

**Problems Associated with Differences in Performance Requirements of Vehicles with an ABS Function and an ABS System.**

Vehicles with Electronic Brake Control with an Anti-Lock Braking Function	Vehicles installed with an Anti-Lock Braking System
<b>Motor Vehicles:</b>	
Paragraph 5.2.1.27.3 requires the minimum performance in the event of a failure in the “electric control transmission” to be that defined in Annex 4 for the relevant vehicle.	Paragraph 4.3 of Annex 13 requires the minimum performance in the event of a failure in the anti-lock braking system, as defined in paragraph 4.1 of Annex 13, to be that defined in Annex 4 for the relevant vehicle.
<p><b>Conclusions:</b>                      For motor vehicles the performance levels for vehicles with an anti-lock braking system and vehicles with an anti-lock braking function integrated into the brake control system are harmonised.</p>	
<b>Trailers:</b>	
Paragraph 5.2.2.15.2 requires the minimum performance in the event of a failure in the “electric control transmission” to be 30% Of the prescribed performance for the relevant vehicle.	Paragraph 4.3 of Annex 13 requires the minimum performance in the event of a failure in the anti-lock braking system of the trailer, as defined in paragraph 4.1 of Annex 13, to be 80% of prescribed performance for the relevant vehicle.
	Paragraph 1.2 of Annex 13 specifies the design elements of the anti-lock braking system and that such a system must fulfil the relevant requirements of Annex 13. Those same performance requirements are also applied to vehicles equipped with a system of a different design or where an anti-lock braking function is integrated into another system.
“Electric control transmission” includes electrical elements which provide the control for the brakes and includes controllers, sensors and cables.	Paragraph 4.1 of Annex 13 defines the elements of the anti-lock braking system which must be considered when applying the failure requirements of specified in paragraph 4.3 of Annex 13 and includes controllers, sensors and cables.
<p><b>Conclusions:</b>                      Based on the defined requirements for and anti-lock braking system and a braking system with an integrated anti-lock braking function different performance requirements are defined in the event of a common electrical failure i.e. controller, sensors cables etc.</p> <p>The performance requirement of 30% of prescribed which is defined for vehicles with electric control transmission has been defined as it provides common failure performance when considering other failure conditions defined elsewhere within Regulation 13 i.e. Annex 10 paragraph 6 (Failure of brake distribution system).</p> <p>Aligning the performance requirements of Annex 13 with those defined for electric control transmission will remove the current ambiguities as proposed in GRRF/2007/3. Alternatively the requirements for braking systems that include electric control transmission and an anti-lock braking function would specifically reference the failure requirements to those for vehicles with electric control transmission as proposed in GRRF/2007/3 Rev 1.</p>	