempt to carry out repairs yourself on a braking system that you haven't been trained in. A fully-loaded trailer can account for up to 75% of the tractor-trailer combination's kinetic energy – that is, the energy or force generated by the moving combination – so it is of vital importance that agricultural trailers are equipped with adequate braking systems for their intended operating speed. They should also be properly maintained to ensure that they work effectively as part of the tractor-trailer combination.

Section 4 – Lighting and Visibility

There are serious road safety risks associated with using poorly lit agricultural vehicles on public roads. Rear-end collisions often happen when motorists travelling behind agricultural vehicles misjudge the speed difference between their own vehicle and the slower-moving agricultural one. Furthermore, side impact collisions may happen when agricultural vehicles are making wide left- or right-hand turns.

In order to address these issues, revised agricultural vehicle lighting and visibility standards are being introduced. The new standards mean that agricultural vehicles must be fitted with appropriate lighting systems and reflectors.

Tractors and self-propelled agricultural machinery are already likely to meet the new requirements. Therefore, the improvements will mainly affect larger agricultural trailers and pieces of interchangeable towed equipment.

Again, the new requirements are effective from 1 January 2016.

Lighting and Visibility – Terminology

daylight hours: any time outside ‘lighting-up’ hours – ‘lighting up’ hours is a half hour after sunset until a half hour before sunrise the next day.

flashing amber beacon: Figure 7 below contains an image of a flashing amber beacon. These beacons are used to warn other road users that they are approaching a slow-moving or large vehicle. Most modern tractors and self-propelled machines already have them fitted, so, provided they have been correctly maintained, these vehicles will not need to have work done to make them compliant. Flashing amber beacons are only required on tractors and self-propelled agricultural machinery. They are not required on agricultural trailers, pieces of interchangeable towed equipment or fully-mounted agricultural equipment.



Figure 7: Image of a flashing amber beacon.

full lighting system: for agricultural tractors and self-propelled agricultural machines, ‘full lighting’ systems include the following: side lamps, head lamps, rear lamps, stop lamps, direction indicators, number plate lighting and a flashing amber beacon. Most agricultural tractors and self-propelled agricultural machinery are already fitted with these lights, so, provided they have been correctly maintained, these vehicles will not need to have work done to make them compliant.

lighting board: Figure 8 below contains an image of a rear lighting board. If an agricultural tractor or self-propelled agricultural machine has its rear lights blocked by a trailer or other towed or mounted equipment, the trailer or other equipment that is blocking the lights must be fitted with a lighting board displaying the required lighting.

This also applies if the equipment is blocking the lights on the front of the tractor. In this case, the lighting board must contain the required lighting for the front of the vehicle – that is: side lamps, head lamps and direction indicators.



Figure 8: Image of a lighting board. (RSA Library Image)

lighting-up hours: lighting-up hours is a half hour after sunset until a half hour before sunrise the next day.

marker lamp: Figure 9 below contains an image of a trailer equipped with marker lamps (circled in white). They are usually amber in colour and, from 1 January 2016, they must be fitted to the side of all agricultural trailers forming part of a combination of vehicles which is over 10 metres in overall length.

modern United Nations/Economic Commission for Europe (UN/ECE) specification (in relation to marker lamps): From 1 January 2016, agricultural trailers forming part of a combination of vehicles over 10 metres long must be fitted with a marker lamp satisfying the provisions of Article 16 of the Lighting Regulations.

This requirement is for one lamp to be fitted to the right side of the trailer. This lamp must be 7 watts or less and show a diffused white light (light that doesn't dazzle). No part of the illuminated surface of the lamp should be higher than 1.5 metres from the ground. It should be placed as near as possible to the centre of the trailer.

When measuring the trailer to find the centre spot, the drawbar is not included. The lit surface of the lamp should face outwards and to the front at an angle of 45 degrees to the side of the trailer.

However, new agricultural trailers manufactured from 1 January 2016 must be fitted with modern marker lamps that comply with the European directive. (Council Directive 76/758/EEC as last amended by Commission Directive 97/30/EC, or UN/ECE Regulation 91 and fitment provisions contained in 6.18 of UNECE Regulation 48.)

A summary of the marker lamp requirements for new trailers is as follows:

- They must be amber in colour and fitted to both sides of the trailer at a height of at least 0.25 metres from the ground but no higher than 1.5 metres. They can go to a height of 2.1 metres if the shape of the trailer's bodywork makes it impossible to keep them within the 1.5 metre requirement.
- At least one side-marker lamp must be fitted to the middle third of the trailer. The first lamp should not be more than 3 metres from the front of the trailer and the distance between two side-marker lamps should not be more than 3 metres. If the structure, design or the operational use of the trailer makes it impossible to comply with such a requirement, the distance between lamps may be increased to 4 metres.
- The distance between the furthest back side-marker lamp and the back of the trailer must not be more than 1 metre.
- The lit surface of the lamps should face outwards both to the front and to the rear at an angle of 45 degrees to the side of the trailer.



Figure 9: Image of a trailer equipped with modern UN/ECE specification marker lamps. (Image Courtesy of Dooley Bros Engineering Works)

modern UN/ECE specification (in relation to side and rear reflective markings):

From 1 January 2016, agricultural trailers with a DGWV over 3,500kg must be fitted with rear reflective markings. Those forming part of a combination over 10 metres in overall length must also be fitted with reflective side markings. These may be either Irish specification markings or UN/ECE specification markings. Irish reflective markings look different to UN/ECE ones, but they are compliant.

However, agricultural trailers manufactured from 1 January 2016 must be fitted with UN/ECE specification reflective markings only. These types of markings are already the most common on heavy goods vehicles and trailers. You can buy them in rolls from motor factors and they are reasonably easy to fit.

You can also retrofit UN/ECE specification reflective markings to trailers manufactured before 1 January 2016 in place of the Irish specification ones.

rear marking sign: from 1 January 2016, a rear marking or 'LONG VEHICLE' sign must be fitted to all agricultural trailers forming part of a combination of vehicles that is over 13 metres long (overall). They may be either Irish specification or UN/ECE specification signs. If fitting UN/ECE specification rear marking signs, the words 'LONG VEHICLE' must also be inscribed on them. Refer to Figures 10 and 11 below for further details.

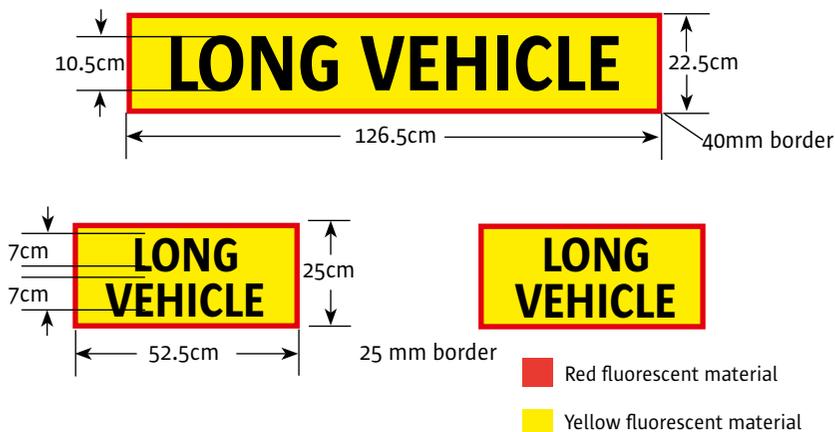


Figure 10: Image of Acceptable 'Irish' Specification Rear marking Signs.
(RSA Library Image)

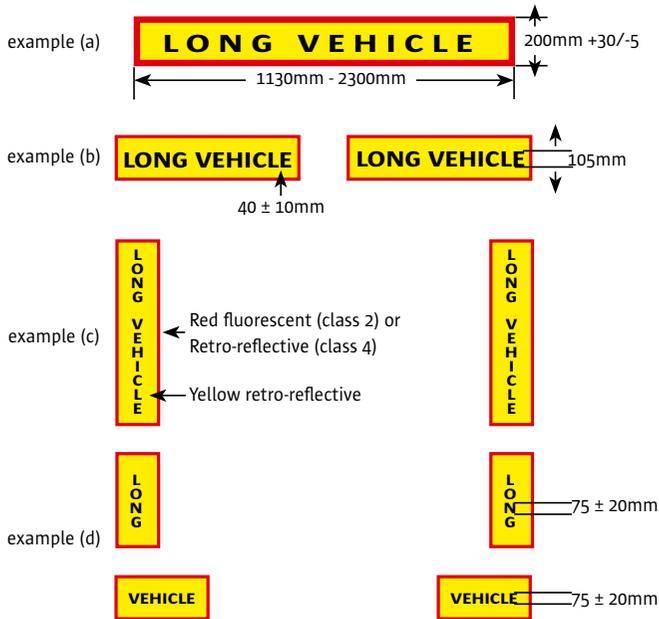


Figure 11: Image of Acceptable UN/ECE Specification Rear Marking Signs.
(RSA Library Image)

working lights: previously known as ‘ploughing lamps’, working lights are fitted to agricultural tractors and self-propelled agricultural machinery so that they can be used in an off-road environment – that is, in a farm yard or field. These lamps should not be switched on when the vehicles are in use on a public road. The Regulations ban white lights being used on the rear of a vehicle when it is in use on a public road. It is illegal to travel on a public road with working lights (ploughing lamps) switched on as they can confuse and dazzle other road users.

Revised Lighting and Visibility Requirements for Agricultural Vehicles

Agricultural tractors and self-propelled agricultural machines must be equipped with full lighting systems at all times, and not just during lighting up hours. Full lighting

systems include: side lamps, head lamps, rear lamps, stop lamps, direction indicators and number plate lighting.

However, agricultural tractors and self-propelled agricultural machines manufactured or first registered before 1 January 1980 are exempt. Also, agricultural trailers, fully mounted agricultural equipment or piece of interchangeable towed equipment being drawn by or attached to an exempt tractor are also exempt **provided they are being used during daylight hours only.**

Agricultural tractors and self-propelled agricultural machines must also be fitted with a flashing amber beacon. Vintage agricultural tractors taking part in vintage rallies are exempt from this requirement.

If an agricultural tractor or self-propelled agricultural machine has its lights blocked by a trailer or other towed or mounted equipment, the trailer or other equipment that is blocking the lights (either to the front or the rear of the vehicle) must be fitted with a lighting board displaying the required lighting.

Agricultural trailers and interchangeable towed equipment must be equipped with side lamps, rear lamps, stop lamps, indicators and number plate lighting. They must also be fitted with a marker lamp on their right-hand side if, when attached to an agricultural tractor, the overall length of the combination is more than 10 metres. Marker lamps fitted to trailers manufactured on or after 1 January 2016 must comply with modern UN/ECE specifications.

Agricultural trailers with a DGWV over 3,500kg must also be fitted with reflective rear markings. If these trailers form part of a combination of vehicles that is over 10 metres long, they must also have reflective side markings. Rear and side markings fitted to trailers manufactured on or after 1 January 2016 must comply with modern UN/ECE specifications.

A rear 'LONG VEHICLE' marking must also be fitted to agricultural trailers forming part of a combination of vehicles over 13 metres long.

The reflective and 'LONG VEHICLE' marking requirements do not apply to pieces of interchangeable towed equipment that can carry more than three times their own unladen weight (as specified by the manufacturer). For example, slurry tankers, fertiliser or manure spreaders, grain chaser bins, and so on.

If you are not sure about your vehicles' compliance with these revised standards, contact the vehicle manufacturer or their authorised distributor for advice. You might also like to read the list of Frequently Asked Questions on next page.

Lighting and Visibility – Frequently Asked Questions

1. Which vehicle types do these revised lighting regulations apply to?

The revised lighting requirements will apply to agricultural tractors, agricultural trailers, interchangeable towed equipment, fully mounted agricultural equipment and self-propelled agricultural machinery used for agricultural, fisheries, forestry or horticultural purposes.

From a lighting and visibility perspective, the term ‘agricultural trailer’ includes pieces of interchangeable towed equipment that can carry more than three times their unladen weight. For example, slurry spreaders, manure or fertiliser spreaders, grain chaser bins, and so on.

It is important to note there is an exemption from the requirements for these pieces of interchangeable towed equipment. They do not need to comply with reflective and rear marking requirements for larger agricultural trailers. That is, they don’t need to fit side and rear reflective markings and a ‘LONG VEHICLE’ rear marking sign.

2. When are the revised lighting and visibility braking regulations coming into force?

From 1 January 2016 in respect of all vehicles, both new and existing.

3. What are the penalties for non-compliance with the revised lighting and visibility standards?

Since 3 August 2012, a number of lighting offences have come within the scope of the fixed charge driving offences system. This is where the driver of a vehicle who has been found committing certain offences can pay a fixed charge or fine instead of going to court. The fixed charge system applies to agricultural vehicles or combinations of agricultural vehicles and their trailers or pieces of interchangeable towed equipment. They carry a €60 fine if paid within 28 days and a €90 fine if paid within a further 28 days. A list of the offences is as follows:

- Using a vehicle not equipped with prescribed lamps and identification mark lighting
- Using a trailer not equipped with prescribed lamps and identification mark lighting
- Using a vehicle not equipped with prescribed rear projecting load lamp or lateral projecting load lamp
- Using a trailer not equipped with prescribed marker lamp

For other lighting related offences, you could receive a summons to court. If you're convicted, you could be fined (up to €2,500), be given a prison sentence, or both. With the exception of where it can be shown that the use of the vehicle is unauthorised, both the owner of the vehicle and whoever is driving it when the offence is recorded can be fined.

4. What are the lighting and visibility requirements for agricultural tractors/self-propelled agricultural equipment?

Agricultural tractors and self-propelled agricultural machines must be equipped with full lighting systems at all times, and not just during lighting up hours. They must also be fitted with a working flashing amber beacon which must be lit when the vehicle is in use in a public place, day or night.

5. Are there any exemptions for older tractors/self-propelled agricultural equipment?

There are some exemptions if certain conditions are met. Agricultural tractors and self-propelled agricultural machines manufactured or first registered before 1 January 1980 do not require lights during the daytime. Also, agricultural trailers, fully mounted agricultural equipment or piece of interchangeable towed equipment being drawn by or attached to an exempt tractor are also exempt from needing lights **provided they are being used during daylight hours only.**

For example, a tractor and trailer combination where the tractor was manufactured or first registered in 1970 requires lights if it is being used during lighting-up hours.

Vintage tractors, that is those more than 30 years old, used solely for vintage rallies or display will not require a flashing amber beacon.

6. What are the revised lighting and visibility requirements for agricultural trailers and interchangeable equipment?

Agricultural trailers and interchangeable towed equipment must be equipped with side lamps, rear lamps, stop lamps, indicators and number plate lighting. They must also be fitted with a marker lamp on their right hand side if, when coupled to an agricultural tractor, the overall length of the combination is more than 10 metres.

Agricultural trailers with a DGWV over 3,500kg must also be fitted with reflective rear markings. If these trailers form part of a combination of vehicles that is over 10 metres long, they must also have reflective side markings.

Finally, a rear 'LONG VEHICLE' marking must be fitted to agricultural trailers forming part of a combination of vehicles over 13 metres long.

The reflective and 'LONG VEHICLE' marking requirements do not apply to pieces of interchangeable towed equipment that can carry more than three times their own unladen weight. For example, slurry tankers, fertiliser or manure spreaders, grain chaser bins, and so on.

7. Are there any exemptions for older trailers and interchangeable equipment?

Only if the trailer or other equipment was manufactured before 1 January 1980 and are being drawn by an agricultural tractor which was also manufactured or first registered before this date. However, this exemption only applies during daylight hours.

8. Can I fit 'modern UN/ECE' specification marker lamps and reflective markings to older trailers?

Yes. In fact, for practical reasons, most people will chose to retrofit modern UN/ECE specification marker lamps and reflective markings.

9. Do agricultural trailers and pieces of interchangeable towed equipment require number plate lighting?

Yes. This requirement has been in force since the Lighting Regulations were introduced over 50 years ago and hasn't changed with the introduction of these revised lighting standards.

10. I have an agricultural tractor that was manufactured prior to 1 January 1980 and I regularly use it on the public road. It has lights fitted. Do the revised requirements mean that I am no longer required to have lights fitted or working?

No. You must keep the lighting and reflectors fitted to your existing vehicles well maintained in a clean and efficient condition so they can be used at any time. Furthermore, if the vehicle is being used for a purpose other than taking part in a vintage rally or display, it must also be fitted with a flashing amber beacon which must be lit at all times when the vehicle is in use in a public place.

11. How do I go about achieving compliance with the revised lighting and visibility standards?

You should contact the original manufacturer or their authorised Irish distributor. If the original manufacturer is no longer in business, you could contact an alternative manufacturer of similar equipment. They may be able to examine the vehicle for you to see what work needs to be done (if any) to achieve compliance. They should also be able to give you an estimate of how much any work might cost.

12. I have interchangeable towed equipment (for example, a baler, crop sprayer, grass rake and so on) in my yard that has no lights. Do the revised lighting and visibility standards apply to these types of vehicles?

Yes. However, such equipment will only need lights if, when attached to a tractor or self-propelled agricultural machine, it blocks the lighting and reflectors fitted to the front or rear of the tractor or self-propelled agricultural machine itself.

13. I need some advice about how to maintain the lighting systems fitted to the agricultural trailers in my yard. Where can I get advice?

You should consult a competent person – for example, a representative of the original manufacturer or one of their authorised distributors. You should never attempt to carry out repairs yourself if you haven't had appropriate training.

Section 5 – Weights, Dimensions and Coupling

From a road safety perspective, and also to protect Ireland’s road and bridge infrastructure, it is imperative that vehicles (including agricultural vehicles) adhere to specified weights and dimensional limits.

As a result, national weight limits are being introduced for agricultural trailers.

These limits will depend on:

- the number of axles fitted,
- the spacing between the axles, and
- the type of coupling fitted.

A revised width requirement is also being introduced for agricultural trailers, which is in line with the width requirements for heavy goods trailers. Again, these revised standards take effect from 1 January 2016 for all agricultural vehicles.

Weights Dimensions and Coupling – Terminology

air suspension: a suspension system that uses pressurised air instead of metal springs. A system is considered to be air suspended if at least 75% of the spring effect is caused by pressurised air.

authorisation plate: a plate attached to an agricultural trailer which contains information such as: manufacturer’s name, vehicle identification number (VIN), maximum design speed and permitted laden weight, maximum drawbar loading, vehicle length and width. It may also contain information on design weights, if these are higher than the national limits permitted in Ireland. An authorisation plate is sometimes referred to as a ‘national weights and dimensions plate’.

coupling: a device used to connect an agricultural tractor to a trailer or piece of interchangeable towed equipment. Typically, these are ‘hook and ring’ or ‘pin and eye’ type devices. However, the ‘ball and spoon’ type couplings are becoming more popular because they are stronger and wear well. Further details on each type are included below.

‘hook and ring’ coupling: Figure 12 below contains an image of a ‘hook and ring’ coupling. This is the most common coupling used on agricultural vehicles in Ireland and is (subject to the tractor manufacturer’s specifications) usually limited to vertical loads of 3,000kg or less. A vertical load is the downward force placed on the hitch by the coupling at the point of connection.

You should check the tractor manufacturer’s specifications regarding coupling devices.



*Figure 12: Image of ‘hook and ring’ type coupling.
(Image courtesy of Dromone Engineering)*

‘pin and eye’ coupling: Figure 13 below contains an image of a ‘pin and eye’ type coupling. Usually, these couplings are used when drawing pieces of interchangeable towed equipment. Again, they are usually limited to vertical loads under of 3,000kg or less. You should check the tractor manufacturer’s specifications regarding coupling devices.



*Figure 13: Image of ‘pin and eye’ type coupling.
(Image courtesy of Dromone Engineering)*

‘ball and spoon’ coupling: Figure 14 below contains an image of a ‘ball and spoon’ coupling. These couplings are a more recent design. They wear better than ‘hook and ring’ couplings and are, therefore, a safer connection type as there is no risk of ‘decoupling’ – where worn trailer tow rings come away from the keeper plate mounted on the rear of the tractor.



*Figure 14: Image of ‘ball and spoon’ type coupling.
(Image courtesy of Dromone Engineering)*

The ‘ball and spoon’ coupling is also an ideal system for use on trailers and interchangeable towed equipment fitted with steering functionality. Whereas they are usually limited to vertical loads of 3,000kg or less, these couplings may be approved for a 4,000kg load if they comply with ISO 24347 and are approved under Directive 94/20/EEC, 89/173/EEC, 2009/144/EEC or UN/ECE Regulation 55. For more information consult the vehicle manufacturer or their authorised distributor.

It will probably not be possible to retrofit this type of coupling to an existing tractor which is capable of taking a 4,000kg load. Nevertheless, you could contact the tractor manufacturer or their authorised distributor for further advice.

Most tractors will be fitted with a plate near the coupling device detailing the maximum load the coupling can take. An example of this is shown in Figure 15 below. The figure illustrates that this particular coupling, when the towing hook is used, has been rated for a maximum load of 3,000daN – decanewtons – which is 3,059kg; and 2300daN (2,345kg) when the drawbar is used at speeds under 40km/h.

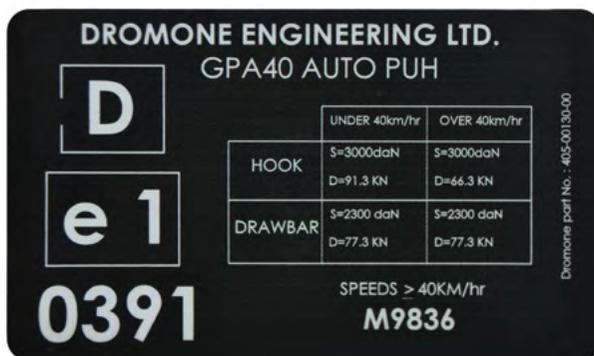


Figure 15: Image of typical plate mounted near to a coupling device fitted to the rear of a tractor. (Image courtesy of Dromone Engineering)

equivalent system: an ‘equivalent system’ means a suspension system which fulfils the conditions to make it equivalent to air suspension as set out in Annex II to Council Directive 96/53/EC. For more information, consult the vehicle manufacturer or their authorised distributor.

flexible suspension: a ‘flexible suspension system’ means, in relation to a trailer, an air suspension system, an equivalent system or a suspension system that incorporates a spring or a shock-absorbing device or both between the axle or axles and the trailer chassis. A ‘rocking bogie’ system (as shown in Figure B on the right-hand side of Figure 16 below) does not constitute a flexible suspension system.

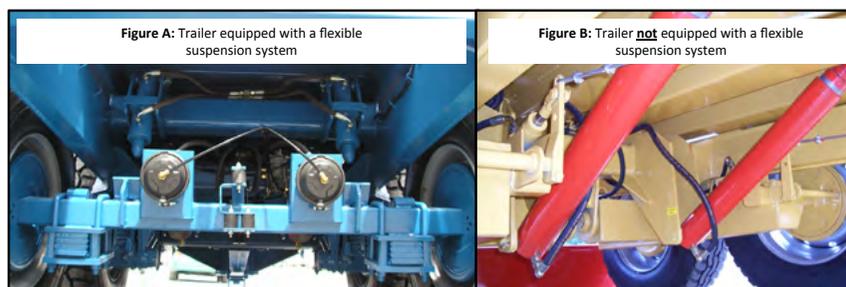


Figure 16: Images of a trailers equipped with or without flexible suspension systems. (Image courtesy of NC Engineering)

flotation tyres: pneumatic tyres with an inflation pressure of not more than 4 bar. A flotation tyre’s area of contact with the road surface is not less than 500 millimetres in width when measured at a right angle to the vehicle.

manufacturer's plate: a manufacturer's plate (sometimes referred to as a statutory plate) is a plate attached to an agricultural tractor and contains information such as: manufacturer's name, vehicle identification number (VIN), total permissible mass, permissible axle loads and permissible towable masses.

secondary coupling: an additional coupling to the primary hook and ring, pin and eye, or ball and spoon coupling. The secondary coupling usually consists of a safety chain or wire rope or other similar connection which ensures that a trailer remains attached its towing vehicle if the primary coupling fails or becomes detached. It prevents a trailer's drawbar from touching the ground and provides some level of steering. A secondary coupling is not needed if a trailer has been equipped with a breakaway brake.

When a secondary coupling is fitted correctly as shown in Figure 17 below, it helps to prevent:

- damage to the tractor's cab, especially when tipping trailers;
- injury to tractor drivers caused by the trailer's drawbar entering the tractor cab through the back window;
- breakages to the back of the tractor, including tyre damage;
- handling difficulties, especially if the trailer's drawbar impacts a wheel on the tractor's rear axle;
- the trailer's drawbar from digging into the ground;
- the tractor rearing up at the front.

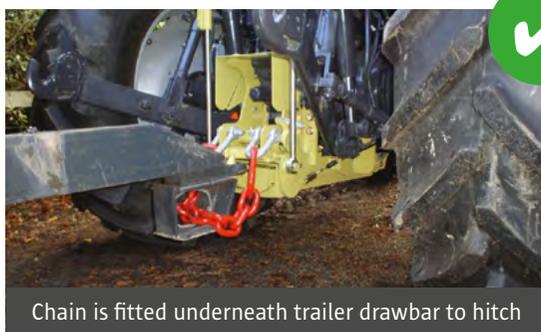


Figure 17: Correctly Fitted Safety Chain. (Image courtesy of Dromone Engineering)

Despite the fact that many older trailers may be equipped with a safety chain following the arrangement shown in Figure 18 below, the RSA advise that, if possible, this type of secondary coupling chain should not be used in future. The chain is too long and too high on the rear of the tractor. This could cause:

- the trailer's drawbar to come through the back window of the tractor and seriously injure the driver;
- the trailer's drawbar to damage the components fitted to the rear of the tractor, that is, the pick-up hitch or three-point linkage components, including hydraulic, braking and lighting connections;
- the tractor to rear up at the front;
- the trailer's drawbar to dig into ground.

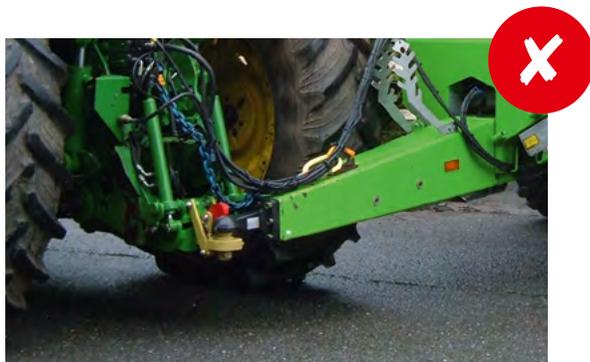


Figure 18: Incorrectly fitted safety chain. (Image courtesy of Dromone Engineering)

Other points worth noting in respect of the use of safety chains include:

- The minimum strength of the chain must be equal to the gross weight of the trailer being drawn. Consult the vehicle manufacturer or chain supplier for advice on the type of chain you need.
- Safety chains must be securely attached to both the tractor's hitch and the trailer drawbar.
- Safety chains must not be damaged, for example, worn from dragging on the ground, stretched or kinked, and so on.
- The slack in the chain should only be enough to allow the trailer to turn.

steering axle: a steering axle controls the direction of a vehicle's wheels.

The steering mechanism can be powered or non-powered. These axles (where required on trailers with axle centres of 1.8 metres or greater) must comply with the technical provisions of UN/ECE Regulation 79 on steering equipment. For more information consult the vehicle manufacturer or their authorised distributor.

Weights

National weight limits are being introduced for two and three-axle agricultural tractors. The weight limit for a two-axle tractor is 18 tonnes; a three-axle tractor, 24 tonnes.

Weight limits for rigid drawbar (unbalanced) trailers are also being introduced:

- 13 tonnes for single axle;
- 19 tonnes for tandem axle; and
- 22.5 tonnes for triaxle.

Higher limits of up to 24 tonnes for rigid (unbalanced) drawbar tandem trailers and 34 tonnes for triaxle trailers that meet certain additional requirements are being introduced.

These requirements are:

- they must be plated,
- they must be fitted with a flexible suspension system,
- they must be fitted with flotation tyres suitable for operation at 10 tonnes per axle in the case of a tandem axle trailer or 9 tonnes per axle in the case of a triaxle trailer, and
- they must be fitted with a steered or steering axles if they have an axle spacing of 1.8 metres or greater.

Further details are contained in Section 8 of this booklet.

Combinations of agricultural tractors and trailers, where either of them is unplated, will have their maximum towable mass capped at three times the tractor's unladen weight.

Dimensions

The following dimensional limits will apply to agricultural vehicles from 1 January 2016.

- **Length** = 12 metres (or 18.75 metres when combined – for example – with a tractor and trailer or other interchangeable towed equipment).
- **Height** = 4.65 metres. However, trailers used to transport loads of baled agricultural produce such as hay or straw, and so on are exempt from this height limitation.
- **Widths**
 - **Agricultural tractors and trailers**
Width = 2.55 metres.
 - **Large tractors – tractors whose unladen weight exceeds 7.25 tonnes**
Width = 2.75 metres.
 - **Tractors with flotation tyres or dual wheel systems**
Width 3.5 metres.
 - **Fully mounted equipment and interchangeable towed equipment**
Width = 3.0 metres.
 - **Self-propelled agricultural machinery**
Width = 3.5 metres.

However, self-propelled agricultural machinery can be wider than 3.5 metres so long as when travelling on public roads it has an escort vehicle. This escort vehicle must drive in front, use dipped headlights and carry working flashing amber beacons and a “CAUTION –WIDE LOAD FOLLOWING” sign.

The machinery being escorted **must also** carry flashing amber beacons, one of which must be visible to the rear and display a “WIDE LOAD” sign to the rear.

Note: The following items don’t count when measuring the overall width of an agricultural trailer:

- the part of flotation tyres and mudguards protruding beyond the bodywork, up to a maximum of 100 millimetres on each side of the vehicle, and
- devices associated with hydraulic rear door opening mechanisms.

Coupling

Requirements are also being introduced for the maximum vertical load (the weight) that can be exerted on an agricultural tractor's coupling by a trailer's drawbar.

This vertical load must not be more than:

1. the lower of the tractor or trailer manufacturer's specifications,
2. 3 tonnes, or
3. 4 tonnes in the case of a ball and spoon coupling which has been approved and plated for this load.

If you are not sure about your vehicle's compliance with these revised standards, contact the vehicle manufacturer or their authorised distributor for advice. You might also like to read the list of Frequently Asked Questions below.

Weights, Dimensions and Coupling – Frequently Asked Questions

1. What vehicle types do these revised weights, dimensions and coupling standards apply to?

The revised requirements apply to agricultural tractors, agricultural trailers and combinations of such vehicles used for agricultural, fisheries, forestry or horticultural purposes. They do not apply to agricultural vehicle combinations being used for purposes outside of agricultural, fisheries, forestry or horticulture.

From a weights, dimensions and coupling perspective, the term 'agricultural trailer' **does not** include pieces of interchangeable towed equipment with a DGWV of more than three times the unladen weight. Therefore, the revised standards for agricultural trailers do not apply to interchangeable towed equipment intended to be drawn by an agricultural tractor where the DGWV of the towed equipment is more than three times its unladen weight as specified by the manufacturer.

For example, a slurry tanker with a maximum laden weight of 20 tonnes and an unladen weight of 6 tonnes does not have to comply with the revised weight, dimensions and coupling requirements even though its laden weight is more than three times the unladen weight. However, operators of towed equipment should not exceed the manufacturer's rated towing capacity for their tractor displayed on the manufacturer's plates.

2. Why are new weight limits for agricultural vehicles being introduced?

It is vitally important that agricultural tractor and trailer combinations do not present an unreasonable road safety risk on public roads. This includes making sure that vehicles are not overloaded, taking the design specification of the vehicle and the limits of the national road and bridge infrastructure into account.

3. Are there any exemptions?

No. If you wish to use your tractor to draw a trailer with a heavier load than the new limits allow, you need a permit. Please visit the RSA website at www.rsa.ie for more information on the abnormal load permitting system.

4. I use my agricultural tractor to draw a trailer for a purpose other than agriculture, fisheries, forestry or horticulture. What requirements must I adhere to?

The axle weight limits for trailers being drawn by an agricultural tractor for a purpose outside of agriculture, fisheries, forestry or horticulture are outlined in the Weights and Dimensions Leaflet, a copy of which is available on the RSA website at www.rsa.ie

Also, the maximum imposed load that can be put on an agricultural tractor's coupling by a trailer's drawbar must not be more than the tractor manufacturer's specifications as detailed on the plate affixed to the coupling device.

5. When are the revised weights, dimensions and coupling requirements coming into force?

From 1 January 2016 for all vehicles, both new and existing.

6. What is the penalty for breach of these revised Regulations?

A breach of the revised standards means you could receive a summons to court. If you're convicted, you could be fined (up to €2,500), be given a prison sentence, or both. With the exception of where it can be shown that the use of the vehicle is unauthorised, both the owner of the vehicle and whoever is driving it when the offence is recorded can be fined.

7. I have a four-axle rigid drawbar agricultural trailer. What weight limits must I adhere to?

The same weight limits and technical requirements that apply to triaxle rigid drawbar agricultural trailers also apply to four axle rigid drawbar trailers. If you want to exceed these limits you must get a permit from your Local Authority. Further details on the abnormal loads permit scheme is available on the RSA website at www.rsa.ie

In no instance can you draw a trailer with a laden weight which exceeds the manufacturer's rated towing capacity of your tractor as detailed on its manufacturer's plate. An example of a manufacturer's plate is shown in Figure 19 below. This example shows that the vehicle has a towing capacity of 32,000kg provided the trailer is fitted with an assisted braking (that is, hydraulic or pneumatic) system.

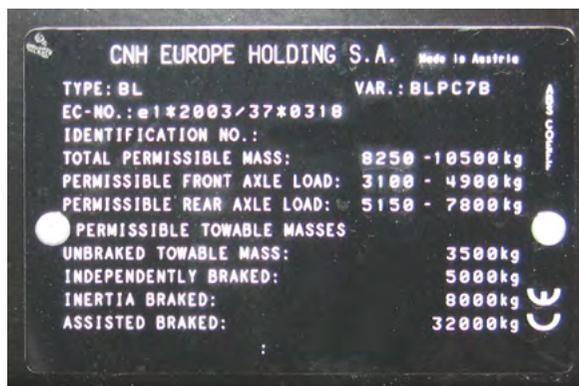


Figure 19: Image of a manufacturer's plate fitted. (RSA Library Image)

8. Why are there a range of weights shown in Figure 19 above for the total permissible mass and permissible axle loadings?

The variations in values are displayed to allow for different tyre and wheel assemblies which may be fitted. If you are unsure as to which limits apply to your vehicle or vehicles, you should consult with the vehicle manufacturer, one of their authorised distributors, or a supplier of agricultural tyres in your area for guidance.

9. My agricultural tractor is fitted with tracks instead of wheels and tyres. Do the revised weight limits apply to me?

No. The weight limits being introduced for tractors only apply to wheeled tractors. However, if your tractor is fitted with tracks, you must adhere to the manufacturer's specifications. If you are drawing a trailer, you must adhere to the lower of the weights declared on the manufacturer's plate fixed to the tractor, or the weights declared on the authorisation plate fixed to the trailer under the heading 'Weights Not to Be Exceeded in Ireland'.

10. My agricultural tractor is plated, but not with a manufacturer's plate like the one shown in Figure 19 above indicating its 'Permissible Towable Masses'. What rules must I follow regarding the maximum laden weight of a trailer or piece of interchangeable towed equipment that I can legally tow?

If your tractor does not have a manufacturer's plate fitted, you are limited to towing a trailer with a DGWV of not more than three times the tractor's unladen weight (as specified by the manufacturer). Alternatively, you can contact the tractor manufacturer or their authorised distributor to have a manufacturer's plate fitted. If you get a manufacturer's plate fitted, you must adhere to the lower weights declared on the manufacturer's plate fixed to the tractor, or the weights declared on the authorisation plate fixed to the trailer under the heading 'Weights Not to Be Exceeded in Ireland'.

11. My agricultural trailer is not fitted with an authorisation plate showing a figure for its maximum permitted laden weight in Ireland. However, it has a manufacturer's plate. My tractor is also plated. What rules must I adhere to as regards the maximum laden weight I can operate at?

If your trailer is not fitted with an authorisation plate, you are limited to a laden weight of not more than three times the unladen weight of the tractor being used to tow it. You are also subject to the following restrictions:

- a. 13 tonnes for a rigid drawbar single axle trailer, 19 tonnes for a tandem axle or 22.5 tonnes for a triaxle; or
- b. 16 tonnes for a drawbar or centre-axle trailer if the axles are less than three metres apart, or 18 tonnes if the axles are more than 3.0 metres apart; or
- c. 25 tonnes in the case of a drawbar or centre-axle trailer equipped with three axles; or
- d. 30 tonnes for a drawbar or centre-axle trailer equipped with four axles.

You could, if you wish, contact the original trailer manufacturer or authorised distributor to have an authorisation plate retrofitted which may allow you to exceed the limits in (a) to (d) above.

A trailer which has been fitted by the original manufacturer or their authorised distributor with a manufacturer's plate is regarded as being un-plated, as it does not carry the required information that an authorisation plate contains.

12. My tractor is fitted with a manufacturer's plate and my trailer is fitted with an authorisation plate. However the manufacturer's plate fitted to the tractor indicates that it has a 'Permissible Towable Mass' more than the figure for the trailer's maximum permitted laden weight as detailed on its authorisation plate in the column 'Weights Not To Be Exceeded in Ireland'. What rules must I adhere to?

Where both an agricultural tractor and trailer are plated, you must adhere to the lesser of the weights declared on the manufacturer's plate affixed to the tractor under the heading 'Permissible Towable Masses' or the figure for the trailer's maximum permitted laden weight as detailed on the its authorisation plate in the column 'Weights Not To Be Exceeded in Ireland'.

13. I have no means of weighing my trailers when they are laden. What can I do to ensure that I comply with the new national weight limits for agricultural tractors and trailers?

Most farms don't have weigh bridges, and very few agricultural trailers have on-board weighing systems.

Therefore, in order to comply with the new weight limits, you should find out both the unladen weight of your trailer (either from the manufacturer, their authorised distributor or have it weighed) and its **volumetric carrying capacity**.

To get the volumetric carrying capacity figure, multiply the length by the width by the height of the goods-carrying area of the trailer. Measure these distances in metres. This will give you a figure which is the volumetric carrying capacity of your trailer expressed in cubic metres. You then need to multiply the volumetric carrying capacity by the indicative density of the crop being carried.

(Your local agricultural advisor should be able to help you with various crop densities.)

Add the figure you get from this calculation to the figure for the trailer's unladen weight. This will give you an estimate of the laden weight of the trailer in kgs.

For example, a 20ft (6.096 metre) tandem axle grain trailer with a volumetric capacity of 23 cubic metres (m³) and an unladen weight of 5,200kg would weigh 22,450kg when level-loaded with wheat:

Unladen weight:	5,200kg
Volumetric capacity:	23 cubic metres (m ³)
Crop density:	750 kilogrammes per cubic metre (kg/m ³) for wheat

The calculation therefore is:

Unladen weight + (carrying capacity x crop density) = loaded weight.

5,200 + (23 x 750) = 22,450kg.

In order for this trailer to comply with the new weight limits (refer to Section 8 of this booklet), it would need to have an axle spacing of 1.3 metres or more, and be equipped with both a flexible suspension system and flotation tyres. It would also need to be fitted with an authorisation plate.

14. What changes to dimensions are being introduced?

The following dimensional limits will apply to agricultural vehicles from 1 January 2016.

- **Length** = 12 metres (or 18.75 metres when combined – for example – with a tractor and trailer or other interchangeable towed equipment).
- **Height** = 4.65 metres. However, trailers used to transport loads of baled agricultural produce such as hay or straw, and so on are exempt from this height limitation.
- **Widths**
 - **Agricultural tractors and trailers**
Width = 2.55 metres.
 - **Large tractors – tractors whose unladen weight exceeds 7.25 tonnes**
Width = 2.75 metres.
 - **Tractors with flotation tyres or dual wheel systems**
Width 3.5 metres.
 - **Fully mounted equipment and interchangeable towed equipment**
Width = 3.0 metres.
 - **Self-propelled agricultural machinery**
Width = 3.5 metres.

However, self-propelled agricultural machinery can be wider than 3.5 metres so long as when travelling on public roads it has an escort vehicle. This escort vehicle must drive in front, use dipped headlights and carry working flashing amber beacons and a “CAUTION –WIDE LOAD FOLLOWING” sign.

The machinery being escorted **must also** carry flashing amber beacons, one of which must be visible to the rear and display a “WIDE LOAD” sign to the rear.

Note: The following items don’t count when measuring the overall width of an agricultural trailer:

- the part of flotation tyres and mudguards protruding beyond the bodywork, up to a maximum of 100 millimetres on each side of the vehicle, and
- devices associated with hydraulic rear door opening mechanisms.

15. What are the specifications for the “CAUTION – WIDE LOAD FOLLOWING” and “WIDE LOAD” signs that must be displayed when escorting self-propelled machinery over 3.5 metres wide?

The specifications for the ‘CAUTION — WIDE LOAD FOLLOWING’ and ‘WIDE LOAD’ signs are as follows:

Materials

- They must be made of retroreflective material of at least Class RA1 as specified in I.S. EN 12899-1:2007.

Formatting of text

- Lettering must be at least 100mm in height and 50mm in width.
- Lettering must be black on a yellow retroreflective background with a red border.
- The font type must be normal, clearly legible and upright.
- Italics are not permitted.

Chevron signalling panels

- Chevron signalling panels satisfying set requirements must be fitted to each end of the ‘CAUTION — WIDE LOAD FOLLOWING’ sign. The **dimensional requirements** are shown in Figure 20 on page 49, and the **colouring and photometric** (reflective properties) **requirements** are set out in Appendix 3 to Annex XII to Commission Regulation 2015/208.
- Chevron signalling panels satisfying the **fitment, colouring and photometric requirements** in Appendix 3 to Annex XII to Commission Regulation 2015/208 must be fitted either:
 - on each end of the ‘WIDE LOAD’ sign on the rear of the self-propelled agricultural machine, **or**
 - at points that are not greater than 100 mm from the extreme outer edges of the vehicle. The points must be the same distance from the vehicle’s ‘median longitudinal plane’ – the centre line of the vehicle when viewed from the rear.

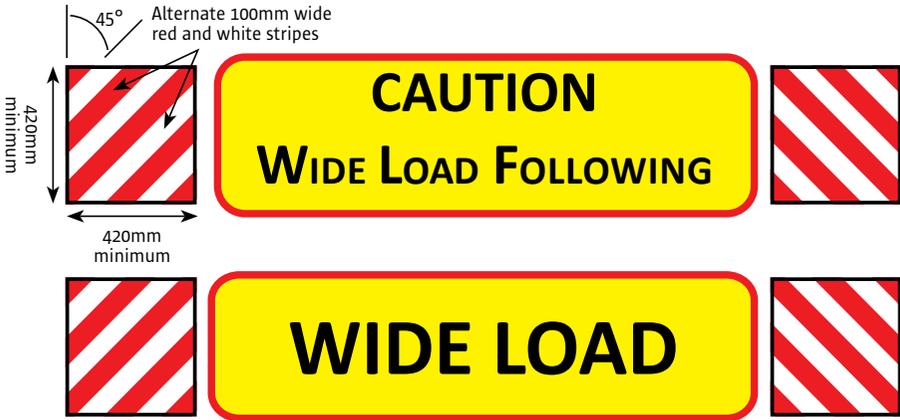


Figure 20: Wide Load Signage to be used when transporting self-propelled equipment over 3.5 metres wide on public roads.

16. What coupling-related changes are being introduced?

Requirements are being introduced whereby the maximum imposed load that can be put on an agricultural tractor's coupling by a trailer's drawbar cannot be more than the lower of:

- a. the manufacturer's specifications as detailed on the plate affixed to the coupling device,
- b. 3,000kg, or
- c. 4,000kg in the case of a coupling which complies with ISO 24347 and is approved under Directive 94/20/EEC, 97/173/EEC, or 2009/144/EEC, or UN/ECE Regulation 55.

Section 6 – Plating and Speed Rating

From a road safety perspective, and also to protect the road and bridge infrastructure, vehicles (including agricultural vehicles) must adhere to specified weights and speed limits.

Plating and speed disc requirements are being introduced for agricultural vehicles. This will help owners to comply with the legal limits. Agricultural vehicles will have to be appropriately plated and display a speed disc indicating the maximum design speed for which they have been rated to travel at.

These revised standards take effect from 1st January 2016.

Plating and Speed Rating – Terminology

authorised distributor: a person who holds a franchise from a vehicle manufacturer to sell particular makes and models of vehicles and who is authorised to represent the manufacturer and to act on their behalf in plating and speed rating matters.

authorisation plate: a plate attached to an agricultural trailer which contains information such as: manufacturer's name, vehicle identification number (VIN), maximum design speed and permitted laden weight, maximum drawbar loading, vehicle length and width. It may also contain information on design weights, if these are higher than the national limits permitted in Ireland. An authorisation plate is sometimes referred to as a 'national weights and dimensions plate'. See Figure 21 on page 51 for an example of what one of these plates looks like.

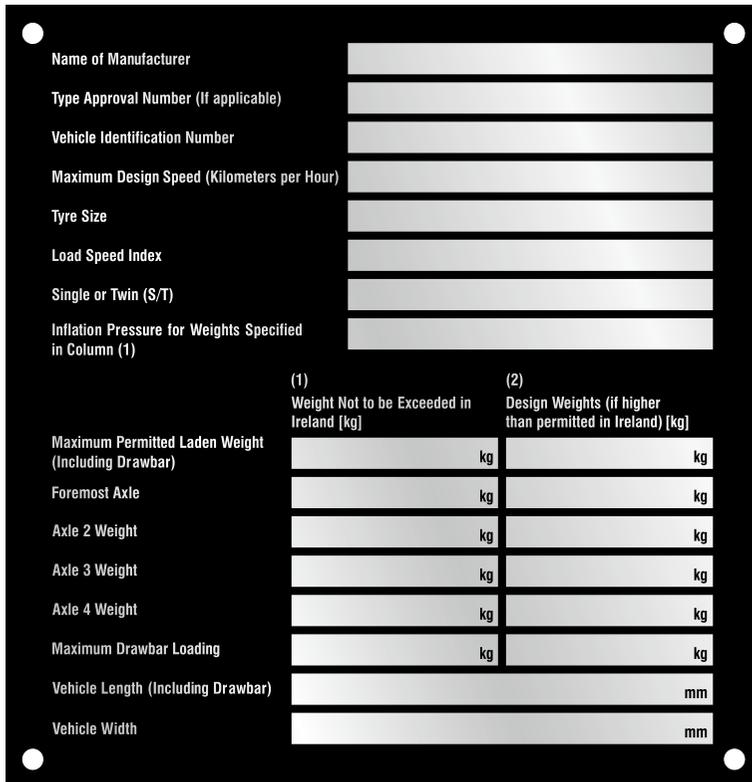


Figure 21: Image of an authorisation plate fitted to an agricultural trailer. (Image courtesy of Alpha Sign Name Plate & Decal Co. Ltd.)

design speed: design speed in relation to an agricultural tractor, a self-propelled agricultural machine, an agricultural trailer, or interchangeable towed equipment means the maximum permissible speed of the vehicle as specified by the manufacturer or authorised distributor of the vehicle. Note that manufacturers and their authorised distributors must take account of the revised ‘Braking’ requirements being introduced in assigning a design speed.

manufacturer’s plate: a manufacturer’s plate (sometimes referred to as a statutory plate) is a plate attached to an agricultural tractor and contains information such as: manufacturer’s name, vehicle identification number (VIN), total permissible mass, permissible axle loads and permissible towable masses. Refer to Figure 21 above for an example of what one of these plates looks like.

plating: is when a vehicle manufacturer or their authorised distributor attaches an information plate to a vehicle. This plate contains information such as the manufacturer's name, a vehicle identification number (VIN), design weights and so on.

speed marking: is when a vehicle manufacturer or their authorised distributor attaches a speed disc to the rear of a vehicle indicating its maximum design speed.

un-plated: in the case of an agricultural tractor, one that is **not** fitted with a manufacturer's plate, and, in the case of an agricultural trailer, one that is **not** fitted with an authorisation plate.

A summary of the standards being introduced under each heading is as follows:

Plating

From 1 January 2016, a **manufacturer's** plate must be fitted to an agricultural tractor and an **authorisation** plate to an agricultural trailer. Retrofitting plates to existing agricultural tractors and trailers will also be required from 1 January 2016 where:

- a. agricultural **tractors** have a maximum design speed over 40 kilometres per hour or are being used to draw tandem or triaxle rigid drawbar agricultural trailers with laden weights over 19 tonnes for tandems and 22.5 tonnes for triaxles, and
- b. agricultural **trailers** are capable by design of being drawn at speeds over 40 kilometres per hour or operating at laden weights exceeding 19 tonnes for tandems and 22.5 tonnes for triaxles.

The Regulations also provide for the operational arrangements relating to the fitment of authorisation plates by trailer manufacturers and their authorised distributors.

Speed Rating

From 1 January 2016, all **new** agricultural tractors, self-propelled agricultural machines, agricultural trailers, and interchangeable towed equipment must be fitted with a speed disc showing their maximum design speed.

From 1 January 2016, all **existing** agricultural tractors, self-propelled agricultural machines, agricultural trailers and interchangeable towed equipment which are capable by design of either being driven or drawn at speeds over 40 kilometres per hour must also be fitted with a speed disc.

The Regulations also outline requirements for manufacturers and authorised dealers regarding the fitting of speed discs.

Further information on plating and speed rating is included in the list of Frequently Asked Questions below.

Plating– Frequently Asked Questions

1. What vehicle types do these new plating requirements apply to?

The revised plating requirements apply to agricultural tractors and agricultural trailers and combinations of such vehicles used for agricultural, fisheries, forestry or horticultural purposes. They do not apply to trailers being drawn by agricultural tractors which are being used for purposes outside of these areas.

From a plating perspective, the term ‘agricultural trailer’ does not include pieces of interchangeable towed equipment where the DGWV is more than three times the unladen weight (as specified by the manufacturer) – for example, equipment such as slurry tankers, manure or fertiliser spreaders and grain chaser bins, and so on.

Instead, the operators of this type of equipment must adhere to the equipment manufacturer’s specifications provided that the equipment (when laden) is not heavier than the manufacturer’s rated towing capacity for their tractor.

2. When do these regulations take effect?

The Regulations take effect from 1 January 2016.

3. Are there any exemptions?

Yes. Agricultural **tractors** first registered before 1 January 2016 will not be required to have plates fitted if the tractor cannot travel at speeds over 40km/h or if it is being used to draw either tandem or a triaxle rigid drawbar agricultural trailers with laden weights of 19 tonnes or less for tandem axle trailers or 22.5 tonnes or less for triaxle trailers.

Agricultural **trailers** manufactured before 1 January 2016 will not be required to have plates retrofitted unless they are rigid drawbar trailers designed to travel at speeds over 40km/h or are designed to operate at laden weights greater than 19 tonnes for tandems or 22.5 tonnes for triaxles.

4. What is the penalty for breach of these Regulations?

If you don’t comply with the revised standards, you could receive a court summons. If you’re convicted, you could be fined (up to 2,500), be given a prison sentence,

or both. With the exception of where it can be shown that the use of the vehicle is unauthorised, both the owner of the vehicle and whoever is driving it when the offence is recorded can be fined.

5. I use my agricultural tractor to draw a trailer for a purpose other than agriculture, fisheries, forestry or horticulture. What requirements must I adhere to?

You must comply with the plating requirements for goods trailers. These requirements are outlined on page 20 of the Heavy Commercial Vehicle (HCV) Testers Manual.

You can download a copy from www.rsa.ie

These trailers must undergo a roadworthiness test every year.

6. What are the plating requirements for agricultural tractors?

From 1 January 2016, tractors must be fitted with a manufacturer's plate (sometimes referred to as a statutory plate) containing information such as: manufacturer's name, vehicle identification number (VIN), total permissible mass, permissible axle loads and permissible towable masses. An example is shown in Figure 21 above.

Retrofitting manufacturer's plates to agricultural tractors first registered before 1 January 2016 is not required unless the tractor is designed to travel at speeds over 40km/h or is being used to draw either a tandem or tri-axle rigid drawbar agricultural trailer with a laden weight of over 19 tonnes for a tandem and 22.5 tonnes for a triaxle.

If you have trouble finding a plate on your tractor and, therefore, you're not sure if there is one, you should contact the vehicle manufacturer or one of their authorised distributors.

If the vehicle manufacturer or their authorised distributor has confirmed that they are unable to fit a plate due to the vehicle's age, you will be limited to towing a trailer with a DGWV of not more than three times the unladen weight of the tractor.

Some tractors may be fitted with a manufacturer's plate displaying information in a language other than English. These plates will be acceptable provided a copy of the relevant extract from the vehicle owner's handbook (in English) is kept in the vehicle. This extract should show the tractor's weight information, axle loads and towing weights. Alternatively, you could contact the vehicle manufacturer or his authorised distributor to arrange replacing the plate with an English version.

7. What are the plating requirements for agricultural trailers?

From 1 January 2016, trailers must be fitted with an authorisation plate (sometimes referred to as a national weights and dimensions plate) containing the information

such as: manufacturer's name, vehicle identification number (VIN), maximum design speed and permitted laden weight, maximum drawbar loading, vehicle length and width. It may also contain information on design weights, if higher than the national limits permitted in Ireland. An example is shown in Figure 21 above.

Retrofitting authorisation plates to agricultural trailers manufactured before 1 January 2016 will not be required unless they are rigid drawbar trailers which have a design speed of over 40km/h or has a DGWV of over 19 tonnes for tandems or 22.5 tonnes for triaxles.

8. I am an agricultural tractor distributor. What information must I ensure is displayed on a plate fitted to a new vehicle I sell?

From 1 January 2016, you must ensure that tractors are fitted with a manufacturer's plate – like the one shown in Figure 21. The plate must satisfy the provisions of Annex V of Council Directive 2009/144/EEC.

9. If I identify a customer who needs a manufacturer's plate retrofitted to their tractor (either because the tractor wasn't originally fitted with one or the original one is so damaged it can't be read), can I retrofit a replacement plate and, if so, what process must I follow?

Yes, you can certainly retrofit a manufacturer's plate. However, it's unlikely that the situation will arise. Most tractors will already have these plates fitted if they are capable of being driven at speeds over 40km/h, or if they are capable of drawing either tandem or triaxle rigid drawbar agricultural trailers with laden weights over 19 tonnes for tandems or 22.5 tonnes for triaxles.

Nevertheless, if you have to retrofit a manufacturer's plate, you should arrange with the original vehicle manufacturer that you hold the franchise for to supply you with a new or replacement plate, depending on the situation. You should also keep a written record of all instances where you retrofit a manufacturer's plate to an agricultural tractor.

10. I am not an agricultural tractor or trailer manufacturer or one of their authorised distributors. Can I fit a manufacturer's plate or an authorisation plate?

No. Manufacturer's plates and authorisation plates can only be fitted by the vehicle manufacturer or one of their authorised distributors.

11. I have modified my tractor so the information displayed on its manufacturer's plate is no longer accurate. Can I use this vehicle in a public place?

No. The only time you can use it in public is when you are bringing it to have a new plate fitted. Even then, you must not carry a load and you must have an appointment for the fitting.

12. I am an agricultural trailer manufacturer/authorised distributor. What information must I ensure is displayed on the authorisation plate fitted to new trailers I sell?

All new agricultural trailers (irrespective of their design speed or load-carrying capacity) manufactured from 1 January 2016 must be fitted with an authorisation plate displaying the information shown on the model plate as illustrated in Figure 21 above.

This information must be displayed clearly – it must be legible and must not fade over the trailer's lifetime.

Authorisation plates must display:

- information on dimensions in metres, to two decimal places (for example, 2.55)
- information on weights as a whole number of kilogrammes (for example, 6,000)

All the information on the plate should be written in letters and numbers that are at least 4 millimetres high.

13. I have customers who will need authorisation plates retrofitted to their rigid drawbar agricultural trailer(s). What process must I follow?

Retrofitting of authorisation plates to agricultural trailers will only be required if they are capable by design of being drawn at speeds over 40km/h or at laden weights over 19 tonnes for tandems or 22.5 tonnes for triaxles.

If trailers need to have authorisation plates retrofitted, this can only be carried out by a trailer manufacturer or their authorised distributor. This applies even if the trailer was originally fitted with a manufacturer's plate.

There is a process to be followed:

1. The trailer owner must allow you to examine the trailer.
2. You must inspect the trailer in accordance with the requirements laid down in Schedule 2 of the Road Traffic (Plating and Speed Rating of Agricultural Vehicles) Regulations 2014 – that is, you must fill out the plating certificate (Schedule 1) and complete and sign the examiner’s declaration at the bottom of it.
3. You must keep the original copy of the plating certificate on file, but you can give a copy to the trailer owner.
4. After issuing the plating certificate, you may then issue and fit an authorisation plate to the trailer.

The following additional points are important for agricultural trailer manufacturers or their authorised distributors:

1. If you are an authorised distributor you must not issue a plating certificate or an authorisation plate for an agricultural trailer which is not a brand you hold a franchise for. However, a manufacturer of agricultural trailers, but not a distributor - may issue a plating certificate and authorisation plate for an agricultural trailer where the original manufacturer of that trailer cannot be determined – that is, the original manufacturer is now known or is no longer in business.
2. If an agricultural trailer has been modified or altered making the information on its plate inaccurate, its manufacturer or one of their authorised distributors can issue an amended plating certificate and fit an amended authorisation plate. They should follow steps 1 to 4 listed in the answer to Question 13 above.
3. Each trailer you issue a plating certificate for and fit an authorisation plate to will be assigned a Vehicle Identification Number (VIN) satisfying the provisions of International Standard ISO 3779. This means you will need to get a World Manufacturer Identifier (WMI) number if you don’t already have one. Further details about this are available on the National Standards Authority of Ireland (NSAI) website at www.nsai.ie
4. A plating certificate and an authorisation plate may contain additional, non-compulsory information on design weights in the column immediately to the right of the column headed ‘Weights Not to be Exceeded in Ireland’.

5. A plating certificate and an authorisation plate may also contain any additional information that is necessary to satisfy the requirements of the Machinery Directive.

As a manufacturer or an authorised distributor assigning an authorisation plate to a trailer, you must also ensure that the trailer complies with the revised standards being introduced on Braking and Weights and Dimensions.

You must also take into account the construction of the trailer, its general maintenance and condition, and ensure that the tyres are correct for the maximum design speed and axle weights assigned.

14. I have modified my agricultural trailer so the information displayed on its authorisation plate is no longer accurate. Can I use this vehicle in a public place?

No. The only time you can use it in public is when you are bringing it to have a new plate fitted. Even then, you must not carry a load and you must have an appointment for the fitting.

15. I need an authorisation plate retrofitted to a trailer. I understand that the manufacturer or an authorised distributor must do this for me. However, I want to know how much is this service likely to cost?

The Regulations do not state the fee to be charged for this service. It will be a private arrangement between you and the manufacturer or distributor. The costs for you will depend on how much work needs to be done to the trailer to make it compliant with all the new standards.

16. Can you list the plating-related offences that could occur under the new Regulations?

Under the new Regulations, it is an offence to:

- use an agricultural tractor in a public place if it has been modified or altered in any way that makes the information displayed on its manufacturer's plate inaccurate.
- use an agricultural trailer in a public place if it has been modified or altered in any way that makes the information displayed on its authorisation plate inaccurate.
- use an agricultural tractor in a public place with a laden weight more than its total weight allowance or with axle loads more than their allowance as set out on the manufacturer's plate.

- use an agricultural trailer in a public place with a laden weight more than its maximum laden weight allowance or more than the maximum weight allowed for each axle as set out on the authorisation plate in the column headed 'Weights Not to be Exceeded' in Ireland.
- issue a plating certificate or fit an authorisation plate to an agricultural trailer if you are not a trailer manufacturer or an authorised distributor. In the case of an authorised distributor, it is an offence to fit an authorisation plate to a trailer which is not a brand you hold a franchise for.
- issue a plating certificate or fit an authorisation plate to an agricultural trailer and assigning a maximum design speed, maximum permitted laden weight and axle weights that are not consistent with the revised braking, weights, dimensions and coupling requirements being introduced.

Speed Rating – Frequently Asked Questions

1. What vehicle types do the new speed rating requirements apply to?

The new speed rating requirements – that is, fitting and displaying a speed disc – apply to all new agricultural tractors, self-propelled agricultural machinery, agricultural trailers and pieces of interchangeable towed equipment from 1 January 2016 irrespective of the design speed of the vehicle.

Vehicles of these types manufactured or first registered before 1 January 2016 will only need to have a speed disc retrofitted if they are designed to be driven or drawn at speeds over 40 km/h.

2. Are there any exemptions?

Yes. As mentioned above, agricultural tractors, self-propelled agricultural machines, agricultural trailers and pieces of interchangeable towed equipment manufactured or first registered before 1 January 2016 don't need to have a speed disc fitted if they are designed to be driven or drawn at speeds of 40 km/h or less.

3. What is meant by the term speed rating?

'Speed rating' means fitting a speed disc showing the vehicle's design speed in kilometres per hour (km/h). An example is shown in Figure 22 (over).



Figure 22: Model speed disc for an agricultural tractor, self-propelled agricultural machine, agricultural trailer or piece of interchangeable towed equipment showing a maximum design speed of 50 km/h.

4. If a speed disc is required, where on the vehicle should it be?

Speed discs must be located:

- on an agricultural tractor, agricultural trailer or piece of interchangeable towed equipment, in a prominent position on the **rear** of the vehicle;
- on a self-propelled agricultural machine, in a prominent position on **both sides** and on the rear of the vehicle;
- on an agricultural trailer or interchangeable towed equipment where, due to its design or use, the disc can't be seen from behind, it should be in a prominent position on the **right** side of the vehicle when looking from behind.

If a speed disc cannot be attached directly to a vehicle, a plate has to be attached to the vehicle to display the disc. The plate is positioned according to the requirements for positioning discs outlined above.

5. Who can fit these speed discs?

Speed discs, if they're needed, must only be fitted by the original vehicle manufacturer or an authorised distributor.

6. What technical specifications must speed discs adhere to?

The following list describes a speed discs specifications:

- The speed disc must be a white disc of non-reflecting material with a diameter of 200 millimetres. The disc has a black border between 3 millimetres and 5 millimetres in width.
- The disc should have a flat surface.
- The disc can be fixed onto a larger and differently shaped area such as bodywork or a plate fixed to the vehicle provided that all requirements outlined in Question 4 above are fulfilled.
- All information on the disc should be in black type and not be handwritten.
- The font type should be normal, clearly legible and upright.
- Italic type is not allowed.
- All digits must be in the same font size and should be no smaller than a 100 millimetres in height and 50 millimetres in width.

7. Where can I buy speed discs to fit to the vehicles in my yard?

There is no need for you to buy speed discs. If you need to have them retrofitted to the vehicles in your yard (because they are capable of being driven or drawn at speeds over 40km/h), then you must contact the vehicle manufacturer or an authorised distributor who will arrange to fit the discs for you.

8. How much is this service likely to cost?

The Regulations do not state the fee to be charged for this service. It is a private arrangement between you and the manufacturer or distributor.

9. My tractor is capable of being driven at a speed over 40km/h which I suspect is greater than the design speed of the trailer or piece of interchangeable towed equipment that I wish to draw with it. What rules apply here?

You may draw such a trailer or another piece of interchangeable towed equipment with a tractor which is capable of speeds over 40km/h, but, when it is in use in a public place, you must not exceed the maximum design speed of the slowest vehicle in the combination. In other words, if a trailer or piece of interchangeable towed equipment does not have a speed disc fitted, the law considers that the vehicle combination – no matter what the design speed of the tractor is – is not capable of speeds over 40km/h.

10. What if neither my tractor nor trailer or piece of interchangeable towed equipment is capable of exceeding 40km/h?

In this case, no speed disc is required on either the tractor, trailer or piece of interchangeable towed equipment. The law considers that if none of the vehicles in a combination is fitted with a speed disc, none of them is capable of or should be operated at a speed over 40km/h.

11. Can you provide a list of the speed disc-related offences that could occur under the new Regulations?

Under the new Regulations, it is an offence to:

- 1.** drive an agricultural tractor or self-propelled agricultural machine, or draw an agricultural trailer or piece of interchangeable towed equipment, in a public place at a speed exceeding:
 - a.** 40km/h unless it is fitted with a speed disc.
 - b.** the speed rating displayed on its speed disc.
 - c.** the speed limit applicable to the place on which the vehicle is travelling.
- 2.** use a combination of agricultural vehicles in a public place at a speed over the maximum design speed of the slowest vehicle in the combination.

12. What is the situation with regard to using agricultural vehicles on motorways? What are the requirements and are any changes being introduced?

In Ireland, the motorway speed limit is 120km/h and, in order for vehicles to be allowed to use motorways, they must be capable of reaching a minimum speed of 50km/h. Therefore, as many modern tractors have a design speed of over 50km/h, these vehicles can legally use the motorway network. From 1 January 2016, if they are towing a trailer, the trailer must also be capable by design (as indicated on its authorisation plate and speed disc) of being drawn at a speed of 50km/h or higher.

Section 7 – Further Information

Where can I get copies of the Regulations?

These are available to view and download from the RSA website at www.rsa.ie or from the website of the Office of the Attorney General at www.irishstatutebook.ie

The list is as follows:

- | | |
|-------------------------------------|--|
| 1. Braking | S.I. No. 248 of 2014 |
| 2. Lighting and Visibility | S.I. No. 249 of 2014 |
| 3. Weights, Dimensions and Coupling | S.I. No. 253 of 2014
& S.I. No. 354 of 2015 |
| 4. Plating and Speed Discs | S.I. No. 247 of 2014 |

Contact Details

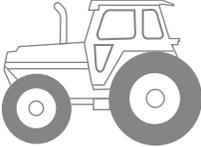
If you have further queries in relation to the new Regulations, please contact the RSA Vehicle Standards Division on **096 25014** from 8am to 6pm Monday to Friday or by email at: agvehicles@rsa.ie

Alternatively, you can write to:

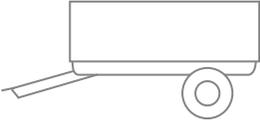
Vehicle Standards
Road Safety Authority
Moy Valley Business Park
Primrose Hill
Dublin Road
Ballina
Co Mayo

Section 8 – Appendix

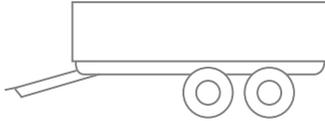
Summary of Agricultural Tractor Weight Limits

Weight Limits – Agricultural Tractors		
		
Number of Axles	Axle Spacing	National Weight Limit
2	N/A	18 tonnes
3	N/A	24 tonnes

Summary of Agricultural Trailer Weight Limits

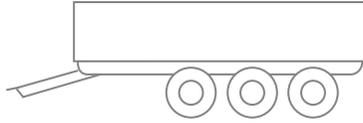
Weight Limits – Rigid Drawbar (Unbalanced) Single Axle Agricultural Trailers			
			
Axle Spacing	National Weight Limit Hook/Pin and Eye Type Coupling	National Weight Limit 80mm Ball and Spoon Type Coupling	Technical Requirements
N/A	13 tonnes (10 tonnes on axle and 3 on drawbar)	14 tonnes (10 tonnes on axle and 4 on drawbar)	No Suspension Required

Weight Limits – Rigid Drawbar (Unbalanced) Tandem Axle Agricultural Trailers

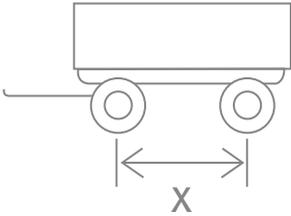
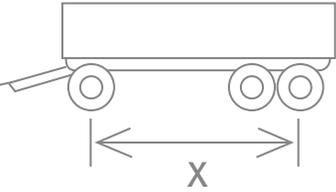
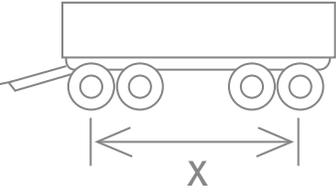


Axle Spacing	National Weight Limit Hook/Pin and Eye Type Coupling	National Weight Limit 80mm Ball and Spoon Type Coupling	Technical Requirements
Less than 1.3 metres	19 tonnes (8 tonnes per axle and 3 on drawbar)	20 tonnes (8 tonnes per axle and 4 on drawbar)	No Suspension Required
1.3 metres or greater	21 tonnes (9 tonnes per axle and 3 on drawbar)	22 tonnes (9 tonnes per axle and 4 on drawbar)	Flexible Suspension Required
1.3 metres or greater	23 tonnes (10 tonnes per axle and 3 on drawbar)	24 tonnes (10 tonnes per axle and 4 on drawbar)	Flexible Suspension and Flotation Tyres (≥500mm wide) Required
1.8 metres or greater	23 tonnes (10 tonnes per axle and 3 on drawbar)	24 tonnes (10 tonnes per axle and 4 on drawbar)	Flexible Suspension and Steering Axle Required

Weight Limits – Rigid Drawbar (Unbalanced) Triaxle Agricultural Trailers



Axle Spacing	National Weight Limit Hook/Pin and Eye Type Coupling	National Weight Limit 80mm Ball and Spoon Type Coupling	Technical Requirements
Less than 1.3 metres	24 tonnes (7 tonnes per axle and 3 on drawbar)	25 tonnes (7 tonnes per axle and 4 on drawbar)	No Suspension Required
1.3 metres or greater	27 tonnes (8 tonnes per axle and 3 on drawbar)	28 tonnes (8 tonnes per axle and 4 on drawbar)	Flexible Suspension Required
1.3 metres or greater	30 tonnes (9 tonnes per axle and 3 on drawbar)	31 tonnes (9 tonnes per axle and 4 on drawbar)	Flexible Suspension and Flotation Tyres (≥500mm wide) Required
1.8 metres or greater	33 tonnes (10 tonnes per axle and 3 on drawbar)	34 tonnes (10 tonnes per axle and 4 on drawbar)	Flexible Suspension, Flotation tyres (>500mm wide) and Steering Axles (on both Foremost and Rearmost Axles) Required

Weight Limits - Drawbar/Centre Axle (Balanced) Agricultural Trailers		
	Axle Spacing (X)	National Weight Limit
Tandem axle 	Less than 3.0 metres	16 tonnes (8 tonnes per axle)
	3.0 metres or greater	18 tonnes (9 tonnes per axle)
Triaxle 	Tonnes/Metre (X) 5.5 tonnes	25 tonnes
Four axle 	Tonnes/Metre (X) 5 tonnes	30 tonnes

Notes



Working to Save Lives

Version B: November 2015



Údarás Um Shábháilteacht Ar Bhóithre Road Safety Authority

Páirc Ghnó Ghleann na Muaidhe, Cnoc an tSabhaircín, Bóthar Bhaile Étha Cliath,
Béal an Átha, Co. Mhaigh Eo.
Moy Valley Business Park, Primrose Hill, Dublin Road, Ballina, Co. Mayo.

locall: 1890 50 60 80 fax: (096) 25 252 email: info@rsa.ie website: www.rsa.ie