

103 年下半年度「車輛安全檢測基準」部分條文修正草案討論（三）

會議紀錄

一、 開會時間：中華民國 104 年 5 月 15 日星期五上午 10 時

二、 開會地點：統一鹿港文創會館 2 樓 204 會議室

三、 會議主席：許志成 處長

四、 會議記錄：黃聖智

五、 出席人員：如簽到表

六、 會議結論：

（一） 本次會議主要討論內容係有：UN 法規增修涉及國內車輛檢測基準 2 項（四十二之三、動態煞車、四十三之二、防鎖死煞車系統）。

（二） 有關基準「四十二之三、動態煞車」部分，綜合意見如下：

1. 原「6.9.4.1.1.1 (b)車輛通稱名；」

修訂為「6.9.4.1.1.1 (b)車輛通稱名(例如：大貨車/曳引車/大客車/半拖車/全拖車)；」

2. 原「6.9.4.2.5.1.4.1.1 車輛識別資訊…車身號碼(VIN)」

修訂為「6.9.4.2.5.1.4.1.1 車輛識別資訊…車身號碼」

3. 原「2.1.30.3 聯結力控制"標稱需求值"…相容性頻帶範圍內。」

修訂為「2.1.30.3 聯結力控制"標稱需求值"…相容性頻帶範圍內。」

4. 原「6.1.14 對於液壓傳輸之煞車系統，…可見位置，以不可被輕易除去之方式黏貼該標誌；申請者可提供額外資訊。」

修訂為「6.1.14 對於液壓傳輸之煞車系統，…可見位置，該標示不可被輕易除去；申請者可提供額外資訊。」

5. 原「6.1.15.4 若聯結力控制系統…相容性頻帶範圍以外…」

修訂為「6.1.15.4 若聯結力控制系統…相容性頻帶範圍以外…」

6. 原「6.1.16.2.2 當煞車系統退化…O 類車輛應依據 6.1.16.5.1 規定之單獨黃色光學訊號警告駕駛…」

修訂為「6.1.16.2.2 當煞車系統退化…O 類車輛應依據 6.1.16.5.1 規定之單獨黃色警告訊號提供駕駛…」

7. 原「6.1.16.2.2.1 (b) 車輛減速度大於或等於二公尺/秒平方者，對

應於百分之二五之數值。」

修訂為「6.1.16.2.2.1 (b) 車輛減速度小於二公尺/秒平方者，對應於車輛減速度為二公尺/秒平方時，百分之二五之數值。」

8. 原「6.1.16.2.2.2 (b) 車輛減速度小於二公尺/秒平方者，對應於標稱值之百分之五〇之數值。」

修訂為「6.1.16.2.2.2 (b) 車輛減速度小於二公尺/秒平方者，對應於車輛減速度為二公尺/秒平方時，標稱值百分之五〇之數值。」

9. 原「6.1.16.5.4 當車輛（及煞車系統）電氣裝備通電時…若係為應如前述致動警告訊號規範內相關之故障或失效，而未能在靜態條件下確認出者…」

修訂為「6.1.16.5.4 當車輛（及煞車系統）電氣裝備通電時…若前述致動警告訊號規範內相關之故障或失效，未能在靜態條件下確認出者…」

10. 原「4.1.7.2 若拖車配備能切斷…設計與製造應使拖車…」

修訂為「4.1.7.2 若拖車配備能切斷…設計與構成應使拖車…」

11. 原「4.1.8.5 若為曳引 O3 或 O4 類拖車…由牽引車輛車出於穩定…」

修訂為「4.1.8.5 若為拖曳 O3 或 O4 類拖車…由牽引車輛出於穩定車輛…」

12. 原「4.1.8.6.5 若輔助設備之能量供應來源係與電力控制線路傳輸者相同，發動機以不超過最大功率…」

修訂為「4.1.8.6.5 若輔助設備之能量供應來源係與電力控制線路傳輸者相同，發動機(或電動車輛驅動馬達)以不超過最大功率…」

13. 原「4.1.8.6.9 若只能與符合 4.1.8.2.2 要求電力控制線路之機動車輛相結合進行操作，可依 4.1.3.3.3 規定裝配拖車。在任何情況下，當拖車電力控制線路連接時，將自動產生煞車或保持制動。該機動車輛應依 6.1.16.5.1 規定的發出獨立黃色警告訊號。」

修訂為「4.1.9 若只能與具備 4.1.8.2.2 電力控制線路之機動車輛相

結合作動，則可依 4.14.3 規定裝配於拖車。在任何其他情況下，當拖車電力控制線路連接時，將自動作動煞車或保持制動。應依 6.1.16.5.1 規定發出獨立黃色警告訊號予駕駛。」

14. 原「6.1.13 制動之磨損必需能容易…制動之零組件必需須具備…」修訂為「6.1.13 制動之磨損必須能容易…制動之零組件必須具備…」

15. 不影響條文原意之下，同意中心於會後將再對草案部分文字進行潤飾及調整。

(三) 有關基準「四十三之二、防鎖死煞車系統」部分，將與上開基準「四十二之三、動態煞車」調整條文同步進行調整。

(四) 經檢視本次跟修 UN R13 對應基準版本之適合性及為利業者對應，將刪除原所擬之基準 42-2 及 43-1 修正草案，僅對應修正基準 42-3 及 43-2。

(五) 請檢測機構協助再檢視草案各條文列屬於符合性聲明及實車檢測範疇之適當性，如有需調整之處，再請提供本中心參考。

(六) 關於檢測能量：

1. 駐煞車系統電氣失效之百分之八坡度駐車試驗，檢測機構（車輛中心）表示目前尚未具備檢測能量，惟若交通部欲推動本項基準之執行，基於協助立場車輛中心可再進行能量建置之可行性評估。故請檢測機構基於交通部擬執行之推動，再告知何時將完成評估結果說明。

2. 動態煞車 ESC/VSF 模擬分析試驗，檢測機構（車輛中心）表示目前尚未具備檢測能量，其考量國內車廠無法提供完整車輛參數進行模擬，且亦無相關軟硬體與專業背景人力，爰尚無相關能量建置之規劃。此將於草案函發交通部時一併說明，以利交通部理解。

(七) 對於上開所述草案調整、其修正條文與檢測能量，如有相關之補充及建議，請文到一週內提供本中心參辦。

七、散會(中午 12 時)

項次	法規名稱	修訂法規內容	新增之法規項目	頁碼	UN 版本別	內容摘要
1	四十二之二、動態煞車	⊕		P.1	UN R13 11-S10 2014/03/03-11-S11 (draft)	1. 參考 R 13 11-S10 版，修訂電池規範部分與電池充電狀態檢視程序。 2. 參考 R13 11-S11 (draft) 版，增訂煞車電力/電子界面、自動連接器彈簧煞車系統名詞釋義。
2	四十二之三、動態煞車	⊙		P.1	UN R13 11-S10 2014/03/03-11-S11 (draft)	1. 參考 R 13 11-S10 版，修訂配備 B 類電力再生煞車系統電池電量及動態穩定性模擬相關規範。 2. 參考 R13 11-S11 (draft) 版，修訂常用及駐煞車性能、液壓傳輸煞車系統液體存量檢查、警告訊號、聯結力控制等；並增訂煞車電力/電子界面、自動連接器、彈簧式煞車系統、煞車參考性能之標稱值、機動車輛標稱值、拖車標稱值及聯結力控制標稱需求值等名詞釋義及自動連接器之煞車電力/電子界面相關規範。
3	四十二之一、防鎖死煞車系統	⊕		P.34	UN R13 11-S11 (draft)	參考 R13 11-S11 (draft) 版，增訂防鎖死煞車系統基本性能相關規範。
4	四十三之二、防鎖死煞車系統(草案)【交通部於 104/5/15 公告】	⊙		P.34	UN R13 11-S11 (draft)	1. 參考 R 13 11-S10 版，增訂不超過四軸之 M2、M3、N2 及 N3 類車輛，應配備第一類防鎖死煞車系統之規範。 2. 參考 R13 11-S11 (draft) 版，增訂裝配電力控制線路之拖車，及配備有防鎖死煞車系統之 O3/O4 車輛，應配備電力控制線路傳輸，以及增訂煞車設備故障或失效之警告訊號相關規範。

※橘色字為104/5/15開會討論後修正

UN R13 BRAKING 11-S10 2014/03/03 11-S11 (draft) 車輛煞車

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
11-S10			(本內容為參照中心所擬 103 年上半年度草案報部)
Annex 4 Braking tests and performance of braking systems ... 1.4.1.2.2. Every test shall be repeated on the unladen vehicle. In the case of a power-driven vehicle there may be, in addition to the driver, a second person on the front seat who is responsible for noting the results of the test; In the case of a tractor for a semi-trailer, the unladen tests will be conducted with the vehicle in its solo condition, including a mass representing the fifth wheel. It will also include a mass representing a spare wheel, if this is included in the standard specification of the vehicle; In the case of a vehicle presented as a bare chassis-cab, a supplementary load may be added to simulate the mass of the body, not exceeding the minimum mass declared by the manufacturer in Annex 2 to this Regulation; In the case of a vehicle equipped with an electric regenerative braking system, the requirements depend on the category of this system:	Annex 4 Braking tests and performance of braking systems ... 1.4.1.2.2. Every test shall be repeated on the unladen vehicle. In the case of a power-driven vehicle there may be, in addition to the driver, a second person on the front seat who is responsible for noting the results of the test; In the case of a tractor for a semi-trailer, the unladen tests will be conducted with the vehicle in its solo condition, including a mass representing the fifth wheel. It will also include a mass representing a spare wheel, if this is included in the standard specification of the vehicle; In the case of a vehicle presented as a bare chassis-cab, a supplementary load may be added to simulate the mass of the body, not exceeding the minimum mass declared by the manufacturer in Annex 2 to this Regulation; In the case of a vehicle equipped with an electric regenerative braking system, the requirements depend on the category of this system:	四十二之二、動態煞車 四十二之三、動態煞車 6. M2、M3、N2、N3、O 及選擇符合 6.規範之 N1 類車輛動態煞車 ... 6.2.2.1.1.4 對半拖車之曳引車，此無負載測試只對曳引車(包括第五輪的重量)執行。 6.2.2.1.1.5 如果車輛為有臥艙之底盤車，則可增加一輔助負載以模擬車體重量，但不得超過製造商所聲明的最小重量。 6.2.2.1.2 對於配備電力再生煞車系統之車輛： 6.2.2.1.2.1 對於 A 類電力再生煞車系統，執行本測試時不得作動。 6.2.2.1.2.2 對於配備 B 類電力再生煞車系統之車輛，在測試剛開始時的電池狀態如 6.1.26.所述時，應使由電力再生煞車系統所提供之煞車力道不超過系統設計之最小值。	四十二之二、動態煞車 四十二之三、動態煞車 6. M2、M3、N2、N3、O 及選擇 6.規範之 N1 類車輛動態煞車 ... 6.2.2.1.1.4 對半拖車之曳引車，此無負載測試只對曳引車(包括第五輪的重量)執行。 6.2.2.1.1.5 如果車輛為有臥艙之底盤車，則可增加一輔助負載以模擬車體重量，但不得超過製造商所聲明的最小重量。 6.2.2.1.2 對於配備電力再生煞車系統之車輛： 6.2.2.1.2.1 對於 A 類電力再生煞車系統，執行本測試時不得作動。 6.2.2.1.2.2 對於配備 B 類電力再生煞車系統之車輛，在測試剛開始時的電池狀態如 6.1.26.所述時，應使由電力再生煞車系統所提供之煞車力道不超過系統設計之最小值。

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
Category A: Any separate electric regenerative braking control which is provided, shall not be used during the Type-0 tests. Category B.: The contribution of the electric regenerative braking system to the braking force generated shall not exceed that minimum level guaranteed by the system design. This requirement is deemed to be satisfied if the batteries are at one of the following state of charge conditions where state of charge³ is determined by the method set out in Appendix 1 to this annex: (a) At the maximum charge level as recommended by the manufacturer in the vehicle specification; or (b) At a level not less than 95 per cent of the full charge level, where the manufacturer has made no specific recommendation; or (c) At the maximum level which results from automatic charge control on the vehicle. (d) When the tests are conducted without a regenerative braking component regardless of the state of charge of the batteries. ... 1.5.3.1.3. In the case of vehicles equipped with an electric regenerative braking system of category B, having carried out the heating cycles according to paragraph	Category A: Any separate electric regenerative braking control which is provided, shall not be used during the Type-0 tests. Category B.: The contribution of the electric regenerative braking system to the braking force generated shall not exceed that minimum level guaranteed by the system design. This requirement is deemed to be satisfied if the batteries are at one of the following state of charge conditions where state of charge³ is determined by the method set out in Appendix 1 to this annex: (a) At the maximum charge level as recommended by the manufacturer in the vehicle specification; or (b) At a level not less than 95 per cent of the full charge level, where the manufacturer has made no specific recommendation; or (c) At the maximum level which results from automatic charge control on the vehicle. ... 1.5.3.1.3. In the case of vehicles equipped with an electric regenerative braking system of category B, having carried out the heating cycles according to paragraph	... 6.1.26 <u>對於配備 B 類電力再生煞車系統之車輛，所提供之煞車力不應超過該系統設計最小值；若其電池電量狀態處於下列狀態之一，則視為符合此規定：</u> 6.1.26.1 <u>申請者</u>列在車輛規格中所建議之最大<u>電量</u>程度；或 6.1.26.2 <u>申請者</u>對此並無特別建議時，在不小於全充電程度<u>之</u>九五%；或 6.1.26.3 在車輛自動充電下達到的最大程度； <u>6.1.26.4 於執行測試時，任何電池電量狀態下均無再生煞車組件。</u> ... 6.2.3.4.3 對於配備有 B 類電力再生煞車系統之車輛，且已根據 6.2.3.2.5 完成熱循環，則熱性能試驗必須是	... 6.1.26 對於配備 B 類電力再生煞車系統之車輛，在下列電池狀態時，所產生的煞車力道不得超過系統設計最小值： 6.1.26.1 列在車輛規格中，製造廠所建議之最大充電程度。 6.1.26.2 在不小於全充電程度的九五%，其中製造廠對此並無特別建議。 6.1.26.3 在車輛自動充電下達到的最大程度。 ... 6.2.3.4.3 對於配備有 B 類電力再生煞車系統之車輛，且已根據 6.2.3.2.5 完成熱循環，則熱性能試驗必須是

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
1.5.1.6. of this annex, the hot performance test shall be carried out at the maximum speed which can be reached by the vehicle at the end of the brake heating cycles, unless the speed specified in paragraph 1.4.2. of this annex can be reached. For comparison, the Type-0 test with cold brakes shall be repeated from this same speed and with a similar electric regenerative braking contribution, as set by an appropriate state of battery charge, as was available during the hot performance test. Reconditioning of the linings shall be permitted before the test is made to compare this second Type-0 cold performance with that achieved in the hot test, against the criteria of paragraphs 1.5.3.1.1. and 1.5.3.2. of this annex. The tests may be conducted without a regenerative braking component. In this case, the requirement on the state of charge of the batteries is not applicable Annex 4 - Appendix Procedure for monitoring the state of battery charge This procedure is applicable to vehicle batteries used for traction and regenerative braking.	1.5.1.6. of this annex, the hot performance test shall be carried out at the maximum speed which can be reached by the vehicle at the end of the brake heating cycles, unless the speed specified in paragraph 1.4.2. of this annex can be reached. For comparison, the Type-0 test with cold brakes shall be repeated from this same speed and with a similar electric regenerative braking contribution, as set by an appropriate state of battery charge, as was available during the hot performance test. Reconditioning of the linings shall be permitted before the test is made to compare this second Type-0 cold performance with that achieved in the hot test, against the criteria of paragraphs 1.5.3.1.1. and 1.5.3.2. of this annex. Annex 4 - Appendix Procedure for monitoring the state of battery charge This procedure is applicable to vehicle batteries used for traction and regenerative braking.	在車輛於煞車熱循環結束時所能達到的最大速度下進行，除非其可達到 6.2.2.2 所規定的速度。 為了比較，使用冷煞車的型式 0 試驗必須從下述狀態重覆試驗： (1)相同速度；和 (2)相似的電力再生煞車供應；此供應是以適當的電池電量狀態來設定，而且是熱性能試驗時所能提供的。 試驗前可重新調整來令片，以使這由熱性能試驗所獲得的第二次型式 0 冷性能可與 6.3.6.1.1 與 6.3.6.1.2 的標準相比較。 <u>可於未有再生煞車組件之情況下執行測試。於此情況下時，得不適用電池電量狀態之規定。</u> 6.8 電池充能狀態檢視程序：此程序適用於使用在主電池和再生煞車的電池。此程序需要用到雙向 DC 瓦時計(Watt-hour meter)或雙向 DC 安時計(Ampere-hour meter)或由申請者	在車輛於煞車熱循環結束時所能達到的最大速度下進行，除非其可達到 6.2.2.2 所規定的速度。 為了比較，使用冷煞車的型式 0 試驗必須從下述狀態重覆試驗： (1)相同速度；和 (2)相似的電力再生煞車供應；此供應是以適當的電池電量狀態來設定，而且是熱性能試驗時所能提供的。 試驗前可重新調整來令片，以使這由熱性能試驗所獲得的第二次型式 0 冷性能可與 6.3.6.1.1 與 6.3.6.1.2 的標準相比較。 6.8 電池充能狀態檢視程序：此程序適用於使用在主電池和再生煞車的電池。此程序需要用到雙向 DC 瓦時計或由申請者提供其他適當電池充能狀態之量測方式進行。

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
The procedure requires the use of a bi-directional DC Watt-hour meter or a bidirectional DC Ampere-hour meter.	The procedure requires the use of a bi-directional DC Watt-hour meter.	提供其他適當電池充能狀態之量測方式進行。	
Annex 21 Appendix 1 Use of the dynamic stability simulation The effectiveness of the directional and/or roll-over stability control function of power driven vehicles and trailers of categories M, N and O, may be determined by computer simulation. 1. Use of the simulation 1.1. The vehicle stability function shall be demonstrated by the vehicle manufacturer to the Type Approval Authority or Technical Service with the same dynamic manoeuvre(s) as for the practical demonstration in paragraph 2.1.3. or 2.2.3. of Annex 21 to this Regulation. 1.2. The simulation shall be a means whereby the vehicle stability performance may be demonstrated with the vehicle stability function enabled or disabled, and in the laden and unladen conditions. 1.3. The simulations shall be carried out with a validated modelling and simulation tool. The simulation tool shall only be used when each relevant parameter of the vehicle to be type-approved, as listed in paragraph 1.1. of Appendix 2 to Annex 21	Annex 21 Appendix 1 Use of the dynamic stability simulation The effectiveness of the directional and/or roll-over stability control function of power-driven vehicles and trailers of categories M, N and O, may be determined by computer simulation. 1. Use of the simulation 1.1. The vehicle stability function shall be demonstrated by the vehicle manufacturer to the Type Approval Authority or Technical Service with the same dynamic manoeuvre(s) as for the practical demonstration in paragraph 2.1.3. or 2.2.3. of Annex 21. 1.2. The simulation shall be a means whereby the vehicle stability performance may be demonstrated with the vehicle stability function enabled or disabled, and in the laden and unladen conditions. 1.3. The simulations shall be carried out with a validated modelling and simulation tool. The verification shall be carried out using the same manoeuvre(s) as defined in paragraph 1.1. above. The method by which the simulation tool is	四十二之三、動態煞車 6.9.3 動態穩定性模擬 M、N 及 O 類之機動車輛及拖車，其方向性及/或翻覆性穩定控制能力之效力，可藉由電腦模擬來判定(參考 6.9.2.1.3 或 6.9.2.2.3)。 6.9.3.1 模擬之使用 6.9.3.1.1 車輛之穩定性功能應由申請者以模擬 6.9.2.1.3 或 6.9.2.2.3 之實車動態操作展示予檢測機構。 6.9.3.1.2 模擬所使用之方法應為藉由將車輛穩定性電子式控制功能 (VSF) 開啟或關閉、且車輛全負載及無負載之條件下，展示車輛穩定性電子式控制功能 (VSF) 之性能。 6.9.3.1.3 模擬必須採用經驗證有效模型及模擬工具。<u>模擬工具僅能使用於受驗車輛每個相關參數(如 6.9.4.1.1 所列)皆已包含於模擬工具內者，並且每個參數值須於該工具對應之有效性驗證範圍內。且必須</u>	四十二之三、動態煞車 6.9.3 動態穩定性模擬 M、N 及 O 類之機動車輛及拖車，其方向性及/或翻覆性穩定控制能力之效力，可藉由電腦模擬來判定(參考 6.9.2.1.3 或 6.9.2.2.3)。 6.9.3.1 模擬之使用 6.9.3.1.1 車輛之穩定性功能應由申請者以模擬 6.9.2.1.3 或 6.9.2.2.3 之實車動態操作展示予檢測機構。 6.9.3.1.2 模擬所使用之方法應為藉由將車輛穩定性電子式控制功能 (VSF) 開啟或關閉、且車輛全負載及無負載之條件下，展示車輛穩定性電子式控制功能 (VSF) 之性能。 6.9.3.1.3 模擬必須採用經驗證有效模型及模擬工具，且必須比照 6.9.3.1 來執行驗證。

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to this Regulation, is included in the simulation tool and when the value of each parameter falls within its respective validated range. The verification shall be carried out using the same manoeuvre(s) as defined in paragraph 1.1. of this appendix to Annex 21 to this Regulation. The method by which the simulation tool is validated is given in Appendix 2 to Annex 21 to this Regulation. 1.3.1. A vehicle manufacturer using a validated simulation tool that was not directly validated by themselves for a vehicle type-approval shall carry-out at least one confirmation test. This confirmation test shall be conducted in conjunction with a Technical Service and shall be a comparison between an actual vehicle test and a simulation using one of the manoeuvres as defined in paragraph 1.1. of this appendix. The confirmation test shall be repeated in the event of any change to the simulation tool.¹ The results of the confirmation test shall be attached to the type-approval documentation. 1.4. The availability of the simulation tool software, to the software version used, shall be maintained for a period of not less	validated is given in Annex 21, Appendix 2.	比照 6.9.3.1.1 之實車動態操作來執行<u>有效性驗證。模擬工具之有效性驗證方法應依 6.9.4 之規定。</u> <u>6.9.3.1.3.1 若申請者使用於型式認證試驗之模擬工具非由申請者直接驗證其有效性，則其應至少執行一次確認試驗。</u> <u>確認試驗應與檢測機構共同進行，將實際車輛試驗與模擬車輛試驗作比較且應比照 6.9.3.1 來執行驗證。若模擬工具有任何改變，則應重複進行確認試驗。</u> <u>確認試驗結果，應檢附於檢測機構出具之試驗報告。</u> <u>6.9.3.1.4 模擬工具軟體的可用性與軟體版本，其應至少保持一 0 年(以該車輛獲取認證日期起算)。</u>	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
than 10 years following the date of the approval of the vehicle. ... Appendix 2 Dynamic stability simulation tool and its validation 1. Specification of the simulation tool 1.1. The simulation tool shall take into account the main factors which influence the directional and roll motion of the vehicle. 1.1.1. The simulation tool shall take into account the following vehicle parameters as applicable¹: (a) Vehicle category; (b) Character of the vehicle; (c) Gearbox type (e.g. manual, automated manual, semi-automatic, automatic); (d) Differential type (e.g. standard or self-locking); (e) Differential lock(s) (driver selected); (f) Brake system type (e.g. air over hydraulic, full air); (g) Brake type (e.g. disc, drum (single wedge, twin wedge, S-cam)); (h) Tyre type (e.g. structure, category of use, size); (i) Suspension type (e.g. air, mechanical, rubber). 1.1.2. The simulation model shall include at	... Appendix 2 Dynamic stability simulation tool and its validation 1. Specification of the simulation tool 1.1. The simulation method shall take into account the main factors which influence the directional and roll motion of the vehicle. A typical model may include the following vehicle parameters in an explicit or implicit form: (a) Axle/wheel; (b) Suspension; (c) Tyre; (d) Chassis/vehicle body; (e) Power train/driveline, if applicable; (f) Brake system; (g) Pay load.	6.9.4 動態穩定性模擬工具及其有效性 6.9.4.1 模擬工具之規格 6.9.4.1.1 模擬方法應考量會影響車輛行進方向與翻覆之主要因子。 <u>6.9.4.1.1.1 模擬工具應視適用性考量下述車輛參數：</u> <u>(a)車種代號；</u> <u>(b)車輛通稱名(例如：大貨車/曳引車/大客車/半拖車/全拖車)；</u> <u>(c)變速箱類型（如手排、自動式手排、半自排、自排）；</u> <u>(d)差速器類型（如標準或自鎖(Self-locking)）；</u> <u>(e)差速鎖(Differential lock)（供駕駛選用）；</u> <u>(f)煞車系統類型（如氣控液壓系統、全氣控系統）；</u> <u>(g)煞車類型（如碟式、鼓式(單楔形、雙楔形、S-凸輪)）；</u> <u>(h)輪胎類型(如結構、使用類別、尺寸)；</u> <u>(i)懸吊類型（如氣壓式、機械式、橡膠式）。</u> <u>6.9.4.1.1.2 模擬模型至少應視適用性</u>	6.9.4 動態穩定性模擬工具及其有效性 6.9.4.1 模擬工具之規格 6.9.4.1.1 模擬方法應考量會影響車輛行進方向與翻覆之主要因子。<u>典型的模型可包含</u>下述車輛參數： <u>(a)車軸/車輪；</u> <u>(b)懸吊；</u> <u>(c)輪胎；</u> <u>(d)底盤/車身；</u> <u>(e)傳動系統/驅動系統(driveline)(以適用者為對象)；</u> <u>(f)煞車系統；</u> <u>(g)負載。</u>

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least the following parameters as applicable¹: (a) Vehicle configuration(s) (e.g. 4x2, 6x2, etc., identifying axle functionality (e.g. free running, driven, lifted, steered) and position); (b) Steering axles (working principle); (c) Steering ratio; (d) Drive axle(s) (effect on wheel speed sensing and vehicle speed); (e) Lift axle(s) (detection/control and wheelbase change effect when lifted); (f) Engine management (communication, control and response); (g) Gearbox characteristic(s); (h) Drive train option(s) (e.g. retarder, regenerative braking, auxiliary propulsion system); (i) Brake characteristic(s); (j) Anti-lock braking configuration; (k) Wheelbase; (l) Track width; (m) Centre of gravity height; (n) Lateral acceleration sensor position; (o) Yaw rate sensor position; (p) Loading. 1.1.3. The Technical Service conducting the validation shall be provided with an information document a at least the points		<u>包含下述車輛參數：</u> <u>(a)車軸配置（如4×2、6×2等用以識別各軸功能性（如自由運轉、驅動、舉升、轉向）和位置）；</u> <u>(b)各轉向軸（工作原理）；</u> <u>(c)轉向比(Steering ratio)；</u> <u>(d)各驅動軸（對於車輪速度感知和車速之影響效應）；</u> <u>(e)各舉升軸（偵測/控制，及舉升時之軸距變化影響效應）；</u> <u>(f)引擎管理系統（通訊，控制和回饋）；</u> <u>(g)變速箱特性；</u> <u>(h)傳動系統之各式選搭（如緩速器(Retarder)、再生煞車、輔助推進系統）；</u> <u>(i)煞車系統特性；</u> <u>(j)防鎖死煞車系統配置；</u> <u>(k)軸距；</u> <u>(l)輪距；</u> <u>(m)重心距地高；</u> <u>(n)橫向加速度感應器位置；</u> <u>(o)橫擺角速感應器位置；</u> <u>(p)負載狀態。</u> 6.9.4.1.1.3應至少提供上述6.9.4.1.1.1及6.9.4.1.1.2文件予執行有效性驗證之檢測機構。	

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in paragraphs 1.1.1. and 1.1.2. above. 1.2. The Vehicle Stability Function shall be added to the simulation model by means of: (a) A subsystem (software model) of the simulation tool as software-in-the-loop, or (b) An actual electronic control box*/ unit in a hardware-in-the-loop configuration. 1.3. In the case of a trailer, the simulation shall be carried out with the trailer coupled to a representative towing vehicle. 1.4. Vehicle loading condition 1.4.1. The simulation tool shall be able to take into account the laden and unladen conditions. 1.4.2. The simulation tool shall, as a minimum, meet the following criteria: (a) A fixed load; (b) A given mass; (c) A given mass distribution; and (d) A given height of the centre of gravity. 2. Validation of the simulation tool 2.1. The validity of the applied modelling and simulation tool shall be verified by means of comparisons with a practical vehicle test(s). The test(s) utilised for the validation shall be those which, without control action, would result in loss of directional control (understeer and over-steer) and/or roll-over control as	1.2. The Vehicle Stability Function shall be added to the simulation model by means of: (a) A subsystem (software model) of the simulation tool; or (b) The electronic control box in a hardware-in-the-loop configuration. 1.3. In the case of a trailer, the simulation shall be carried out with the trailer coupled to a representative towing vehicle. 1.4. Vehicle loading condition 1.4.1. The simulator shall be able to take into account the laden and unladen conditions. 1.4.2. The load shall be considered to be a fixed load with properties (mass, mass distribution and maximum recommended height of the centre of gravity) specified by the manufacturer. 2. Validation of the simulation tool 2.1. The validity of the applied modelling and simulation tool shall be verified by means of comparisons with a practical vehicle test(s). The test(s) utilised for the validation shall be those which, without control action, would result in loss of directional control (understeer and over-steer) or roll-over control as appropriate to the functionality of the stability control	6.9.4.1.2 車輛穩定性電子式控制功能 (VSF) 應以下述方式加入模擬模型中: (a)模擬工具內如軟體控制迴圈之子系統(軟體模型);或 (b)於硬體控制迴圈配置中之電子式控制單元實體。 6.9.4.1.3 拖車應於聯結至具有代表性之牽引車輛狀態下執行模擬。 6.9.4.1.4 車輛負載條件 6.9.4.1.4.1 模擬工具必須能考量到全負載及無負載狀態。 6.9.4.1.4.2 模擬工具應至少符合下列準則: (a)固定之負載; (b)給定之重量; (c)給定之重量分配;及 (d)給定之重心距地高。 6.9.4.2 模擬工具之有效性驗證 6.9.4.2.1 應藉由比較車輛實際試驗結果來驗證所使用模型及模擬工具之有效性,應以足以展現車輛所配備之車輛穩定性電子式控制功能(VSF)之測試方法進行驗證,其應為在未給予控制操作時會導致失去方向性控制(轉向不足及過度轉向)及/或翻覆性控制之測試方法。於測試期間,下述運動參數應視實際	6.9.4.1.2 車輛穩定性電子式控制功能 (VSF) 應以下述方式加入模擬模型中: (a)模擬工具之子系統(軟體模型);或 (b)於硬體控制迴圈配置中增加電子控制單元。 6.9.4.1.3 拖車應在聯結至具有代表性之曳引車狀態下執行模擬。 6.9.4.1.4 車輛負載條件 6.9.4.1.4.1 模擬器必須能考量到全負載及無負載狀態。 6.9.4.1.4.2 負載必須是由車廠宣告之固定負載及裝載特性(重量、重量分配及建議之最大重心高度)。 6.9.4.2 模擬工具之有效性驗證 6.9.4.2.1 應藉由比較車輛實際測試結果來驗證所使用模型及模擬工具之有效性,應以足以展現代表車所配備之車輛穩定性電子式控制功能(VSF)之測試方法進行驗證,其應為在未給予控制操作時會導致失去方向性控制(轉向不足及過度轉向)或翻覆性控制之測試方法。於測試期間,下述運動參數應視實際

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appropriate to the functionality of the stability control function installed on a vehicle. During the test(s) the following motion variables, as appropriate, shall be recorded or calculated in accordance with ISO 15037 Part 1:2006 or Part 2:2002 as relevant: (a) Yaw velocity; (b) Lateral acceleration; (c) Wheel load or wheel lift; (d) Forward velocity; (e) Driver input. 2.2. The objective is to show that the simulated vehicle behaviour and operation of the vehicle stability function is comparable with that seen in practical vehicle tests. The ability of the simulation tool to be used with parameters that have not been validated by a practical vehicle test shall be shown by conducting simulations with varied parameter values. The results of these simulations shall be checked to be logical and similar in comparison to the results of known practical vehicle tests. 2.3. The simulation tool shall be deemed to be validated when its output is comparable	function installed on a representative vehicle. During the test(s) the following motion variables, as appropriate, shall be recorded or calculated in accordance with ISO 15037 Part 1:2005: General conditions for passenger cars or Part 2:2002: General conditions for heavy vehicles and buses (depending on the vehicle category): (a) Yaw velocity; (b) Lateral acceleration; (c) Wheel load or wheel lift; (d) Forward velocity; (e) Driver input. 2.2. The objective is to show that the simulated vehicle behaviour and operation of the vehicle stability function is comparable with that seen in practical vehicle tests. 2.3. The simulator shall be deemed to be validated when its output is comparable to	適當狀況予以記錄或依照 ISO 15037 <u>相關之</u> Part1:<u>2006</u> 或 Part2 :2002 <u>:</u> (1) 橫擺角速度(yaw rate) (2) 側向加速度 (3) 車輪負載或車輪離地 (4) 前進速度 (5) 駕駛之操作 6.9.4.2.2 以呈現被模擬車輛之行為及車輛穩定性電子式控制功能 (VSF) 之作動與實際車輛<u>試驗</u>結果可相當為目標。 <u>若欲將未有實際車輛試驗結果以驗證之參數使用於模擬工具，則應藉由執行不同參數之模擬予以展示其模擬能力，且此等模擬的結果應與已知實際車輛試驗結果比較，針對其彼此間邏輯性與相似度，核對確認模擬工具有效性。</u> 6.9.4.2.3 當模擬<u>工具</u>之輸出結果相當	適當狀況予以記錄或依照 ISO 15037 Part1:<u>2005</u>(<u>小客車之一般狀態</u>)或 Part2 :2002(<u>大型車輛之一般狀態</u>)<u>計算(視車輛種類而定)</u>。 (1) 橫擺角速度(yaw rate) (2) 側向加速度 (3) 車輪負載或車輪離地 (4) 前進速度 (5) 駕駛<u>者</u>之操作 6.9.4.2.2 以呈現被模擬車輛之行為及車輛穩定性電子式控制功能 (VSF) 之操作與實際車輛測試結果可相當為目標。 6.9.4.2.3 當模擬<u>器</u>之輸出結果相當於

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to the practical test results produced by the same vehicle(s) during the manoeuvre(s) selected from those defined with paragraph 2.1.3. or 2.2.3. of Annex 21 to this Regulation, as appropriate. The simulation tool shall only be used with regard to features for which a comparison has been made between real vehicle tests and simulation tool results. The comparisons shall be carried-out in the laden and unladen condition to show the different conditions of load can be adapted to and to confirm the extreme parameters to be simulated, e.g.: (a) Vehicle with shortest wheelbase and highest centre of gravity; (b) Vehicle with longest wheelbase and highest centre of gravity. In the case of the steady state circular test the under-steer gradient shall be the means of making the comparison. In the case of a dynamic manoeuvre, the relationship of activation and sequence of the vehicle stability function in the simulation and in the practical vehicle test shall be the means of making the comparison. 2.4. The physical parameters that are different between the reference vehicle and simulated vehicle configurations shall	the practical test results produced by the same vehicle(s) during the manoeuvre(s) selected from those defined in paragraph 2.1.3. or 2.2.3. of Annex 21, as appropriate. The simulator shall only be used with regard to features for which a comparison has been made between real vehicle tests and simulator results. The comparisons shall be carried-out in the laden and unladen condition to show the different conditions of load can be adapted to and to confirm the extreme parameters to be simulated, e.g.: (a) Vehicle with shortest wheelbase and highest centre of gravity; (b) Vehicle with longest wheelbase and highest centre of gravity. In the case of the steady state circular test the under-steer gradient shall be the means of making the comparison. In the case of a dynamic manoeuvre, the relationship of activation and sequence of the vehicle stability function in the simulation and in the practical vehicle test shall be the means of making the comparison. 2.4. The physical parameters that are different between the reference vehicle and simulated vehicle configurations shall be modified accordingly in the simulation.	於6.9.2.1.3或6.9.2.2.3實車試驗之結果，則該模擬工具視為有效。 該模擬工具應只能用於已對照比較過實車試驗及模擬工具結果之特性。該對照比較應於全負載及無負載條件下執行，以顯示其可適用不同之負載條件，以及確認預設模擬參數之極限，例如： (a)最短軸距及最高重心之車輛。 (b)最長軸距及最高重心之車輛。 於穩態繞圓試驗時，應以轉向不足程度（gradient）作為比較之方式。 於動態操作時，應以車輛穩定性電子式控制功能（VSF）模擬啟動及順序與實際車輛試驗之關係進行比較作為比較之方法。 6.9.4.2.4 參考車輛及受模擬車輛配置間之物理參數差異應於模擬中進行相對應的修正。	6.9.2.1.3 或 6.9.2.2.3 實車試驗之結果，則該模擬器視為有效。 該模擬器應只能用於已對照比較過實車試驗及模擬器結果之特性。該對照比較應於全負載及無負載條件下執行，以顯示其可適用不同之負載條件，以及確認預設模擬參數之極限，例如： (a)最短軸距及最高重心之車輛。 (b)最長軸距及最高重心之車輛。 於穩態繞圓試驗時，應以轉向不足程度（gradient）作為比較之方式。 於動態操作時，應以車輛穩定性電子式控制功能（VSF）模擬啟動及順序與實際車輛測試之關係進行比較作為比較之方法。 6.9.4.2.4 參考車輛及受模擬車輛配置間之物理參數差異應於模擬中進行相對應的修正。

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be modified accordingly in the simulation. 2.5. A simulation tool test report shall be produced, a model of which is defined in Appendix 3 to this annex, and a copy attached to the vehicle approval report. 2.5.1. A simulation tool validation carried-out in accordance with Appendix 2 and Appendix 3 to Annex 21 to this Regulation, prior to the entry into force of Supplement 10 to the 11 series of amendments to this Regulation, may continue to be used for a new vehicle stability function approval or extension of an existing vehicle stability function approval provided that the relevant technical requirements are fulfilled and the scope of application is complied with. Appendix 3 Vehicle stability function simulation tool test report 1. Identification 1.1. Name and address of the simulation tool manufacturer 1.2. Simulation tool identification: name/model/number (hardware and software) 2. Simulation tool 2.1. Simulation method (general description, taking into account the requirements of paragraph 1.1. of Appendix 2 to Annex 21 to	2.5. A simulator test report shall be produced, a model of which is defined in Appendix 3 of this annex, and a copy attached to the vehicle approval report. Appendix 3 Vehicle stability function simulation tool test report 1. Identification 1.1. Name and address of the simulation tool manufacturer 1.2. Simulation tool identification: name/model/number (hardware and software) 2. Simulation tool 2.1. Simulation method (general description, taking into account the requirements of paragraph 1.1. of Appendix 2 to Annex 21)	6.9.4.2.5 所述之模擬工具有效性驗證報告應檢附於檢測機構出具之試驗報告。 6.9.4.2.5.1 車輛穩定性電子式控制功能模擬工具之有效性驗證報告，應至少包含下列內容： 6.9.4.2.5.1.1 識別資訊 6.9.4.2.5.1.1.1 模擬工具製造商廠牌與地址 6.9.4.2.5.1.1.2 模擬工具識別資訊：廠牌/型式/編號（硬體與軟體） 6.9.4.2.5.1.2. 模擬工具 6.9.4.2.5.1.2.1 模擬方法（一般描述，依據6.9.4.1.1要求） 6.9.4.2.5.1.2.2 迴圈內之硬體/軟體	6.9.4.2.5 檢測報告應檢附模擬器之測試報告。 無

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
this Regulation) 2.2. Hardware/software in the loop (see paragraph 1.2. of Appendix 2 to Annex 21 to this Regulation) 2.3. Vehicle loading conditions (see paragraph 1.4. of Appendix 2. to Annex 21 to this Regulation) 2.4. Validation (see paragraph 2. of Appendix 2 to Annex 21 to this Regulation) 2.5. Motion variables (see paragraph 2.1. of Appendix 2 to Annex 21 to this Regulation) 3. Scope of application: 3.1. Vehicle category: 3.2. Character of the vehicle: 3.3. Vehicle configuration: 3.4. Steering axles: 3.5. Steering ratio: 3.6. Drive axles: 3.7. Lift axles: 3.8. Engine management: 3.9. Gearbox type: 3.10. Drive train options: 3.11. Differential type: 3.12. Differential lock(s): 3.13. Brake system type: 3.14. Brake type: 3.15. Brake characteristics: 3.16. Anti-lock braking configuration:	2.2. Hardware/software in the loop (see paragraph 1.2. of Appendix 2 to Annex 21) 2.3. Vehicle loading conditions (see paragraph 1.4 of Appendix 2 to Annex 21) 2.4. Validation (see paragraph 2. of Appendix 2 to Annex 21) 2.5. Motion variables (see paragraph 2.1. of Appendix 2 to Annex 21) 3. Scope of application 3.1. Character of vehicle (e.g. truck, tractor for semi-trailer, bus, semi-trailer, centre-axle trailer, full trailer) 3.2. Vehicle configuration: (e.g. 4x2, 4x4, 6x2, 6x4, 6x6) 3.3. Limiting factors: (e.g. mechanical suspension only) 3.4. Manoeuvre(s) for which the simulator has been validated:	<u>(依據6.9.4.1.2要求)</u> <u>6.9.4.2.5.1.2.3 車輛負載狀態 (依據6.9.4.1.4要求)</u> <u>6.9.4.2.5.1.2.4 有效性驗證 (依據6.9.4.2要求)</u> <u>6.9.4.2.5.1.2.5 運動參數(依據6.9.4.2.1要求)</u> <u>6.9.4.2.5.1.3 適用之車輛規格範圍:</u> <u>6.9.4.2.5.1.3.1 車種代號</u> <u>6.9.4.2.5.1.3.2 車輛通稱名(例如:大貨車/曳引車/大客車/半拖車/全拖車)</u> <u>6.9.4.2.5.1.3.3 車輛之軸組型態及驅動軸數</u> <u>6.9.4.2.5.1.3.4 轉向軸數</u> <u>6.9.4.2.5.1.3.5 轉向比</u> <u>6.9.4.2.5.1.3.6 驅動軸數</u> <u>6.9.4.2.5.1.3.7 舉升軸數</u> <u>6.9.4.2.5.1.3.8 引擎管理系統</u> <u>6.9.4.2.5.1.3.9 變速箱類型</u> <u>6.9.4.2.5.1.3.10 傳動系統之選搭</u> <u>6.9.4.2.5.1.3.11 差速器類型</u> <u>6.9.4.2.5.1.3.12 差速鎖</u> <u>6.9.4.2.5.1.3.13 煞車系統類型</u> <u>6.9.4.2.5.1.3.14 煞車類型</u> <u>6.9.4.2.5.1.3.15 煞車系統特性</u> <u>6.9.4.2.5.1.3.16 防鎖死煞車系統配置</u>	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
3.17. Wheelbase: 3.18. Tyre type: 3.19. Track width: 3.20. Suspension type: 3.21. Centre of gravity height: 3.22. Lateral acceleration sensor position: 3.23. Yaw rate sensor position: 3.24. Loading: 3.25. Limiting factors: 3.26. Manoeuvre(s) for which the simulation tool has been validated:		6.9.4.2.5.1.3.17 軸距 6.9.4.2.5.1.3.18 輪胎類型 6.9.4.2.5.1.3.19 輪距 6.9.4.2.5.1.3.20 懸吊類型 6.9.4.2.5.1.3.21 重心距地高 6.9.4.2.5.1.3.22 橫向加速度感應器位置 6.9.4.2.5.1.3.23 橫擺角速度感應器位置 6.9.4.2.5.1.3.24 負載狀態 6.9.4.2.5.1.3.25 限制因子 6.9.4.2.5.1.3.26 已對模擬工具有效性進行驗證之操作展示	
4. Verifying vehicle test(s) 4.1. Description of vehicle(s) including the towing vehicle in case of trailer testing: 4.1.1. Vehicle(s) identification: make/model/VIN 4.1.1.1. Non-standard fitments: 4.1.2. Vehicle description, including axle configuration/suspension/wheels, engine and drive line, braking system(s) and vehicle stability function content (directional control/ rollover control), steering system, with name/model/number identification: 4.1.3. Vehicle data used in the simulation (explicit)	4. Verifying vehicle test(s) 4.1. Description of vehicle(s) including the towing vehicle in case of trailer testing: 4.1.1. Vehicle(s) identification: make/model/VIN 4.1.1.1. Non-standard fitments: 4.1.2. Vehicle description, including axle configuration/suspension/wheels, engine and drive line, braking system(s) and vehicle stability function content (directional control/rollover control), steering system, with name/model/number identification: 4.1.3. Vehicle data used in the simulation (explicit): 4.2. Description of test(s) including	6.9.4.2.5.1.4車輛驗證試驗 6.9.4.2.5.1.4.1試驗車輛描述，包含拖車試驗時聯結之牽引車輛 6.9.4.2.5.1.4.1.1 車輛識別資訊：廠牌/型式名稱/車身號碼(VIN) 6.9.4.2.5.1.4.1.1.1非標準配備 6.9.4.2.5.1.4.1.2車輛規格描述，包含車軸配置/懸吊/車輪、引擎與傳動系統、煞車系統與車輛穩定性電子式控制功能內容（方向性控制/翻覆性控制）、轉向系統，且具有廠牌/型號/識別號碼 6.9.4.2.5.1.4.1.3明確取自模擬車輛之	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
4.2. Description of test(s) including location(s), road/test area surface conditions, temperature and date(s): 4.3. Results laden and unladen with the vehicle stability function switched on and off, including the motion variables referred to in paragraph 2.1. of Appendix 2 to Annex 21 to this Regulation, as appropriate: 5. Simulation results 5.1. Vehicle parameters and the values used in the simulation that are not taken from the actual test vehicle (implicit): 5.2. Results laden and unladen with the vehicle stability function switched on and off for each test conducted under paragraph 4.2. of this appendix, including the motion variables referred to in paragraph 2.1. of Appendix 2 to Annex 21 to this Regulation, as appropriate: 6. Concluding statement The simulated vehicle behaviour and operation of the vehicle stability function is comparable with that of practical vehicle tests.Yes/No 7. Limiting factors 8. This test has been carried out and the results reported in accordance with Appendix 2 to Annex 21 to Regulation No. 13 as last amended by the series of	location(s), road/test area surface conditions, temperature and date(s): 4.3. Results laden and unladen with the vehicle stability function switched on and off, including the motion variables referred to in Annex 21, Appendix 2, paragraph 2.1. as appropriate: 5. Simulation results 5.1. Vehicle parameters and the values used in the simulation that are not taken from the actual test vehicle (implicit): 5.2. Results laden and unladen with the vehicle stability function switched on and off for each test conducted under paragraph 3.2. of this Appendix, including the motion variables referred to in Annex 21, Appendix 2, paragraph 2.1. as appropriate: 6. This test has been carried out and the results reported in accordance with Appendix 2 of Annex 21 to ECE Regulation No. 13 as last amended by the ... series of amendments.	<u>車輛數據</u> <u>6.9.4.2.5.1.4.2 試驗環境描述，包含地點，道路/試驗區域表面條件，溫度及試驗日期</u> <u>6.9.4.2.5.1.4.3車輛穩定性電子式控制功能開啟與關閉狀態下，所執行各項試驗全負載及無負載條件下執行結果，包含6.9.4.2.1所述運動參數</u> <u>6.9.4.2.5.1.5 模擬結果</u> <u>6.9.4.2.5.1.5.1 模擬期間非取自實際試驗車輛本身之車輛參數及其數值</u> <u>6.9.4.2.5.1.5.2車輛穩定性電子式控制功能開啟與關閉狀態下，於6.9.4.2.5.1.4.2所執行各項試驗全負載及無負載條件下執行結果，包含6.9.4.2.1所述運動參數</u> <u>6.9.4.2.5.1.6 試驗結果總結</u> <u>明述所模擬車輛行為及車輛穩定性電子式控制功能作動，是否與實際車輛試驗者相當(Comparable)。</u> <u>6.9.5.7 限制因素</u> 【限制因素於 UNR13 法規僅有其名詞，無實質內容故建議不列】	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
Amendments. Technical Service conducting the test1 Signed:..... Date: Approval Authority 1	Technical Service conducting the test1 Signed:..... Date: Type Approval Authority1		
11-S11 (draft)			
2. Definitions ... 2.39. " <i>Brake electric/electronic interface</i> " means the part of a separable electrical/electronic connection between the towing vehicle and the towed vehicle which is dedicated to the braking system. 2.40. " <i>Automated Connector</i> " means a system through which the electric and pneumatic connection, between the towing vehicle and towed vehicle is made automatically without direct intervention of a human operator. 【Annex 8原文名詞釋義】 Annex 8 Provisions relating to specific conditions for spring braking systems 1. Definition 1.1. " <i>Spring braking systems</i> " are braking systems in which the energy required for		四十二之三、動態煞車 2. 名詞釋義： ... 2.1.27 <u>煞車電力/電子界面 (Brake electric/electronic interface)</u> ：係指牽引車輛(Towing vehicle)與拖車間煞車系統相關之可分離式電力/電子連接部件。 2.1.28 <u>自動連接器 (Automated Connector)</u> ：係指讓牽引車輛與拖車間電力和氣動之連接自動完成之媒介系統，其無須人為直接介入操作。 【Annex 8原文名詞釋義】 2.1.29 <u>彈簧式煞車系統 (Spring braking systems)</u> ：係指由一個或多個作為儲能裝置(蓄能器(Energy accumulator)之彈簧來提供煞車所需能量之煞車系統。用以釋放煞車所需壓縮彈簧之能量，係由駕駛啟動之控制裝置提供與控制。	四十二之三、動態煞車 2. 名詞釋義： ...

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braking is supplied by one or more springs acting as an energy storage device (energy accumulator). 1.1.1. The energy necessary to compress the spring in order to release the brake is supplied and controlled by the "control" actuated by the driver (see definition in paragraph 2.4. of this Regulation). 2.28. "Nominal value" definitions for braking reference performance are required to put a value on the transfer function of the braking system, relating output to input for vehicles individually and when used in combination. 2.28.1. "Nominal value" is defined, for a power-driven vehicle, as the characteristic which can be demonstrated at Type Approval and which relates the braking rate of the vehicle on its own to the level of the braking input variable. 2.28.2. "Nominal value" is defined, for a trailer, as the characteristic which can be demonstrated at Type Approval and which relates the braking rate to the coupling head signal. 2.28.3. "Nominal demand value" is defined, for coupling force control, as the characteristic which relates the coupling head signal to the braking rate and which		 <u>2.1.30 煞車參考性能之"標稱值"</u> (Nominal value):係指設定於煞車系統傳輸功能之數值，其為個別車輛與組合車輛狀態下，建立輸出與輸入間之關係。 <u>2.1.30.1 機動車輛"標稱值"</u>:係指於型式認證試驗展現之特性，且其代表車輛本身煞車率與煞車輸入變數值間之關係。 <u>2.1.30.2 拖車"標稱值"</u>:係指於型式認證試驗展現之特性，且其代表車輛本身煞車率與聯結頭 (Coupling head)訊號之關係。 <u>2.1.30.3 聯結力控制"標稱需求值"</u> (Nominal demand value):係指於型式認證試驗展現之特性，且其代表	

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can be demonstrated at Type Approval, within the limits of the compatibility bands of Annex 10.		<u>聯結頭訊號與車輛煞車率之關係，其應介於 6.6 相容性頻帶範圍內。</u>	
5. Specifications ... 5.1.1.4. The effectiveness of the braking systems, including the electric control line, shall not be adversely affected by magnetic or electrical fields. This shall be demonstrated by fulfilling the technical requirements and respecting the transitional provisions of Regulation No. 10 by applying: (a) The 03 series of amendments for vehicles without a coupling system for charging the Rechargeable Energy Storage System (traction batteries). (b) The 04 series of amendments for vehicles with a coupling system for charging the Rechargeable Energy Storage System (traction batteries).	5. Specifications ... 5.1.1.4. The effectiveness of the braking systems, including the electric control line, shall not be adversely affected by magnetic or electrical fields. This shall be demonstrated by compliance with Regulation No. 10, 02 series of amendments.	6. M2、M3、N2、N3、O 及選擇符合 6.規範之 N1 類車輛動態煞車 ... 6.1.2 煞車系統之效能應不受電場或磁場之影響。	6. M2、M3、N2、N3、O 及選擇符合 6.規範之 N1 類車輛動態煞車 ... 6.1.2 煞車系統之效能應不受電場或磁場之影響。
5.2.1.12. In hydraulic-transmission braking systems, the filling ports of the fluid reservoirs shall be readily accessible; in addition, the receptacles containing the reserve fluid shall be so designed and constructed that the level of the reserve fluid can be easily checked without the receptacles having to be opened. If this latter condition is not fulfilled, the red	5.2.1.12. In hydraulic-transmission braking systems, the filling ports of the fluid reservoirs shall be readily accessible; in addition, the receptacles containing the reserve fluid shall be so designed and constructed that the level of the reserve fluid can be easily checked without the receptacles having to be opened. If this latter condition is not fulfilled, the red	6.1.14 對於液壓傳輸之煞車系統，其液體儲存槽注入口需易於使用；且 <u>其設計與構造應能讓不須開啟容器情況下輕易檢查液體存量，若未能滿足此一條件，則應依 6.1.16.1.3 規定之紅色警告訊號，提醒駕駛注意到會導致煞車系統失效之液體液面下降狀況。液壓傳輸煞車系統中使用之液體型式，應使用 ISO</u>	6.1.14 對於液壓傳輸之煞車系統，其液體儲存槽注入口需易於使用，且能輕易檢查液體存量。

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warning signal specified in paragraph 5.2.1.29.1.1. shall draw the driver's attention to any fall in the level of reserve fluid liable to cause a failure of the braking system. The type of fluid to be used in the hydraulic transmission braking systems shall be identified by the symbol in accordance with figure 1 or 2 of Standard ISO 9128:2006. The symbol shall be affixed in a visible position in indelible form within 100 mm of the filling ports of the fluid reservoirs; additional information may be provided by the manufacturer.	warning signal specified in paragraph 5.2.1.29.1.1. shall draw the driver's attention to any fall in the level of reserve fluid liable to cause a failure of the braking system. The type of fluid to be used in the hydraulic transmission braking systems shall be identified by the symbol in accordance with figure 1 or 2 of Standard ISO 9128:2006. The symbol shall be affixed in a visible position in indelible form within 100 mm of the filling ports of the fluid reservoirs; additional information may be provided by the manufacturer.	<u>9128:2006 圖一或圖二之標示予以辨識。</u> <u>應於距離儲存槽注入口一00公釐以內之可見位置，該標示不可被輕易除去；申請者可提供額外資訊。</u>	
5.2.1.28. Special requirements for coupling force control 5.2.1.28.1. Coupling force control shall only be permitted in the towing vehicle. 5.2.1.28.2. The action of the coupling force control shall be to reduce the difference between the dynamic braking rates of towing and towed vehicles. The operation of the coupling force control shall be checked at the time of type approval. The method by which this check is carried out shall be agreed between the vehicle manufacturer and the technical service with the method of assessment and results being appended to the type approval	5.2.1.28. Special requirements for coupling force control 5.2.1.28.1. Coupling force control shall only be permitted in the towing vehicle. 5.2.1.28.2. The action of the coupling force control shall be to reduce the difference between the dynamic braking rates of towing and towed vehicles. The operation of the coupling force control shall be checked at the time of type approval. The method by which this check is carried out shall be agreed between the vehicle manufacturer and the technical service with the method of assessment and results being appended to the type approval report.	6.1.15 聯結力控制(Coupling force control)： 6.1.15.1 只允許<u>牽引車輛</u>配備有聯結力控制裝置。 <u>6.1.15.2</u> 此裝置應能減少<u>牽引車輛</u>與拖車間之動態煞車率差異值，在檢測報告中需有聯結力控制裝置之功能確認，確認方法須由<u>申請者</u>及檢測<u>機構</u>同意，並附加在檢測報告上。	6.1.15 聯結力控制(Coupling force control)： 6.1.15.1 只允許<u>曳引車</u>配備有聯結力控制裝置，且此裝置應能減少<u>曳引車</u>與拖車之間的動態煞車率差異值，在檢測報告中需有聯結力控制裝置之功能確認，確認方法需由<u>製造廠</u>及檢測<u>單位</u>同意，並附加在檢測報告上。 <u>6.1.15.2</u> 一聯結力控制系統必須只控制由動力驅動車輛與拖車的常用煞車系統(不包括持久煞車系統)所引起的聯結力。

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report. 5.2.1.28.2.1. The coupling force control may control the braking rate TM/PM and/or the brake demand value(s) for the trailer. In the case of a towing vehicle equipped with two control lines according to paragraph 5.1.3.1.2. above, both signals shall be subject to similar control adjustments. 5.2.1.28.2.2. The coupling force control shall not prevent the maximum possible braking pressure(s) from being applied. 5.2.1.28.3. The vehicle shall fulfil the laden compatibility requirements of Annex 10, but to achieve the objectives of paragraph 5.2.1.28.2. the vehicle may deviate from these requirements when the coupling force control is in operation. 5.2.1.28.4. A coupling force control failure shall be detected and indicated to the driver by a yellow warning signal such as that specified in paragraph 5.2.1.29.1.2. In the event of a failure the relevant requirements of Annex 10 shall be fulfilled. 【原基準 42-3 6.1.16.4.4 已納入】 5.2.1.28.5. Compensation by the coupling force control system shall be indicated by means of the yellow warning signal specified in paragraph 5.2.1.29.1.2. if this	5.2.1.28.2.1. The coupling force control may control the braking rate TM/PM and/or the brake demand value(s) for the trailer. In the case of a towing vehicle equipped with two control lines according to paragraph 5.1.3.1.2. above, both signals shall be subject to similar control adjustments. 5.2.1.28.2.2. The coupling force control shall not prevent the maximum possible braking pressure(s) from being applied. 5.2.1.28.3. The vehicle shall fulfil the laden compatibility requirements of Annex 10, but to achieve the objectives of paragraph 5.2.1.28.2. the vehicle may deviate from these requirements when the coupling force control is in operation. 5.2.1.28.4. A coupling force control failure shall be detected and indicated to the driver by a yellow warning signal such as that specified in paragraph 5.2.1.29.1.2. In the event of a failure the relevant requirements of Annex 10 shall be fulfilled. 【原基準 42-3 6.1.16.4.4 已納入】 5.2.1.28.5. Compensation by the coupling force control system shall be indicated by means of the yellow warning signal specified in paragraph 5.2.1.29.1.2. if this	<u>6.1.15.2.1 聯結力控制可以控制拖車之煞車率 TM/PM 及/或煞車需求值。若為依據 4.1.4.2 裝配兩條控制線路之牽引車輛，此二訊號應接受相似之控制調整。</u> <u>6.1.15.2.2 聯結力控制不應阻礙最大可能煞車壓力之施加。</u> <u>6.1.15.3 車輛應滿足全負載相容性要求，然而，為了達到 6.1.15.2 之目標，於聯結力控制作動時，車輛可不依循此要求。</u> <u>6.1.15.4 若聯結力控制系統提供之補償較本項 2.1.30.3 規定之標稱需求值逾一五 0 kPa，且控制線聯結頭內壓力值小於六五 0 kPa(或等效數位</u>	

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compensation exceeds 150 kPa away from the nominal demand value defined in paragraph 2.28.3. up to a limit, in pm, of 650 kPa (or the equivalent digital demand). Above the level of 650 kPa the warning shall be given if the compensation causes the operating point to lie outside the laden compatibility band as specified in Annex 10 for the motor vehicle. 5.2.1.28.6. A coupling force control system shall control only the coupling forces generated by the service braking system of the motor vehicle and the trailer. Coupling forces resulting from the performance of endurance braking systems shall not be compensated by the service braking system of either the motor vehicle or trailer. It is considered that endurance braking systems are not part of the service braking systems.	compensation exceeds 150 kPa away from the nominal demand value defined in paragraph 2.28.3. up to a limit, in pm, of 650 kPa (or the equivalent digital demand). Above the level of 650 kPa the warning shall be given if the compensation causes the operating point to lie outside the laden compatibility band as specified in Annex 10 for the motor vehicle. 5.2.1.28.6. A coupling force control system shall control only the coupling forces generated by the service braking system of the motor vehicle and the trailer. Coupling forces resulting from the performance of endurance braking systems shall not be compensated by the service braking system of either the motor vehicle or trailer. It is considered that endurance braking systems are not part of the service braking systems.	需求值)，應依據 6.1.16.2.4 之黃色警告訊號指示聯結力控制裝置之補償狀態。若其值逾六五〇 kPa 且此補償導致作動點(Operating point)位於 6.6 所規定之機動車輛全負載相容性頻帶範圍以外，則應發出警告訊號。 6.1.15.5 一聯結力控制系統必須只控制由動力驅動車輛與拖車的常用煞車系統(不包括持久煞車系統)所引起的聯結力。	
5.2.1.13. Warning device 5.2.1.13.1. Any vehicle fitted with a service brake actuated from an energy reservoir shall, where the prescribed secondary braking performance cannot be obtained by means of this braking system without the use of the stored energy, be provided with a warning device, in addition to a pressure gauge, where fitted, giving an	5.2.1.13. Warning device 5.2.1.13.1. Any vehicle fitted with a service brake actuated from an energy reservoir shall, where the prescribed secondary braking performance cannot be obtained by means of this braking system without the use of the stored energy, be provided with a warning device, in addition to a pressure gauge, where fitted, giving an optical or	6.1.18 使用駕駛人肌力以外之能量來輔助煞車之作動時，該能量供應裝置可為一個或多個，但應確保該能量供應裝置具有足夠之安全性。 6.1.18.1 任何配備有能量儲存裝置作動常用煞車之車輛，必須有一警告裝置其在儲存能量降至某一程度時，未充填此儲存裝置且無論何種載重下，發出光學(紅色)或聲音訊	6.1.18 使用駕駛人肌力以外之能量來輔助煞車之作動時，該能量供應裝置可為一個或多個，但應確保該能量供應裝置具有足夠之安全性。 6.1.18.1 任何配備有能量儲存裝置作動常用煞車之車輛，必須有一警告裝置其在儲存能量降至某一程度時，未充填此儲存裝置且無論何種載重下，發出光學(紅色)或聲音訊

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optical or acoustic signal when the stored energy, in any part of the system, falls to a value at which without re-charging of the reservoir and irrespective of the load conditions of the vehicle, it is possible to apply the service brake control a fifth time after four full-stroke actuations and obtain the prescribed secondary braking performance (without faults in the service brake transmission and with the brakes adjusted as closely as possible). This warning device shall be directly and permanently connected to the circuit. When the engine is running under normal operating conditions and there are no faults in the braking system, as is the case in approval tests for this type, the warning device shall give no signal except during the time required for charging the energy reservoir(s) after start-up of the engine. The red warning signal specified in paragraph 5.2.1.29.1.1. shall be used as the optical warning signal. 【原基準 6.1.18.1 已納入】 5.2.1.13.1.1. However, in the case of vehicles which are only considered to comply with the requirements of paragraph 5.2.1.5.1. of this Regulation by virtue of meeting the requirements of	acoustic signal when the stored energy, in any part of the system, falls to a value at which without re-charging of the reservoir and irrespective of the load conditions of the vehicle, it is possible to apply the service brake control a fifth time after four full-stroke actuations and obtain the prescribed secondary braking performance (without faults in the service brake transmission and with the brakes adjusted as closely as possible). This warning device shall be directly and permanently connected to the circuit. When the engine is running under normal operating conditions and there are no faults in the braking system, as is the case in approval tests for this type, the warning device shall give no signal except during the time required for charging the energy reservoir(s) after start-up of the engine. The red warning signal specified in paragraph 5.2.1.29.1.1. shall be used as the optical warning signal. 5.2.1.13.1.1. However, in the case of vehicles which are only considered to comply with the requirements of paragraph 5.2.1.5.1. of this Regulation by virtue of meeting the requirements of paragraph 1.2.2. of Part C	號；此訊號作動時對應之儲存能量，需為可能於經歷四次全行程作用常用煞車控制端後的第五次作用常用煞車時，獲得規定之第二煞車效能（常用煞車之傳輸正常，且煞車調整儘可能接近）。此警告裝置必須直接且永久的連接在迴路上。當引擎在正常運作狀況下運轉且煞車系統無失效時，除非在剛啟動引擎後需要充填能量儲存裝置，否則警告裝置必須不作動。 6.1.18.1.1 然而，若因符合 6.7.3 要求而獲認定符合 6.7.1 要求，則其警告裝置應包含光學(紅色)及聲音訊號。符合上述要求之每個警告裝置，可非同步作動，惟聲音訊號作	號；此訊號作動時對應之儲存能量，需為可能於經歷四次全行程作用常用煞車控制端後的第五次作用常用煞車時，獲得規定之第二煞車效能（常用煞車之傳輸正常，且煞車調整儘可能接近）。此警告裝置必須直接且永久的連接在迴路上。當引擎在正常運作狀況下運轉且煞車系統無失效時，除非在剛啟動引擎後需要充填能量儲存裝置，否則警告裝置必須不作動。

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paragraph 1.2.2. of Part C of Annex 7 to this Regulation, the warning device shall consist of an acoustic signal in addition to an optical signal. These devices need not operate simultaneously, provided that each of them meet the above requirements and the acoustic signal is not actuated before the optical signal. The red warning signal specified in paragraph 5.2.1.29.1.1. shall be used as the optical warning signal. 5.2.1.13.1.2. This acoustic device may be rendered inoperative while the handbrake is applied and/or, at the choice of the manufacturer, in the case of automatic transmission the selector is in the "Park" position.	of Annex 7 to this Regulation, the warning device shall consist of an acoustic signal in addition to an optical signal. These devices need not operate simultaneously, provided that each of them meet the above requirements and the acoustic signal is not actuated before the optical signal. The red warning signal specified in paragraph 5.2.1.29.1.1. shall be used as the optical warning signal. 5.2.1.13.1.2. This acoustic device may be rendered inoperative while the handbrake is applied and/or, at the choice of the manufacturer, in the case of automatic transmission the selector is in the "Park" position.	<u>動不應較光學訊號早。</u> <u>6.1.18.1.2 使用手動煞車時，及/或依照申請者之選擇，在自動變速箱檔位於「駐煞車」位置時，可免除此聲音訊號之作動。</u>	
5.2.1.14. Without prejudice to the requirements of paragraph 5.1.2.3. of this Regulation, where an auxiliary source of energy is essential to the functioning of a braking system, the reserve of energy shall be such as to ensure that, if the engine stops or in the event of a failure of the means by which the energy source is driven, the braking performance remains adequate to bring the vehicle to a halt in the prescribed conditions. In addition, if the muscular effort applied by the driver to the parking braking system is reinforced by a servo device, the actuation of the parking	5.2.1.14. Without prejudice to the requirements of paragraph 5.1.2.3. of this Regulation, where an auxiliary source of energy is essential to the functioning of a braking system, the reserve of energy shall be such as to ensure that, if the engine stops or in the event of a failure of the means by which the energy source is driven, the braking performance remains adequate to bring the vehicle to a halt in the prescribed conditions. In addition, if the muscular effort applied by the driver to the parking braking system is reinforced by a servo device, the actuation of the parking	<u>6.1.18.2 在不影響 4.1.3.1 之要求下，對於輔助能源為煞車系統運作之必要儲能者，其應能確保煞車性能於引擎停止或該能源驅動設備故障時仍可使車輛於規定之條件下停止。同時，若利用伺服裝置 (Servo device) 輔助駕駛於駐煞車系統上施力，則應確保駐煞車系統於伺服裝置故障時之致動。可視需要使用與伺服裝置所屬之儲能設備不同之儲能設備。該儲能設備可為提供常用煞車系統使用之儲能設備。</u>	

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braking system shall be ensured in the event of a failure of the servo device, if necessary by using a reserve of energy independent of that normally supplying the servo device. This reserve of energy may be that intended for the service braking system.	braking system shall be ensured in the event of a failure of the servo device, if necessary by using a reserve of energy independent of that normally supplying the servo device. This reserve of energy may be that intended for the service braking system.		
		6.1.16 警告訊號：	6.1.16 警告訊號： <u>6.1.16.1 警告訊號應使駕駛於全天候皆能易於辨識，且於駕駛座能輕易判讀，其零件故障應不對煞車系統產生不良影響。【此段移至6.1.16.5.2】</u> <u>6.1.16.2 當故障或失效存在且啟動開關位於「開-ON」時，警告訊號應持續顯示，且訊號穩定不閃爍。【此段移至6.1.16.5.3.2】</u>
		<u>6.1.16.1</u> 煞車系統出現下列狀況時，應以紅色警告訊號顯示：	<u>6.1.16.3</u> 煞車系統出現下列狀況時，應以紅色警告訊號顯示：
		<u>6.1.16.1.1</u> 液壓煞車系統零件故障致使常用煞車系統無法達到其性能，和該系統至少一個迴路失效時。替代性的作法是，當煞車油容量低於申請者容許之指定值時。	<u>6.1.16.3.1</u> 液壓煞車系統零件故障致使常用煞車系統無法達到其性能，和該系統至少一個迴路失效時。替代性的作法是，當煞車油容量低於申請者容許之指定值時。
		<u>6.1.16.1.2</u> 駐煞車系統作動時。	<u>6.1.16.3.2</u> 駐煞車系統作動時。
		<u>6.1.16.1.3</u> 機動車輛透過電力控制線控制拖車煞車時，當拖車煞車系統無法達到其效能或單一迴路失效時。	<u>6.1.16.3.3</u> 機動車輛透過電力控制線控制拖車煞車時，當拖車煞車系統無法達到其效能或單一迴路失效時。

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
		6.1.16.1.4 一個紅色警告訊號，用以指示出此法規所定義的車輛煞車設備內的故障。此故障使無法達到規定的常用煞車性能與/或至少使兩個獨立的常用煞車迴路中有一個無法作用。	6.1.16.3.4 一個紅色警告訊號，用以指示出此法規所定義的車輛煞車設備內的故障。此故障使無法達到規定的常用煞車性能與/或至少使兩個獨立的常用煞車迴路中有一個無法作用。
		6.1.16.2 下列狀況應以黃色警告訊號顯示：	6.1.16.4 下列狀況應以黃色警告訊號顯示：
		6.1.16.2.1 駐煞車系統電力供給或傳輸之線路破損、故障時	6.1.16.4.1 駐煞車系統電力供給或傳輸之線路破損、故障時。
補充資料			
5.2.1.8. The action of the service braking system shall be distributed between the wheels of one and the same axle symmetrically in relation to the longitudinal median plane of the vehicle. Compensation and functions, such as anti-lock, which may cause deviations from this symmetrical distribution, shall be declared.	5.2.1.8. The action of the service braking system shall be distributed between the wheels of one and the same axle symmetrically in relation to the longitudinal median plane of the vehicle. Compensation and functions, such as anti-lock, which may cause deviations from this symmetrical distribution, shall be declared.	6.1.11 常用煞車系統之作用力需能依縱向中間平面對稱地分配至同軸兩側之車輪，可能造成此分配由對稱偏至不對稱之補償及功能(如 ABS 等)時需要加以宣告。	6.1.11 常用煞車系統之作用力需能依縱向中間平面對稱地分配至同軸兩側之車輪，可能造成此分配由對稱偏至不對稱之補償及功能(如 ABS 等)時需要加以宣告。
5.2.1.8.1. Compensation by the electric control transmission for deterioration or defect within the braking system shall be indicated to the driver by means of the yellow warning signal specified in paragraph 5.2.1.29.1.2. This requirement shall apply for all conditions of loading when compensation exceeds the following limits:	5.2.1.8.1. Compensation by the electric control transmission for deterioration or defect within the braking system shall be indicated to the driver by means of the yellow warning signal specified in paragraph 5.2.1.29.1.2. This requirement shall apply for all conditions of loading when compensation exceeds the following limits:	6.1.16.2.2 當煞車系統退化或損壞而以電力控制線路傳輸進行調整時， M2/M3/N 類車輛應依據 6.1.16.2.4 規定之黃色警告訊號，O 類車輛應依據 6.1.16.5.1 規定之單獨黃色光學警告訊號提供駕駛，此於補償調整超過下列限制值時，適用所有負載條件：	6.1.16.4.2 當煞車系統退化或損壞而以電子控制傳輸進行調整時。
5.2.1.8.1.1. A difference in transverse	5.2.1.8.1.1. A difference in transverse braking	6.1.16.2.2.1 任一車軸之下列橫向煞車	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
braking pressures on any axle of: (a) 25 per cent of the higher value for vehicle decelerations $\geq 2 \text{ m/s}^2$; (b) A value corresponding to 25 per cent at 2 m/s^2 for decelerations below this rate.	pressures on any axle of: (a) 25 per cent of the higher value for vehicle decelerations $\geq 2 \text{ m/s}^2$; (b) A value corresponding to 25 per cent at 2 m/s^2 for decelerations below this rate.	<u>壓力差值：</u> (a) <u>車輛減速度大於或等於二公尺/秒平方者，較大值之百分之二五。</u> (b) <u>車輛減速度小於二公尺/秒平方者，對應於車輛減速度為二公尺/秒平方時，百分之二五之數值。</u>	
5.2.1.8.1.2. An individual compensating value on any axle of: (a) > 50 per cent of the nominal value for vehicle decelerations $\geq 2 \text{ m/s}^2$; (b) A value corresponding to 50 per cent of the nominal value at 2 m/s^2 for decelerations below this rate.	5.2.1.8.1.2. An individual compensating value on any axle of: (a) > 50 per cent of the nominal value for vehicle decelerations $\geq 2 \text{ m/s}^2$; (b) A value corresponding to 50 per cent of the nominal value at 2 m/s^2 for decelerations below this rate.	<u>6.1.16.2.2.2 任一車軸之下列個別補償值：</u> (a) <u>車輛減速度大於或等於二公尺/秒平方者，大於標稱值(nominal value)之百分之五 0。</u> (b) <u>車輛減速度小於二公尺/秒平方者，對應於車輛減速度為二公尺/秒平方時，標稱值 之 百分之五 0 之數值。</u>	
5.2.1.8.2. Compensation as defined above, is permitted only when the initial brake application is made at vehicle speeds greater than 10 km/h. ...	5.2.1.8.2. Compensation as defined above, is permitted only when the initial brake application is made at vehicle speeds greater than 10 km/h. ...	<u>6.1.16.2.3 只有車速高於一 0 公里/小時且煞車第一次作用時，才允許出現上述規定之補償。</u>	
5.2.2.5. The action of the service braking system shall be distributed between the wheels of one and the same axle symmetrically in relation to the longitudinal median plane of the vehicle. Compensation and functions, such as anti-lock, which may cause deviations from this symmetrical distribution, shall be declared.	5.2.2.5. The action of the service braking system shall be distributed between the wheels of one and the same axle symmetrically in relation to the longitudinal median plane of the vehicle. Compensation and functions, such as anti-lock, which may cause deviations from this symmetrical distribution, shall be declared.		
5.2.2.5.1. Compensation by the electric	5.2.2.5.1. Compensation by the electric		

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
control transmission for deterioration or defect within the braking system shall be indicated to the driver by means of the separate yellow optical warning signal specified in paragraph 5.2.1.29.2. This requirement shall apply for all conditions of loading when compensation exceeds the following limits: 5.2.2.5.1.1. A difference in transverse braking pressures on any axle of: (a) 25 per cent of the higher value for vehicle decelerations $\geq 2 \text{ m/s}^2$; (b) A value corresponding to 25 per cent at 2 m/s^2 for decelerations below this rate. 5.2.2.5.1.2. An individual compensating value on any axle of: (a) > 50 per cent of the nominal value for vehicle decelerations $\geq 2 \text{ m/s}^2$; (b) A value corresponding to 50 per cent of the nominal value at 2 m/s^2 for decelerations below this rate. 5.2.2.5.2. Compensation as defined above, is permitted only when the initial brake application is made at vehicle speeds greater than 10 km/h.	control transmission for deterioration or defect within the braking system shall be indicated to the driver by means of the separate yellow optical warning signal specified in paragraph 5.2.1.29.2. This requirement shall apply for all conditions of loading when compensation exceeds the following limits: 5.2.2.5.1.1. A difference in transverse braking pressures on any axle of: (a) 25 per cent of the higher value for vehicle decelerations $\geq 2 \text{ m/s}^2$; (b) A value corresponding to 25 per cent at 2 m/s^2 for decelerations below this rate. 5.2.2.5.1.2. An individual compensating value on any axle of: (a) > 50 per cent of the nominal value for vehicle decelerations $\geq 2 \text{ m/s}^2$; (b) A value corresponding to 50 per cent of the nominal value at 2 m/s^2 for decelerations below this rate. 5.2.2.5.2. Compensation as defined above, is permitted only when the initial brake application is made at vehicle speeds greater than 10 km/h. 【5.2.2.5.1.~5.2.2.5.2內容與上述條文5.2.1.8.~5.2.1.8.2內容合併】		
5.2.1.29.1.2. Where applicable, a yellow warning signal indicating an electrically detected defect within the vehicle braking	5.2.1.29.1.2. Where applicable, a yellow warning signal indicating an electrically detected defect within the vehicle braking	<u>6.1.16.2.4</u> 當偵測到車輛煞車系統中的一個電路故障而此故障為以黃色警告訊號而並非以紅色警告訊號顯	<u>6.1.16.4.3</u> 當偵測到車輛煞車系統中的一個電路故障而此故障並未以紅色警告訊號顯示時。

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
equipment, which is not indicated by the red warning signal described in paragraph 5.2.1.29.1.1. above.	equipment, which is not indicated by the red warning signal described in paragraph 5.2.1.29.1.1. above.	示時。	
5.2.1.28.4. A coupling force control failure shall be detected and indicated to the driver by a yellow warning signal such as that specified in paragraph 5.2.1.29.1.2. In the event of a failure the relevant requirements of Annex 10 shall be fulfilled.	5.2.1.28.4. A coupling force control failure shall be detected and indicated to the driver by a yellow warning signal such as that specified in paragraph 5.2.1.29.1.2. In the event of a failure the relevant requirements of Annex 10 shall be fulfilled.	6.1.16.2.5 聯結力控制故障時。	6.1.16.4.4 聯結力控制故障時。
		6.1.16.2.6 除了 N1 類的車輛以外，配備有電力控制線路及/或被認可允許曳引配備有電力控制傳輸裝置拖車的動力驅動車輛，當拖車煞車設備的電力控制傳輸裝置與/或能量供應裝置故障時。	6.1.16.4.5 除了 N1 類的車輛以外，配備有電力控制線路及/或被認可允許曳引配備有電力控制傳輸裝置拖車的動力驅動車輛，當拖車煞車設備的電力控制傳輸裝置與/或能量供應裝置故障時。
		6.1.16.2.7 使用選擇性煞車以確保車輛穩定性之拖車，當其穩定系統的電力控制傳輸裝置出現故障時。	6.1.16.4.6 使用選擇性煞車以確保車輛穩定性之拖車，當其穩定系統的電力控制傳輸裝置出現故障時。
		6.1.16.2.8 當供應至拖車的電壓降至無法確保規定的常用煞車性能時。	6.1.16.4.7 當供應至拖車的電壓降至無法確保規定的常用煞車性能時。
		6.1.16.2.9 當能源供給失敗時。	6.1.16.4.8 當能源供給失敗時。
5.2.1.27.3. A failure within the electric control transmission,8 not including its energy reserve, that affects the function and performance of systems addressed in this Regulation shall be indicated to the driver by the red or yellow warning signal specified in paragraphs 5.2.1.29.1.1. and	5.2.1.27.3. A failure within the electric control transmission,8 not including its energy reserve, that affects the function and performance of systems addressed in this Regulation shall be indicated to the driver by the red or yellow warning signal specified in paragraphs 5.2.1.29.1.1. and	6.1.16.3 配備電力控制傳輸裝置之常用煞車，當故障時應有紅色或黃色訊號警告駕駛者，提供紅色或黃色警告訊號予駕駛。若因電力接續性之故障(例如損壞、中斷)，導致常用煞車性能無法達到(紅色警告訊號)，應於其發生時即發出訊號予駕	6.1.16.5 配備電力控制傳輸裝置之常用煞車，當故障時應有紅色或黃色訊號警告駕駛者。

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
5.2.1.29.1.2., respectively, as appropriate. When the prescribed service braking performance can no longer be achieved (red warning signal), failures resulting from a loss of electrical continuity (e.g. breakage, disconnection) shall be signalled to the driver as soon as they occur, and the prescribed residual braking performance shall be fulfilled by operating the service braking control in accordance with paragraph 2.4. of Annex 4 to this Regulation. These requirements shall not be construed as a departure from the requirements concerning secondary braking.	5.2.1.29.1.2., respectively, as appropriate. When the prescribed service braking performance can no longer be achieved (red warning signal), failures resulting from a loss of electrical continuity (e.g. breakage, disconnection) shall be signalled to the driver as soon as they occur, and the prescribed residual braking performance shall be fulfilled by operating the service braking control in accordance with paragraph 2.4. of Annex 4 to this Regulation. These requirements shall not be construed as a departure from the requirements concerning secondary braking.	<u>駛，且依照 6.2.9 規定操作常用煞車控制裝置應能滿足之第二煞車性能。此要求並不違背有關第二煞車的要求。</u>	
5.2.1.27.6. When the battery voltage falls below a value nominated by the manufacturer at which the prescribed service braking performance can no longer be guaranteed and/or which precludes at least two independent service braking circuits from each achieving the prescribed secondary or residual braking performance, the red warning signal specified in paragraph 5.2.1.29.1.1. shall be activated. After the warning signal has been activated, it shall be possible to apply the service braking control and obtain at least the residual performance prescribed in paragraph 2.4. of Annex 4 to this	5.2.1.27.6. When the battery voltage falls below a value nominated by the manufacturer at which the prescribed service braking performance can no longer be guaranteed and/or which precludes at least two independent service braking circuits from each achieving the prescribed secondary or residual braking performance, the red warning signal specified in paragraph 5.2.1.29.1.1. shall be activated. After the warning signal has been activated, it shall be possible to apply the service braking control and obtain at least the residual performance prescribed in paragraph 2.4. of Annex 4 to this	<u>6.1.16.4</u> 當電池電壓降至申請者所指定的值以下，使無法再確保規定的常用煞車性能及/或至少兩個常用煞車迴路都無法得到規定的第二煞車或剩餘煞車性能時，就必須啟動 <u>6.1.16.1.3</u> 所規定的紅色警告訊號。在啟動警告訊號以後，必須要能作動常用煞車控制並至少得到像 6.3.5 規定的剩餘性能。必須了解的是，在常用煞車系統的能量傳輸裏有提供足夠的能量。此要求並不違背有關第二煞車的要求。	<u>6.1.16.6</u> 當電池電壓降至申請者所指定的值以下，使無法再確保規定的常用煞車性能及/或至少兩個常用煞車迴路都無法得到規定的第二煞車或剩餘煞車性能時，就必須啟動 <u>6.1.16.3.4</u> 所規定的紅色警告訊號。在啟動警告訊號以後，必須要能作動常用煞車控制並至少得到像 6.3.5 規定的剩餘性能。必須了解的是，在常用煞車系統的能量傳輸裏有提供足夠的能量。此要求並不違背有關第二煞車的要求。

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
Regulation. It should be understood that sufficient energy is available in the energy transmission of the service braking system. This requirement shall not be construed as a departure from the requirement concerning secondary braking.	Regulation. It should be understood that sufficient energy is available in the energy transmission of the service braking system. This requirement shall not be construed as a departure from the requirement concerning secondary braking.		
5.2.1.29. Brake failure and defect warning signal The general requirements for optical warning signals whose function is to indicate to the driver certain specified failures (or defects) within the braking equipment of the power driven vehicle or, where appropriate, its trailer, are set out in the following subparagraphs. Other than as described in paragraph 5.2.1.29.6. below, these signals shall be used exclusively for the purposes prescribed by this Regulation. 5.2.1.29.1. Power-driven vehicles shall be capable of providing optical brake failure and defect warning signals, as follows: 5.2.1.29.1.1. A red warning signal, indicating failures, defined elsewhere in this Regulation, within the vehicle braking equipment which preclude achievement of the prescribed service braking performance and/or which preclude the functioning of at least one of two	5.2.1.29. Brake failure and defect warning signal The general requirements for optical warning signals whose function is to indicate to the driver certain specified failures (or defects) within the braking equipment of the power driven vehicle or, where appropriate, its trailer, are set out in the following subparagraphs. Other than as described in paragraph 5.2.1.29.6. below, these signals shall be used exclusively for the purposes prescribed by this Regulation. 5.2.1.29.1. Power-driven vehicles shall be capable of providing optical brake failure and defect warning signals, as follows: 5.2.1.29.1.1. A red warning signal, indicating failures, defined elsewhere in this Regulation, within the vehicle braking equipment which preclude achievement of the prescribed service braking performance and/or which preclude the functioning of at least one of two	6.1.16.5 煞車設備故障(Failure)或失效(Defect)之警告訊號：該機動車輛或拖車(如適用)之煞車設備故障或失效時，提醒駕駛之光學警告訊號功能相關要求如下。除 6.1.16.5.5 規定外，此訊號應於專供此規範所描述之目的下使用。 【對應基準 6.1.16.1.4】 【對應基準 6.1.16.1.3】	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
independent service braking circuits; 5.2.1.29.1.2. Where applicable, a yellow warning signal indicating an electrically detected defect within the vehicle braking equipment, which is not indicated by the red warning signal described in paragraph 5.2.1.29.1.1. above.	independent service braking circuits; 5.2.1.29.1.2. Where applicable, a yellow warning signal indicating an electrically detected defect within the vehicle braking equipment, which is not indicated by the red warning signal described in paragraph 5.2.1.29.1.1. above.	【對應基準 6.1.16.2.4】	
5.2.1.29.2. Power-driven vehicles equipped with an electric control line and/or authorized to tow a trailer equipped with an electric control transmission, shall be capable of providing a separate yellow warning signal to indicate a defect within the electric control transmission of the braking equipment of the trailer. The signal shall be activated from the trailer via pin 5 of the electric connector conforming to ISO 7638:2003⁹ and in all cases the signal transmitted by the trailer shall be displayed without significant delay or modification by the towing vehicle. This warning signal shall not light up when coupled to a trailer without an electric control line and/or electric control transmission or when no trailer is coupled. This function shall be automatic.	5.2.1.29.2. Power-driven vehicles equipped with an electric control line and/or authorized to tow a trailer equipped with an electric control transmission, shall be capable of providing a separate yellow warning signal to indicate a defect within the electric control transmission of the braking equipment of the trailer. The signal shall be activated from the trailer via pin 5 of the electric connector conforming to ISO 7638:2003 ⁹ and in all cases the signal transmitted by the trailer shall be displayed without significant delay or modification by the towing vehicle. This warning signal shall not light up when coupled to a trailer without an electric control line and/or electric control transmission or when no trailer is coupled. This function shall be automatic.	6.1.16.5.1 <u>配備有電力控制線路之機動車輛，及/或被認可允許曳引配備有電力控制線路傳輸之拖車之機動車輛，應配備有獨立之黃色警告訊號提供警示功能，其係用以顯示出拖車煞車設備之電子控制傳輸失效。應由拖車透過 ISO 7638:2003 連接器之接腳 5 致動黃色警告訊號，且在牽引車輛上無顯著延遲或更動之下，顯示拖車所傳輸提供之訊號。於與無配備電力控制線及/或無配備電力控制線路傳輸之拖車聯結，或者未與拖車聯結時，此黃色警告訊號不應亮起，此功能應為自動進行。</u>	
5.2.1.29.2.1. In the case of a power-driven vehicle equipped with an electric control line, when electrically connected to a	5.2.1.29.2.1. In the case of a power-driven vehicle equipped with an electric control line, when electrically connected to a trailer	6.1.16.5.1.1 <u>配備有電力控制線之機動車輛，於與配備有電力控制線之拖車進行電力連接，且拖車透過電力</u>	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
trailer with an electric control line, the red warning signal specified in paragraph 5.2.1.29.1.1. above shall also be used to indicate certain specified failures within the braking equipment of the trailer, whenever the trailer provides corresponding failure information via the data communication part of the electric control line. This indication shall be in addition to the yellow warning signal specified in paragraph 5.2.1.29.2. above. Alternatively, instead of utilizing the red warning signal specified in paragraph 5.2.1.29.1.1. and the accompanying yellow warning signal above, a separate red warning signal may be provided in the towing vehicle to indicate such a failure within the braking equipment of the trailer.	with an electric control line, the red warning signal specified in paragraph 5.2.1.29.1.1. above shall also be used to indicate certain specified failures within the braking equipment of the trailer, whenever the trailer provides corresponding failure information via the data communication part of the electric control line. This indication shall be in addition to the yellow warning signal specified in paragraph 5.2.1.29.2. above. Alternatively, instead of utilizing the red warning signal specified in paragraph 5.2.1.29.1.1. and the accompanying yellow warning signal above, a separate red warning signal may be provided in the towing vehicle to indicate such a failure within the braking equipment of the trailer.	<u>控制線路之資料通訊部位提供相應之故障訊息時，應以符合 6.1.16.1.3 規定之紅色警告訊號，顯示拖車煞車設備內某些特定故障。該顯示應附加於前述 6.1.16.5.1. 規定之黃色警告訊號之外。或者，若不使用 6.1.16.1.3 規定之紅色警告訊號及前述伴隨之黃色警告訊號，牽引車輛應可提供獨立之紅色警告訊號以顯示前述拖車煞車設備內之故障。</u>	
5.2.1.29.3. The warning signals shall be visible, even by daylight; the satisfactory condition of the signals shall be easily verifiable by the driver from the driver's seat; the failure of a component of the warning devices shall not entail any loss of the braking system's performance.	5.2.1.29.3. The warning signals shall be visible, even by daylight; the satisfactory condition of the signals shall be easily verifiable by the driver from the driver's seat; the failure of a component of the warning devices shall not entail any loss of the braking system's performance.	<u>6.1.16.5.2</u> 警告訊號應使駕駛於全天候皆能易於辨識，且於駕駛座能輕易判讀，其零件故障應不對煞車系統產生不良影響。	<u>6.1.16.1</u> 警告訊號應使駕駛者於全天候皆能易於辨識，且於駕駛座能輕易判讀，其零件故障應不對煞車系統產生不良影響。
5.2.1.29.4. Except where stated otherwise: 5.2.1.29.4.1. A specified failure or defect shall be signalled to the driver by the above-mentioned warning signal(s) not	5.2.1.29.4. Except where stated otherwise: 5.2.1.29.4.1. A specified failure or defect shall be signalled to the driver by the above-mentioned warning signal(s) not	<u>6.1.16.5.3</u> 除非另有規定，亦應符合下列規定： <u>6.1.16.5.3.1</u> 應於致動相關煞車控制裝置時，立即以前述警告訊號向駕駛	

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later than on actuation of the relevant braking control; 5.2.1.29.4.2. The warning signal(s) shall remain displayed as long as the failure/defect persists and the ignition (start) switch is in the "on" (run) position; and 5.2.1.29.4.3. The warning signal shall be constant (not flashing).	later than on actuation of the relevant braking control; 5.2.1.29.4.2. The warning signal(s) shall remain displayed as long as the failure/defect persists and the ignition (start) switch is in the "on" (run) position; and 5.2.1.29.4.3. The warning signal shall be constant (not flashing).	<u>發出規範內相關之故障或失效之訊號；</u> <u>6.1.16.5.3.2 當故障或失效持續且啟動開關位於「開-ON」時，警告訊號應持續顯示；且</u> <u>6.1.16.5.3.3 警告訊號應持續點亮（不閃爍）。</u>	
5.2.1.29.5. The warning signal(s) mentioned above shall light up when the electrical equipment of the vehicle (and the braking system) is energized. With the vehicle stationary, the braking system shall verify that none of the specified failures or defects are present before extinguishing the signals. Specified failures or defects which should activate the warning signals mentioned above, but which are not detected under static conditions, shall be stored upon detection and be displayed at start-up and at all times when the ignition (start) switch is in the "on" (run) position, as long as the failure or defect persists.	5.2.1.29.5. The warning signal(s) mentioned above shall light up when the electrical equipment of the vehicle (and the braking system) is energized. With the vehicle stationary, the braking system shall verify that none of the specified failures or defects are present before extinguishing the signals. Specified failures or defects which should activate the warning signals mentioned above, but which are not detected under static conditions, shall be stored upon detection and be displayed at start-up and at all times when the ignition (start) switch is in the "on" (run) position, as long as the failure or defect persists.	<u>6.1.16.5.4 當車輛（及煞車系統）電氣裝備通電時，前述警告訊號應被點亮。車輛處於靜止狀態下，於訊號熄滅之前，煞車系統應確認無規範內相關之故障或失效存在。若係為應於前述致動警告訊號規範內相關之故障或失效，而未能在靜態條件下確認出者，則其應於被檢出時儲存，並於車輛啟動時顯示出，且若故障或失效持續存在，則前述警告訊號應於啟動開關位於「開-ON」時持續顯示。</u>	
5.2.1.29.6. Non-specified failures (or defects), or other information concerning the brakes and/or running gear of the power-driven vehicle, may be indicated by the yellow signal specified in paragraph 5.2.1.29.1.2. above, provided that all the	5.2.1.29.6. Non-specified failures (or defects), or other information concerning the brakes and/or running gear of the power-driven vehicle, may be indicated by the yellow signal specified in paragraph 5.2.1.29.1.2. above, provided that all the	<u>6.1.16.5.5 非規範內相關之故障或失效，或關於機動車輛煞車及/或行駛裝置之其他資訊，可依 6.1.16.2.4 黃色訊號顯示出，惟此應滿足下述規範：</u>	

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following conditions are fulfilled: 5.2.1.29.6.1. The vehicle is stationary; 5.2.1.29.6.2. After the braking equipment is first energised and the signal has indicated that, following the procedures detailed in paragraph 5.2.1.29.5. above, no specified failures (or defects) have been identified; and 5.2.1.29.6.3. Non-specified faults or other information shall be indicated only by the flashing of the warning signal. However, the warning signal shall be extinguished by the time when the vehicle first exceeds 10 km/h.	following conditions are fulfilled: 5.2.1.29.6.1. The vehicle is stationary; 5.2.1.29.6.2. After the braking equipment is first energised and the signal has indicated that, following the procedures detailed in paragraph 5.2.1.29.5. above, no specified failures (or defects) have been identified; and 5.2.1.29.6.3. Non-specified faults or other information shall be indicated only by the flashing of the warning signal. However, the warning signal shall be extinguished by the time when the vehicle first exceeds 10 km/h. 【增訂5.2.1.29.~ 5.2.1.29.6.3.調合條文內容】	<u>6.1.16.5.5.1 車輛處於靜止狀態；</u> <u>6.1.16.5.5.2 煞車裝備首次通電且依前述 6.1.16.5.4 所述之程序進行偵測後，應無故障或失效被偵測；及</u> <u>6.1.16.5.5.3 非規範內相關之故障或其他資訊僅能以閃爍之警告訊號顯示出。然而，當車輛首次車速超過10 公里／小時，應熄滅警告訊號。</u> 【經與 A R T C 確認上述警告訊號內容為設計符合注意事項，申請者應確認項目，且 ARTC 尚無檢測 ISO 7638:2003 連接器之接腳 5 實務經驗】	
5.1.2.1. Service braking system The service braking system shall make it possible to control the movement of the vehicle and to halt it safely, speedily and effectively, whatever its speed and load, on any up or down gradient. It shall be possible to graduate this braking action. The driver shall be able to achieve this braking action from his driving seat without removing his hands from the steering control. ... 5.2.2.10. On every trailer which is required	5.2.2.9. The braking systems shall be such that the trailer is stopped automatically if the coupling separates while the trailer is in motion. 5.2.2.10. On every trailer which is required to	4.1.1 常用煞車系統：常用煞車系統必須於任何速度、荷重或路面坡度下均能迅速有效地控制車輛移動而安全停下，此系統動作必須為漸進式。駕駛能在駕駛座且雙手不離開方向盤之條件下操作常用煞車。 ... 4.1.3.2 對於應配備常用煞車系統的	4.1.1 常用煞車系統：常用煞車系統必須於任何速度、荷重或路面坡度下均能迅速有效地控制車輛移動而安全停下，此系統動作必須為漸進式。駕駛者能在駕駛座且雙手不離開方向盤之條件下操作常用煞車。 ... 4.1.3.2 對於應配備常用煞車系統的拖車(即使拖車是與曳引車分離)，必

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to be equipped with a service braking system, parking braking shall be assured even when the trailer is separated from the towing vehicle. The parking braking device shall be capable of being actuated by a person standing on the ground; however, in the case of a trailer used for the carriage of passengers, this brake shall be capable of being actuated from inside the trailer.	be equipped with a service braking system, parking braking shall be assured even when the trailer is separated from the towing vehicle. The parking braking device shall be capable of being actuated by a person standing on the ground; however, in the case of a trailer used for the carriage of passengers, this brake shall be capable of being actuated from inside the trailer.	拖車(即使拖車是與 <u>牽引車輛</u> 分離), 必須配備一個駐煞車, 此駐煞車裝置必須要能由一位站在地面的人員啟動; 不過, 對於使用於搭載乘客的拖車, 則此駐煞車必須要能由拖車內來啟動。	須配備一個駐煞車, 此駐煞車裝置必須要能由一位站在地面的人員啟動; 不過, 對於使用於搭載乘客的拖車, 則此駐煞車必須要能由拖車內來啟動。
... 5.2.2.9. The braking systems shall be such that the trailer is stopped automatically if the coupling separates while the trailer is in motion.	... 5.2.2.9. The braking systems shall be such that the trailer is stopped automatically if the coupling separates while the trailer is in motion.	<u>4.1.7 O 類車輛</u> <u>4.1.7.1 煞車系統應能使行駛中的拖車與牽引車輛之聯結脫離時, 使拖車自動停止。</u>	
5.2.2.11. If the trailer is fitted with a device enabling compressed-air actuation of the braking system other than the parking braking system to be cut out, the first-mentioned system shall be so designed and constructed that it is positively restored to the position of rest not later than on resumption of the supply of compressed-air to the trailer.	5.2.2.11. If the trailer is fitted with a device enabling compressed-air actuation of the braking system other than the parking braking system to be cut out, the first-mentioned system shall be so designed and constructed that it is positively restored to the position of rest not later than on resumption of the supply of compressed-air to the trailer.	<u>4.1.7.2 若拖車配備能切斷煞車系統(非駐煞車系統)壓縮空氣致動機能之裝置, 則該煞車系統之設計與構成應使拖車能於壓縮空氣恢復供應時回復至停止狀態。</u>	
5.2.2.12. Trailers of categories O3 and O4 shall satisfy the conditions specified in paragraph 5.2.1.18.4.2. An easily accessible pressure test connection is required downstream of the coupling head	5.2.2.12. Trailers of categories O3 and O4 shall satisfy the conditions specified in paragraph 5.2.1.18.4.2. An easily accessible pressure test connection is required downstream of the coupling head	<u>4.1.7.3 O3、O4類車輛應滿足6.1.19.2規定。控制線路聯結端點之下游應有一個易使用之壓力試驗接頭。</u>	

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of the control line. 5.2.2.12.1. In the case of trailers equipped with an electric control line and electrically connected to a towing vehicle with an electric control line the automatic braking action specified in paragraph 5.2.1.18.4.2. may be suppressed as long as the pressure in the compressed air reservoirs of the trailer is sufficient to ensure the braking performance specified in paragraph 3.3. of Annex 4 to this Regulation. 5.2.2.13. Trailers of category O3 shall be equipped with an anti-lock braking system in accordance with the requirements of Annex 13 to this Regulation. Trailers of category O4 shall be equipped with an anti-lock braking system in accordance with the category A requirements of Annex 13 to this Regulation. 5.2.2.14. Where the auxiliary equipment is supplied with energy from the service braking system, the service braking system shall be protected to ensure that the sum of the braking forces exerted at the periphery of the wheels shall be at least 80 per cent of the value prescribed for the relevant trailer as defined in paragraph 3.1.2.1. of Annex 4 to this Regulation. This requirement shall be fulfilled under	of the control line. 5.2.2.12.1. In the case of trailers equipped with an electric control line and electrically connected to a towing vehicle with an electric control line the automatic braking action specified in paragraph 5.2.1.18.4.2. may be suppressed as long as the pressure in the compressed air reservoirs of the trailer is sufficient to ensure the braking performance specified in paragraph 3.3. of Annex 4 to this Regulation. 5.2.2.13. Trailers of category O3 shall be equipped with an anti-lock braking system in accordance with the requirements of Annex 13 to this Regulation. Trailers of category O4 shall be equipped with an anti-lock braking system in accordance with the category A requirements of Annex 13 to this Regulation. 5.2.2.14. Where the auxiliary equipment is supplied with energy from the service braking system, the service braking system shall be protected to ensure that the sum of the braking forces exerted at the periphery of the wheels shall be at least 80 per cent of the value prescribed for the relevant trailer as defined in paragraph 3.1.2.1. of Annex 4 to this Regulation. This requirement shall be fulfilled under both	4.1.7.3.1 <u>若拖車裝配電力控制線並聯結至具有電力控制線之牽引車輛，只要拖車壓縮空氣儲槽壓力足以確保符合6.4.3自動煞車系統之性能規定，則可免除6.1.19.2規定之自動煞車作用。</u> 【基準 431 之 4.2 已有對應】 4.1.7.4 <u>若輔助設備由常用煞車系統供應能量，則應保護常用煞車系統，以確保施加在車輪周圍的煞車力總和至少符合6.4.1.1相關拖車規定之八〇%。</u> <u>下述兩種作用條件下應滿足本項要求：</u> <u>(a)輔助設備作用期間；及</u> <u>(b)輔助設備損壞或發生洩漏，除非該損壞或洩漏影響6.6.5規定提及</u>	

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both of the following operating conditions: During operation of the auxiliary equipment; and In the event of breakage or leakage from the auxiliary equipment, unless such breakage or leakage affects the control signal referred to in paragraph 6. to Annex 10 to this Regulation, in which case the performance requirements of that paragraph shall apply. 5.2.2.14.1. The above provisions are deemed to be fulfilled when the pressure in the service brake storage device(s) is maintained at a pressure of at least 80 per cent of the control line demand pressure or equivalent digital demand as defined in paragraph 3.1.2.2. of Annex 4 to this Regulation. 5.2.2.15. Special additional requirements for service braking systems with electric control transmission 5.2.2.15.1. In the case of a single temporary failure (< 40 ms) within the electric control transmission, excluding its energy supply, (e.g. non-transmitted signal or data error) there shall be no distinguishable effect on the service braking performance. 5.2.2.15.2. In the case of a failure within the electric control transmission¹⁴ (e.g. breakage, disconnection), a braking	of the following operating conditions: During operation of the auxiliary equipment; and In the event of breakage or leakage from the auxiliary equipment, unless such breakage or leakage affects the control signal referred to in paragraph 6. to Annex 10 to this Regulation, in which case the performance requirements of that paragraph shall apply. 5.2.2.14.1. The above provisions are deemed to be fulfilled when the pressure in the service brake storage device(s) is maintained at a pressure of at least 80 per cent of the control line demand pressure or equivalent digital demand as defined in paragraph 3.1.2.2. of Annex 4 to this Regulation. 5.2.2.15. Special additional requirements for service braking systems with electric control transmission 5.2.2.15.1. In the case of a single temporary failure (< 40 ms) within the electric control transmission, excluding its energy supply, (e.g. non-transmitted signal or data error) there shall be no distinguishable effect on the service braking performance. 5.2.2.15.2. In the case of a failure within the electric control transmission¹⁴ (e.g. breakage, disconnection), a braking	<u>之控制訊號，於此種情況下應適用該段性能要求。</u> <u>4.1.7.4.1 當常用煞車儲存裝置中之壓力可使控制管路之需求壓力達至少八〇%或等同於符合6.4.1.2之壓力時，可視為符合上述之規定要求。</u> <u>4.1.7.5 具有電力控制線路傳輸之常用煞車系統特殊額外要求。</u> <u>4.1.7.5.1 若電力控制線路傳輸發生臨時單一故障(小於四〇毫秒)，未涉及能量供應(例如非發送訊號或資料之錯誤)，則常用煞車性能應無顯著影響。</u> <u>4.1.7.5.2 若電力控制線路傳輸內部發生故障(例如損壞、中斷)，則應使拖車之常用煞車性能維持至少</u>	

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performance of at least 30 per cent of the prescribed performance for the service braking system of the relevant trailer shall be maintained. For trailers, electrically connected via an electric control line only, according to paragraph 5.1.3.1.3., and fulfilling 5.2.1.18.4.2. with the performance prescribed in paragraph 3.3. of Annex 4 to this Regulation, it is sufficient that the provisions of paragraph 5.2.1.27.10. are invoked, when a braking performance of at least 30 per cent of the prescribed performance for the service braking system of the trailer can no longer be ensured, by either providing the "supply line braking request" signal via the data communication part of the electric control line or by the continuous absence of this data communication. 5.2.2.15.2.1. A failure within the electric control transmission of the trailer that affects the function and performance of systems addressed by this Regulation and failures of energy supply available from the ISO 7638:2003¹⁵ connector shall be indicated to the driver by the separate warning signal specified in paragraph 5.2.1.29.2. via pin 5 of the electrical connector conforming to ISO 7638:2003.¹⁵	performance of at least 30 per cent of the prescribed performance for the service braking system of the relevant trailer shall be maintained. For trailers, electrically connected via an electric control line only, according to paragraph 5.1.3.1.3., and fulfilling 5.2.1.18.4.2. with the performance prescribed in paragraph 3.3. of Annex 4 to this Regulation, it is sufficient that the provisions of paragraph 5.2.1.27.10. are invoked, when a braking performance of at least 30 per cent of the prescribed performance for the service braking system of the trailer can no longer be ensured, by either providing the "supply line braking request" signal via the data communication part of the electric control line or by the continuous absence of this data communication. 5.2.2.15.2.1. A failure within the electric control transmission of the trailer that affects the function and performance of systems addressed by this Regulation and failures of energy supply available from the ISO 7638:2003¹⁵ connector shall be indicated to the driver by the separate warning signal specified in paragraph 5.2.1.29.2. via pin 5 of the electrical connector conforming to ISO 7638:2003.¹⁵	<u>三0%。</u> <u>對於僅依據4.1.4.3透過電力控制線路進行電力聯結並滿足6.1.19.2規定性能之拖車，當拖車的常用煞車性能無法確保維持至少三0%，應透過電力控制線路之資料通訊或此等連續不斷之資料傳輸提供“煞車管路供應請求”訊號，且執行4.1.8.6.8規定就已足夠。</u> <u>4.1.7.5.2.1 拖車電力控制線路傳輸之故障而對本基準規定之系統功能和性能造成影響，以及透過ISO 7638:2003連接器之能量供應發生故障，應以6.1.16.5.1規定符合ISO 7638:2003連接器之接腳5發出之個別警告訊號向駕駛警示。且配備電力控制線路之拖車與配備電力控制線路之牽引車輛進行電力聯結</u>	

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In addition, trailers equipped with an electric control line, when electrically connected to a towing vehicle with an electric control line, shall provide the failure information for activation of the red warning signal specified in paragraph 5.2.1.29.2.1. via the data communication part of the electric control line, when the prescribed service braking performance of the trailer can no longer be ensured. 5.2.2.16. When the stored energy in any part of the service braking system of a trailer equipped with an electric control line and electrically connected to a towing vehicle with an electronic control line, falls to the value determined in accordance with paragraph 5.2.2.16.1. below, a warning shall be provided to the driver of the towing vehicle. The warning shall be provided by activation of the red signal specified in paragraph 5.2.1.29.2.1. and the trailer shall provide the failure information via the data communication part of the electric control line. The separate yellow warning signal specified in paragraph 5.2.1.29.2. shall also be activated via pin 5 of the electrical connector conforming to ISO 7638:2003,15 to indicate to the driver that the low-energy situation is on the trailer.	In addition, trailers equipped with an electric control line, when electrically connected to a towing vehicle with an electric control line, shall provide the failure information for activation of the red warning signal specified in paragraph 5.2.1.29.2.1. via the data communication part of the electric control line, when the prescribed service braking performance of the trailer can no longer be ensured. 5.2.2.16. When the stored energy in any part of the service braking system of a trailer equipped with an electric control line and electrically connected to a towing vehicle with an electronic control line, falls to the value determined in accordance with paragraph 5.2.2.16.1. below, a warning shall be provided to the driver of the towing vehicle. The warning shall be provided by activation of the red signal specified in paragraph 5.2.1.29.2.1. and the trailer shall provide the failure information via the data communication part of the electric control line. The separate yellow warning signal specified in paragraph 5.2.1.29.2. shall also be activated via pin 5 of the electrical connector conforming to ISO 7638:2003,15 to indicate to the driver that the low-energy situation is on the trailer.	<u>時，當拖車之常用煞車性能無法確保，應依6.1.16.5.1.1規定透過電力控制線路之資料通訊提供系統故障之紅色警告訊號。</u> <u>4.1.7.6 配備電控線之拖車與配備電力控制線路之牽引車輛進行電力聯結時，當能量儲存裝置任一部分之數值下降到4.1.7.6.1規定之值以下，應發出警告訊號予牽引車輛之駕駛。警告訊號應依6.1.16.5.1.1規定透過電力控制線路之資料通訊提供紅色之警告訊號。亦可為符合ISO 7638:2003連接器之接腳5發出6.1.16.5.1規定之個別黃色警告訊號向駕駛警示拖車處於低能量狀態。</u>	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
5.2.2.16.1. The low energy value referred to in paragraph 5.2.2.16. above shall be that at which, without re-charging of the energy reservoir and irrespective of the load condition of the trailer, it is not possible to apply the service braking control a fifth time after our full-stroke actuations and obtain at least 50 per cent of the prescribed performance of the service braking system of the relevant trailer. 5.2.2.17. Trailers equipped with an electric control line and O3 and O4 category trailers equipped with an anti-lock system, shall be fitted with either one or both of the following, for the electric control transmission: (a) A special electrical connector for the braking system and/or anti-lock system, conforming to ISO 7638:2003^{15, 16}; (b) An automated connector meeting the requirements specified in Annex 22. Failure warning signals required from the trailer by this Regulation shall be activated via the above connectors. The requirement to be applied to trailers with respect to the transmission of failure warning signals shall be those, as appropriate, which are prescribed for	5.2.2.16.1. The low energy value referred to in paragraph 5.2.2.16. above shall be that at which, without re-charging of the energy reservoir and irrespective of the load condition of the trailer, it is not possible to apply the service braking control a fifth time after our full-stroke actuations and obtain at least 50 per cent of the prescribed performance of the service braking system of the relevant trailer. 5.2.2.17. Trailers equipped with an electric control line and O3 and O4 category trailers equipped with an anti-lock system, shall be fitted with a special electrical connector for the braking system and/or anti-lock system, conforming to ISO 7638:2003.15, 16 Failure warning signals required from the trailer by this Regulation shall be activated via the above connector. The requirement to be applied to trailers with respect to the transmission of failure warning signals shall be those, as appropriate, which are prescribed for motor vehicles in paragraphs 5.2.1.29.4., 5.2.1.29.5. and 5.2.1.29.6. Trailers equipped with an ISO 7638:2003 connector as defined above shall be marked in indelible form to indicate the functionality of the braking system when	<u>4.1.7.6.1 低能量狀態係指不補充能量儲存裝置且不考慮拖車負載條件下，進行常用煞車系統四次全行程作動後之第五次常用煞車作動時，至少達到拖車常用煞車控制系統規定五 0 %之性能。</u> <u>4.1.7.7 裝配電力控制線路之拖車，及配備有防鎖死煞車系統之 O3/O4 車輛，應配備下述任一者或兩者之電力控制線路傳輸：</u> <u>(a) 符合 ISO 7638:2003 規定之煞車系統及/或防鎖死煞車系統之特殊電氣連接器；</u> <u>(b) 符合條文 8.規範之自動連接器。</u> <u>拖車之故障警告訊號應藉由上述連接器致動。拖車之故障警告訊號傳輸要求，應視其適用性符合 6.1.16.5.3、6.1.16.5.4 及 6.1.16.5.5。拖車配備符合 ISO 7638:2003 之連接器，應有不可被輕易除去之標示，以顯示出煞車系統於連接器連</u>	

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motor vehicles in paragraphs 5.2.1.29.4., 5.2.1.29.5. and 5.2.1.29.6. Trailers equipped with an ISO 7638:2003 connector as defined above shall be marked in indelible form to indicate the functionality of the braking system when the ISO 7638:2003 connector is connected and disconnected*. The marking is to be positioned so that it is visible when connecting the pneumatic and electrical interface connections." 5.2.2.17.1. Trailers equipped with a vehicle stability function as defined in paragraph 2.34. of this Regulation shall in the event of a failure or defect within the trailer stability function indicate the failure or defect by the separate yellow warning signal specified in paragraph 5.2.1.29.2. above via pin 5 of the ISO 7638:2003 connector. The warning signal shall be constant and remain displayed as long as the failure or defect persists and the ignition (start) switch is in the "on" (run) position. 5.2.2.17.2. It is permitted to connect the braking system to a power supply in addition to that available from the ISO 7638:2003 connector above. However, when an additional power supply is available the following provisions will	the ISO 7638:2003 connector is connected and disconnected. The marking is to be positioned so that it is visible when connecting the pneumatic and electrical interface connections. 5.2.2.17.1. Trailers equipped with a vehicle stability function as defined in paragraph 2.34. of this Regulation shall in the event of a failure or defect within the trailer stability function indicate the failure or defect by the separate yellow warning signal specified in paragraph 5.2.1.29.2. above via pin 5 of the ISO 7638:2003 connector. The warning signal shall be constant and remain displayed as long as the failure or defect persists and the ignition (start) switch is in the "on" (run) position. 5.2.2.17.2. It is permitted to connect the braking system to a power supply in addition to that available from the ISO 7638:2003 connector above. However, when an additional power supply is available the following provisions will	<u>結及斷開時之功能性。此標示應置於氣動及電力介面連接時清晰可見之位置。</u> (O3及O4類ABS 部分，同步修訂於下述VSTD 432 草案) <u>4.1.7.7.1 配備車輛穩定性電子式控制功能(VSF) 的拖車，若該功能故障或失效，應由符合ISO 7638:2003 連接器之接腳5發出6.1.16.5.1之個別黃色警告訊號。</u> <u>當發生故障或失效，點火開關位於「開-ON」時，警告訊號應持續顯示且穩定不閃爍。</u> <u>4.1.7.7.2 煞車系統電源供應可另與ISO 7638:2003連接器者不同，當使用此等額外的電源供應時，應符合下列條件：</u>	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
apply: (a) In all cases the ISO 7638:2003 power supply is the primary power source for the braking system, irrespective of any additional power supply that is connected. The additional supply is intended to provide a backup should a failure of the ISO 7638:2003 power supply occur; (b) It shall not have an adverse effect on the operation of the braking system under normal and failed modes; (c) In the event of a failure of the ISO 7638:2003 power supply the energy consumed by the braking system shall not result in the maximum available power from the additional supply being exceeded; (d) The trailer shall not have any marking or label to indicate that the trailer is equipped with an additional power supply; (e) A failure warning device is not permitted on the trailer for the purposes of providing a warning in the event of a failure within the trailer braking system when the braking system is powered from the additional supply; (f) When an additional power supply is available it shall be possible to verify the operation of the braking system from this power source;	apply: (a) In all cases the ISO 7638:2003 power supply is the primary power source for the braking system, irrespective of any additional power supply that is connected. The additional supply is intended to provide a backup should a failure of the ISO 7638:2003 power supply occur; (b) It shall not have an adverse effect on the operation of the braking system under normal and failed modes; (c) In the event of a failure of the ISO 7638:2003 power supply the energy consumed by the braking system shall not result in the maximum available power from the additional supply being exceeded; (d) The trailer shall not have any marking or label to indicate that the trailer is equipped with an additional power supply; (e) A failure warning device is not permitted on the trailer for the purposes of providing a warning in the event of a failure within the trailer braking system when the braking system is powered from the additional supply; (f) When an additional power supply is available it shall be possible to verify the operation of the braking system from this power source;	<u>(a)無論是何種額外的電源供應，ISO 7638:2003應為煞車系統主要電源供應之來源。額外電源供應係於ISO 7638:2003電源供應發生故障時，提供備援電源。</u> <u>(b)在正常與故障模式下不應對煞車系統的操作有不良的影響。</u> <u>(c)於ISO 7638:2003電源供應發生故障時，煞車系統之能量需求不應超過額外電源供應之最大可用功率。</u> <u>(d)拖車不應具備任何顯示其裝設額外電源供應之標示或標籤。</u> <u>(e)於額外電源供應之煞車系統內部發生故障時，不允許故障警告裝置提供其警示。</u> <u>(f)若使用額外電源供應，則應可透過該電源確認煞車系統之作動。</u>	

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(g) Should a failure exist within the electrical supply of energy from the ISO 7638:2003 connector the requirements of paragraphs 5.2.2.15.2.1. and 4.1. of Annex 13 with respect to failure warning shall apply irrespective of the operation of the braking system from the additional power supply. 5.2.2.18. Whenever power supplied by the ISO 7638:2003 connector is used for the functions defined in paragraph 5.1.3.6. above, the braking system shall have priority and be protected from an overload external to the braking system. This protection shall be a function of the braking system. 5.2.2.19. In the case of a failure in one of the control lines connecting two vehicles equipped according to paragraph 5.1.3.1.2. the trailer shall use the control line not affected by the failure to ensure, automatically, the braking performance prescribed for the trailer in paragraph 3.1. of Annex 4. 5.2.2.20. When the supply voltage to the trailer falls below a value nominated by the manufacturer at which the prescribed service braking performance can no longer be guaranteed, the separate yellow warning signal specified in paragraph	(g) Should a failure exist within the electrical supply of energy from the ISO 7638:2003 connector the requirements of paragraphs 5.2.2.15.2.1. and 4.1. of Annex 13 with respect to failure warning shall apply irrespective of the operation of the braking system from the additional power supply. 5.2.2.18. Whenever power supplied by the ISO 7638:2003 connector is used for the functions defined in paragraph 5.1.3.6. above, the braking system shall have priority and be protected from an overload external to the braking system. This protection shall be a function of the braking system. 5.2.2.19. In the case of a failure in one of the control lines connecting two vehicles equipped according to paragraph 5.1.3.1.2. the trailer shall use the control line not affected by the failure to ensure, automatically, the braking performance prescribed for the trailer in paragraph 3.1. of Annex 4. 5.2.2.20. When the supply voltage to the trailer falls below a value nominated by the manufacturer at which the prescribed service braking performance can no longer be guaranteed, the separate yellow warning signal specified in paragraph	<u>(g) 不論煞車系統作動是否使用額外電源，若來自ISO 7638:2003連接器之電源供應發生故障，則應符合本基準4.1.7.5.2.1規定及防鎖死煞車系統電氣控制傳輸之故障警示。</u> <u>4.1.7.8 若ISO 7638:2003連接器所提供電源，係用於6.1.17.7所描述之功能，則應優先考慮煞車系統，並應防止對煞車系統造成過大負載。該保護應屬煞車系統功能之一部分。</u> <u>4.1.7.9 聯結兩部車輛之控制管路，於依據4.1.4.3進行連接情況下，其中一條管路出現故障，應自動地選用不受故障影響之管路，以確保6.4.1拖車煞車性能。</u> <u>4.1.7.10 當拖車供電電壓下降到申請者保證常用煞車性能值以下時，應透過ISO 7638:2003連接器之接腳5依據6.1.16.5.1規定發出之個別黃色警告訊號，且配備電力控制線路的拖車與配備電力控制線路之牽</u>	

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5.2.1.29.2. shall be activated via pin 5 of the ISO 7638:2003¹⁷ connector. In addition, trailers equipped with an electrical control line, when electrically connected to a towing vehicle with an electric control line, shall provide the failure information for actuation of the red warning signal specified in paragraph 5.2.1.29.2.1. via the data communication part of the electric control line. 5.2.2.21. In addition to the requirements of paragraphs 5.2.1.18.4.2. and 5.2.1.21. above, the brakes of the trailer may also be applied automatically when this is initiated by the trailer braking system itself following the evaluation of on-board generated information.	5.2.1.29.2. shall be activated via pin 5 of the ISO 7638:2003¹⁷ connector. In addition, trailers equipped with an electrical control line, when electrically connected to a towing vehicle with an electric control line, shall provide the failure information for actuation of the red warning signal specified in paragraph 5.2.1.29.2.1. via the data communication part of the electric control line. 5.2.2.21. In addition to the requirements of paragraphs 5.2.1.18.4.2. and 5.2.1.21. above, the brakes of the trailer may also be applied automatically when this is initiated by the trailer braking system itself following the evaluation of on-board generated information.	<u>引車輛進行電力聯結時，應依6.1.16.5.1.1規定透過電力控制線路之資料通訊提供紅色警告訊號。</u> <u>4.1.7.11 於6.1.19.2、4.1.8.5要求下，當拖車煞車系統本身的控制線路感應到相關資訊，拖車之煞車亦可自動地作動。</u>	
5.2.1.16. The pneumatic/hydraulic auxiliary equipment shall be supplied with energy in such a way that during its operation, the prescribed deceleration values can be reached and that even in the event of damage to the source of energy the operation of the auxiliary equipment cannot cause the reserves of energy feeding the braking systems to fall below the level indicated in paragraph 5.2.1.13. above.	5.2.1.16. The pneumatic/hydraulic auxiliary equipment shall be supplied with energy in such a way that during its operation, the prescribed deceleration values can be reached and that even in the event of damage to the source of energy the operation of the auxiliary equipment cannot cause the reserves of energy feeding the braking systems to fall below the level indicated in paragraph 5.2.1.13. above.	<u>4.1.8 M2/M3/N 類車輛 (對應 UN 5.2.1)</u> <u>4.1.8.1 氣動/液壓輔助設備在運作期間應獲得足以達到規定減速值之能量，並於該能量來源受到損害情況下，輔助設備之運作亦不應導致供應煞車系統之能量儲備下降到上述 6.1.18 規定之水準以下。</u>	
5.2.1.18. In the case of a vehicle authorized to tow a trailer of category O3 or O4, its	5.2.1.18. In the case of a vehicle authorized to tow a trailer of category O3 or O4, its	<u>4.1.8.2 被認可拖曳 O3 或 O4 類車輛之機動車輛，其煞車應符合下述規定：</u>	

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braking systems shall satisfy the following conditions: 5.2.1.18.1. When the towing vehicle's secondary braking system comes into action, there shall also be a graduated braking action in the trailer; 5.2.1.18.2. In the event of failure of the towing vehicle's service braking system, where that system consists of at least two independent parts, the part or parts not affected by the failure shall be capable of partially or fully actuating the brakes of the trailer. It shall be possible to graduate this braking action. If this operation is achieved by a valve which is normally at rest, then such a valve may only be incorporated if its correct functioning can easily be checked by the driver, either from within the cab or from outside the vehicle, without the use of tools; ... 5.2.1.18.3. In the event of a failure (e.g. breakage or leak) in one of the pneumatic connecting lines, interruption or defect in the electric control line, it shall nevertheless be possible for the driver, fully or partially, to actuate the brakes of the trailer by means either of the service braking control or of the secondary braking	braking systems shall satisfy the following conditions: 5.2.1.18.1. When the towing vehicle's secondary braking system comes into action, there shall also be a graduated braking action in the trailer; 5.2.1.18.2. In the event of failure of the towing vehicle's service braking system, where that system consists of at least two independent parts, the part or parts not affected by the failure shall be capable of partially or fully actuating the brakes of the trailer. It shall be possible to graduate this braking action. If this operation is achieved by a valve which is normally at rest, then such a valve may only be incorporated if its correct functioning can easily be checked by the driver, either from within the cab or from outside the vehicle, without the use of tools; ... 5.2.1.18.3. In the event of a failure (e.g. breakage or leak) in one of the pneumatic connecting lines, interruption or defect in the electric control line, it shall nevertheless be possible for the driver, fully or partially, to actuate the brakes of the trailer by means either of the service braking control or of the secondary braking	<u>4.1.8.2.1 於牽引車輛之第二煞車系統作動時，亦應讓拖車有漸進之煞車作動；</u> <u>4.1.8.2.2 於牽引車輛之常用煞車系統發生故障時，若該系統係由至少兩個獨立部分所組成，則未受故障影響部分應能部分致動或完全致動拖車煞車，其可以有漸進之煞車作用。若此乃由一個常閉閥門控制，則此閥門可為內建式(Incorporated)，惟其應可讓駕駛容易由駕駛室內部或車輛外部、且無需使用工具之下檢查。</u>	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
control or of the parking braking control, unless the failure automatically causes the trailer to be braked with the performance prescribed in paragraph 3.3. of Annex 4 to this Regulation. 【基準42-3 6.1.17.5已有對應】 5.2.1.18.4. The automatic braking in paragraph 5.2.1.18.3. above shall be considered to be met when the following conditions are fulfilled: 5.2.1.18.4.1. When the designated brake control of those controls mentioned in paragraph 5.2.1.18.3. above, is fully actuated, the pressure in the supply line shall fall to 150 kPa within the following two seconds; in addition, when the brake control is released, the supply line shall be re-pressurized. 5.2.1.18.4.2. When the supply line is evacuated at the rate of at least 100 kPa per second the automatic braking of the trailer shall start to operate before the pressure in the supply line falls to 200 kPa. 【基準42-3 6.1.19~6.1.19.2已有對應】 5.2.1.18.5. In the event of a failure in one of the control lines connecting two vehicles equipped according to paragraph 5.1.3.1.2., the control line not affected by the failure shall automatically ensure the	control or of the parking braking control, unless the failure automatically causes the trailer to be braked with the performance prescribed in paragraph 3.3. of Annex 4 to this Regulation. 【基準42-3 6.1.17.5已有對應】 5.2.1.18.4. The automatic braking in paragraph 5.2.1.18.3. above shall be considered to be met when the following conditions are fulfilled: 5.2.1.18.4.1. When the designated brake control of those controls mentioned in paragraph 5.2.1.18.3. above, is fully actuated, the pressure in the supply line shall fall to 150 kPa within the following two seconds; in addition, when the brake control is released, the supply line shall be re-pressurized. 5.2.1.18.4.2. When the supply line is evacuated at the rate of at least 100 kPa per second the automatic braking of the trailer shall start to operate before the pressure in the supply line falls to 200 kPa. 【基準42-3 6.1.19~6.1.19.2已有對應】 5.2.1.18.5. In the event of a failure in one of the control lines connecting two vehicles equipped according to paragraph 5.1.3.1.2., the control line not affected by the failure shall automatically ensure the braking	4.1.8.2.3 若聯結兩輛車之控制管路其中一條發生故障，則未受故障影響之控制管路應能自動地確保拖車煞車性能。	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
braking performance prescribed for the trailer in paragraph 3.1. of Annex 4.	performance prescribed for the trailer in paragraph 3.1. of Annex 4.		
5.2.1.19. In the case of a power-driven vehicle equipped to draw a trailer with an electrical braking system, according to paragraph 1.1. of Annex 14 to this Regulation, the following requirements shall be met: 5.2.1.19.1. The power supply (generator and battery) of the power-driven vehicle shall have a sufficient capacity to provide the current for an electrical braking system. With the engine running at the idling speed recommended by the manufacturer and all electrical devices supplied by the manufacturer as standard equipment of the vehicle switched on, the voltage in the electrical lines shall at maximum current consumption of the electrical braking system (15 A) not fall below the value of 9.6 V measured at the connection. The electrical lines shall not be capable of short circuiting even when overloaded; 5.2.1.19.2. In the event of a failure in the towing vehicle's service braking system, where that system consists of at least two independent parts, the part or parts not affected by the failure should be capable of partially or fully actuating the brakes of the trailer;	5.2.1.19. In the case of a power-driven vehicle equipped to draw a trailer with an electrical braking system, according to paragraph 1.1. of Annex 14 to this Regulation, the following requirements shall be met: 5.2.1.19.1. The power supply (generator and battery) of the power-driven vehicle shall have a sufficient capacity to provide the current for an electrical braking system. With the engine running at the idling speed recommended by the manufacturer and all electrical devices supplied by the manufacturer as standard equipment of the vehicle switched on, the voltage in the electrical lines shall at maximum current consumption of the electrical braking system (15 A) not fall below the value of 9.6 V measured at the connection. The electrical lines shall not be capable of short circuiting even when overloaded; 5.2.1.19.2. In the event of a failure in the towing vehicle's service braking system, where that system consists of at least two independent parts, the part or parts not affected by the failure should be capable of partially or fully actuating the brakes of the trailer;	<u>4.1.8.3 若為裝有拖曳具備電氣式煞車系統拖車之機動車輛，則應滿足下列要求：</u> <u>4.1.8.3.1 機動車輛之電源(發電機和電池)應有充足能量為電氣式煞車系統提供電流。引擎於申請者建議怠速運作，且所有標準配備電氣裝置開啟狀態下，電氣式煞車系統最大電流消耗(15A)時，於連接端上量測得之電氣線路內電壓不得低於9.6V。</u> <u>於超載時，電氣線路亦不應有短路產生；</u> <u>4.1.8.3.2 於牽引車輛之常用煞車系統發生故障時，若該系統係由至少兩個獨立部分所組成，則未受故障影響部分應能部分致動或完全致動拖車煞車；</u>	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
5.2.1.19.3. The use of the stop-lamp switch and circuit for actuating the electrical braking system is permissible only if the actuating line is connected in parallel with the stop-lamp and the existing stop-lamp switch and circuit are capable of taking the extra load.	5.2.1.19.3. The use of the stop-lamp switch and circuit for actuating the electrical braking system is permissible only if the actuating line is connected in parallel with the stop-lamp and the existing stop-lamp switch and circuit are capable of taking the extra load.	<u>4.1.8.3.3 用以致動電氣式煞車系統之煞車燈開關與電路，僅可於該致動線路與煞車燈並聯，且煞車燈開關及電路承受該額外負載之情況下使用。</u>	
5.2.1.20. In the case of a pneumatic service braking system comprising two or more independent sections, any leakage between those sections at or downstream of the control shall be continuously vented to atmosphere.	5.2.1.20. In the case of a pneumatic service braking system comprising two or more independent sections, any leakage between those sections at or downstream of the control shall be continuously vented to atmosphere.	<u>4.1.8.4 若氣壓式常用煞車系統係由兩個(含)以上之獨立部分組成，應將控制裝置處或其下游各獨立部分間之洩漏持續地排放至大氣中。</u>	
5.2.1.21. In the case of a power-driven vehicle authorized to tow a trailer of categories O3 or O4, the service braking system of the trailer may only be operated in conjunction with the service, secondary or parking braking system of the towing vehicle. However, automatic application of the trailer brakes alone is permitted where the operation of the trailer brakes is initiated automatically by the towing vehicle for the sole purpose of vehicle stabilization.	5.2.1.21. In the case of a power-driven vehicle authorized to tow a trailer of categories O3 or O4, the service braking system of the trailer may only be operated in conjunction with the service, secondary or parking braking system of the towing vehicle. However, automatic application of the trailer brakes alone is permitted where the operation of the trailer brakes is initiated automatically by the towing vehicle for the sole purpose of vehicle stabilization.	<u>4.1.8.5 若為拖曳 O3 或 O4 類拖車之機動車輛，拖車常用煞車系統可僅與牽引車輛常用、第二或駐煞車系統同時作動。然而，若拖車煞車作動是由牽引車輛出於穩定車輛之唯一目的而自動致動，則拖車煞車可自動作動。</u>	
5.2.1.26. Special additional requirements for the electric transmission of the parking braking system	5.2.1.26. Special additional requirements for the electric transmission of the parking braking system	6.3.3 駐煞車系統性能： ... <u>6.3.3.4.1 駐煞車系統電力傳輸特殊附加要求：</u>	6.3.3 駐煞車系統性能： ...

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
5.2.1.26.1. In the case of a failure within the electric transmission, any unintended actuation of the parking braking system shall be prevented. 5.2.1.26.2. The following requirements shall be fulfilled in the event of an electrical failure as specified: 5.2.1.26.2.1. Vehicles of categories M2, M3, N2 and N3: In the case of an electrical failure in the control or a break in the wiring within the electric control transmission external to the electronic control unit(s), excluding the energy supply, it shall remain possible to apply the parking braking system from the driver's seat and thereby be capable of holding the laden vehicle stationary on an 8 per cent up or down gradient. Alternatively, in this case, an automatic actuation of the parking brake is allowed when the vehicle is stationary, provided that the above performance is achieved and, once applied, the parking brake remains engaged independently of the status of the ignition (start) switch. In this alternative, the parking brake shall be automatically released as soon as the driver starts to set the vehicle in motion again. It shall also be possible to release the parking braking system, if necessary	5.2.1.26.1. In the case of a failure within the electric transmission, any unintended actuation of the parking braking system shall be prevented. 5.2.1.26.2. The following requirements shall be fulfilled in the event of an electrical failure as specified: 5.2.1.26.2.1. Vehicles of categories M2, M3, N2 and N3: In the case of an electrical failure in the control or a break in the wiring within the electric control transmission external to the electronic control unit(s), excluding the energy supply, it shall remain possible to apply the parking braking system from the driver's seat and thereby be capable of holding the laden vehicle stationary on an 8 per cent up or down gradient. Alternatively, in this case, an automatic actuation of the parking brake is allowed when the vehicle is stationary, provided that the above performance is achieved and, once applied, the parking brake remains engaged independently of the status of the ignition (start) switch. In this alternative, the parking brake shall be automatically released as soon as the driver starts to set the vehicle in motion again. It shall also be possible to release the parking braking system, if necessary	<u>6.3.3.4.1.1 若電力傳輸內部發生故障，則應防止駐煞車系統任何非預期之致動。</u> 6.3.3.5 駐煞車系統若發生電氣失效，應符合以下規定： 6.3.3.5.1 M2、M3、N2 及 M3 類車輛：當控制電氣失效，或微電子控制單元外部電氣控制傳輸線（不包括能源供應）線路中斷的操作控制或操作煞車的電氣傳輸線路失效，應仍可自駕駛座位置施加駐煞車系統。<u>且於全負載狀態下，駐煞車系統應能維持車輛停駐於百分之八坡度之上坡或下坡。</u>一旦作動，駐煞車應持續作動而不受點火開關狀態影響；當駕駛再移動車輛時，駐煞車應能立即自動解除。必要時可使用車輛上的工具及/或輔助設備以釋放駐煞車系統。 【5/1 ARTC 回覆試車場設置有12%(長 68m)、18%(長 59m)、20%(長 49m)、30%(長 29m)、35%(長 24m)、42%(長 18m)及50%(長 14m)7種不同坡度之測試道。但無 8%坡度 之測試道。】	6.3.3.5 駐煞車系統若發生電子失效，應符合以下規定： 6.3.3.5.1 M2、M3、N2 及 N3 類車輛：當控制電子失效，或微電子控制單元外部電子控制傳輸線（不包括能源供應）線路中斷的操作控制或操作煞車的電子傳輸線路失效，應仍可自駕駛座位置施加駐煞車系統。一旦作動，駐煞車應持續作動而不受點火開關狀態影響；當駕駛者再移動車輛時，駐煞車應能立即自動解除。必要時可使用車輛上的工具及/或輔助設備以釋放駐煞車系統。

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
by the use of tools and/or an auxiliary device carried/fitted on the vehicle. 5.2.1.26.2.2. Vehicles of category N1: In the case of an electrical failure in the control or a break in the wiring within the electric control transmission between the control and the ECU directly connected with it, excluding the energy supply, it shall remain possible to apply the parking braking system from the driver's seat and thereby be capable of holding the laden vehicle stationary on an 8 per cent up or down gradient. Alternatively, in this case, an automatic actuation of the parking brake is allowed when the vehicle is stationary, provided that the above performance is achieved and, once applied, the parking brake remains engaged independently of the status of the ignition (start) switch. In this alternative, the parking brake shall be automatically released as soon as the driver starts to set the vehicle in motion again. The engine/manual transmission or the automatic transmission (park position) may be used to achieve or assist in achieving the above performance. 5.2.1.26.2.3. A break in the wiring within the electric transmission, or an electric failure in the control of the parking braking	by the use of tools and/or an auxiliary device carried/fitted on the vehicle. 5.2.1.26.2.2. Vehicles of category N1: In the case of an electrical failure in the control or a break in the wiring within the electric control transmission between the control and the ECU directly connected with it, excluding the energy supply, it shall remain possible to apply the parking braking system from the driver's seat and thereby be capable of holding the laden vehicle stationary on an 8 per cent up or down gradient. Alternatively, in this case, an automatic actuation of the parking brake is allowed when the vehicle is stationary, provided that the above performance is achieved and, once applied, the parking brake remains engaged independently of the status of the ignition (start) switch. In this alternative, the parking brake shall be automatically released as soon as the driver starts to set the vehicle in motion again. The engine/manual transmission or the automatic transmission (park position) may be used to achieve or assist in achieving the above performance. 5.2.1.26.2.3. A break in the wiring within the electric transmission, or an electric failure in the control of the parking braking system	6.3.3.5.2 N1 類車輛： 當控制電氣失效，或控制與其直接連接之ECU之間之電氣控制傳輸線線路中斷（不包括能源供應），應仍可自駕駛座位置施加駐煞車系統。<u>且於全負載狀態下，駐煞車系統應能維持車輛停駐於百分之八坡度之上坡或下坡。</u>一旦作動，駐煞車應持續作動而不受點火開關狀態影響；當駕駛再移動車輛時，駐煞車應能立即自動解除。可藉由車輛引擎/手排或自排變速箱(駐車檔)來達成或輔助達成前述性能。 【5/1 ARTC 回覆試車場設置有12%(長 68m)、18%(長 59m)、20%(長 49m)、30%(長 29m)、35%(長 24m)、42%(長 18m)及50%(長 14m)7種不同坡度之測試道。但無 8%坡度 之測試道。】 6.3.3.5.3 駐煞車系統的電氣傳輸線路中斷或控制電氣失效，應以<u>6.1.16.2.4</u>所規定之黃色警示訊號立	6.3.3.5.2 N1 類車輛： 當控制電子失效，或控制與其直接連接之ECU之間之電子控制傳輸線線路中斷（不包括能源供應），應仍可自駕駛座位置施加駐煞車系統。一旦作動，駐煞車應持續作動而不受點火開關狀態影響；當駕駛者再移動車輛時，駐煞車應能立即自動解除。可藉由車輛引擎/手排或自排變速箱(駐車檔)來達成或輔助達成前述性能。 6.3.3.5.3 駐煞車系統的電子傳輸線路中斷或控制電子失效，應以 <u>6.1.16</u>所規定之黃色警示訊號立即警示駕駛者。另外，控制電子（不包括能

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system shall be signalled to the driver by the yellow warning signal specified in paragraph 5.2.1.29.1.2. When caused by a break in the wiring within the electric control transmission of the parking braking system, this yellow warning signal shall be signalled as soon as the break occurs. In addition, such an electric failure in the control or break in the wiring external to the electronic control unit(s) and excluding the energy supply shall be signalled to the driver by flashing the red warning signal specified in paragraph 5.2.1.29.1.1. as long as the ignition (start) switch is in the "on" (run) position including a period of not less than 10 seconds thereafter and the control is in the "on" (activated) position. However, if the parking braking system detects correct clamping of the parking brake, the flashing of the red warning signal may be suppressed and the non-flashing red signal shall be used to indicate parking brake applied. Where actuation of the parking brake is normally indicated by a separate red warning signal, satisfying all the requirements of 5.2.1.29.3., this signal shall be used to satisfy the above requirement for a red signal.	shall be signalled to the driver by the yellow warning signal specified in paragraph 5.2.1.29.1.2. When caused by a break in the wiring within the electric control transmission of the parking braking system, this yellow warning signal shall be signalled as soon as the break occurs. In addition, such an electric failure in the control or break in the wiring external to the electronic control unit(s) and excluding the energy supply shall be signalled to the driver by flashing the red warning signal specified in paragraph 5.2.1.29.1.1. as long as the ignition (start) switch is in the "on" (run) position including a period of not less than 10 seconds thereafter and the control is in the "on" (activated) position. However, if the parking braking system detects correct clamping of the parking brake, the flashing of the red warning signal may be suppressed and the non-flashing red signal shall be used to indicate parking brake applied. Where actuation of the parking brake is normally indicated by a separate red warning signal, satisfying all the requirements of 5.2.1.29.3., this signal shall be used to satisfy the above requirement for a red signal.	即警示駕駛。另外，控制電氣失效，或微電子控制單元外部之線路（不包括能源供應）中斷，當點火開關於“開”（運轉）之位置，有一0秒以上的停留期間，且該控制在“開”（作動）位置，應以6.1.16.1.3所規定之紅色閃爍警示訊號警示駕駛。然而，若駐煞車系統偵測確認駐煞車之正確鉗緊，則可禁斷該紅色警告訊號之閃爍，而應使用無閃爍之紅色訊號來指示「駐煞車已作動」。 若駐煞車作動狀態是以獨立的紅色警示訊號為正規顯示方式，並滿足6.1.16.5.2規範，應以此訊號來符合上述紅色訊號規範。	源供應）或電子控制單元外部之線路，當點火開關於“開”（運轉）之位置，有一0秒以上的停留期間，且該控制在“開”（作動）位置，應以6.1.16所規定之紅色閃爍警示訊號警示駕駛者。然而，若駐煞車系統偵測確認駐煞車之正確鉗緊，則可禁斷該紅色警告訊號之閃爍，而應使用無閃爍之紅色訊號來指示「駐煞車已作動」。 若駐煞車作動狀態是以獨立的紅色警示訊號為正規顯示方式，並滿足6.1.16.1規範，應以此訊號來符合上述紅色訊號規範。

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
5.2.1.26.3. Auxiliary equipment may be supplied with energy from the electric transmission of the parking braking system provided that the supply of energy is sufficient to allow the actuation of the parking braking system in addition to the vehicle electrical load under non-fault conditions. In addition, where the energy reserve is also used by the service braking system, the requirements of paragraph 5.2.1.27.7. shall apply. 5.2.1.26.4. After the ignition/start switch which controls the electrical energy for the braking equipment has been switched off and/or the key removed, it shall remain possible to apply the parking braking system, whereas releasing shall be prevented.	5.2.1.26.3. Auxiliary equipment may be supplied with energy from the electric transmission of the parking braking system provided that the supply of energy is sufficient to allow the actuation of the parking braking system in addition to the vehicle electrical load under non-fault conditions. In addition, where the energy reserve is also used by the service braking system, the requirements of paragraph 5.2.1.27.7. shall apply. 5.2.1.26.4. After the ignition/start switch which controls the electrical energy for the braking equipment has been switched off and/or the key removed, it shall remain possible to apply the parking braking system, whereas releasing shall be prevented.	<u>6.3.3.5.4 輔助設備可經由駐煞車系統電力傳輸取得能量供應，惟於該車輛電氣負載下，能量供應仍應足以讓駐煞車系統無誤地致動。此條件同樣適用於亦使用該能量儲存裝置之常用煞車系統，相關規定如4.1.8.6.5 要求。</u> <u>6.3.3.5.5 控制煞車設備電源之點火/啟動開關關掉後，及/或鑰匙拔除後，駐煞車系統應仍可使用，且應防止駐煞車被釋放。</u>	
5.2.1.27. Special additional requirements for service braking systems with electric control transmission 5.2.1.27.1. With the parking brake released, the service braking system shall be able to generate a static total braking force at least equivalent to that required by the prescribed Type-0 test, even when the ignition/start switch has been switched off and/or the key has been removed. In the case of power-driven vehicles authorized to tow trailers of category O3 or O4, such	5.2.1.27. Special additional requirements for service braking systems with electric control transmission 5.2.1.27.1. With the parking brake released, the service braking system shall be able to generate a static total braking force at least equivalent to that required by the prescribed Type-0 test, even when the ignition/start switch has been switched off and/or the key has been removed. In the case of power-driven vehicles authorized to tow trailers of category O3 or O4, such	<u>4.1.8.6 具有電力控制線路傳輸之常用煞車系統之特殊額外要求</u> <u>4.1.8.6.1 即使點火/啟動開關關掉後，及/或鑰匙拔除後，駐煞車被釋放之下，常用煞車系統仍應可產生至少等效於型式0 試驗所需之總靜態煞車力。對於被認可曳引O3 或O4 類拖車之機動車輛，應為拖車之常用煞車系統提供完整控制訊號，於常用煞車系統之能量傳輸裝置中亦應有充足能量可供使用。</u>	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
vehicles shall provide a full control signal for the service braking system of the trailer. It should be understood that sufficient energy is available in the energy transmission of the service braking system. 5.2.1.27.2. In the case of a single temporary failure (< 40 ms) within the electric control transmission, excluding its energy supply, (e.g. non-transmitted signal or data error) there shall be no distinguishable effect on the service braking performance. 5.2.1.27.3. A failure within the electric control transmission,8 not including its energy reserve, that affects the function and performance of systems addressed in this Regulation shall be indicated to the driver by the red or yellow warning signal specified in paragraphs 5.2.1.29.1.1. and 5.2.1.29.1.2., respectively, as appropriate. When the prescribed service braking performance can no longer be achieved (red warning signal), failures resulting from a loss of electrical continuity (e.g. breakage, disconnection) shall be signalled to the driver as soon as they occur, and the prescribed residual braking performance shall be fulfilled by operating the service braking control in accordance with paragraph 2.4. of Annex 4 to this Regulation. These requirements shall not	vehicles shall provide a full control signal for the service braking system of the trailer. It should be understood that sufficient energy is available in the energy transmission of the service braking system. 5.2.1.27.2. In the case of a single temporary failure (< 40 ms) within the electric control transmission, excluding its energy supply, (e.g. non-transmitted signal or data error) there shall be no distinguishable effect on the service braking performance. 5.2.1.27.3. A failure within the electric control transmission,8 not including its energy reserve, that affects the function and performance of systems addressed in this Regulation shall be indicated to the driver by the red or yellow warning signal specified in paragraphs 5.2.1.29.1.1. and 5.2.1.29.1.2., respectively, as appropriate. When the prescribed service braking performance can no longer be achieved (red warning signal), failures resulting from a loss of electrical continuity (e.g. breakage, disconnection) shall be signalled to the driver as soon as they occur, and the prescribed residual braking performance shall be fulfilled by operating the service braking control in accordance with paragraph 2.4. of Annex 4 to this Regulation. These requirements shall not	4.1.8.6.2 若電力控制線路傳輸發生臨時單一失效(小於40毫秒),未涉及能量供應(例如非發送訊號或資料之錯誤),則其常用煞車性能應無顯著影響。 【已對應基準 6.1.16.3】	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
be construed as a departure from the requirements concerning secondary braking. 5.2.1.27.4. A power-driven vehicle, electrically connected to a trailer via an electric control line, shall provide a clear warning to the driver whenever the trailer provides the failure information that the stored energy in any part of the service braking system on the trailer falls below the warning level, as specified in paragraph 5.2.2.16. below. A similar warning shall also be provided when a continuous failure (> 40 ms) within the electric control transmission of the trailer, excluding its energy reserve, precludes achievement of the prescribed service braking performance of the trailer, as specified in paragraph 5.2.2.15.2.1. below. The red warning signal specified in paragraph 5.2.1.29.2.1. shall be used for this purpose. 5.2.1.27.5. In the event of a failure of the energy source of the electric control transmission, starting from the nominal value of the energy level, the full control range of the service braking system shall be guaranteed after twenty consecutive full stroke actuations of the service braking control. During the test, the	be construed as a departure from the requirements concerning secondary braking. 5.2.1.27.4. A power-driven vehicle, electrically connected to a trailer via an electric control line, shall provide a clear warning to the driver whenever the trailer provides the failure information that the stored energy in any part of the service braking system on the trailer falls below the warning level, as specified in paragraph 5.2.2.16. below. A similar warning shall also be provided when a continuous failure (> 40 ms) within the electric control transmission of the trailer, excluding its energy reserve, precludes achievement of the prescribed service braking performance of the trailer, as specified in paragraph 5.2.2.15.2.1. below. The red warning signal specified in paragraph 5.2.1.29.2.1. shall be used for this purpose. 5.2.1.27.5. In the event of a failure of the energy source of the electric control transmission, starting from the nominal value of the energy level, the full control range of the service braking system shall be guaranteed after twenty consecutive full stroke actuations of the service braking control. During the test, the braking	4.1.8.6.3 藉由電力控制線路與拖車電力連接之機動車輛，在拖車常用煞車系統任一部分之儲存能量降至4.1.7.6 所述預警液面以下時，應發出故障訊號以明確向駕駛提出警告。 當拖車之電力控制線路傳輸內部發生連續故障(大於40 毫秒)(不包括能量儲存)時，亦應提供類似之警告，但不包含 4.1.7.5.2.1 達到拖車常用煞車性能規定，此可使用 6.1.16.5.1.1 規定之紅色警告訊號。 4.1.8.6.4 若電力控制線路傳輸之能量來源發生故障，則從能量標稱值開始，常用煞車控制裝置20 次連續全行程致動後，應能確保常用煞車系統之全控制範圍。試驗期間，在每次致動時，煞車控制裝置應完全作動20 秒，及鬆開五秒。在上述	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
braking control shall be fully applied for 20 seconds and released for 5 seconds on each actuation. It should be understood that during the above test, sufficient energy is available in the energy transmission to ensure full actuation of the service braking system. This requirement shall not be construed as a departure from the requirements of Annex 7. 5.2.1.27.6. When the battery voltage falls below a value nominated by the manufacturer at which the prescribed service braking performance can no longer be guaranteed and/or which precludes at least two independent service braking circuits from each achieving the prescribed secondary or residual braking performance, the red warning signal specified in paragraph 5.2.1.29.1.1. shall be activated. After the warning signal has been activated, it shall be possible to apply the service braking control and obtain at least the residual performance prescribed in paragraph 2.4. of Annex 4 to this Regulation. It should be understood that sufficient energy is available in the energy transmission of the service braking system. This requirement shall not be construed as a departure from the requirement concerning secondary	control shall be fully applied for 20 seconds and released for 5 seconds on each actuation. It should be understood that during the above test, sufficient energy is available in the energy transmission to ensure full actuation of the service braking system. This requirement shall not be construed as a departure from the requirements of Annex 7. 5.2.1.27.6. When the battery voltage falls below a value nominated by the manufacturer at which the prescribed service braking performance can no longer be guaranteed and/or which precludes at least two independent service braking circuits from each achieving the prescribed secondary or residual braking performance, the red warning signal specified in paragraph 5.2.1.29.1.1. shall be activated. After the warning signal has been activated, it shall be possible to apply the service braking control and obtain at least the residual performance prescribed in paragraph 2.4. of Annex 4 to this Regulation. It should be understood that sufficient energy is available in the energy transmission of the service braking system. This requirement shall not be construed as a departure from the requirement concerning secondary braking.	<u>試驗期間，能量傳輸中應有充足能量確保常用煞車系統之全行程致動。本項不應違背能量儲存裝置之要求。</u> 【已對應基準 6.1.16.4】	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
braking. 5.2.1.27.7. If auxiliary equipment is supplied with energy from the same reserve as the electric control transmission, it shall be ensured that, with the engine running at a speed not greater than 80 per cent of the maximum power speed, the supply of energy is sufficient to fulfil the prescribed deceleration values by either provision of an energy supply which is able to prevent discharge of this reserve when all auxiliary equipment is functioning or by automatically switching off pre-selected parts of the auxiliary equipment at a voltage above the critical level referred to in paragraph 5.2.1.27.6. of this Regulation such that further discharge of this reserve is prevented. Compliance may be demonstrated by calculation or by a practical test. For vehicles authorized to tow a trailer of category O3 or O4 the energy consumption of the trailer shall be taken into account by a load of 400 W. This paragraph does not apply to vehicles where the prescribed deceleration values can be reached without the use of electrical energy. 5.2.1.27.8. If the auxiliary equipment is supplied with energy from the electric control transmission,	5.2.1.27.7. If auxiliary equipment is supplied with energy from the same reserve as the electric control transmission, it shall be ensured that, with the engine running at a speed not greater than 80 per cent of the maximum power speed, the supply of energy is sufficient to fulfil the prescribed deceleration values by either provision of an energy supply which is able to prevent discharge of this reserve when all auxiliary equipment is functioning or by automatically switching off pre-selected parts of the auxiliary equipment at a voltage above the critical level referred to in paragraph 5.2.1.27.6. of this Regulation such that further discharge of this reserve is prevented. Compliance may be demonstrated by calculation or by a practical test. For vehicles authorized to tow a trailer of category O3 or O4 the energy consumption of the trailer shall be taken into account by a load of 400 W. This paragraph does not apply to vehicles where the prescribed deceleration values can be reached without the use of electrical energy. 5.2.1.27.8. If the auxiliary equipment is supplied with energy from the electric control transmission,	<u>4.1.8.6.5 若輔助設備之能量供應來源係與電力控制線路傳輸者相同，發動機(或電動車輛驅動馬達)以不超過最大功率八〇%之條件運轉下，應以下述方式之一確保能量供應可滿足規定之減速值：所有輔助設備運作時能夠防止此儲存裝置外洩，或在高於本規定 6.1.16.4 所述之臨界電壓下透過自動關閉預先選擇之輔助設備零組件以防該儲存裝置外洩。可以計算或實際試驗證明符合此要求。被認可拖曳 O3 或 O4 類拖車之車輛，應以負載四〇〇瓦為拖車之能量消耗考量。本段不適用於不使用電能之情況下能達到規定減速度值之車輛。</u> <u>4.1.8.6.6 若輔助設備能量係來自電力控制線路傳輸，則應滿足下列要求：</u>	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
the following requirements shall be fulfilled. 5.2.1.27.8.1. In the event of a failure in the energy source, whilst the vehicle is in motion, the energy in the reservoir shall be sufficient to actuate the brakes when the control is applied. 5.2.1.27.8.2. In the event of a failure in the energy source, whilst the vehicle is stationary and the parking braking system applied, the energy in the reservoir shall be sufficient to actuate the lights even when the brakes are applied. 5.2.1.27.9. In the case of a failure in the electric control transmission of the service braking system of a towing vehicle equipped with an electric control line according to paragraph 5.1.3.1.2. or 5.1.3.1.3., the full actuation of the brakes of the trailer shall remain ensured. 5.2.1.27.10. In the case of a failure in the electric control transmission of a trailer, electrically connected via an electric control line only, according to paragraph 5.1.3.1.3., braking of the trailer shall be ensured according to paragraph 5.2.1.18.4.1. This shall be the case whenever the trailer provides the "supply line braking request" signal via the data communication part of the electric control line or in the event of the continuous	the following requirements shall be fulfilled. 5.2.1.27.8.1. In the event of a failure in the energy source, whilst the vehicle is in motion, the energy in the reservoir shall be sufficient to actuate the brakes when the control is applied. 5.2.1.27.8.2. In the event of a failure in the energy source, whilst the vehicle is stationary and the parking braking system applied, the energy in the reservoir shall be sufficient to actuate the lights even when the brakes are applied. 5.2.1.27.9. In the case of a failure in the electric control transmission of the service braking system of a towing vehicle equipped with an electric control line according to paragraph 5.1.3.1.2. or 5.1.3.1.3., the full actuation of the brakes of the trailer shall remain ensured. 5.2.1.27.10. In the case of a failure in the electric control transmission of a trailer, electrically connected via an electric control line only, according to paragraph 5.1.3.1.3., braking of the trailer shall be ensured according to paragraph 5.2.1.18.4.1. This shall be the case whenever the trailer provides the "supply line braking request" signal via the data communication part of the electric control line or in the event of the continuous	<u>4.1.8.6.6.1 在車輛行駛中，能量來源發生故障下操作控制裝置時，儲存裝置內之能量應足以致動煞車。</u> <u>4.1.8.6.6.2 在車輛靜止、駐煞車系統作動、而能量來源發生故障之情況下，儲存能量應足以於煞車作動時點亮指示燈。</u> <u>4.1.8.6.7 依 4.1.4.2 或 4.1.4.3，裝配電力控制線路之牽引車輛，於常用煞車系統之電力控制線路傳輸發生故障時，應保持拖車煞車之完全致動。</u> <u>4.1.8.6.8 依據 4.1.4.3 以電力控制線路連接者，若其拖車之電力控制線路傳輸發生故障，則應依據 6.1.19.1 確保拖車煞車。此等情況包括拖車透過電力控制線路資料通訊提供“供應線路煞車請求”訊號，或在該資料通訊連續缺失之情況。本條文對 4.1.9 無法與拖車僅以電力控制線路連結之機動車輛不適用。。</u>	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
absence of this data communication. This paragraph shall not apply to power-driven vehicles which cannot be operated with trailers connected via an electric control line only, as described in paragraph 5.1.3.5. 【⁸ Until uniform test procedures have been agreed, the manufacturer shall provide the Technical Service with an analysis of potential failures within the control transmission and their effects. This information shall be subject to discussion and agreement between the Technical Service and the vehicle manufacturer. 】	absence of this data communication. This paragraph shall not apply to power-driven vehicles which cannot be operated with trailers connected via an electric control line only, as described in paragraph 5.1.3.5. 【⁸ Until uniform test procedures have been agreed, the manufacturer shall provide the Technical Service with an analysis of potential failures within the control transmission and their effects. This information shall be subject to discussion and agreement between the Technical Service and the vehicle manufacturer. 】	【若為獲致一致之測試程序，則申請者應提供控制傳輸失效及影響之分析予檢測機構，並與檢測機構討論該資料。】 【此為設計規範且電力控制線路傳輸ARTC 尚無檢測經驗】	
5.1.3.5. A trailer may be equipped as defined in paragraph 5.1.3.1.3., provided that it can only be operated in conjunction with a power-driven vehicle with an electric control line which satisfies the requirements of paragraph 5.2.1.18.2. In any other case, the trailer, when electrically connected, shall automatically apply the brakes or remain braked. The driver shall be warned by the separate yellow warning signal specified in paragraph 5.2.1.29.2.	5.1.3.5. A trailer may be equipped as defined in paragraph 5.1.3.1.3., provided that it can only be operated in conjunction with a power-driven vehicle with an electric control line which satisfies the requirements of paragraph 5.2.1.18.2. In any other case, the trailer, when electrically connected, shall automatically apply the brakes or remain braked. The driver shall be warned by the separate yellow warning signal specified in paragraph 5.2.1.29.2	4.1.9 若只能與具備 4.1.8.2.2 要求電力控制線路之機動車輛相結合作動，則可依 4.14.3 規定裝配於拖車。在任何其他情況下，當拖車電力控制線路連接時，將自動作動煞車或保持制動。該機動車輛應依 6.1.16.5.1 規定發出獨立黃色警告訊號予駕駛。	無
5.2.2. Vehicles of category O 5.2.2.1. Trailers of category O1 need not be equipped with a service braking system; however, if a trailer of this category is	5.2.2. Vehicles of category O 5.2.2.1. Trailers of category O1 need not be equipped with a service braking system; however, if a trailer of this category is	6.1.17 O類車輛之煞車系統： 6.1.17.1 對於 O1 類拖車無須配備常用煞車系統，但若裝備則需符合與 O2 類拖車相同之規範。	6.1.17 O類車輛之煞車系統： 6.1.17.1 對於 O1 類拖車無須配備常用煞車系統，但若裝備則需符合與 O2 類拖車相同之規範。

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
equipped with a service braking system, it shall satisfy the same requirements as a trailer of category O2. 5.2.2.2. Trailers of category O2 shall be equipped with a service braking system either of the continuous or semi-continuous or of the inertia (overrun) type. The latter type shall be permitted only for centre axle trailers. However, electrical braking systems conforming to the requirements of Annex 14 to this Regulation shall be permitted. 5.2.2.3. Trailers of categories O3 and O4 shall be equipped with a service braking system of the continuous or semi-continuous type. 5.2.2.4. The service braking system: 5.2.2.4.1. Shall act on all the wheels of the vehicle; 5.2.2.4.2. Shall distribute its action appropriately among the axles; 5.2.2.4.3. Shall contain in at least one of the air reservoirs a device for draining and exhausting in an adequate and easily accessible position. ... 5.2.2.6. Malfunctions of the electric control transmission shall not apply the brakes contrary to the driver's intentions.	equipped with a service braking system, it shall satisfy the same requirements as a trailer of category O2. 5.2.2.2. Trailers of category O2 shall be equipped with a service braking system either of the continuous or semi-continuous or of the inertia (overrun) type. The latter type shall be permitted only for centre axle trailers. However, electrical braking systems conforming to the requirements of Annex 14 to this Regulation shall be permitted. 5.2.2.3. Trailers of categories O3 and O4 shall be equipped with a service braking system of the continuous or semi-continuous type. 5.2.2.4. The service braking system: 5.2.2.4.1. Shall act on all the wheels of the vehicle; 5.2.2.4.2. Shall distribute its action appropriately among the axles; 5.2.2.4.3. Shall contain in at least one of the air reservoirs a device for draining and exhausting in an adequate and easily accessible position. ... 5.2.2.6. Malfunctions of the electric control transmission shall not apply the brakes contrary to the driver's intentions.	6.1.17.2 對於 O2 類拖車，必須配備一個連續式或半連續式或慣性(超越)式的常用煞車系統。慣性(超越)常用煞車系統只能用於中心軸拖車。然而，亦可裝設電力煞車系統。 6.1.17.3 對於 O3 與 O4 類拖車必須配備有一個連續式或半連續式的常用煞車系統。 <u>6.1.17.3.1 其應作用於車輛所有車輪上；</u> <u>6.1.17.3.2 其應適當分配作用於輪軸之間；</u> <u>6.1.17.3.3 應至少有一個附有排水及洩氣裝置之空氣儲槽，其應安裝於容易接近之位置。</u> ... 6.1.12 電力控制線路傳輸之故障應不造成違反駕駛人意願之煞車作動。	6.1.17.2 對於 O2 類拖車，必須配備一個連續式或半連續式或慣性(超越)式的常用煞車系統。慣性(超越)常用煞車系統只能用於中心軸拖車。然而，亦可裝設電力煞車系統。 6.1.17.3 對於 O3 與 O4 類拖車必須配備有一個連續式或半連續式的常用煞車系統。 6.1.12 電力控制傳輸裝置之故障應不造成違反駕駛人意願之煞車作動。

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
5.2.2.7. The braking surfaces required to attain the prescribed degree of effectiveness shall be in constant connection with the wheels, either rigidly or through components not liable to failure. 5.2.2.8. Wear of the brakes shall be capable of being easily taken up by means of a system of manual or automatic adjustment. In addition, the control and the components of the transmission and of the brakes shall possess a reserve of travel and, if necessary, suitable means of compensation such that, when the brakes become heated, or the brake linings have reached a certain degree of wear, effective braking is ensured without immediate adjustment being necessary. 5.2.2.8.1. Wear adjustment shall be automatic for the service brakes. However, the fitting of automatic adjustment devices is optional for vehicles of categories O1 and O2. Brakes equipped with automatic brake adjustment devices shall, after heating followed by cooling, be capable of free running as defined in paragraph 1.7.3. of Annex 4 following the Type-I or Type-III test also defined in that annex as appropriate.	5.2.2.7. The braking surfaces required to attain the prescribed degree of effectiveness shall be in constant connection with the wheels, either rigidly or through components not liable to failure. 5.2.2.8. Wear of the brakes shall be capable of being easily taken up by means of a system of manual or automatic adjustment. In addition, the control and the components of the transmission and of the brakes shall possess a reserve of travel and, if necessary, suitable means of compensation such that, when the brakes become heated, or the brake linings have reached a certain degree of wear, effective braking is ensured without immediate adjustment being necessary. 5.2.2.8.1. Wear adjustment shall be automatic for the service brakes. However, the fitting of automatic adjustment devices is optional for vehicles of categories O1 and O2. Brakes equipped with automatic brake adjustment devices shall, after heating followed by cooling, be capable of free running as defined in paragraph 1.7.3. of Annex 4 following the Type-I or Type-III test also defined in that annex as appropriate.	6.1.12.1 煞車表面的有效性應確保符合規定，其應透過不易發生故障之構件與車輪穩固地結合。 6.1.13 制動之磨損必須能容易地使用手動或自動調整系統方式調整。此外，控制裝置、傳輸之零組件、制動之零組件必須具備預備磨損用之行程預度，如有需要，當制動變熱或煞車來令片磨損至某一程度時，在沒有立即調整之情況下，適當的補償方式需能確保煞車效力： 6.1.13.1 常用煞車應能自動調整煞車磨損，然而，對於O1、O2類車輛與N2、N3類的越野(Off road)車輛、及N1車輛的後煞車而言，自動調整煞車裝置之安裝是可選配。<u>自動調整煞車裝置在熱性能試驗之後進行冷卻，應視情況依據6.2.3.5規定進行型式I試驗或型式III試驗之自由運轉試驗。</u>	6.1.13 制動之磨損必需能容易地使用手動或自動調整系統方式調整。此外，控制裝置、傳輸之零組件、制動之零組件必需具備預備磨損用之行程預度，如有需要，當制動變熱或煞車來令片磨損至某一程度時，在沒有立即調整之情況下，適當的補償方式需能確保煞車效力： 6.1.13.1 常用煞車應能自動調整煞車磨損，然而，對於O1、O2類車輛與N2、N3類的越野(Off road)車輛、及N1車輛的後煞車而言，自動調整煞車裝置之安裝是可選配。

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
5.2.2.8.1.1. In the case of trailers of category O4 the performance requirements of paragraph 5.2.2.8.1. above shall be deemed to be satisfied by fulfilling the requirements of paragraph 1.7.3. of Annex 4.	5.2.2.8.1.1. In the case of trailers of category O4 the performance requirements of paragraph 5.2.2.8.1. above shall be deemed to be satisfied by fulfilling the requirements of paragraph 1.7.3. of Annex 4.	6.1.13.1.1 對於O4類車輛， <u>若符合6.2.3.5規定，則視為滿足6.1.13.1之性能要求。</u>	
5.2.2.8.1.2. In the case of trailers of categories O2 and O3 the performance requirements of paragraph 5.2.2.8.1. above shall be deemed to be satisfied by fulfilling the requirements of paragraph 1.7.3. ¹³ of Annex 4.	5.2.2.8.1.2. In the case of trailers of categories O2 and O3 the performance requirements of paragraph 5.2.2.8.1. above shall be deemed to be satisfied by fulfilling the requirements of paragraph 1.7.3. ¹³ of Annex 4.	6.1.13.1.2 對於O2、O3類車輛， <u>若符合6.2.3.5規定，則視為滿足6.1.13.1之性能要求。</u>	
5.2.2.8.2. Checking the wear of the service brake friction components	5.2.2.8.2. Checking the wear of the service brake friction components	6.1.13.2 檢查常用煞車零件之磨損狀況：	6.1.13.2 檢查常用煞車零件之磨損狀況：
5.2.2.8.2.1. It shall be possible to easily assess this wear on service brake linings from the outside or underside of the vehicle, without the removal of the wheels, by the provision of appropriate inspection holes or by some other means. This may be achieved by utilizing simple standard workshop tools or common inspection equipment for vehicles.	5.2.2.8.2.1. It shall be possible to easily assess this wear on service brake linings from the outside or underside of the vehicle, without the removal of the wheels, by the provision of appropriate inspection holes or by some other means. This may be achieved by utilizing simple standard workshop tools or common inspection equipment for vehicles.	6.1.13.2.1.應可在不拆下車輪的情況下，藉由適當檢查孔或其他方式，利用車輛標準修護工具或一般檢查裝備很容易地由車外或車底檢查常用煞車來令片之磨損狀況。可另外選擇之方式為， <u>拖車可安裝提供需要更換煞車來令片資訊之顯示器或</u> 以車輪（雙輪視為單輪）感應裝置，在煞車來令片必需要更換時，警示位於駕駛位置之駕駛，此警示得使用符合本法規 <u>6.1.16.5.1</u> 所規定之黃色警告訊號。	6.1.13.2.1 應可在不拆下車輪的情況下，藉由適當檢查孔或其他方式，利用車輛標準修護工具或一般檢查裝備很容易地由車外或車底檢查常用煞車來令片之磨損狀況。可另外選擇之方式為，以車輪（雙輪視為單輪）感應裝置，在煞車來令片必需要更換時，警示位於駕駛位置之駕駛，此警示得使用符合本法規 <u>6.1.16</u> 所規定之黃色警告訊號。
Alternatively, a trailer mounted display providing information when lining replacement is necessary or a sensing device per wheel (twin wheels are considered as a single wheel), which will	Alternatively, a trailer mounted display providing information when lining replacement is necessary or a sensing device per wheel (twin wheels are considered as a single wheel), which will		

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
warn the driver at his driving position when lining replacement is necessary, is acceptable. In the case of an optical warning, the yellow warning signal specified in paragraph 5.2.1.29.2. above may be used provided that the signal complies with the requirements of paragraph 5.2.1.29.6. above. 5.2.2.8.2.2. Assessment of the wear condition of the friction surfaces of brake discs or drums may only be performed by direct measurement of the actual component or examination of any brake disc or drum wear indicators, which may necessitate some level of disassembly. Therefore, at the time of type approval, the vehicle manufacturer shall define the following: (a) The method by which wear of the friction surfaces of drums and discs may be assessed, including the level of disassembly required and tools and process required to achieve this; (b) Information defining the maximum wear indicators. This information shall be made freely available e.g. vehicle handbook or electronic data record. ... 5.2.2.22. Activation of the service braking system.	warn the driver at his driving position when lining replacement is necessary, is acceptable. In the case of an optical warning, the yellow warning signal specified in paragraph 5.2.1.29.2. above may be used provided that the signal complies with the requirements of paragraph 5.2.1.29.6. above. 5.2.2.8.2.2. Assessment of the wear condition of the friction surfaces of brake discs or drums may only be performed by direct measurement of the actual component or examination of any brake disc or drum wear indicators, which may necessitate some level of disassembly. Therefore, at the time of type approval, the vehicle manufacturer shall define the following: (a) The method by which wear of the friction surfaces of drums and discs may be assessed, including the level of disassembly required and tools and process required to achieve this; (b) Information defining the maximum wear indicators. This information shall be made freely available e.g. vehicle handbook or electronic data record. ... 5.2.2.22. Activation of the service braking system.	6.1.13.2.2 煞車鼓/碟盤摩擦面的磨損狀況評估，可僅為實際零件直接量測或為任何的煞車鼓/碟盤磨損指示器查檢，其過程中可有局部的拆解。在申請型式認證試驗時，申請者應定義下述： 6.1.13.2.2.1 煞車鼓/碟盤的摩擦表面磨損狀況評估的方法，包括所需局部拆解及需要的工具與程序。 6.1.13.2.2.2 必要更換時機的容許最大磨耗極限資訊。此資訊應隨手可得，如在車主手冊或電子資料記錄中。 6.1.20.3. 當拖車的煞車系統於"自動控制煞車"下作動時，裝配有電控線	6.1.13.2.2 煞車鼓/碟盤摩擦面的磨損狀況評估，可僅為實際零件直接量測或為任何的煞車鼓/碟盤磨損指示器查檢，其過程中可有局部的拆解。在申請型式認證試驗時，申請者應定義下述： 6.1.13.2.2.1 煞車鼓/碟盤的摩擦表面磨損狀況評估的方法，包括所需局部拆解及需要的工具與程序。 6.1.13.2.2.2 必要更換時機的容許最大磨耗極限資訊。此資訊應隨手可得，如在車主手冊或電子資料記錄中。 6.1.20.3. 當拖車的煞車系統於"自動控制煞車"下作動時，裝配有電控線

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
5.2.2.22.1. In the case of trailers equipped with an electric control line the message "illuminate stop lamps" shall be transmitted by the trailer via the electric control line when the trailer braking system is activated during "automatically commanded braking" initiated by the trailer. However, when the retardation generated is less than 0.7 m/s², the signal may be suppressed.¹⁸ 5.2.2.22.2. In the case of trailers equipped with an electric control line the message "illuminate stop lamps" shall not be transmitted by the trailer via the electrical control line during "selective braking" initiated by the trailer.¹⁹ 5.2.2.23. Subject to the provisions of paragraph 12.4. of this Regulation, all vehicles of categories O3 and O4²⁰ having no more than 3 axles and equipped with air suspension shall be equipped with a vehicle stability function. This shall include at least roll-over control and meet the technical requirements of Annex 21 to this Regulation.	5.2.2.22.1. In the case of trailers equipped with an electric control line the message "illuminate stop lamps" shall be transmitted by the trailer via the electric control line when the trailer braking system is activated during "automatically commanded braking" initiated by the trailer. However, when the retardation generated is less than 0.7 m/s², the signal may be suppressed.¹⁸ 5.2.2.22.2. In the case of trailers equipped with an electric control line the message "illuminate stop lamps" shall not be transmitted by the trailer via the electrical control line during "selective braking" initiated by the trailer.¹⁹ 5.2.2.23. Subject to the provisions of paragraph 12.4. of this Regulation, all vehicles of categories O3 and O4²⁰ having no more than 3 axles and equipped with air suspension shall be equipped with a vehicle stability function. This shall include at least roll-over control and meet the technical requirements of Annex 21 to this Regulation.	的拖車，需經由拖車電控線送出「點亮煞車燈」訊號。但當減速度小於0.七公尺/秒平方則不觸發訊號。 6.1.20.5 當裝備有電控線之前車接受到來自拖車之點亮煞車燈訊息時，前車應產生點亮煞車燈的訊號。裝備電控線之拖車，當在”選擇性煞車”開始作動時不應由電控線送出點亮煞車燈之訊號。(註：此規範需配合ISO 11992修訂執行。) <u>6.1.20.6. 未逾三軸且配備空氣懸吊之O3和O4類車輛，其穩定性電子式控制功能(VSF)，至少應包括翻覆性控制及6.9之要求規定。</u> <u>6.1.17.7</u> (a)電力控制線路應符合 ISO 11992-1及 11992-2:2003，包括其修正版 1：2007，且為使用下列條件之點對點	的拖車，需經由拖車電控線送出「點亮煞車燈」訊號。但當減速度小於0.七公尺/秒平方則不觸發訊號。 6.1.20.5 當裝備有電控線之前車接受到來自拖車之點亮煞車燈訊息時，前車應產生點亮煞車燈的訊號。裝備電控線之拖車，當在”選擇性煞車”開始作動時不應由電控線送出點亮煞車燈之訊號。(註：此規範需配合ISO 11992修訂執行。) 無
5.1.3.6. (a) The electric control line shall conform to ISO 11992-1 and 11992-2:2003 including its amendment 1:2007 and be a	5.1.3.6. The electric control line shall conform to ISO 11992-1 and 11992-2:2003 and be a point-to-point type using the seven pin connector according to	<u>6.1.17.7</u> (a)電力控制線路應符合 ISO 11992-1及 11992-2:2003，包括其修正版 1：2007，且為使用下列條件之點對點	無

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
point-to-point type using: (i) The seven pin connector according to ISO 7638-1 or 7638-2:2003 or, (ii) In the case of systems where the connection of the electric control line is automated, the automated connector shall ,as a minimum, provide the same number of pins as the above-mentioned ISO 7638 connector and meet the requirements specified in Annex 22 of this Regulation. (b) The data contacts of the ISO 7638 connector shall be used to transfer information exclusively for braking (including ABS) and running gear (steering, tyres and suspension) functions as specified in ISO 11992-2:2003 including its Amd.1:2007. The braking functions have priority and shall be maintained in the normal and failed modes. The transmission of running gear information shall not delay braking functions. (c) The power supply, provided by the ISO 7638 connector, shall be used exclusively for braking and running gear functions and that required for the transfer of trailer related information not transmitted via the electric control line. However, in all cases the provisions of Paragraph 5.2.2.18. of	ISO 7638-1 or 7638-2:2003. The data contacts of the ISO 7368 connector shall be used to transfer information exclusively for braking (including ABS) and running gear (steering, tyres and suspension) functions as specified in ISO 11992-2:2003. The braking functions have priority and shall be maintained in the normal and failed modes. The transmission of running gear information shall not delay braking functions. The power supply, provided by the ISO 7638 connector, shall be used exclusively for braking and running gear functions and that required for the transfer of trailer related information not transmitted via the electric control line. However, in all cases the provisions of paragraph 5.2.2.18. of this Regulation shall apply. The power supply for all other functions shall use other measures.	類型： <u>(i) ISO7638-1 或 7638-2：2003 規範之七個接腳之連接器，或</u> <u>(ii)對於電力控制線路為自動連接之系統，自動連接器應至少提供與上述 ISO7638 連接器相同數量之接腳，且符合 8 之規範要求。</u> <u>(b)ISO 7638 連接器的數據接觸點應專用於 ISO11992-2:2003(包括其修正版 1：2007)指定之煞車（包括 ABS）及行駛相關裝置（方向盤、輪胎和懸吊系統）等功能之資訊傳輸。煞車功能者應具有優先權、並應於正常和失效模式維持。行駛相關裝置功能之資訊傳輸不應延遲煞車功能者。</u> <u>(c) 由 ISO 7638 連接器所提供之電源，應專用於煞車和行駛相關裝置等功能，以及未經電力控制線路傳輸之拖車相關訊息傳輸。惟無論於何種情況，皆應適用本項 4.1.7.7 規定。其他功能所需電源應以其他方式供應。</u>	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
this Regulation shall apply. The power supply for all other functions shall use other measures.			
5.1.3.8. Shut-off devices which are not automatically actuated shall not be permitted.	5.1.3.8. Shut-off devices which are not automatically actuated shall not be permitted. In the case of articulated vehicle combinations, the flexible hoses and cables shall be a part of the power-driven vehicle. In all other cases, the flexible hoses and cables shall be a part of the trailer.	4.1.5 動力驅動車輛與拖車聯結端之止洩裝置必須能夠自動作用。	4.1.5 動力驅動車輛與拖車聯結端之止洩裝置必須能夠自動作用。 <u>在動力驅動車輛以關節聯結(如半拖車)之情況時，撓性軟管和電纜必須是動力驅動車輛之一部份；在其它情況下，撓性軟管和電纜必須是拖車的一部份。</u>
5.1.3.9. In the case of tractor and semi-trailer combinations, the flexible hoses and cables shall be a part of the power-driven vehicle. In all other cases, the flexible hoses and cables shall be a part of the trailer. In the case of an automated connector, this requirement regarding the allocation of flexible hoses and cables is not applicable."		4.1.6 <u>在曳引車和半拖車聯結情況下，撓性軟管和電纜應屬機動車輛之一部份；其它情況下，撓性軟管和電纜應屬拖車的一部份。對於自動連接器，不適用此撓性軟管和電纜配置之規定。</u>	
Annex 2, Communication ... 14.14.1. Where an Annex 19 test report has been utilised, the test report number shall be stated: 14.15. The vehicle is equipped with an automated connector: yes/no ² 14.15.1. If yes, does the automated connector fulfil the requirements of Annex 22: yes/no ²	Annex 2, Communication ... 14.14.1. Where an Annex 19 test report has been utilised, the test report number shall be stated:	(此修訂為溝通文件不影響國內基準)	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
14.15.2. The automated connector is of category A/B/C/D ²			
Annex 6 Method of measuring the response time on vehicles equipped with compressed-air braking systems ... 2.5. In the case of power-driven vehicles having a pneumatic control line for trailers, in addition to the requirements of paragraph 1.1. of this Annex, the response time shall be measured at the extremity of a pipe 2.5 m long with an internal diameter of 13 mm which shall be joined to the coupling head of the control line of the service braking system. During this test, a volume of 385 +/- 5 cm³ (which is deemed to be equivalent to the volume of a pipe 2.5 m long with an internal diameter of 13 mm and under a pressure of 650 kPa) shall be connected to the coupling head of the supply line. Tractors for semi-trailers shall be equipped with flexible pipes for making the connection to semi-trailers. The coupling heads will, therefore, be at the extremity of those flexible pipes. The length and internal diameter of the pipes shall be entered at item 14.7.3. of the form conforming to the model in	Annex 6 Method of measuring the response time on vehicles equipped with compressed-air braking systems ... 2.5. In the case of power-driven vehicles having a pneumatic control line for trailers, in addition to the requirements of paragraph 1.1. of this annex, the response time shall be measured at the extremity of a pipe 2.5 m long with an internal diameter of 13 mm which shall be joined to the coupling head of the control line of the service braking system. During this test, a volume of 385 +/- 5 cm³ (which is deemed to be equivalent to the volume of a pipe 2.5 m long with an internal diameter of 13 mm and under a pressure of 650 kPa) shall be connected to the coupling head of the supply line. Tractors for semitrailers shall be equipped with flexible pipes for making the connection to semi-trailers. The coupling heads will, therefore, be at the extremity of those flexible pipes. The length and internal diameter of the pipes shall be entered at item 14.7.3. of the form conforming to the model in Annex 2 to this Regulation.	6. M2、M3、N2、N3、O及選擇符合6.規範之N1類車輛動態煞車 ... 6.5 反應時間：當車輛裝置常用煞車系統，其全部或部份是依靠駕駛人肌力以外之能量時，於緊急情況時必須符合以下要求： 6.5.1 介於控制裝置開始作用與最少分配軸煞車力量達到前述性能水準之時間必須不超過0.六秒。 6.5.2 對於配備壓縮空氣煞車系統的車輛，應符合下列規範： 6.5.2.1 M及N類車輛： <u>對於配備有拖車用氣動管路之機動車輛，應額外執行下述試驗：</u> <u>自動連接器之量測，應包括一如上所述之長二.五公尺且容積為三八五正/負五立方公分之管子之使用，連接器之接合部作用視同聯結頭。</u>	6. M2、M3、N2、N3、O及選擇符合6.規範之N1類車輛動態煞車 ... 6.5 反應時間：當車輛裝置常用煞車系統，其全部或部份是依靠駕駛人肌力以外之能量時，於緊急情況時必須符合以下要求： 6.5.1 介於控制裝置開始作用與最少分配軸煞車力量達到前述性能水準之時間必須不超過0.六秒。 6.5.2 對於配備壓縮空氣煞車系統的車輛，應符合下列規範： 6.5.2.1 M及N類車輛：

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
Annex 2 to this Regulation. In the case of an automated connector the measurement including the use of a 2.5m pipe and 385 +/- 5 cm³ of volume as described above shall be made, considering the connector interface as the coupling heads.			
3.3.3. The simulator shall be set, e.g. through the choice of orifice in accordance with paragraph 3.3.1. of this annex in such a way that, if a reservoir of 385 +/- 5 cm³ is joined to it, the time taken for the pressure to increase from 65 to 490 kPa (10 and 75 per cent respectively of the nominal pressure of 650 kPa) shall be 0.2 +/- 0.01 seconds. If a reservoir of 1155 +/- 15 cm³ is substituted for the above-mentioned reservoir, the time taken for the pressure to increase from 65 to 490 kPa without further adjustment shall be 0.38 +/- 0.02 seconds. Between these two pressure values, the pressure shall increase in an approximately linear way. These reservoirs shall be connected to the coupling head without using flexible pipes. The connection between the reservoirs and the coupling head shall have an internal diameter of not less than 10 mm. The setting shall be carried out	3.3.3. The simulator shall be set, e.g. through the choice of orifice in accordance with paragraph 3.3.1. of this annex in such a way that, if a reservoir of 385 +/- 5 cm³ is joined to it, the time taken for the pressure to increase from 65 to 490 kPa (10 and 75 per cent respectively of the nominal pressure of 650 kPa) shall be 0.2 +/- 0.01 second. If a reservoir of 1,155 +/- 15 cm³ is substituted for the above-mentioned reservoir, the time taken for the pressure to increase from 65 to 490 kPa without further adjustment shall be 0.38 +/- 0.02 second. Between these two pressure values, the pressure shall increase in an approximately linear way. These reservoirs shall be connected to the coupling head without using flexible pipes and the connection shall have an internal diameter of not less than 10 mm.	(模擬器設定方式國內並無規範，故不影響國內檢測基準)	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
using a coupling head arrangement that is representative of the type fitted to the trailer for which type approval is sought."			
Annex 19,Appendix 7 Vehicle (trailer) stability function information document ... 3.7.1. Documentation demonstrating compliance with Regulation No. 10 as required by paragraph 5.1.1.4. of the Regulation.	Annex 19,Appendix 7 Vehicle (trailer) stability function information document ... 3.7.1. Documentation demonstrating compliance with Regulation No. 10 including the 02 series of amendments.	(車輛穩定性電子式控制功能 (VSF) 文件證明符合電磁相容性，國內已有電磁相容性等相關規定)	無
Annex 22 Requirements for the brake electric/electronic interface of an automated connector 1. General This Annex defines the requirements applicable to installations where the connection and disconnection of the brake electric/electronic interface between the towing vehicle and the towed vehicle is achieved by an automated connector. This Annex also considers the case where a vehicle is equipped with both ISO 7638 connector and an automated connector.		<u>8. 自動連接器之煞車電力/電子界面 (Electric/electronic interface) 規範</u> <u>8.1 一般規範</u> <u>8.1.1 本規範適用牽引車輛與拖車之間自動連接器之煞車電力/電子界面連接與斷開，本規範亦包含同時配備ISO 7638連接器與自動連接器之車輛。</u>	無
2. Categories of automated connectors Automated connectors are classified in different categories ¹: Category A: automated connector for		<u>8.2 自動連接器之類型</u> <u>8.2.1 自動連接器之類型如下:</u> <u>8.2.1.1 A類：符合9.規定之供曳引車/</u>	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
tractor/semi-trailer combinations shall meet the requirements of Appendix 2 of this annex. All automated connectors within this category are compatible together. Category B: automated connectors for tractor/semi-trailer combinations that do not meet all the requirements of Appendix 2. They are not compatible with category A. Interfaces of category B are not necessarily compatible to all type of interfaces within this category. Category C: automated connectors for combination other than tractor/semi-trailer shall meet the requirements of Appendix 3 of this annex². All automated connectors within this category are compatible together. Category D: automated connectors for combinations other than tractor/semi-trailer that do not meet all the requirements of Appendix 3. They are not compatible with category C. Interfaces of category D are not necessarily compatible to all type of interfaces within this category.		<u>半拖車聯結使用之自動連接器，此類自動連接器應能相容共用。</u> <u>8.2.1.2 B類：未符合9.規定之供曳引車/半拖車聯結使用的自動連接器。B類自動連接器無須與A類相容；B類之介面無須與其類型內所有型式介面相容。</u> <u>8.2.1.3 C類：符合UN R13 Annex 22 - Appendix3規定之供給，除曳引車/半拖車以外車輛聯結使用之自動連接器。此類型內之各式自動連接器應能相容共用。</u> (Annex 22 - Appendix3 UN R13目前尚未擬訂) <u>8.2.1.4 D類：未符合UN R13 Annex 22 - Appendix3規定之供給，除曳引車/半拖車以外車輛聯結使用之自動連接器。D類不與C類自動連接器相容；D類型內之各式自動連接器介面可彼此不相容。</u> (Annex 22 - Appendix3 UN R13目前尚未擬訂)	
3. Requirements The brake electric/electronic interface of the automated connector shall achieve the same functional requirements as specified		<u>8.3 一般要求：自動連接器之煞車電力/電子界面規定，應符合ISO 7638連接器中相同功能的所有規定。</u>	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
for the ISO 7638 connector throughout this regulation and its Annexes. 3.1. The contacts (pins and sockets) for the brake electric/electronic interface shall have the same electrical characteristics and functionality as the ISO 7638 contacts. 3.1.1. The data contacts of the brake electric/electronic interface shall be used to transfer information exclusively for braking (including ABS) and running gear (steering, tyres and suspension) functions as specified in ISO 11992-2:2003 including its Amendment 1:2007. The braking functions have priority and shall be maintained in the normal and failed modes. The transmission of running gear information shall not delay braking functions. 3.1.2. The power supply, provided by the brake electric/electronic interface, shall be used exclusively for braking and running gear functions and that required for the transfer of trailer related information not transmitted via the electric control line. However, in all cases the provisions of paragraph 5.2.2.18. of this Regulation shall apply. The power supply for all other functions shall use other measures. 3.2. In the case of semi-trailer combinations equipped with an automated connector the		<u>8.3.1提供煞車電力/電子界面之接觸器(接腳與插座)，應具有相同的電氣特性及功能，如ISO7638接觸器。</u> <u>8.3.1.1 ISO7638連接器之煞車電力/電子界面應作為專門為傳遞資訊給煞車(包括ABS)及傳動裝置(方向盤、輪胎和懸吊系統)功能，其規範於ISO 11992-2:2003，包括其修正版1：2007。煞車功能應優先考慮、並應於正常和失效模式保持。傳動裝置功能資訊之傳遞應不得延遲煞車功能。</u> <u>8.3.1.2 由煞車電力/電子界面所提供之電源，應專門用於煞車和傳動裝置功能資訊，以及傳遞不能由電力控制線路傳輸之與拖車相關的訊息，無論於何種情況，應適用本項4.1.7.7規定。其他功能所需電源應以其他方式供應。</u> <u>8.3.2 若聯結半拖車之組合車輛配備有一個自動連接器，其供煞車資料</u>	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
maximum length of the cable for braking data communication shall be; (a) Tractor: 21 m; (b) Semi-trailer: 19 m; in the running mode. In all other cases the conditions of paragraphs 5.1.3.6. and 5.1.3.8. of this Regulation apply with respect to maximum cable lengths. 3.3. Vehicles being equipped with both a connector conforming to ISO 7638 and an automated connector shall be built in such a way that only a single path is possible for the functioning of the electric control transmission or in the transmission of information in accordance with ISO 11992-2:2003 including Amendment 1:2007. See Appendix 1 to this annex for examples. In the case of automatic path selection the priority shall be given to the automated connector. 3.4. Any trailer equipped with an automated connector shall be equipped with a spring braking system according to Annex 8 of this regulation. 3.5. The manufacturer applying for type approval shall submit an information document describing the functionality and any limitations in the use of the automated connector and any associated equipment, including information about the category		<u>傳送之電纜最大長度應為；</u> (a) <u>曳引車：21公尺；</u> (b) <u>半拖車：19公尺；在道路運行模式。</u> <u>本項規定6.1.17.7、4.1.5規範之所有情況下，適用最大電纜長度規定。</u> <u>8.3.3 若車輛配有兩個連接器符合ISO7638和一個自動連接器，應建立僅一單一路徑以執行電力控制線路傳輸之功能或依據11992-2:2003（包括其修正版1：2007）資訊傳輸裝置。在自動路徑選擇之情況下，應優先選擇自動連接。</u> <u>8.3.4 配備自動連接裝置之拖車應配備彈簧式煞車系統。</u> <u>8.3.5 申請型式認證時，申請者應提供連接器及任何相關設備之功能及任何於使用上限制之資料文件，包含8.2規定所規範之種類。對於B類及D類自動連接器，自動連接器之確認方法亦應被描述，以確認其相容性。</u>	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
according to paragraph 2 of this Annex. In the case of automated connectors of categories B and D, the means to identify the type of automated connector shall also be described to ensure identification of compatibility. 3.6. The vehicle user's handbook provided by the manufacturer shall warn the driver of the consequences of not checking the compatibility of the automated connector between the towing vehicle and the trailer. Information about mixed mode operation shall also be provided if applicable. To enable the driver to check the compatibility, vehicles fitted with an automated connector shall have a marking specifying the category according to paragraph 2. of this Annex. For category B and D also the type of the installed automated connector shall be shown. This marking shall be indelible and visible to the driver when standing on the ground beside the vehicle.		<u>8.3.6 申請者提供之車輛使用手冊，應警示駕駛未檢查牽引車輛和拖車之間自動連接器相容性的後果。有關混合模式之操作資訊亦應提供（如適用）。</u> <u>為使駕駛檢查車輛配備之自動連結器相容性，應有一個詳細指明其對應8.2規定類型之標示。對安裝之B類和D類，其自動連接器亦應標示其型式（Type）。該標示不可被輕易除去，且當駕駛站立於車旁時，可清晰看見該標示。</u>	
Annex 22 - Appendix 1 Examples of the layout of an automated connection between vehicles Automated connection and manual connection equipped vehicles: data bus requirements. Diagrams for electrical connections show		(車輛之間自動連接器的佈置範例不影響國內檢測基準，本項建議不納入) <u>9.車輛之間自動連接器的佈置範例</u> <u>9.1配備自動連接器和手動連接器車輛：數據匯流排的要求。</u> <u>9.2用於電子連結連圖表顯示出根據</u>	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
routing of signals of pin 6 and 7 according to ISO 7638. Legend Electrical E1: ISO 11992-2 node in tractor, e.g. ECU ABS/EBS E2: Tractor ISO 7638 socket E3: Tractor ISO 7638 plug for automated connector E4: Tractor part of automated connector E5: Trailer ISO 7638 plug for automated connector E6: Trailer ISO 7638 socket E7: Trailer part of automated connector E8: ISO 7638 coiled cable E9: ISO 7638 park socket E10: ISO 11992-2 node in trailer, e.g. ECU ABS/EBS I: Cable from E1 to E2 II: Cable from E10 to E6 III: Cable from E5 to E7 IV: Cable from E3 to E4 Pneumatic P1: Trailer control valve mounted on tractor P2: T-piece P3: Pneumatic coupling head on tractor (control and supply) P4: Tractor part of automated connector P5: Pneumatic coupling head on trailer		ISO 7638的管腳6和7的例行的訊號。 說明 電力 E1：曳引車ISO 11992-2的節點，例如ECU的ABS/EBS E2：曳引車ISO7638插座 E3：曳引車的ISO7638自動連接器插頭 E4：自動連接器曳引車的零件 E5：拖車ISO7638自動連接器插頭 E6：拖車ISO7638插座 E7：自動連接器拖車的零件 E8：ISO7638盤繞的電纜 E9：ISO7638停車插座 E10：拖車的ISO11992-2的節點，例如ECU的ABS/EBS I：E1～E2電纜 II：E10～E6電纜 III：E5～E7電纜 IV：E3～E4電纜 氣壓 P1：安裝在曳引車之拖車控制閥 P2：T型管件 P3：曳引車氣動連接頭（控制和電源） P4：自動連接器曳引車的零件 P5：拖車氣動連接頭（控制和電源） P6：氣動閥未使用的終端密封（雙單向閥）（控制和電源） P7：自動連接器拖車的零件	

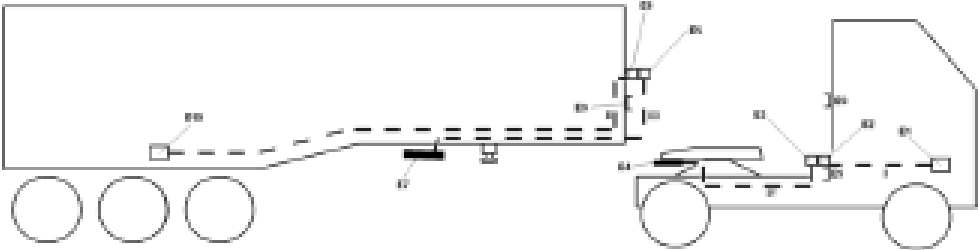
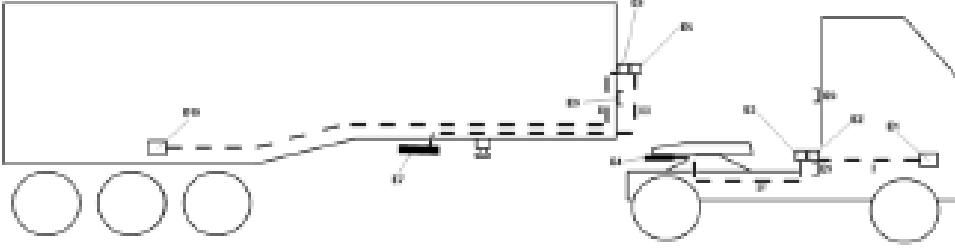
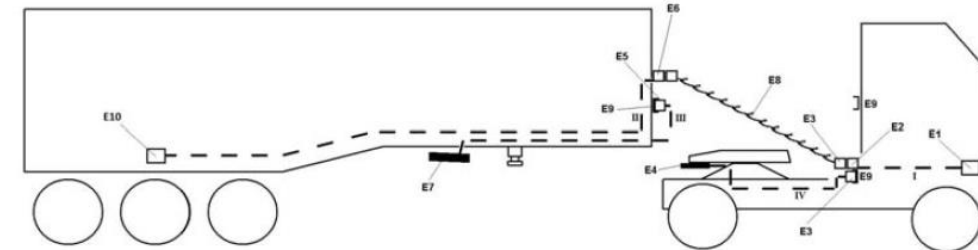
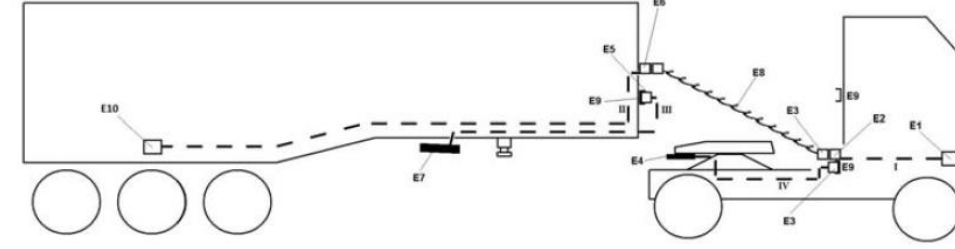
增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
(control and supply) P6: Pneumatic valve to seal the unused terminal (double check valve) (control and supply) P7: Trailer part of automated connector P8: Pneumatic coiled tube (control and supply) P9: Pneumatic park socket (control and supply)		P8: 氣動盤繞的管 (控制和電源) P9: 氣動停車插座 (控制和電源)	
Tractor and semi-trailer examples I. Automated connection and Manual Connection equipped Vehicles <i>Automated connection mode</i> Figure A Point-to-point connection ECU Tractor (E1) and ECU Trailer (E10) via ACV. Automated connection mode: No coiled cables connected, Connection between E1 and E10 when E4 and E7 are connected (i.e. when the fifth wheel is coupled) 【請參考頁末表格】 <i>Manual connection mode</i> Figure B Point-to-point connection ECU Tractor (E1) and ECU Trailer (E10) via coiled cable. Manual mode: Coiled cables connected, Connections between E3 and E4 as E5 and E7 are not in use		(曳引車和半拖車範例，不影響國內檢測基準)	

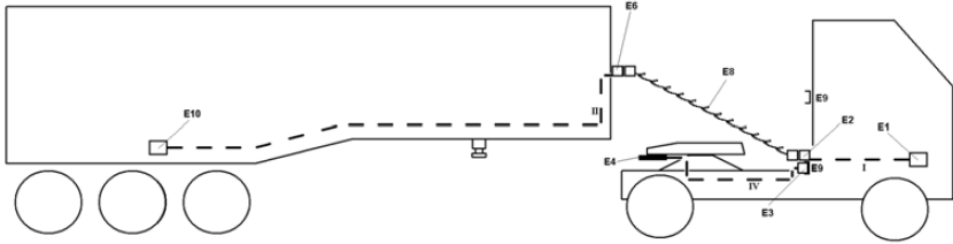
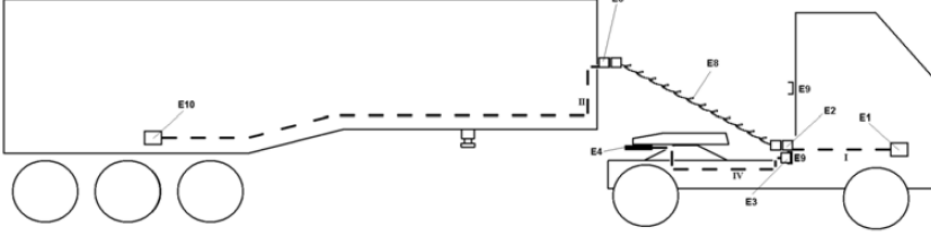
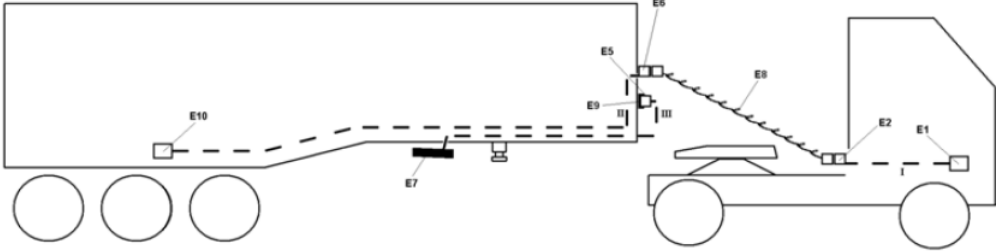
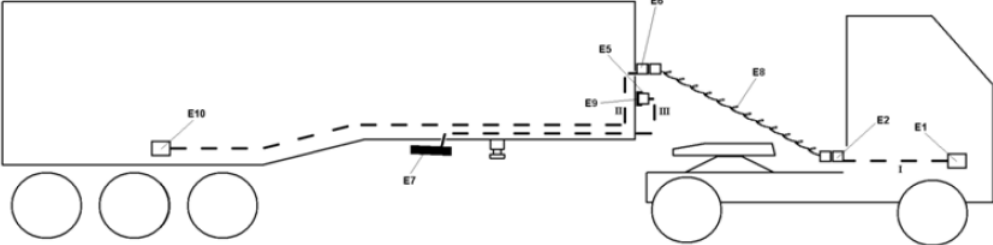
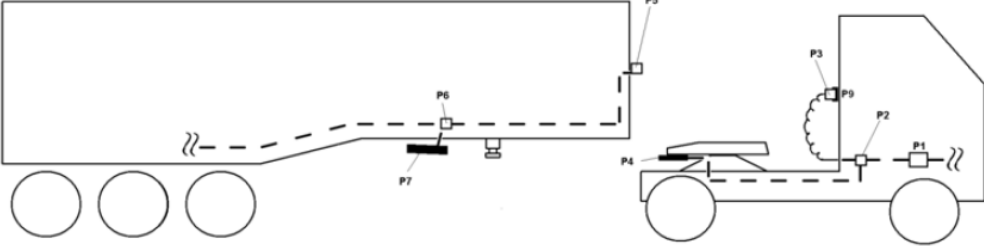
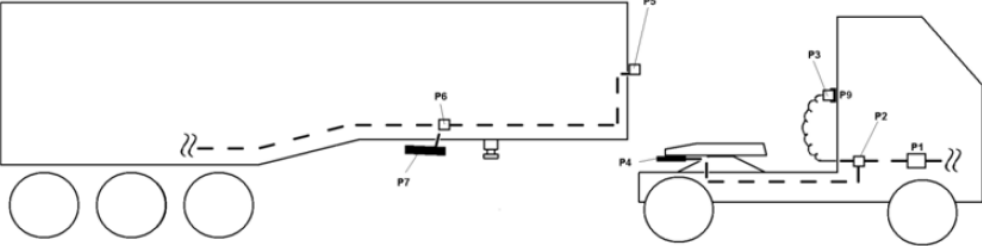
增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
【請參考頁末表格】 <u>Note by the secretariat:</u> After consultations with the Chairs of GRRF and of the Informal Working Group on Automated Coupling Vehicles: the correct Figure B is the one in the original document ECE/TRANS/ WP.29/GRRF/2013/12 and not the one in ECE/TRANS/WP.29/GRRF/75, Annex II. II. Only one part of the vehicle combination is equipped with an automated connection <i>Manual mode A (only the tractor equipped with automated connection)</i> Figure C Point-to-point connection ECU Tractor (E1) and ECU Trailer (E10) when the fifth wheel is closed. Coiled cables connected, Line E3 to E4 is not in use 【請參考頁末表格】 <i>Manual mode B (only the semi-trailer equipped with automated connection)</i> Figure D Point-to-point connection ECU Tractor (E1) and ECU Trailer (E10). Coiled cables connected, Line E5 to E7 is not in use 【請參考頁末表格】 <i>Automated connection mode</i>			

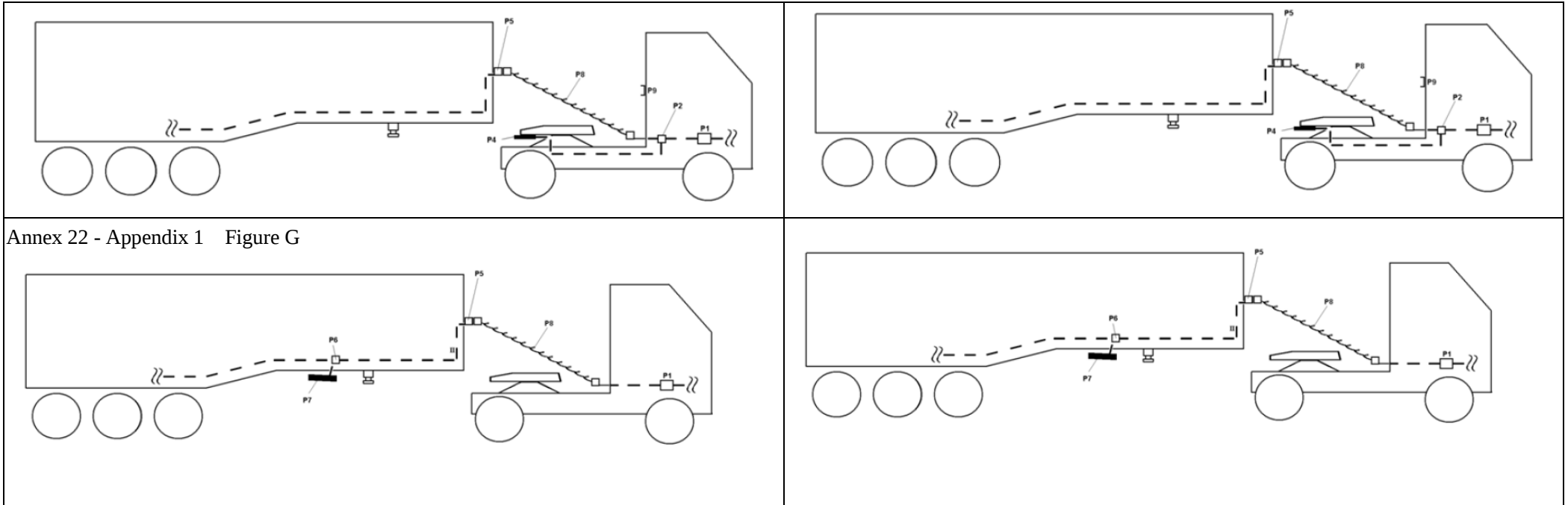
增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
Figure E Pneumatic connection Tractor and Trailer via ACV. Automated connection mode: No coiled cables connected, Connection between tractor and trailer when P4 and P7 are connected (i.e. when the fifth wheel coupled) 【請參考頁末表格】 <i>Manual mode A (only the tractor equipped with automated connection)</i> Figure F Pneumatic connection Tractor and Trailer via coiled tube. Coiled tubes connected, Line P2 to P5* 【請參考頁末表格】 <i>Manual mode B (only the semi-trailer equipped with automated connection)</i> Figure G Pneumatic connection Tractor and Trailer via coiled tube. Coiled tubes connected, Line P1 to P5* 【請參考頁末表格】			
Annex 22 - Appendix 2 Couplings of category A shall conform with the relevant provisions of ISO 13044-2:2013 to ensure compatibility of braking systems of tractor and semi-trailer		9. <u>A 類之連結器應符合 ISO 13044-2:2013 相關規定，以確保曳引車和半拖車的煞車系統的相容性。</u>	

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
Annex 22 - Appendix 3 (Reserved) To be defined at a later date."			

下述為圖示為**Annex 22 - Appendix 1** 內容，故無須納入檢測基準。

增/修內容	修訂國內法規條文草案
Annex 22 - Appendix Figure A 	
Annex 22 - Appendix 1 Figure B 	
Annex 22 - Appendix 1 Figure C	

	
Annex 22 - Appendix 1 Figure D 	
Annex 22 - Appendix 1 Figure E 	
Annex 22 - Appendix 1 Figure F	



Annex 22 - Appendix 1 Figure G

UN R13 BRAKING (M1) 11-S10 2014/03/03 11-S11 (draft) 車輛煞車

增/修內容	原內容	修訂國內法規條文草案	對應國內法規條文
11-S10 (draft)			
5.2.1.22. Power-driven vehicles of categories M2, M3, N2 and N3 with not more than four axles shall be equipped with anti-lock systems of category 1 in accordance with Annex 13 to this Regulation.	5.2.1.22. Power-driven vehicles of categories M2, M3, N2 and N3 with not more than four axles shall be equipped with anti-lock systems of category 1 in accordance with Annex 13 to this Regulation.	四十三之二、防鎖死煞車系統 ... 4. 防鎖死煞車系統類別： <u>4.1 不超過四軸之 M2、M3、N2 及 N3 類車輛，應配備第一類防鎖死煞車系統，其應符合本項規定。</u> <u>4.2 安裝防鎖死煞車系統之汽車須符合下列條件其中之一：</u>	四十三之二、防鎖死煞車系統 ... 4. 防鎖死煞車系統類別： <u>4.1 安裝防鎖死煞車系統之汽車須符合下列條件其中之一：</u>

		4.2.1 第一類防鎖死煞車系統:該車輛須符合本法規 5.1 及 9.1 所有有關要求。 4.2.2 第二類防鎖死煞車系統:該車輛須符合本法規 5.1 及 9.1 所有有關要求,但 6.3.5.2 的試驗要求除外。 4.2.3 第三類防鎖死煞車系統:該車輛須符合本法規 5.1 及 9.1 所有有關要求,但 6.3.5.1 及 6.3.5.2 的試驗要求則不包括在內。	4.1.1 第一類防鎖死煞車系統:該車輛須符合本法規 5.1 及 9.1 所有有關要求。 4.1.2 第二類防鎖死煞車系統:該車輛須符合本法規 5.1 及 9.1 所有有關要求,但 6.3.5.2 的試驗要求除外。 4.1.3 第三類防鎖死煞車系統:該車輛須符合本法規 5.1 及 9.1 所有有關要求,但 6.3.5.1 及 6.3.5.2 的試驗要求則不包括在內。
11-S11 (draft)			
5.2.1.13. Warning device ... 5.2.1.23. Power driven vehicles authorized to tow a trailer equipped with an anti-lock system shall also be equipped with either one or both of the following, for the electric control transmission: (a) A special electrical connector conforming to ISO 7638:2003⁷; (b) An automated connector meeting the requirements specified in Annex 22.	5.2.1.13. Warning device ... 5.2.1.23. Power driven vehicles authorized to tow a trailer equipped with an anti-lock system shall also be equipped with a special electrical connector, conforming to ISO 7638:2003⁷, for the electric control transmission.	四十三之一、防鎖死煞車系統 四十三之二、防鎖死煞車系統 ... 5. 防鎖死煞車系統基本性能 5.1 M 類、N 類及 O 類車輛(汽車及拖車): 5.1.1 設計符合性聲明事項:申請者應確保及聲明符合本項規定。 5.1.1.1 防鎖死煞車系統的運作,須不受磁場或電場之不良影響。 5.1.1.2 安裝防鎖死煞車系統的汽車如獲准拖曳一輛安裝同樣系統的拖車,且非為 M1 與 N1 類車輛的話,則機動車輛(power-driven)應針對拖車的防鎖死煞車系統,另安裝一個符合 5.1.2 要求的分離式黃色視覺警示裝置,並經由符合 ISO 7638:1997 之電動連接器的第五針啟動,並且在所有的負載狀態下,	四十三之一、防鎖死煞車系統 四十三之二、防鎖死煞車系統 ... 5. 防鎖死煞車系統基本性能 5.1 M 類、N 類及 O 類車輛(汽車及拖車): 5.1.1 設計符合性聲明事項:申請者應確保及聲明符合本項規定。 5.1.1.1 防鎖死煞車系統的運作,須不受磁場或電場之不良影響。 5.1.1.2 安裝防鎖死煞車系統的汽車如獲准拖曳一輛安裝同樣系統的拖車,且非為 M1 與 N1 類車輛的話,則汽車(power-driven)應針對拖車的防鎖死煞車系統,另安裝一個符合 5.1.2 要求的分離式黃色視覺警示裝置,並經由符合 ISO 7638:1997 之電動連接器的第五針啟動,並且在所有的負載狀態下,控制線連接頭上

		控制線連接頭上需顯示煞車率，在 0.2 至 1bar 之間或是等值的數位值。 <u>5.1.1.3 若機動車輛(power-driven)被認可允許拖曳配備有防鎖死煞車系統之拖車，則其亦應配備下述任一者或兩者之電力控制線路傳輸：</u> <u>(a)符合 ISO 7638:2003 規定之特殊電氣連接器。</u> <u>(b)符合「動態煞車」基準規定條文 8.之自動連接器。</u> 5.1.2 在防鎖死煞車系統電力控制傳動範圍內會影響系統功能及性能要求的失效，均應傳送規定之黃色視覺警示訊號通知駕駛人。 5.1.2.1 在靜態狀況下無法被偵測到的感知器異常，須在車速不超過一〇公里/小時前被偵測到。然而，為防止感知器因其中一個車輪沒有轉動而未有車速輸出所產生之錯誤的故障顯示，該確認可被延遲，但應在車速超過一五公里/小時前被偵測到。 5.1.2.2 防鎖死煞車系統如在車輛靜止時獲得能量，則受電力控制的氣動調節閥至少須循環一次。 5.1.3 M1類車輛之防鎖死煞車系統失效時(單一電子功能失效所致且應亮黃色警告燈的狀況)，其常用煞車效能應不低於型式0空檔性能要求的百分之八〇。若為拖車，當防鎖	需顯示煞車率，在 0.2 至 1bar 之間或是等值的數位值。 5.1.2 在防鎖死煞車系統電力控制傳動範圍內會影響系統功能及性能要求的失效，均應傳送規定之黃色視覺警示訊號通知駕駛人。 5.1.2.1 在靜態狀況下無法被偵測到的感知器異常，須在車速不超過一〇公里/小時前被偵測到。然而，為防止感知器因其中一個車輪沒有轉動而未有車速輸出所產生之錯誤的故障顯示，該確認可被延遲，但應在車速超過一五公里/小時前被偵測到。 5.1.2.2 防鎖死煞車系統如在車輛靜止時獲得能量，則受電力控制的氣動調節閥至少須循環一次。 5.1.3 M1類車輛之防鎖死煞車系統失效時(單一電子功能失效所致且應亮黃色警告燈的狀況)，其常用煞車效能應不低於型式0空檔性能要求的百分之八〇。若為拖車，當防鎖死煞車系統發生如5.1.2所述之故障時，其殘餘煞車性能至少應達到該有關之拖車煞車系統所規定之滿載性能的百分之八〇。其它類車輛之防鎖死煞車系統失效時，其殘餘煞車性能應達到其常用煞車系統的一部份傳遞裝置失效時所須滿足之規定，惟此項要求不可被詮釋為背離
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		死煞車系統發生如5.1.2所述之故障時，其殘餘煞車性能至少應達到該有關之拖車煞車系統所規定之滿載性能的百分之八0。其它類車輛之防鎖死煞車系統失效時，其殘餘煞車性能應達到其常用煞車系統的一部份傳遞裝置失效時所須滿足之規定，惟此項要求不可被詮釋為背離第二煞車的有關要求。 5.1.4 除了N2G與N3G類之非道路行駛(Off-Road)汽車外，其他車輛不可有手動中斷或改變防鎖死煞車系統的控制裝置。 5.1.5 車輛裝備整合式持久煞車系統者亦需配備防鎖死煞車系統，防鎖死煞車系統至少作用在持久煞車系統控制軸的常用煞車上與持久煞車系統本身。	第二煞車的有關要求。 5.1.4 除了N2G與N3G類之非道路行駛(Off-Road)汽車外，其他車輛不可有手動中斷或改變防鎖死煞車系統的控制裝置。 5.1.5 車輛裝備整合式持久煞車系統者亦需配備防鎖死煞車系統，防鎖死煞車系統至少作用在持久煞車系統控制軸的常用煞車上與持久煞車系統本身。
5.2.2.17. Trailers equipped with an electric control line and O3 and O4 category trailers equipped with an anti-lock system, shall be fitted with either one or both of the following, for the electric control transmission: (a) A special electrical connector for the braking system and/or anti-lock system, conforming to ISO 7638:2003¹⁵,¹⁶, (b) An automated connector meeting the requirements specified in Annex 22. Failure warning signals required from	5.2.2.17. Trailers equipped with an electric control line and O3 and O4 category trailers equipped with an anti-lock system, shall be fitted with a special electrical connector for the braking system and/or anti-lock system, conforming to ISO 7638:2003.¹⁵, ¹⁶ Failure warning signals required from the trailer by this Regulation shall be activated via the above connector. The requirement to be applied to trailers with respect to the transmission of failure warning signals shall be those, as	<u>5.1.6 裝配電力控制線路之拖車，及配備有防鎖死煞車系統之 O3/O4 車輛，應配備下述任一者或兩者的電力控制線路傳輸：</u> <u>(a)符合 ISO 7638:2003 規定之煞車系統及/或防鎖死煞車系統之特殊電氣連接器；</u> <u>(b)符合基準「動態煞車」條文 8. 規範之自動連接器。拖車之故障警告訊號應藉由上述連接器致動。拖車</u>	無

the trailer by this Regulation shall be activated via the above connectors. The requirement to be applied to trailers with respect to the transmission of failure warning signals shall be those, as appropriate, which are prescribed for motor vehicles in paragraphs 5.2.1.29.4., 5.2.1.29.5. and 5.2.1.29.6. Trailers equipped with an ISO 7638:2003 connector as defined above shall be marked in indelible form to indicate the functionality of the braking system when the ISO 7638:2003 connector is connected and disconnected*. The marking is to be positioned so that it is visible when connecting the pneumatic and electrical interface connections."	appropriate, which are prescribed for motor vehicles in paragraphs 5.2.1.29.4., 5.2.1.29.5. and 5.2.1.29.6. Trailers equipped with an ISO 7638:2003 connector as defined above shall be marked in indelible form to indicate the functionality of the braking system when the ISO 7638:2003 connector is connected and disconnected. The marking is to be positioned so that it is visible when connecting the pneumatic and electrical interface connections.	<u>之故障警告訊號傳輸要求，應視其適用性符合基準「動態煞車」6.1.16.5.3、6.1.16.5.4及6.1.16.5.5。拖車配備符合ISO 7638:2003之連接器，應有不可被輕易除去之標示，以於連接器連結及斷開時，顯示出煞車系統之功能性。此標示應置於氣動及電力介面連接時清晰可見之位置。</u>	
5.2.1.29.4. Except where stated otherwise: 5.2.1.29.4.1. A specified failure or defect shall be signalled to the driver by the above-mentioned warning signal(s) not later than on actuation of the relevant braking control; 5.2.1.29.4.2. The warning signal(s) shall remain displayed as long as the failure/defect persists and the ignition (start) switch is in the "on" (run) position; and 5.2.1.29.4.3. The warning signal shall be		<u>5.1.7 除非另有規定，亦應符合下列規定：</u> <u>5.1.7.1 應於致動相關煞車控制裝置時，立即以前述警告訊號向駕駛發出規範內相關之故障或失效之訊號；</u> <u>5.1.7.2 當故障或失效持續且啟動開關位於「開-ON」時，警告訊號應持續顯示；且</u> <u>5.1.7.3 警告訊號應持續點亮（不閃</u>	

constant (not flashing). 5.2.1.29.5. The warning signal(s) mentioned above shall light up when the electrical equipment of the vehicle (and the braking system) is energized. With the vehicle stationary, the braking system shall verify that none of the specified failures or defects are present before extinguishing the signals. Specified failures or defects which should activate the warning signals mentioned above, but which are not detected under static conditions, shall be stored upon detection and be displayed at start-up and at all times when the ignition (start) switch is in the "on" (run) position, as long as the failure or defect persists. 5.2.1.29.6. Non-specified failures (or defects), or other information concerning the brakes and/or running gear of the power-driven vehicle, may be indicated by the yellow signal specified in paragraph 5.2.1.29.1.2. above, provided that all the following conditions are fulfilled: 5.2.1.29.6.1. The vehicle is stationary; 5.2.1.29.6.2. After the braking equipment is first energised and the signal has indicated		爍)。 <u>5.1.8 當車輛 (及煞車系統) 電氣裝備通電時，前述警告訊號應被點亮。車輛處於靜止狀態下，於訊號熄滅之前，煞車系統應確認無規範內相關之故障或失效存在。若係為應如前述致動警告訊號規範內相關之故障或失效，而未能在靜態條件下確認出者，則其應於被檢出時儲存，並於車輛啟動時顯示出，且若故障或失效持續存在，則前述警告訊號應於啟動開關位於「開-ON」時持續顯示。</u> <u>5.1.9 非規範內相關之故障或失效，或關於機動車輛煞車及/或行駛裝置之其他資訊，可以基準「動態煞車之 5.1.9.4.3 黃色訊號顯示出，惟此應滿足下述規範：</u> <u>5.1.9.1 車輛處於靜止狀態；</u> <u>5.1.9.2 煞車裝備首次通電且依前述 5.1.8 所述之程序進行偵測後，應無</u>	
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that, following the procedures detailed in paragraph 5.2.1.29.5. above, no specified failures (or defects) have been identified; and 5.2.1.29.6.3. Non-specified faults or other information shall be indicated only by the flashing of the warning signal. However, the warning signal shall be extinguished by the time when the vehicle first exceeds 10 km/h.		<u>故障或失效被偵測；及</u> <u>5.1.9.3 非規範內相關之故障或其他資訊僅能以閃爍之警告訊號顯示出。然而，當車輛首次車速超過10公里／小時，應熄滅警告訊號。</u>	
Annex 13, Test requirements for vehicles fitted with anti-lock systems ... 4.4. The operation of the anti-lock system shall not be adversely affected by magnetic or electrical fields. This shall be demonstrated by compliance with Regulation No. 10 as required by paragraph 5.1.1.4. of the Regulation."	Annex 13, Test requirements for vehicles fitted with anti-lock systems ... 4.4. The operation of the anti-lock system shall not be adversely affected by magnetic or electrical fields. This shall be demonstrated by compliance with Regulation No. 10, 02 series of amendments.	(ABS 的操作不受磁場或電場的不利影響，國內已有電磁相容性等相關規定)	無