

## Q&A on i-Size

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### i-Size – executive summary

The new regulation i-Size is made up of three different parts:

- **ECE R129** for child restraint systems (CRS)
- **ECE R16**, which defines the vehicle seatbelt system and ISOFIX space requirements
- **ECE R14**, which defines respective strength requirements of anchorage points and the floor in the car

The new i-Size regulation has been developed by a committee of experts under the auspice of United Nations with the aim to enhance child safety in Europe by addressing key areas such as misuse, side impact and new test tools.

CRSs that are manufactured based on the new i-Size regulation will provide the following major improvements for the transportation of children in cars:

- Requires rearward-facing transport until the child is 15 months of age
- Provides side impact protection for better protection of head and neck
- Promotes ISOFIX and therefore reduce misuse with ISOFIX only child restraint systems
- Simplified classification based on stature of the child, not mass
- Prevents from too early upsizing
- Better compatibility car-CRS: i-Size CRSs are super isofix meaning that they can be installed perfectly in i-Size seating position but also that they can be installed like existing R44 isofix products in existing isofix positions.

The new regulation has been in force since 9<sup>th</sup> July 2013 but it does not replace the current ECE R 44.04 car seat legislation. Both standards will run in parallel. Therefore car seats complying with either standard may continue to be sold and used safely.

With the introduction of i-Size, consumers will be given the extra option to choose a seat that abides by the latest standard when purchasing a new car seat for their baby or toddler.



## GENERAL QUESTIONS

### Q1. What is the current approval standard for child car seats in Europe?

Child restraints (baby seats, child seats, booster seats and booster cushions) sold in Europe must conform to the United Nations ECE Regulation R44.03\* or later standard R44.04.

The standard, ECE R44.04, was introduced at the end of June 2005, and all new child car seats have had to meet this standard since June 2006 (which applies for whole of Europe).

\* If you are using child restraints that conform to an earlier version of R44 you should consider replacing them with a seat that conforms to R44.04.

### Q2. What is the issue with the current ECE R 44.04 regulation?

There are three main issues with the current regulation that are solved with the new ECE R129.

1. Research has given clear evidence, that there is still a high number of errors in regard to the installation of the seat in the car or the child in the seat. In the first case, the installation with the car seat belt is often the root cause for the misuse.\* ISOFIX is much simpler to use and therefore the new regulation makes ISOFIX mandatory.

2. The current ECE R44.04 allows forward facing transport as of 9kg (approx. 9 months) which leads to parents often switching from Group 0+ to a larger seat too early. However parents should keep their children rearward facing for as long as it fits their child and car. The ECE R129 will make rearward facing travelling mandatory until 15 months.

3. Although 28%\*\* of all accidents involve a side-impact collision, the current regulation does not test for side impact. The approval tests for the ECE R129 will include the side impact.

4. The current ECE R 44.04 can appear complicated from a consumer point of view. It covers belted, ISOFIX, Universal, Semi-Universal & Vehicle Specific approvals as well as having confusing overlaps in the weight groups that could cause parents to make the wrong choice for their child.

\* Farid Bendjellal, 6th International Conference on Protection of Children in Cars - Munich 2008.

\*\* Casimir "Child Car Passenger Fatalities - European Figures and In-Depth Study"; May 2012

### Q3. Is i-Size a new regulation or a legislation (law)? Does it replace the current ECE R44 legislation?

i-Size is introduced as a new legislation next to the current ECE R44 legislation. This means that, for now, new car seats can still be homologated as ECE R44 and consumers can remain using the ECE R44 products.



Both i-Size and ECE R44 are laws. Meaning that manufactures can choose to make either i-Size and/or ECE R44 car seats. Likewise, consumers can choose to either buy an i-Size car seat (safest) or an ECE R44 car seat (safe).

**Q4. What is the difference between i-Size and current ECE R44?**

The concrete differences between the current ECE R44 and i-Size are summarized in the table below:

i-Size Check list	ECE R44	Regulation 129
1. Improved protection for side & front impact and a much better protection of head & neck	Front impact 50km/hr – 21-28G Rear impact 30km/hr 14-21 G No side impact	<input type="checkbox"/> Front impact 50km/hr – 21-28G, more demanding criteria <input type="checkbox"/> Rear impact 30km/hr 14-21 G <input type="checkbox"/> Side impact: 24 km/hr start 13-15 G with an intruding door
2. Rearward facing travelling mandatory up to 15 months old	Forward facing possible from 9 KG (approx. 9 months) 	<input type="checkbox"/> Label on product: no forward facing before 15 months 
3. i-Size also promotes Isofix, which has less chance of being incorrectly used than belted car seats	Isofix, belt or combination All age classes	<input type="checkbox"/> Regulation 129 Phase 1 i-Size: Isofix only & birth to 105 cm/ 0-4 years (can go above 105cm as well) <i>Regulation 129 Phase 2 (in progress): Boosters from 100 cm to 150 cm; side protection up to ~135</i> <i>Regulation 129 Phase 3: all belted car seats</i>
4. i-Size cars will fit all isofix and i-Size car seats	1. Universal (top tether) 2. Semi universal (support leg) 3. Car specific	<input type="checkbox"/> Universal (support leg & top tether)
5. Length classification for easier selection of the right car seat, similar like clothing sizes	Group 0 – 0+, 0+/1, 1/1-2-3, 2-3	No groups <input type="checkbox"/> Centimeters based <input type="checkbox"/> Max occupant mass
I-Size regulation will be effective middle of 2013		<input type="checkbox"/> Homologation possible after July 2013

**Q5. Why the name i-Size?**

i-Devices are generally seen to be intelligent, convenient and well thought-out. These are the characteristics of this new safety standard. The word “Size” appears in the name because the length primarily determines how to choose a child restraint system, more so than age or weight.

**Q6. What are the benefits of the new regulation?**

1. Better protection for the head and neck of babies and toddlers due to rearward facing transport until the age of 15 months.
2. Improved child safety due to side impact being part of the approval test for i-Size child car seats.
3. Less risk of being incorrectly fitted due to the mandatory use of ISOFIX.
4. Easier selection of correct seat due to change from weight, to age & size. There are also no confusing overlaps in the weight groups.\*

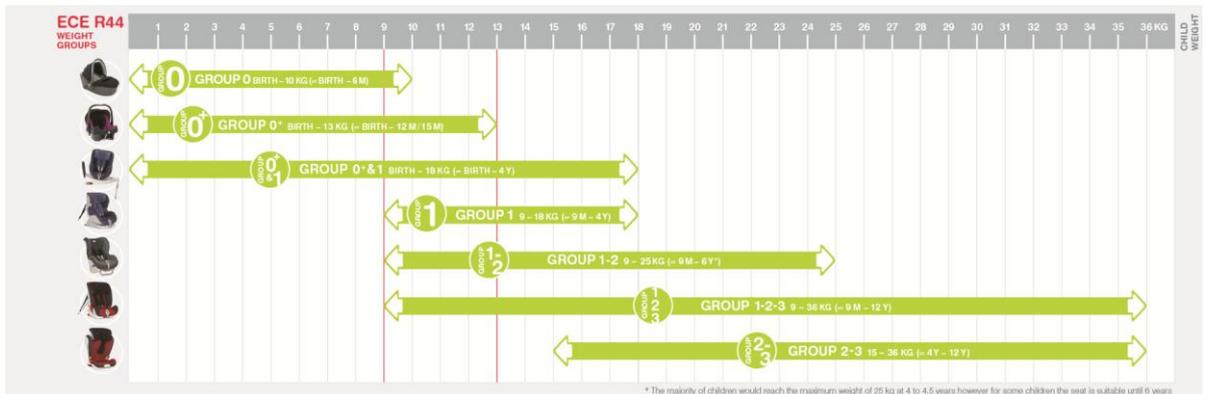
\* Although age and height are the criteria to select and use the child seat, there will be a maximum child weight for each seat defined to avoid overloading the strength of the ISOFIX anchorage points.

**Q7. How will there be less options in terms of groups?**

The ECE R129 removes the overlaps between the groups and makes it easier for parents to know which category is right for their child.

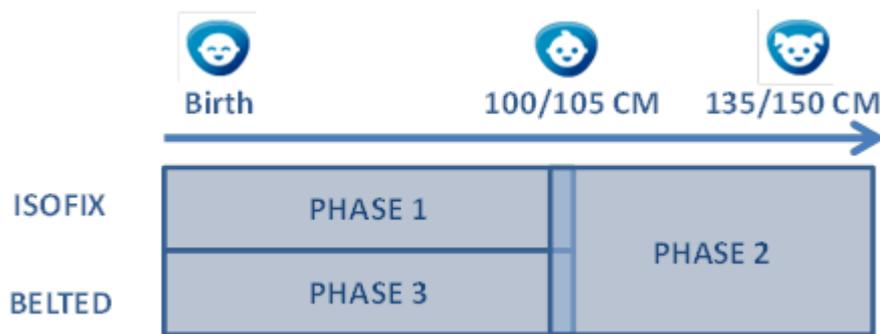


For example, the current regulation permits a child of 9 kg to use a forward facing child seat but in the case of a heavy child, this could occur well before 15 months old, which safety experts have defined as a much better time to make the change.



**Q8. When does the new i-Size regulation 129 come into force?**

i-Size will be launched in 3 phases in regards to timing and scope.



**Regulation 129 Phase 1 called i-Size (07/2013):**

Stature - From birth to 100/105 cm

Universal Integral ISOFIX, RWF or FWF with Top Tether or Support Leg.

Vehicles: minimum floor strength.

**Regulation 129 Phase 2 (estimated timing 2015):**

Stature – From 100/105 – 135/150 cm



Seats attached with Belt and ISOFIX (Kidfix)

Vehicles: ISOFIX & Belt compatibility

**Regulation 129 Phase 3 (estimated timing 2018):**

R44 will disappear.

Stature to be confirmed On July 9<sup>th</sup>, 2013 Phase 1 was launched. This was the first possible date for approvals for CRS. Car manufacturers can approve their cars according to R14 and R16 regulations as of July 15<sup>th</sup> 2013 with a minimum of two i-Size ready seating positions. The current regulation, ECE R44.04 will continue in tandem until approximately 2018.

Now	Mid 2013	2016	2018*
<b>ECE R44.04</b> for all child seats: •Group 0, = Birth to 10kg •Group 0+ = Birth to 13kg •Group 1 = 9 to 18kg •Group 2/3 = 15 to 36kg			ECE R44.04 approvals cease
i-Size approval not possible for this category yet	<b>R129 Phase I i-Size</b> Universal ISOFIX (integral) with Top Tether or Support Leg for: •Birth to 15 months •15 months to a maximum height of 100/105cm		
R129 approval not possible for this category yet		<b>R129 – Phase II</b> ISOFIX + Seat Belt (non-integral) for: Children height 100/105 – 135/150 cm	
R129 approval not possible for this category yet			<b>R129 – Phase III</b> Belted Seats For: Children Height TBD

\* Dates are only indicative

As of when can I buy an i-Size car seat?

July 9<sup>th</sup> 2013 is the earliest possible approval date.

**Q9. How long can I still buy the R44.04 car seats?**

2018\* will be the end of ECE R44.04 approvals (if indicative dates become a reality) but the retailer will be able to sell them for an additional time period. The exact timing will be decided by EU Commission and EU countries.

**Q10. How long can I still use my child seat?**

Consumers can still buy a R44.04 child car seat probably until 2018\* and will be able to use them also after this date.

**Q11. Will all ISOFIX seats that will be produced as of mid 2013 have to follow the ECE R129 regulation?**

No, the current regulation ECE R44.04 will continue in tandem for all CRS – irrespective of whether it is ISOFIX or belted. ECE R44.04 car seats will therefore still be available until they are replaced by ECRS R 129 Phase 3 seats in around 2018\*.

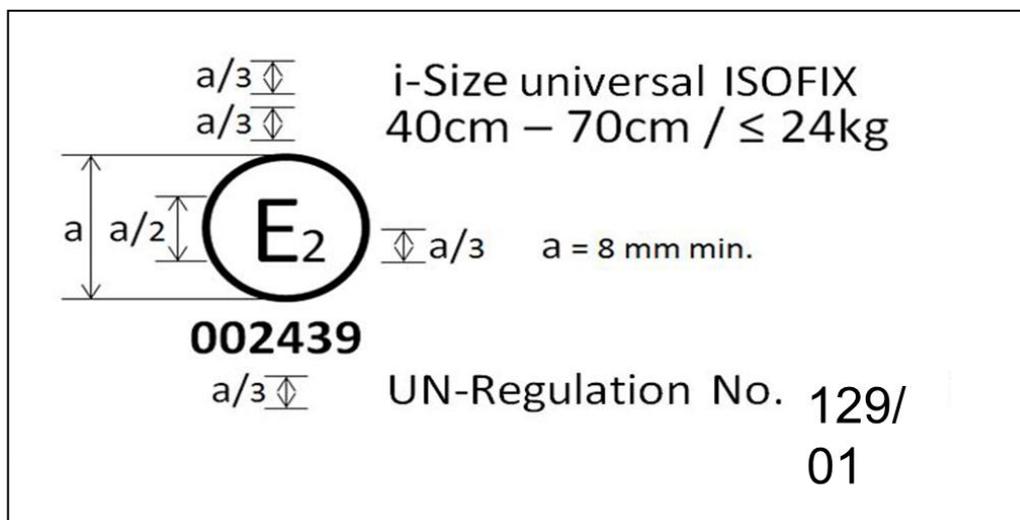
**Q12. How do you expect the number of i-Size car seats to grow?**

\* Indicative dates

ize car seats to steadily grow in line with the availability of i-Size ready cars over the next years and to replace respective ECE R44.04 car seats. The first i-Size ready cars will be available at the end of 2013 with increased penetration in 2014.

**Q13. Will i-Size be a classification (group systems) in parallel to the current one?**

No: the label will indicate the size for which the seat is designed.



The dimension 40cm-70cm indicates the range of child's height for which the seat is designed. The weight < 24kg means that the seat is designed for a maximum weight of the child of 24kg. The E mark indicates the country where the seat was approved. The number below the mark refers to the official approval number of the seat.

**Q14. Will i-Size child seats fit all cars?**

An i-Size seat will fit all cars with i-Size approved seating locations.

i-Size CRSs can also be installed in existing isofix seating positions with the same constraints which apply to R44 isofix CRSs (a list of approved cars will be provided by child seat manufacturers).

Cars with all i-Size specifications except for the marking are, or will be available in the market. Euro NCAP will communicate on those cars starting from mid 2013 with a corresponding list of cars including i-Size seat location.

**Q15. How will the i-Size regulation influence the design of cars?**

The car manufacturers will have to comply with new requirements and ensure that all i-Size approved seating positions:



- have ISOFIX & a Top Tether anchorage point
- have a strength tested floor in the area of contact between the child seat's foot prop and the floor
- have enough space available for installation of larger rear facing seats (up to 15 months of age).
- will be marked with an i-Size label & detailed information will be shown in the vehicle's handbook.

**Q16. What is the effect of side-airbags on travelling rearward facing longer?**

Side-airbags have no negative effect on child restraint systems, also not in rearward facing mode. In some but not all cases of a side-impact collision, the side-airbag will provide additional safety for the child. This effect of side-airbags does not differ whether the child is travelling forward or rearward facing.

Frontal airbags do have a negative impact on the safety of rearward facing transported children. The airbags have to be switched off always when travelling rearward facing on the passenger seat.

**Q17. What if I want to transport my child rear facing seat after 15 months?**

i-Size does not designate the direction of travel after 15 months so as long as extended rear facing seats can meet the ECRS R129 regulation then the choice for direction of travel remains with the parent. Alternatively use products approved to the ECE R44 regulation rear facing to either group 1 or group 1 and 2.

**Q18. Why has upsizing the child's car seat switched from being a weight-dependent decision to one that's decided by the length of the child? Why not make the upsizing decision based on the child's age?**

The child's length is a better scale to determine the fit in a car seat than weight or age. In addition, parents know the length of their children better than their weight since this is similar to clothing sizes. There is a lot of variation between the length of children and their age. Children are known to grow differently, as they can have growth spurts at different times.

Age and kilos can still be used as an indication to the fit in a car seat next to the length. Length however will be the main denominator since it tells best if a child fits a seat well and when a parent should switch to the next car seat.

**Q19. Why does the legislation not use minimal length for rearward facing but 15 months instead?**

This is because research<sup>1</sup> has shown that on average the neck of a 15 month old child is developed enough to withstand the forces of a forward collision. This is based on the child's age and not his stature or weight.

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<sup>1</sup> Casper 2007, Accident reconstructions



Although transporting rearward facing is required to at least until 15 months, Maxi-Cosi / BébéConfort / Britax Römer recommend to transport children rearward facing as long as possible.

**Q20. When using an i-Size seat can I turn my child forward facing as of 15 months no matter how tall it is?**

Yes. As of 15 months you can turn your child forward facing.

**Q21. What is ISOFIX?**

ISOFIX is an international standardized fitting system, which provides a safe, easy and quick way to install a child car seat without the need of car seat belts. The name ISOFIX stands for ISO (International Standardization Organization) plus FIX (Fixation). ISOFIX car seats make use of two standard attachment points at the base of the seat in the car, plus an anti-rotation device to prevent forward pitching: this can be either a support leg or top tether.

From 2006, most new cars are equipped with ISOFIX and a top tether anchorage point. ISOFIX is also fitted in a large number of car brands built prior to 2006.

**Q22. What about the category ISOFIX plus adult seat belt (non-integral) for children over 100/105 cm / group 2 and above? Does Regulation 129 also apply for them?**

Yes, this will be phase 2 (~~135/150 cms~~) and if indicative dates become reality this will be 2015.

**Q23. What about belted only seats?**

This will be phase III (~~below ~105 cm~~) and if indicative dates become reality this will be 2018.