

檔號：
保存年限：

交通部 函

100230

臺北市中正區北平西路3號3樓3140室

受文者：台灣軌道工程學會

發文日期：中華民國114年4月22日

發文字號：交路(一)字第1147900255號

速別：普通件

密等及解密條件或保密期限：

附件：如主旨

機關地址：100299臺北市仁愛路1段50號

傳 真：02-89691567

聯 絡 人：林嵩偉

聯絡電話：02-80723333分機3503

電子郵件：swlin@rb.gov.tw

主旨：茲修正頒布「我國鐵道類標準整體架構(含參考標準)」
(詳附件)，請查照。

說明：

- 一、本次修正共新增29篇及更新版本16篇標準。
- 二、為利我國鐵道產業標準一致化並接軌國際主流市場，旨揭文件請各單位參採引用。

正本：行政院公共工程委員會、經濟部標準檢驗局、臺北市政府捷運工程局、新北市政府捷運工程局、基隆市政府交通處、桃園市政府捷運工程局、臺中市政府捷運工程局、臺南市捷運工程處、高雄市政府捷運工程局、臺北大眾捷運股份有限公司、桃園大眾捷運股份有限公司、臺中捷運股份有限公司、高雄捷運股份有限公司、台灣高速鐵路股份有限公司、財團法人工業技術研究院、中華軌道車輛工業發展協會、台灣軌道工程學會、財團法人鐵道技術研究及驗證中心、中興工程顧問股份有限公司、中鼎工程股份有限公司、台灣世曦工程顧問股份有限公司、林同棧工程顧問股份有限公司、美商科進栢誠工程顧問有限公司、國營臺灣鐵路股份有限公司、農業部林業及自然保育署、台灣糖業股份有限公司、交通部鐵道局

副本：本部路政及道安司、公共運輸及監理司、綜合規劃司(均含附件)

部長陳世凱

修正一覽表

版 序	頒布日期	頒布文號	修正重點
1	111.05.17	交路(一)字第 1117900311 號	新頒布
2	112.07.11	交路(一)字第 1127900502 號	新增 44 篇；更新 23 篇
3	113.06.18	交路(一)字第 1137900530 號	新增 62 篇；更新 50 篇；廢止 3 篇
4	114.04.22	交路(一)字第 1147900255 號	新增 29 篇；更新 16 篇

我國鐵道類標準整體架構
(含參考標準)

交通部

中華民國 114 年 4 月 22 日修正頒布

目錄

壹、緣起及作業目標.....	1
貳、作業歷程.....	2
參、作業成果及檢討修正機制.....	3

圖目錄

圖 2-1 我國鐵道標準整體架構之研提步驟示意圖.....	2
圖 3-1 我國鐵道標準整體架構圖.....	8
圖 3-2 我國鐵道標準整體架構圖-車輛系統.....	9
圖 3-3 我國鐵道標準整體架構圖-車輛系統(續).....	10
圖 3-4 我國鐵道標準整體架構圖-供電系統.....	11
圖 3-5 我國鐵道標準整體架構圖-號誌系統.....	12
圖 3-6 我國鐵道標準整體架構圖-通訊系統.....	13
圖 3-7 我國鐵道標準整體架構圖-軌道系統.....	14
圖 3-8 我國鐵道標準整體架構圖-智慧鐵道系統.....	15
圖 3-9 我國鐵道標準整體架構圖-系統驗證及其他系統.....	16

表目錄

表 3-1 節錄自表 3-3 車輛系統之參考標準	3
表 3-2 我國鐵道標準整體架構-寬整更新清單	4
表 3-3 我國鐵道標準整體架構-車輛系統	17
表 3-4 我國鐵道標準整體架構-供電系統	75
表 3-5 我國鐵道標準整體架構-號誌系統	107
表 3-6 我國鐵道標準整體架構-通訊系統	117
表 3-7 我國鐵道標準整體架構-軌道系統	138
表 3-8 我國鐵道標準整體架構-智慧鐵道系統	154
表 3-9 我國鐵道標準整體架構-系統驗證	159
表 3-10 我國鐵道標準整體架構-其他系統	162

壹、緣起及作業目標

為配合行政院推動我國軌道產業發展，提高國產化比例政策，經跨部會「軌道產業推動會報」討論，已確認我國軌道產業發展三大策略及 6+3 項行動方案，其中「制定國家標準」屬 6+3 項行動方案之一，依分工係由交通部鐵道局及經濟部標準檢驗局負責辦理。我國已於 2002 年正式加入世界貿易組織(WTO)並同時簽署技術性貿易障礙協定(Agreement on Technical Barriers to Trade, TBT)，該協定主要規範有關技術法規、標準及符合性評鑑程序的擬定採行及適用要求，以不造成技術性貿易障礙為目的，亦即於制定技術法規或標準時，若國際標準組織(如 ISO (International Organization for Standardization)、IEC (International Electrotechnical Commission)等)已訂有國際標準，即應以其為依據，以避免造成技術性貿易障礙。

面臨全球貿易自由化及科技技術發展快速的競爭環境，主導國際標準發展方向將有利於企業在國際競爭中搶得先機，因此技術先進國家之企業莫不積極與政府攜手，參與相關國際標準組織之標準制定工作，可知標準已成為國家及企業競爭策略中極重要之一環。藉由標準之制定，可協助國內業者對鐵道類產品製造與測試驗證有所依循，除能滿足鐵道營運基本需求外，亦有助創新技術開發(如原型開發)與產品輸出。同時，利用一致的標準作為進入市場之條件，使企業願意開發符合標準之品質之國產化鐵道類產品，投入相關技術研發與應用，除可提升企業本身的技術水準，亦能接軌國際市場需求，有利於將產品行銷到廣大的國際市場。

考量我國近年大力推行前瞻基礎建設與鐵道國產化，預期未來我國鐵道產業將有大量鐵道相關之 CNS 國家標準需求，爰急需加速推動研訂國家標準，惟制定國家標準之作業程序較為嚴謹，故研擬國家標準之同時，除盤點國內產業需求，以加速推動研擬業界所需之國家標準以外，亦同步建立我國鐵道類標準整體架構(含參考標準)，作為國家標準未完備前之配套措施，以提供興建、營運及產業界、顧問公司、工協會及檢測驗證單位等，於辦理採購、研發、製造、檢測驗證及後續維修等作業之重要依循，以利我國鐵道產業之發展，進而接軌國際主流市場。

參、作業成果及檢討修正機制

一、修正作業成果說明(統計至 113 年 12 月 31 日)

我國鐵道標準整體架構更新(新增、更新版本、廢止)作業方式係依據標準組織/主管機關之官方網站檢索確認，爰針對各標準組織如 CNS、ISO、IEC、EN、IRS 等之官方網站或其鐵路工作小組如 ISO/TC 269、IEC/TC 9 等發布資料，篩選與鐵道相關之標準進行更新確認。本次修正作業係依據截至 113 年 12 月 31 日 CNS 之公告資訊，以及 ISO、IEC、EN、IEEE、IRS 等之公告資訊，進行寬整更新作業，共新增 CNS、ISO、IEC、EN、IRS 合計共 29 篇標準、更新 EN、IRS 等共 16 篇標準版本等相關資訊。寬整後之更新標準資訊詳見表 3-2，亦同步更新於表 3-3 至表 3-10。其中，為使用方便，於表 3-3 至表 3-10 中，我國 CNS 標準總號後以中刮號之方式代表該標準引用之標準號碼及版次，如列於表 3-3 車輛系統-車門系統-車側出入口系統之 CNS 62279:2023 標準，係引用 IEC 62279:2015 所制定，爰以[IEC 62279:2015]表示，又與 IEC 62279 具相同標準標題(等同)之國際/區域標準 EN 50128 於 2020 年有更新版，爰列於下方供參考，詳如表 3-1 所示。另為避免混淆，表 3-3 至表 3-10 中，相同標準標題之國際/區域標準，僅列示最新版本之國際/區域標準。惟標準因應產業水準的提升，內容與版本日新月异，引用或參考時，應先確認最新公告之版本與內容，以免造成應用之不便。

另標準制定組織之一，國際鐵路聯盟 UIC (International Union of Railways)，自 1922 年於法國巴黎成立以來，已發行約 700 件 UIC Leaflet。自 2018 年起，內部成立標準化小組，計畫將現存自行制定之 UIC Leaflet，經由標準化小組(協同 ISO/IEC/CEN)，朝向被受國際認可之 UIC IRS(International Railway Solution)國際標準推展。值得注意的是，原 UIC Leaflet 若轉為 UIC IRS 後，原先之 UIC Leaflet 將會廢止，如 UIC 864-1:1982，在轉換後之標準 IRS 80864-1:2022 公告的同年，即遭廢止。

表 3-1 節錄自表 3-3 車輛系統之參考標準

1 階項目	2 階項目	標準號碼	標準標題
-------	-------	------	------

貳、作業歷程

經綜整國內外標準現況、蒐集國內利害關係人之建議，並依既有軌道工程類國家標準分類，考量因應國際發展趨勢之接軌布局以及國家標準制定之能量限制等，研提我國鐵道標準整體架構，其步驟如圖 2-1，經調查鐵道產業國際主流標準發展趨勢，可知全球市場常以 EN 標準為依循標準，係因 EN 標準之範疇與項目較為完整，且歐盟國家積極參與國際標準化組織，歐洲標準化委員會(CEN)及歐洲電工標準化委員會(CENELEC)，分別與 ISO 及 IEC 簽訂合作協議，藉由相互間之技術工作促進歐洲標準與國際標準之高度調和，且 IEC/ISO 標準與 EN 標準相互參考引用已成趨勢，亦即參考引用 EN 標準幾乎可視為參考引用國際標準的功效。爰我國鐵道標準整體架構其分類原則係以完整性高且主流之歐盟標準(EN)為基礎，參考國內產業現況，研提我國鐵道標準之架構。



圖 2-1 我國鐵道標準整體架構之研提步驟示意圖

車門系統	車側出入口系統	CNS 62279:2023 [IEC 62279:2015] EN 50128:2011+A2:2020	鐵路應用—通訊、號誌及處理系統— 鐵路控制及防護系統之軟體
------	---------	---	----------------------------------

表 3-2 我國鐵道標準整體架構-蒐整更新清單列表

項次	系統分類	標準號碼	標準標題	狀態
1	供電	CNS 15156-103	高電壓開關裝置及控制裝置—第 103 部：額定電壓高於 1 kV 且在 52 kV 以下之交流開關	新增
2	車輛	CNS 16244-1	鐵路應用—多車組列車熱車系統—第 1 部：要求及定義	新增
3	車輛	CNS 16244-2	鐵路應用—多車組列車熱車系統—第 2 部：試驗法	新增
4	車輛	CNS 60077-1	鐵路應用—鐵路車輛之電氣設備—第 1 部：一般使用條件及通則	新增
5	通訊	CNS 61375-1	鐵路電子設備—列車通訊網路(TCN)—第 1 部：一般架構	新增
6	通訊	CNS 61375-2-6	鐵路電子設備—列車通訊網路(TCN)—第 2-6 部：車載對地面通訊	新增
7	車輛	ISO 9879	Railway applications — Rolling stock maintenance — Vocabulary	新增
8	其他	ISO 22163	Railway applications — Railway quality management system — ISO 9001:2015 and specific requirements for application in the railway sector	新增
9	其他	EN ISO 22163	Railway applications - Railway quality management system - ISO 9001:2015 and specific requirements for application in the railway sector (ISO 22163:2023)	新增
10	車輛	EN ISO 24478	Railway applications - Braking - General vocabulary	新增
11	號誌	IEC 62427	Railway applications - Compatibility between rolling stock and train detection systems	新增
12	供電	IEC 63438	Railway applications - Fixed installations - Protection principles for AC and DC electric traction power supply systems	新增
13	車輛	EN 16186-6	Railway applications - Driver's cab - Part 6: Integration of displays, controls and indicators for tram vehicles	新增
14	車輛	EN 17936	Railway applications - Acoustics - Measurement of source terms for environmental noise calculations	新增

項次	系統分類	標準號碼	標準標題	狀態
15	車輛	EN 17976	Railway applications - Bolting of rail vehicles and components	新增
16	車輛	EN 50728	Railway applications - Rolling stock - Testing for electromagnetic compatibility with track circuits	新增
17	其他	IRS 20201	Carriage of dangerous goods - Emergency planning guidance for rail marshalling yards	新增
18	其他	IRS 30311	Financial relations between railway undertakings - Principles and terms of application	新增
19	車輛	IRS 50502-1	Exceptional consignments - UIC profile system	新增
20	車輛	IRS 50540	Brakes - Air brakes for freight trains and passenger trains	新增
21	車輛	IRS 50561	Railways applications - Passenger vehicles-Interconnecting gangway systems between vehicles	新增
22	其他	IRS 60660	Measures to ensure the technical compatibility of High-Speed Trains	新增
23	其他	IRS 60683	Design of a High-Speed Railway - Interface	新增
24	供電	IRS 70014	Maintenance Guidelines for OCL	新增
25	軌道	IRS 70701	Polymeric composite sleepers - Recommendations for use	新增
26	供電	IRS 70791	Railway Infrastructure - Electrical Supply - Quality assurance of overhead contact line equipment	新增
27	軌道	IRS 71720	Railway Infrastructure - Laying and maintenance of track - Tracks with continuous welded rails	新增
28	軌道	IRS 71725	Railway Infrastructure - Laying and maintenance of track - Treatment of rail defects	新增
29	車輛	IRS 80811-3	Railway applications - Axle surface treatments to improve mechanical properties - Additional requirements to EN 13261	新增
30	車輛	EN 16186-8	Railway applications - Driver's cab - Part 8: Tram vehicle layout and access	更新版本
31	車輛	EN 16286-1	Railway applications - Gangway systems between vehicles - Part 1: Main applications	更新版本
32	車輛	EN 17530	Railway applications - Interior glazing for rail vehicles	新增

二.成果與檢討修正機制

綜合上述，以國外先進鐵道發展國家之標準架構之架構分類為基礎，考量我國國內鐵道政策發展(如 2020 交通科技產業政策白皮書)、部頒技術規範(如輕軌系統建設及技術標準規範)、蒐整產業界採用之主流標準、參考利害關係人(主管機關、營運單位、法人單位、產業界等機關單位)建議之標準後，將我國鐵道標準體系架構分為七大系統(如圖 3-1 至圖 3-9 所示)，分別為車輛系統、供電系統、號誌與通訊系統、軌道系統、智慧鐵道系統、系統驗證與其他系統，並依照系統、子系統、零組件等作為樹狀結構的分類基礎，而第一階標準為該類之主幹標準，每一類的階層再連結相關的規範標準，包含設計、製造、測試與檢驗(含安全等驗證)之相關標準，各系統之參考標準如表 3-3 至表 3-10 所示。

後續軌道興建/營運採購機關(構)、顧問公司、工協會及產業界等相關單位，如認為本標準架構內之標準有需補充時，後續由交通部鐵道局或財團法人鐵道技術研究及驗證中心邀利害關係人開會研商檢討修訂後，循序報部函知各界參考引用，惟引用或參考時，應先確認最新公告之版本與內容，以免造成應用之不便。

項次	系統分類	標準號碼	標準標題	狀態
				更新版本
33	車輛	EN 45545-6	Railway applications - Fire protection on railway vehicles - Part 6: Fire control and management systems	更新版本
34	系統驗證	EN 50126-1	Railway applications - The specification and demonstration of Reliability, Availability, Maintainability and Safety (RAMS) - Part 1: Generic RAMS process	更新版本
35	系統驗證	EN 50126-2	Railway applications - The specification and demonstration of Reliability, Availability, Maintainability and Safety (RAMS) - Part 2: Systems approach to safety	更新版本
36	車輛	EN 50343	Railway applications - Rolling stock - Rules for installation of cabling	更新版本
37	車輛	EN 50463-1	Railway applications - Energy measurement on board trains - Part 1: General	更新版本
38	車輛	EN 50463-2	Railway applications - Energy measurement on board trains - Part 2: Energy measuring	更新版本
39	車輛	EN 50463-3	Railway applications - Energy measurement on board trains - Part 3: Data handling	更新版本
40	車輛	EN 50463-5	Railway applications - Energy measurement on board trains - Part 5: Conformity assessment	更新版本
41	車輛	EN 50546	Railway applications - Rolling Stock - Three-phase shore (external) supply system for rail vehicles and its connectors	更新版本
42	號誌	EN 50617-1	Railway applications - Technical parameters of train detection systems for the interoperability of the trans-European railway system - Part 1: Track circuits	更新版本
43	號誌	EN 50617-2	Railway applications - Technical parameters of train detection systems for the interoperability of the trans-European railway system - Part 2: Axle counters	更新版本
44	車輛	IRS 50596-6	Conditions for coding intermodal transport units in combined transport, combined transport lines and wagons	更新版本
45	軌道	IRS 80864-5	Technical specification - Permanent Way - Supply of rail pads	更新版本

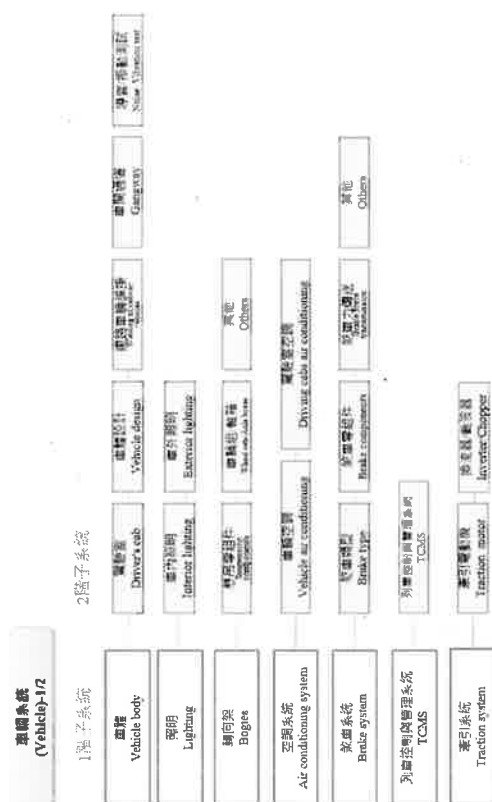
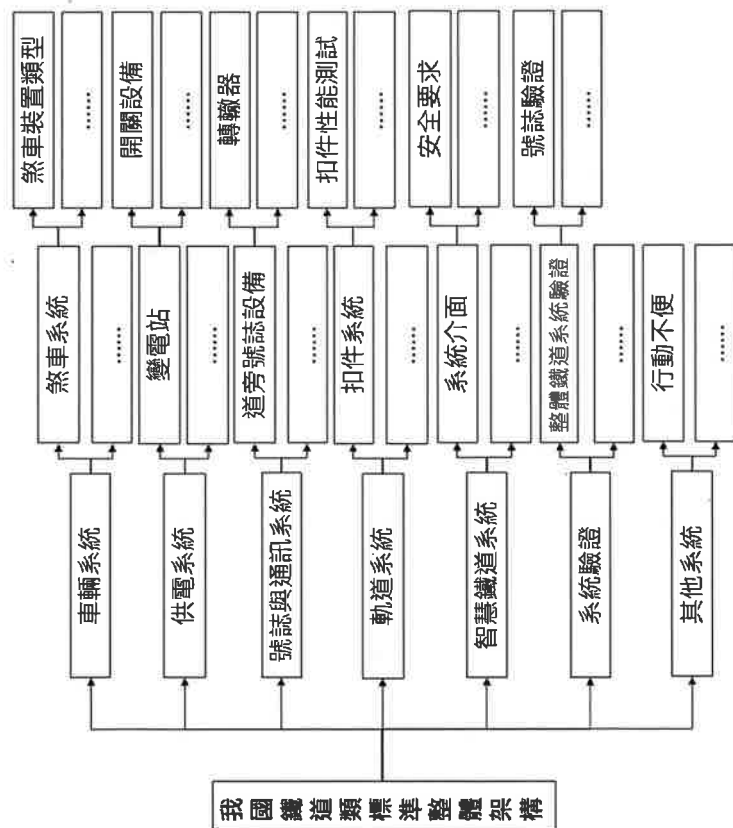
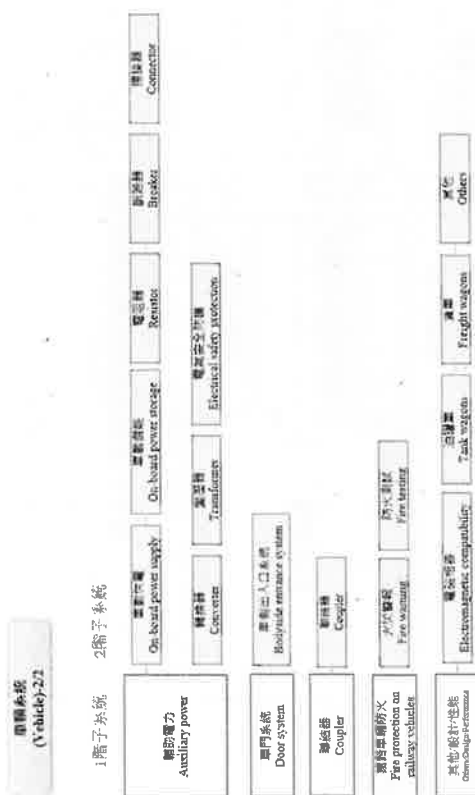
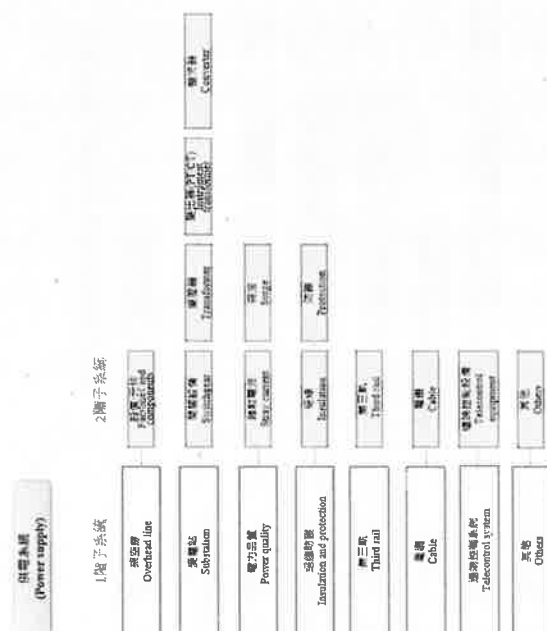


圖 3-2 我國鎖道類標準整體架構圖-車輛系統



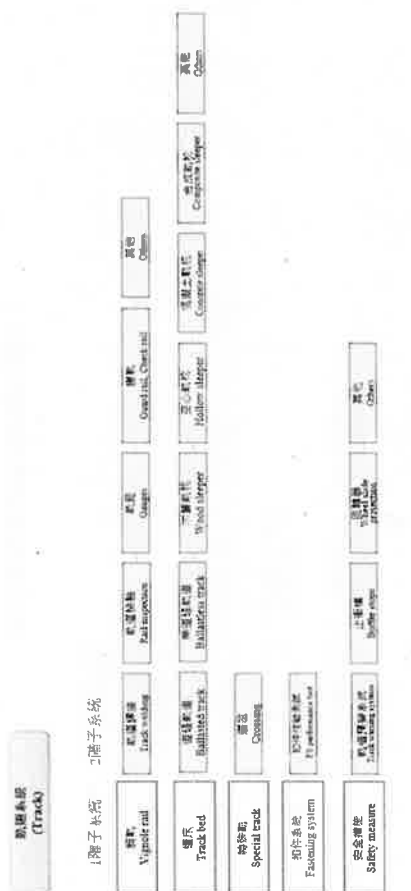


圖 3-7 我國鐵道標準整體架構圖-軌道系統

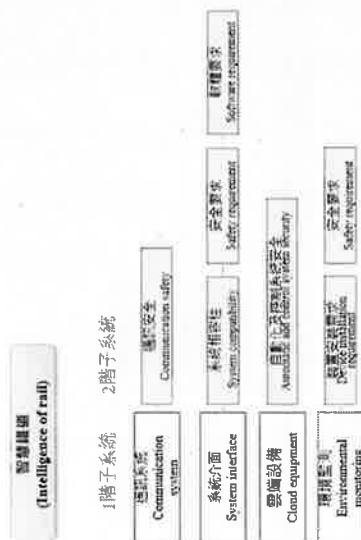


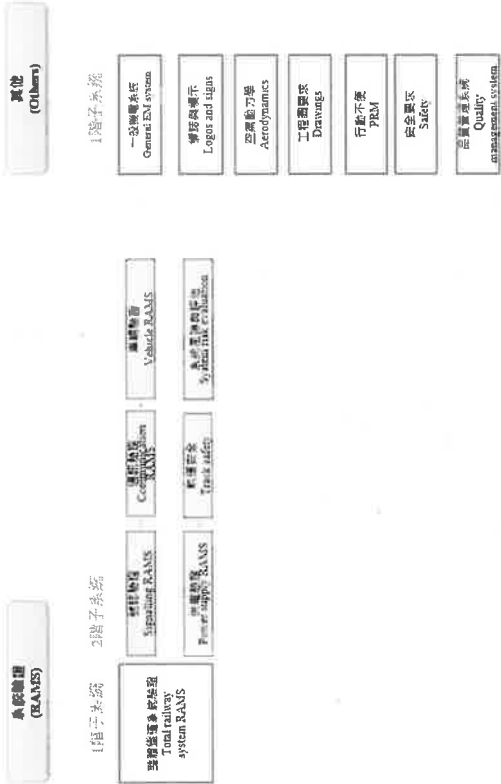
圖 3-8 我國鐵道標準整體架構圖-智慧鐵道系統

■ 車輛系統

表 3-3 我國鐵道標準整體架構-車輛系統列表

1. 項目	標準號碼	標準標題	2. 子項目	標準號碼	標準標題
車輛 Vehicle body	CNS 15969:2017	機車及客車軌道車輛車體結構要求		EN 15892:2011	Railway applications - Noise Emission - Measurement of noise inside driver's cabs
	[EN 12663-1:2010+A1:2014] EN 12663-1:2010+A2:2023				
	CNS 16194:2023 [EN 15227:2020]	鐵路應用 - 鐵路車輛之耐撞性要求	駕駛室 Driver's cab	EN 16186-1:2014 + A1:2018	Railway applications - Driver's cab - Part 1: Anthropometric data and visibility
	EN 1999-1-1:2007	Eurocode 9 Design of aluminum structures- General rules and rules for buildings		EN 16186-2:2017	Railway applications - Driver's cab - Part 2: Integration of displays, controls and indicators
	EN 1999-1-2:2007+ A.C:2009	Eurocode 9 Design of aluminum structures Structures susceptible to fatigue			
				EN 16186-3:2022	Railway applications - Driver's cab - Part 3: Design of displays

圖 3-9 我國鐵道標準整體架構圖-系統驗證及其他系統



1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	EN 14363:2016 + A1:2018	Railway applications - Testing and Simulation for the acceptance of running characteristics of railway vehicles - Running Behaviour and stationary tests		EN 16186-4:2019	Railway applications - Driver's cab - Part 4: Layout and access
	EN 17976:2024	Railway applications - Bolting of rail vehicles and components		EN 16186-5:2023	Railway applications - Driver's cabs - Part 5: External visibility for tram vehicles
				EN 16186-6:2024	Railway applications - Driver's cab - Part 6: Integration of displays, controls and indicators for tram vehicles
				EN 16186-8:2024	Railway applications - Driver's cab - Part 8: Tram vehicle layout and access
			車輛設計 Vehicle design	ISO 21106:2019	Railway applications - Recyclability and recoverability calculation method for rolling stock

階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
				EN 15273-1:2013 + A1:2016+ AC:2017	Railway applications - Gauges - Part 1: General - Common rules for infrastructure and rolling stock
				EN 15273-2:2013 + A1:2016	Railway applications - Gauges - Part 2: Rolling stock gauge
				EN 15273-3:2013 + A1:2016	Railway applications - Gauges - Part 3: Structure gauges
				EN 15551:2022	Railway applications - Railway rolling stock - Buffers
				EN 16839:2022	Railway applications - Rolling stock - Head stock layout
				EN 17149-1:2024	Railway applications - Strength assessment of rail vehicle structures - Part 1: General
				EN 17149-2:2024	Railway applications - Strength assessment of rail vehicle structures - Part 2: Static strength assessment
				EN 17460:2022	Railway applications - Adhesive bonding of rail vehicles and their components
				EN 17530:2024	Railway applications - Interior glazing for rail vehicles

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
				UIC 505-4:2007	Effects of the application of the kinematic gauges defined in the 505 series of leaflets on the positioning of structures in relation to the trucks and of the tracks in relation to each other
				UIC 505-5:2010	History, justification and commentaries on the elaboration and development of UIC leaflets of the series 505 and 506 on gauges
				UIC 506:2008	Rules governing application of the enlarged GA, GB, GB1, GB2, GC and G13 gauges
				IRS 50505-1:2021	Railway transport stock - Rolling stock construction gauge
			鐵路車輛焊接 Welding of railway vehicles	CNS 16129-1:2010 [EN 15085-1:2007] EN 15085-1:2023	鐵路應用－鐵路車輛及其零組件之焊接－第 1 部:通則
				CNS 16129-2:2010 [EN 15085-2:2007] EN 15085-2:2020+A1:2023	鐵路應用－鐵路車輛及其零組件之焊接－第 2 部:焊接製造商商品質要求及驗證

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	CNS 16129-3:2010 [EN 15085-3:2007] EN 15085-3:2023	鐵路應用－鐵路車輛及其零組件之焊接－第 3 部:設計要求		CNS 16129-4:2010 [EN 15085-4:2007] EN 15085-4:2023	鐵路應用－鐵路車輛及其零組件之焊接－第 4 部:生產要求
	CNS 16129-5:2010 [EN 15085-5:2007] EN 15085-5:2023	鐵路應用－鐵路車輛及其零組件之焊接－第 5 部:檢驗、測試及文件化		ISO 3834-1:2005	Quality requirements for fusion welding of metallic materials - Part 1: Criteria for the selection of the appropriate level of quality requirements
				ISO 3834-2:2005	Quality requirements for fusion welding of metallic materials - Part 2: Comprehensive quality requirements
				ISO 3834-3:2005	Quality requirements for fusion welding of metallic materials - Part 3: Standard quality requirements

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	ISO 3834-4:2005	Quality requirements for fusion welding of metallic materials - Part 4: Elementary quality requirements			
	ISO 3834-5:2015	Quality requirements for fusion welding of metallic materials - Part 5: Documents with which it is necessary to conform to claim conformity to the quality requirements of ISO 3834-2, ISO 3834-3 or ISO 3834-4			
	ISO 15610:2023	Specification and qualification of welding procedures for metallic materials - Qualification based on tested welding consumables			
	EN 15085-6:2022	Railway applications - Welding of railway vehicles and components - Part 6: Maintenance welding requirements			
	EN 16116-1:2022	Railway applications - Design requirements for steps, handrails and associated access for staff - Part 1: Passenger vehicles, luggage vans and locomotives	車間通道 (Gangway)		

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	EN 16286-1:2024	Railway applications - Gangway systems between vehicles - Part 1: Main applications			
	IRS 50561:2024	Railways applications - Passenger vehicles- Interconnecting gangway systems between vehicles			
	EN 16286-2:2023	Railway applications - Gangway systems between vehicles - Part 2: Acoustic measurements	噪音/振動測試 Noise/ Vibration test		
	CNS 61373 :2019 [IEC 61373:2010]	鐵路應用—鐵路車輛設備—声学及振動試驗			
	ISO 1999:2013	Acoustics - Estimation of noise-induced hearing loss			
	ISO 2631-1: 1997+ A1:2010	Mechanical vibration and shock - Evaluation of human exposure to whole-body vibration - Part 1: General requirements - Amendment 1			
	ISO 2631-2:2003	Mechanical vibration and shock - Evaluation of human exposure to whole-body vibration - Part 2: Vibration in buildings (1 Hz to 80 Hz)			

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
		Mechanical vibration and shock - Evaluation of human exposure to whole-body vibration - Part 4: Guidelines for the evaluation of the effects of vibration and rotational motion on passenger and crew comfort in fixed-guideway transport systems - Amendment 1		ISO 2631-4: 2001+ A1:2010	
		Mechanical vibration and shock - Evaluation of human exposure to whole-body vibration - Part 5: Method for evaluation of vibration containing multiple shocks		ISO 2631-5:2018	
		Acoustics - Railway applications - Measurement of noise emitted by railbound vehicles		ISO 3095:2013	
		Railway applications - Acoustics - Noise measurement inside railbound vehicles		ISO 3381:2021	
		Mechanical vibration - Measurement and evaluation of human exposure to hand-		ISO 5349-1:2001	

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
					transmitted vibration - Part 1: General requirements
					Mechanical vibration - Measurement and evaluation of human exposure to hand-transmitted vibration - Part 2: Practical guidance for measurement at the workplace
				ISO 5349-2:2001	
					Acoustics - Noise emitted by machinery and equipment - Determination of emission sound pressure levels at a work station and at other specified positions in an essentially free field over a reflecting plane with negligible environmental corrections
				ISO 11201:2010	
				IEC 60268-1:1985+A1:1988	Sound system equipment. Part 1: General
				IEC 60268-16:2020	Sound system equipment - Part 16: Objective rating of speech intelligibility by speech transmission index
				EN 14253:2003+A1:2007	Mechanical vibration - Measurement and calculation of

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
					occupational exposure to whole-body vibration with reference to health - Practical guidance
					Railway applications - External visible and audible warning devices - Part 2: Warning horns for heavy rail
	EN 15153-2:2020				
					Railway applications - External visible and audible warning devices - Part 4: Audible warning devices for urban rail
	EN 15153-4:2020				
					Railway applications - Noise emission - Characterisation of the dynamic properties of track sections for pass by noise measurements
	EN 15461:2008+A1:2010				
					Railway applications - Acoustics - Rail and wheel roughness measurement related to noise generation
	EN 15610:2019				
					Railway applications - Noise Emission - Measurement of noise inside driver's cabs
	EN 15892:2011				

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
					Railway application - Testing for the acceptance of running characteristics of railway vehicles - Freight wagons - Conditions for dispensation of freight wagons with defined characteristics from on-track tests according to EN 14363
	EN 16235:2023				
					Railway applications - Infrastructure - Noise barriers and related devices acting on airborne sound propagation - Test method for determining the acoustic performance - Part 1: Intrinsic characteristics - Sound absorption in the laboratory under diffuse sound field conditions
	EN 16272-1:2023				
					Railway applications - Infrastructure - Noise barriers and related devices acting on airborne sound propagation - Test method for determining the acoustic performance - Part 2: Intrinsic characteristics - Airborne sound
	EN 16272-2:2023				

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
					insulation in the laboratory under diffuse sound field conditions
					Railway applications - Infrastructure - Noise barriers and related devices acting on airborne sound propagation - Test method for determining the acoustic performance - Part 3-1: Normalized railway noise spectrum and single number ratings for diffuse field applications
				EN 1 6272-3-1:2023	
					Railway applications - Infrastructure - Noise barriers and related devices acting on airborne sound propagation - Test method for determining the acoustic performance - Part 3-2: Normalized railway noise spectrum and single number ratings for direct sound field applications
				EN 1 6272-3-2:2023	
				EN 1 6272-4:2016	Railway applications - Track - Noise barriers and related devices

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
					acting on airborne sound propagation - Test method for determining the acoustic performance - Part 4: Intrinsic characteristics - In situ values of sound diffraction under direct sound field
					Railway applications - Infrastructure - Noise barriers and related devices acting on airborne sound propagation - Test method for determining the acoustic performance - Part 5: Intrinsic characteristics - Sound absorption under direct sound field conditions
				EN 16272-5:2023	
					Railway applications - Infrastructure - Noise barriers and related devices acting on airborne sound propagation - Test method for determining the acoustic performance - Part 6: Intrinsic characteristics - Airborne sound insulation under direct sound field conditions
				EN 16272-6:2023	

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
				EN 16286-2:2023	Railway applications - Gangway systems between vehicles - Part 2: Acoustic measurements
				EN 16727-1:2018	Railway applications - Track - Noise barriers and related devices acting on airborne sound propagation - Non-acoustic performance - Part 1: Mechanical performance under static loadings - Calculation and test method
				EN 16727-2-1:2018	Railway applications - Track - Noise barriers and related devices acting on airborne sound propagation - Non-acoustic performance - Part 2-1: Mechanical performance under dynamic loadings due to passing trains - Resistance to fatigue
				EN 16727-2-2:2016	Railway applications - Track - Noise barriers and related devices acting on airborne sound propagation - Non-acoustic performance - Part 2-2: Mechanical performance under

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
					dynamic loadings caused by passing trains - Calculation method
				EN 16951-1:2018	Railway applications - Track - Noise barriers and related devices acting on airborne sound propagation - Procedures for assessing long term performance - Part 1: Acoustic characteristics
				EN 16951-2:2018	Railway applications - Track - Noise barriers and related devices acting on airborne sound propagation - Procedures for assessing long term performance - Part 2: Non-acoustic characteristics
				EN 17936:2024	Railway applications - Acoustics - Measurement of source terms for environmental noise calculations

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
				IRS 75717:2023	Track noise measurement guidelines - A methodology to measure and compare noise emissions during train pass-bys
照明 Lighting	EN 13272-1:2019	Railway applications - Electrical lighting for rolling stock in public transport systems - Part 1: Heavy rail	車內照明 Interior lighting	IEC 62718:2013+COR1:2016	Railway applications - Rolling stock - DC supplied electronic ballasts for lighting fluorescent lamps
	EN 13272-2:2019	Railway applications - Electrical lighting for rolling stock in public transport systems - Part 2: Urban rail	車外照明 Exterior lighting		
轉向架 Bogies	CNS 16149:2021 [EN 13749:2011] EN 13749:2021+A1:2023	鐵路應用 — 車輪組及轉向架 — 轉向架結構之要求		ISO 22749-1:2021	Railway applications - Suspension components - Part 1: Characteristics and test methods for elastomer-mechanical parts
	EN 13260:2020	Railway applications - Wheelsets and bogies - Wheelsets - Product requirements	懸吊零件 Suspension components	ISO 22749-2:2021	Railway applications - Suspension components - Part 2: Approval procedure and quality monitoring for elastomer-mechanical parts
	EN 13261:2024	Railway applications - Wheelsets and bogies - Axles - Product		EN 13298:2003	Railway applications - Suspension components - Helical suspension springs, steel

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
		requirements		EN 13597:2003	Railway applications - Rubber suspension components - Rubber diaphragms for pneumatic suspension springs
	EN 14363:2016 + A1:2018	Railway applications - Testing and Simulation for the acceptance of running characteristics of railway vehicles		EN 13802:2013	Railway applications - Suspension components - Hydraulic dampers
	EN 15827:2011	Railway applications - Requirements for bogies and running gears		EN 13913:2003	Railway applications - Rubber suspension components - Elastomer-based mechanical parts
	UIC 515-1:2003	Passenger Rolling Stock - Trailer Bogies - Running Gear - General Provisions Applicable To The Components Of Trailers Bogies		EN 14200:2004	Railway applications - Suspension components - Parabolic springs, steel
	UIC 515-4:1993	Passenger rolling stock trailer bogies - running gear bogie frame structure strength tests		EN 14817:2006	Railway applications - Suspension components - Air spring control elements

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	UTC 515-5:1994	Powered And Trailing Stock - Bogies - Running Gear - Tests For Axle-Boxes			
	UTC 615-4:2003	Motive power units - Bogies and running gear - Bogie frame structure strength tests.			
	IRS 80811-3:2024	Railway applications - Axle surface treatments to improve mechanical properties - Additional requirements to EN 13261		EN 15049:2007	Railway applications - Suspension components - Torsion bar, steel
				EN 12080:2017	Railway applications - Axleboxes - Rolling bearings
				EN 12081:2017	Railway applications - Axleboxes - Lubricating greases
			車輪組/輪箱 Wheel sets/ Axle boxes	EN 12082:2021	Railway applications - Axleboxes - Performance testing
				EN 13103-1:2017	Railway applications - Wheelsets and bogies - Part 1: Design method for axles with external journals

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
				EN 13260:2020	Railway applications - Wheelsets and bogies - Wheelsets - Product requirements
				EN 13261:2024	Railway applications - Wheelsets and bogies - Axles - Product requirements
				EN 13262:2004 + A2:2011	Railway applications - Wheelsets and bogies - Wheels - Product requirements
				EN 13715:2006 + A1:2010	Railway applications - Wheelsets and bogies - Wheels - Tread profile
				EN 13979-1:2023	Railway applications - Wheelsets and bogies - Monobloc wheels - Technical approval procedure - Part 1: Forged and rolled wheels
				EN 14865-1:2009 + A1:2010	Railway applications - Axlebox lubricating greases - Part 1: Method to test the ability to lubricate
				EN 14865-2:2006 + A2:2010	Railway applications - Axlebox lubricating greases - Part 2: Method to test the mechanical

I 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
		stability to cover vehicle speeds up to 200 km/h			
	EN 15302:2021	Railway applications - Method for determining the equivalent conicity			
	EN 15313:2024	Railway applications - In-service wheelset operation requirements - In-service and off-vehicle wheelset maintenance			
	EN 15427:2008 + A1:2010	Railway applications - Wheel/rail friction management - Flange lubrication			
	EN 15437-1:2009+ A1:2022	Railway applications - Axlebox condition monitoring - Interface and design requirements - Part 1: Track side equipment and rolling stock axlebox			
	EN 15437-2:2012+ A1:2022	Railway applications - Axlebox condition monitoring - Interface and design requirements - Part 2: Performance and design requirements of on-board systems for temperature monitoring			

I 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	EN 15654-1:2023				Railway applications - Measurement of vertical forces on wheels and wheelsets - Part 1: On-track measurement sites for vehicles in service
	EN 15654-2:2019				Railway applications - Measurement of vertical forces on wheels and wheelsets - Part 2: Test in workshop for new, modified and maintained vehicles
	EN 16028:2012				Railway applications - Wheel/rail friction management - Lubricants for trainborne and trackside applications
	EN 16910-1:2018				Railway applications - Rolling stock - Requirements for non-destructive testing on running gear in railway maintenance - Part 1: Wheelsets
	UIC 814:1988				Technical Specification for The official testing and supply of greases intended for The lubrication of railway vehicle roller bearing axle boxes

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
空調系統 Air conditioning system				IRS 50510-5:2023	Additional requirements for the technical approval of forged and rolled wheels according to EN 13979-1:2020
			其他 Others	EN 15663:2024	Railway applications - Vehicle reference masses
	CNS 16163-2:2022 [EN 14750-2:2006]	鐵路應用-指令區域型車輛 路車輛之空調-第 2 部：型式試驗	車輛空調 Vehicle air conditioning		
			駕駛室空調 Driving cabs air conditioning	CNS 16156-2:2021 [EN 14813-2:2006 + A1:2010]	鐵路應用－駕駛室之空調－第 2 部：型式試驗
	EN ISO 19659-1:2023	Railway applications - Heating, ventilation and air conditioning systems for rolling stock - Part 1: Terms and definitions	車輛空調 air conditioning	EN 14813-1:2006 + A1:2010	Railway applications - Air conditioning for driving cabs - Part 1: Comfort parameters
	ISO 19659-2:2020	Railway applications - Heating, ventilation and air conditioning systems for rolling stock - Part 2: Thermal comfort			

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
熱車系統 Brake system	ISO 19659-3:2022	Railway applications - Heating, ventilation and air conditioning systems for rolling stock - Part 3: Energy efficiency			
	EN 13129:2016	Railway applications - Air conditioning for main line rolling stock - Comfort parameters and type tests			
	EN 14750-1:2006	Railway applications - Air conditioning for urban and suburban rolling stock - Part 1: Comfort parameters			
	CNS 16155-1:2021 [EN 13452-1:2003]	鐵路應用－熱車－大眾運輸熱車系統－第 1 部：性能要求	熱車類型 Brake type	CNS 15972:2017 [UIC 541-3:2010] UIC 541-3:2017	鐵路車輛碟式煞車及其應用
	CNS 16155-2:2021 [EN 13452-2:2003]	鐵路應用－熱車－大眾運輸熱車系統－第 2 部：試驗方法		EN 14535-1:2019	Railway applications - Brake discs for railway rolling stock - Part 1: Brake discs pressed or shrunk onto the axle or drive shaft, dimensions and quality requirements

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	CNS 16244-1 [EN 16185-1:2014 + A1:2020]	鐵路應用—多車組列車煞車系統—第1部：要求及定義		EN 14535-2:2019	Railway applications - Brake discs for railway rolling stock - Part 2: Brake discs mounted onto the wheel, dimensions and quality requirements
	CNS 16244-2 [EN 16185-2:2014 + A1:2019]	鐵路應用—多車組列車煞車系統—第2部：試驗法			
	ISO 4975:2022	Railway applications - Braking system - Quality of compressed air for pneumatic apparatus and systems		EN 14535-3:2016	Railway applications - Brake discs for railway rolling stock - Part 3: Brake discs, performance of the disc and the friction couple, classification
	ISO 20138-1:2018	Railway applications - Calculation of braking performance (stopping, slowing and stationary braking) - Part 1: General algorithms utilizing mean value calculation			
	ISO 20138-2:2019	Railway applications - Calculation of braking		EN 16207:2024	Railway applications - Braking - Functional and performance criteria of Magnetic Track Brake systems for use in railway rolling stock

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
		performance (stopping, slowing and stationary braking) - Part 2: General algorithms utilizing step by step calculation			
	ISO 24221:2024	Railway applications- Braking system - General requirements			
	ISO 24478:2023	Railway applications - Braking - General vocabulary		UIC 541-5:2005	Brakes - Electropneumatic brake (ep brake) - Electropneumatic emergency brake override (EBO)
	EN 14198:2016 + A1:2018	Railway applications - Braking - Requirements for the brake system of trains hauled by locomotives			
	EN 14478:2017	Railway applications - Braking - Generic vocabulary		UIC 541-6:2010	Brakes - Electropneumatic brake (ep brake) and Passenger alarm signal (PAS)

I 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題	
	EN 14531-1:2015 + A1:2018	Railway applications - Methods for calculation of stopping and slowing distances and immobilization braking - Part 1: General algorithms utilizing mean value calculation for train sets or single vehicles		UIC 546:2014	Brakes - High power brakes for passenger trains	
				UIC 547:1989	Brakes - Air brake - Standard programme of tests	
	EN 14531-2:2015	Railway applications - Methods for calculation of stopping and slowing distances and immobilization braking - Part 2: Step by step calculations for train sets or single vehicles		IRS 50540:2024	Brakes - Air brakes for freight trains and passenger trains	
				IRS 50541-06:2021	Brakes - Regulations concerning the construction of the various brake components - Magnetic track brakes	
	EN 15179:2007	Railway applications - Braking - Requirements for the brake system of coaches				

I 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	EN 15595:2018+A1:2023	Railway applications - Braking - Wheel slide protection		CNS 8489:2016 [UIC 541-4:2010] UIC 541-4:2020	鐵路車輛用合成閉瓦
		Railway applications - Braking systems of high speed trains - Part 1: Requirements and definitions			
	EN 15734-1:2021	Railway applications - Braking systems of high speed trains - Part 1: Test methods		EN 14601:2024	Railway applications - Straight and angled end cocks for brake pipe and main reservoir pipe
	EN 15734-2:2021	Railway applications - Braking systems of high speed trains - Part 2: Test methods		EN 15220:2016	Railway applications - Brake indicators
	EN 16834:2019	Railway applications - Braking - Brake performance		EN 15328:2020+ A1:2024	Railway applications - Braking - Brake pads
	EN 17065:2018	Railway applications - Braking - Passenger coach test procedure			
	EN ISO 24478:2024	Railway applications - Braking - General vocabulary		EN 15329:2019	Railway applications - Braking - Brake block holder and brake block key
	UIC 543:2018	Brakes - Regulations governing the equipment of trailing stock			

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題	
	UTC 544-1:2014	Brakes - Braking performance		EN 15355:2023	Railway applications - Braking - Distributor valves and distributor-isolating devices	
	IRS 50541-04:2023	Brakes - Regulations concerning the manufacture of brake components - Self-adjusting load-proportional braking system and automatic "empty-loaded" control device		EN 15611: 2020+ A1:2022	Railway applications - Braking - Relay valves	
		IRS 50543:2023		Brakes - Regulations governing the equipment of trailing stock	EN 15612:2008 + A1:2010	Railway applications - Braking - Brake pipe accelerator valve
					EN 15624:2024	Railway applications - Braking - Empty-loaded changeover devices
					EN 15625:2021	Railway applications - Braking - Automatic variable load sensing devices
				EN 16451:2024	Railway applications - Braking - Brake pad holder	
				EN 16452:2015 + A1:2019	Railway applications - Braking - Brake blocks	

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	UTC 541-01:2017			UTC 541-01:2017	Brakes - Brake cylinder/units for air brakes - General conditions for certification and use
	UTC 541-03:2015			UTC 541-03:2015	Brakes - Specifications for the construction of various brake parts - Driver's brake valve / Driver's brake controller
	UTC 541-05:2016			UTC 541-05:2016	Brakes - Manufacturing specifications for various brake parts - Wheel Slide Protection device (WSP)
	UTC 541-07:1992			UTC 541-07:1992	Brakes - Regulations governing the construction of different types of braking gear - Simple pressure receptacles of steel, not fired, for air braking equipment and auxiliary pneumatic equipment for railway rolling stock
	UTC 541-08:2007			UTC 541-08:2007	Brakes - Regulations concerning the manufacture of the different brake parts - Derailment detectors for wagons

I 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
				UIC 541-1:2016	Brakes - Regulations concerning the design of brake components
				UIC 542:2015	Brake parts - Interchangeability
				IRS 50544-3:2020	Brakes - Venting performance of ETCS emergency brake valves for Lambda trains
				IRS 50548:2022	Brakes - Requirements of friction test benches for the international certification of brake pads and brake blocks
				EN 15624:2024	Railway applications - Braking - Empty-loaded changeover devices
			制動力傳遞 Brake force transmission	UIC 541-04:2014	Brakes - Regulations concerning the manufacture of brake components - Self-adjusting load-proportional braking system and automatic "empty-loaded" control device
				UIC 541-2:1981	Dimensions of hose connections (brake hoses) and electric cables; types of pneumatic and electric connections and their positioning on wagons and coaches equipped

I 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
					with automatic couplers of the UIC and OSID Member Railways
				UIC 544-2:1983	Conditions to be observed by the dynamic brake of locomotives and motor coaches so that the extra braking effort produced can be taken into account for the calculation of the braked-weight
			其他 Others	UIC 543-1:2010	Brakes - A study of minimum standards for maintenance of goods wagon brakes
				UIC 545:2014	Brakes - Inscriptions, marks and signs
列車控制與 管理系统 (TCMS) Train control and management systems	CNS 16134:2020 [EN 50155:2017] EN 50155:2021	鐵路應用—鐵路車輛—電子設備	列車控制與 管理系统 (TCMS) Train control and management systems		
管理系統 (TCMS) Train control and management systems	CNS 61375-2-4:2021 [IEC TS 61375-2-4:2017]	電子化鐵路設備—列車通訊網絡(TCN)—第 2-4 部：TCN 應用規範			

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	CNS 61375-2-6:2024 [IEC 61375-2-6: 2018]	鐵路電子設備-列車通訊 網路(TCN)－第 2-6 節:車 載地面通訊			
	CNS 62236-3-1:2022 [IEC 62236-3-1:2018] EN 50121-3-1:2017+ A1:2019	鐵路應用-電磁相容-第 3-1 節：鐵路車輛-列車與整車			
	CNS 62236-3-2:2022 [IEC 62236-3-2:2018]	鐵路應用-電磁相容-第 3-2 節：鐵路車輛-裝置			
	EN 50121-4:2016+ A1:2019	Railway applications - Electromagnetic compatibility - Part 4: Emission and immunity of the signalling and telecommunications apparatus			

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	EN 50121-5:2017+ A1:2019	Railway applications - Electromagnetic compatibility - Part 5: Emission and immunity of fixed power supply installations and apparatus			
	EN 50238-2:2020	Railway applications - Compatibility between rolling stock and train detection systems - Part 2: Compatibility with track circuits			
	EN 50238-3:2022	Railway applications - Compatibility between rolling stock and train detection systems - Part 3: Compatibility with axle counters			
	EN 61375-2-3:2015 + A1:2017	Electronic railway equipment - Train communication network(TCN) - Part 2-3: TCN communication profile			

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
牽引系統 Traction system	CNS 61377:2021 [IEC 61377:2016]	鐵路應用—鐵路車輛—牽引系統綜合試驗法	牽引電動機 Traction motor	CNS 15588-1:2012 [IEC 60349-1:2010]	電力牽引—軌道及道路車輛用之旋轉電機—第 1 部:旋轉電機 (不含電子換流器供電之交流電動機)
	CNS 62498-1:2023 [EN 50125-1:2014]	鐵路應用—設備之環境條件—第 1 部:鐵路車輛及車載設備		CNS 15588-2:2012 [IEC 60349-2:2010]	電力牽引—軌道及道路車輛用之旋轉電機—第 2 部:電子換流器供電之交流電動機
	IEC 60034-1:2017	Rotating electrical machines - Part 1: Rating and performance		CNS 15588-3:2012 [IEC 60349-3:2010]	電力牽引—軌道及道路車輛用之旋轉電機—第 3 部:由組件損失總和判定換流器供電交流電動機之總損失
	EN 50122-3:2022	Railway applications - Fixed installations - Electrical safety, earthing and the return circuit - Part 3: Mutual interaction of AC and DC traction systems			
	EN 50163: 2004+A3:2022	Railway applications - Supply voltages of traction systems		CNS 15588-4:2013 [IEC 60349-4:2012]	電力牽引—軌道及道路車輛用之旋轉電機—第 4 部:電子換流器供電之永磁同步電機
	EN 50388-1:2022	Railway Applications- Fixed installations and rolling stock- Technical criteria for the coordination between electric traction power supply systems and rolling stock to achieve			

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
輔助電力 Auxiliary power		Interoperability - Part 1: General			
	IEC 63438:2024	Railway applications - Fixed installations - Protection principles for AC and DC electric traction power supply systems		IEC 62520:2011	Railway applications - Electric traction - Short-primary type linear induction motors (LIM) fed by power converters
			換流器/載波器 Inverter/Carrier		
	CNS 60494:2019 [IEC 60494-1 :2013 & IEC 60494-2:2013]	鐵路車輛—集電弓—特性和試驗—正線、快速及輕軌車輛之集電弓	車載供電 On-board power supply	CNS 16134:2020 [EN 50155:2017] EN 50155:2021 CNS 62498-1:2023 [EN 50125-1:2014]	鐵路應用—鐵路車輛—電子設備 鐵路應用—設備之環境條件—第 1 部:鐵路車輛及車載設備
	CNS 60077-1:2024 [IEC 60077-1:2017]	鐵路應用—鐵路車輛之電氣設備—第 1 部:一般使用條件及通則		IEC 60077-4:2019	Railway applications - Electric equipment for rolling stock - Part 4: Electrotechnical components - Rules for AC circuit-breakers

! 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	IEC 60077-2:2017	Railway applications - Electric equipment for rolling stock - Part 2: Electrotechnical components - General rules		IEC 60077-5:2019	Railway applications - Electric equipment for rolling stock - Part 5: Electrotechnical components - Rules for HV fuses
	IEC 62485-1 :2015	Safety requirements for secondary batteries and battery installations- General safety information		IEC 62313:2009	Railway applications - Power supply and rolling stock - Technical criteria for the coordination between power supply (substation) and rolling stock
	IEC 62485-2 :2010	Safety requirements for secondary batteries and battery installations- Stationary batteries		EN 50317: 2012+ A1:2022	Railway applications- Current collection systems- Requirements for and validation of measurements of the dynamic interaction between pantograph and overhead contact line
	IEC 62486:2017	Railway applications - Current collection systems - Technical criteria for the interaction between pantograph and overhead contactline (to achieve free access)		EN 50318: 2018+ A1:2022	Railway applications - Current collection systems - Validation of simulation of the dynamic interaction between pantograph

! 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	IEC 62499:2021	Railway applications - Current collection systems - Pantographs, testing methods for carbon contact strips			
	IEC 62973-3:2024	Railway applications - Rolling stock - Batteries for auxiliary power supply systems - Part 3: Lead acid batteries		CNS 16134:2020 [EN 50155:2017] EN 50155:2021	鐵路應用－鐵路車輛－電子設備
	IEC 62973-4	Railway applications - Rolling stock - Batteries for auxiliary power supply systems - Part 4: Secondary sealed nickel-metal hydride batteries	車載儲能 On-board power storage		
	IEC 62973-5:2023	Railway applications - Rolling stock - Batteries for auxiliary power supply systems - Part 5: Lithium-ion batteries		CNS 61373:2019 [IEC 61373:2010]	鐵路應用－鐵路車輛設備－新製及振動試驗
	IEC 63076:2023	Railway applications - Rolling stock - Electrical equipment in trolley buses -		CNS 61881-3:2021 [IEC 61881-3: 2012+ A1:2013]	鐵路應用－鐵路車輛設備－電力電子之電容器－第3部：電解電容器

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
		Safety requirements and current collection systems			
	EN 50274:2002	Low voltage switchgear and control gear assemblies- Protection against electric shock-Protection against unintentional direct contact with hazardous live parts.			
	EN 50343:2024	Railway applications- Rolling stock- Rules for installation of cabling		CNS 62928:2021 [EN IEC 62928:2018]	鐵路應用—鐵路車輛—車體纜線子牽引電池
	EN 50547:2013	Railway applications - Batteries for auxiliary power supply systems		IEC 60068-2-14:2009	Environmental testing -Part 2-14: Tests - Test N: Change of temperature
	EN 50702:2021	Railway applications - Rolling stock - Conductor rail current collectors (shogear): Characteristics and tests		IEC 60623:2017	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Vented nickel-cadmium prismatic rechargeable single cells

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
				IEC 61881-2:2012	Railway applications - Rolling stock equipment - Capacitors for power electronics - Part 2: Aluminium electrolytic capacitors with non solid electrolyte
				IEC 62391-2:2006	Fixed electric double-layer capacitors for use in electronic equipment - Part 2: Sectional specification - Electric double-layer capacitors for power application
				IEC 62576:2018	Electric double-layer capacitors for use in hybrid electric vehicles. Test methods for electrical characteristics
				IEC 62619:2017	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for secondary lithium cells and batteries, for use in industrial applications

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
				IEC 62620:2014	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Secondary lithium cells and batteries for use in industrial applications
				IEC 62864-1:2016	Railway applications - Rolling stock - Power supply with onboard energy storage system - Part 1: Series hybrid system
				EN 60068-2-27:2009	Basic environmental testing procedures - Part 2: Tests - Test E1a and guidance: Shock
				EN 60068-2-78:2013	Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state
				EN 61881-1:2011	Railway applications - Rolling stock equipment - Capacitors for power electronics - Part 1: Paper/plastic film capacitors

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
				EN 62391-1:2016	Fixed electric double-layer capacitors for use in electric and electronic equipment - Part 1: Generic specification
			電阻器 Resistor	EN 60322:2001	Railway applications - Electric equipment for rolling stock - Rules for power resistors of open construction
			斷路器 Breaker	IEC 60077-3:2019	Railway applications - Electric equipment for rolling stock - Part 3: Electrotechnical components - Rules for d.c. circuit-breakers
				IEC 60077-4:2019	Railway applications - Electric equipment for rolling stock - Part 4: Electrotechnical components - Rules for AC circuit-breakers
				IEC 60077-5:2019	Railway applications - Electrotechnical equipment for rolling stock - Part 5:

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
					Electrotechnical components - Rules for HV fuses
				IEC 62847:2023	Railway applications - Rolling stock - Electrical connectors - Requirements and test methods
			連接器 Connector	EN 50467:2011	Railway applications - Rolling stock - Electrical connectors, requirements and test methods
				EN 50546:2024	Railway applications - Rolling Stock - Three-phase shore (external) supply system for rail vehicles and its connectors
			轉換器 Converter	IEC 61287-1:2014	Railway applications - Power converters installed on board rolling stock - Part 1: Characteristics and test methods
			變壓器 Transformer	IEC 60310:2016	Railway applications - Traction transformers and inductors on board rolling Stock
			電氣安全防 護 Electrical	EN 50153:2014	Railway applications - Rolling stock - Protective provisions relating to electrical hazards

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
			safety protection		
				CNS 16211-2:2023 [ISO 10140-2:2021]	建築—建築構件隔音之實驗室量測—第 2 部：空氣音隔音量測
				CNS 15813-1:2015 [ISO 12567-1:2010]	門窗熱性能—熱傳遞性熱箱測定法—第 1 部：完整門窗
車門系統 Door system			車側出入口 系統 Bodyside entrance system	CNS 16108-2:2019 [EN 45545-2:2013+ A1:2015] EN 45545-2:2020+ A1:2023	鐵路應用—鐵路車輛防火—第 2 部：材料及零組件火災時之行為要求
				CNS 16134:2020 [EN 50155:2017] EN 50155:2021	鐵路應用—鐵路車輛—電子設備
				CNS 16150:2021 [EN 14752:2015+ A1:2017] EN 14752:2019+ A1:2021	鐵路應用—鐵路車輛車體側入口系統

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	CNS 60077-1:2024 [IEC 60077-1:2017]	鐵路應用－鐵路車輛之電氣設備－第1部：一般使用條件及通則			
	CNS 61373:2019 [IEC 61373:2010]	鐵路應用－鐵路車輛設備－衝擊及振動試驗			
	CNS 62279:2023 [IEC 62279:2015] EN 50128:2011+A2:2020	鐵路應用－通訊、號誌及處理系統－鐵路控制及防護系統之軟體			
	CNS 62498-1:2023 [EN 50125-1:2014]	鐵路應用－設備之環境條件－第1部：鐵路車輛及車載設備			
	ISO 5658-2:2006	Reaction to fire tests-spread of flame-Part 2: Lateral spread on building products in vertical configuration			
	ISO 10140-2:2010	Acoustics - Laboratory measurement of sound insulation of building elements - Part 2: Measurement of airborne sound insulation			

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	ISO 12567-1:2010+ Cor 1:2010				Thermal performance of windows and doors - Determination of thermal transmittance by the hot-box method - Part 1: Complete windows and doors
	ISO 22752:2021				Railway applications - Bodyside windows for rolling stock
	IEC 62278:2002				Railway applications - Specification and demonstration of reliability, availability, maintainability and safety (RAMS)
	EN 14067-1:2003				Railway applications - Aerodynamics - Part 1: Symbols and units

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
				EN 14067-3:2003	Railway applications - Aerodynamics - Part 3: Aerodynamics in tunnels
				EN 14067-4:2024	Railway applications - Aerodynamics - Part 4: Requirements and test procedures for aerodynamics on open track
				EN 14067-5: 2021+ AC:2023	Railway applications - Aerodynamics - Part 5: Requirements and test procedures for aerodynamics in tunnels
				EN 14067-6:2018	Railway applications - Aerodynamics - Part 6: Requirements and test procedures for cross wind assessment
				EN 50133:2014	Railway applications - Rolling stock - Protective provisions relating to electrical hazards
聯結器 Coupler	CNS 16223:2024 [EN 16019:2014] EN 15020:2006 + A1:2010	鐵路應用—自動聯結器—性能要求、特定介面幾何及試驗法 Railway applications - Rescue coupler -	聯結器 Coupler		

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
		Performance requirements, specific interfaces geometry and test methods			
	EN 15566:2022	Railway applications - Railway rolling stock - Draw gear and screw coupling			
	EN 15807:2021	Railway applications - Pneumatic half couplings			
鐵路車輛 防火 Fire protection on railway vehicles	CNS 16108-1:2019 [EN 45545-1:2013]	鐵路應用—鐵路車輛防火—第 1 部:通則	火災警報 Fire warning		
			防火測試 Fire testing	EN 16989:2018	Railway applications - Fire protection on railway vehicles - Fire behaviour test for a complete seat
				EN 17084:2018	Railway applications - Fire protection on railway vehicles - Toxicity test of materials and components
	CNS 16108-2:2019 [EN 45545-2:2013+ A1:2015]	鐵路應用—鐵路車輛防火—第 2 部:材料及零組件火災時之行爲要求			

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	EN 45545-2:2020+ A1:2023				
	EN 45545-3:2024	Railway applications - Fire protection on railway vehicles - Part 3: Fire resistance requirements for fire barriers			
	EN 45545-4:2024	Railway applications - Fire protection on railway vehicles - Part 4: Fire safety requirements for rolling stock design			
	EN 45545-5:2016	Railway applications - Fire protection on railway vehicles - Part 5: Fire safety requirements for electrical equipment including that of trolley buses, truck guided buses and magnetic levitation vehicles			
	EN 45545-6:2024	Railway applications - Fire protection on railway vehicles - Part 6: Fire			

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
		control and management systems			
	EN 45545-7:2013	Railway applications - Fire protection on railway vehicles - Part 7: Fire safety requirements for flammable liquid and flammable gas installations			
	CNS 15768:2010 [IEC 61133:2016] IEC 61133:2021	軌道車輛框架充氣點燃轉 荷之整車測試		CNS 62236-3-1:2022 [IEC 62236-3-1:2018] EN 50121-3-1:2017+ A1:2019	鐵路應用-電磁相容-第 3-1 部： 鐵路車輛-列車與整車
其他/設計/性能	ISO 281:2007	Rolling bearings - Dynamic load ratings and rating life		CNS 62236-3-2:2022 [IEC 62236-3-2:2018]	鐵路應用-電磁相容-第 3-2 部： 鐵路車輛-裝置
Others/					Railway applications - Electromagnetic compatibility - Part 2: Emission of the whole railway system to the outside world
Design/			電磁相容	IEC 62236-2:2018	
Performance	EN 12299:2024	Railway applications - Ride comfort for passengers - Measurement and evaluation	Electromagnetic compatibility		Specification for radio disturbance and immunity measuring apparatus and methods - Part 2-3: Methods of measurement of disturbances and immunity -

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
					Radiated disturbance measurements
	EN 15380-4:2013	Railway applications - Classification system for railway vehicles - Part 4: Function groups		EN 50728:2024	Railway applications - Rolling stock - Testing for electromagnetic compatibility with track circuits
	EN 15380-5:2014	Railway applications - Classification system for railway vehicles - Part 5: System Breakdown Structure (SBS)		EN 12561-1:2011	Railway applications - Tank wagons - Part 1: Identification plates for tank wagons for the carriage of dangerous goods
	EN 15528:2021	Railway applications - Line categories for managing the interface between load limits of vehicles and infrastructure	油罐車 Tank wagons	EN 12561-2:2011	Railway applications - Tank wagons - Part 2: Bottom emptying devices for liquid products including vapour return
	EN 15723:2010	Railway applications - Closing and locking devices for payload protecting devices against environmental influences - Requirements for durability, operation, indication, maintenance, recycling		EN 12561-3:2011 + AC:2014	Railway applications - Tank wagons - Part 3: Bottom filling and emptying devices for gases liquefied under pressure

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	EN 16362:2013	Railway applications - Ground based services - Water restocking equipment		EN 12561-4:2011	Railway applications - Tank wagons - Part 4: Devices for top filling and emptying of liquid products
	EN 16404:2016	Railway applications - Re-railing and recovery requirements for railway vehicles		EN 12561-5:2011	Railway applications - Tank wagons - Part 5: Devices for vapour return while filling or emptying of liquid products
	EN 17343:2023	Railway applications - General terms and definitions		EN 12561-6:2011	Railway applications - Tank wagons - Part 6: Manholes
	EN 50463-1:2024	Railway applications - Energy measurement on board trains - Part 1: General		EN 12561-7:2011	Railway applications - Tank wagons - Part 7: Platforms and ladders
	EN 50463-2:2024	Railway applications - Energy measurement on board trains - Part 2: Energy measuring		EN 12561-8:2011	Railway applications - Tank wagons - Part 8: Heating connections
	EN 50463-3:2024	Railway applications - Energy measurement on board trains - Part 3: Data handling	貨車 Freight wagons	EN 12663-2:2023	Railway applications - Structural requirements of railway vehicle bodies - Part 2: Freight wagons

I 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	EN 50463-4:2017	Railway applications - Energy measurement on board trains - Part 4: Communication		EN 13775-1:2003	Railway applications - Measuring of new and modified freight wagons - Part 1: Measuring principles
	EN 50463-5:2024	Railway applications - Energy measurement on board trains - Part 5: Conformity assessment		EN 13775-2:2003	Railway applications - Measuring of new and modified freight wagons - Part 2: Freight wagons with bogies
	EN 50591:2019	Railway applications - Rolling Stock - Specification and verification of energy consumption		EN 13775-3:2003	Railway applications - Measuring of new and modified freight wagons - Part 3: Freight wagons with 2 wheelsets
	EN 50657:2023	Railways applications- Rolling stock applications- Software on board rolling stock		EN 13775-4:2004	Railway applications - Measuring of new and modified freight wagons - Part 4: Bogies with 2 wheelsets
				EN 13775-5:2004	Railway applications - Measuring of new and modified freight

I 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
					wagons - Part 5: Bogies with 3 wheelsets
				EN 13775-6:2004	Railway applications - Measuring of new and modified freight wagons - Part 6: Multiple and articulated freight wagons
				EN 15839:2024	Railway applications - Testing for the acceptance of running characteristics of railway vehicles - Freight wagons - Testing of running safety under longitudinal compressive forces
				EN 15877-1:2024	Railway applications - Marking on railway vehicles - Part 1: Freight wagons
				EN 16116-2:2024	Railway applications - Design requirements for steps, handrails and associated access for staff - Part 2: Freight wagons

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
				EN 16860:2019	Railway applications - Requirements and general principles for securing payload in rail freight transport
				IRS 40426:2024	Freight transport - Standardised seals - Guidelines for sealing wagons and intermodal transport units
				IRS 40428-3:2024	Formation of international trains and groups of wagons
				IRS 50502-2:2024	Exceptional consignments - Outline procedure
				IRS 50571-5:2023	Wagons for combined transport - Horizontal transshipment - Characteristics of the wagons suitable for the transport of roller units
				IRS 50571-6:2023	Wagons for combined transport - Low-floor wagons for the transport of road vehicles

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
				IRS 50592:2023	Intermodal Loading Units (other than semi-trailers) for vertical transshipment and suitable for carriage on wagons - Minimum requirements
				IRS 50596-5:2023	Transport of road vehicles on wagons - Technical Organisation - Conveyance of semi-trailers with P coding or N coding on recess wagons
				IRS 50596-6:2024	Conditions for coding intermodal loading units, combined transport lines and wagons
				CNS 14678:2002 [UIC 564-1:1979]	客車廂之玻璃窗
			其他 Others	CNS 14829:2004 [UIC 822:2003]	軌道車輛用壓縮螺旋彈簧

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	EN 15152:2019+ A1:2023	Railway applications - Winderscreens for trains			
	EN 15153-1:2013 + A1:2016	Railway applications - External visible and audible warning devices for trains - Part 1: Head, marker and tail lamps			
	EN 15663:2017 + A1:2018	Railway applications - Vehicle reference masses			
	EN 15877-2:2013	Railway applications - Markings of railway vehicles - Part 2: External markings on coaches, motive power units, locomotives and on track machines (MKS-I)			
	EN 16241:2014 + A1:2016	Railway applications - Slack adjuster			
	EN 16507:2014	Railway applications - Ground based service - Diesel refuelling equipment			

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	EN 16922: 2017+ A1:2019				Railway applications - Ground based services - Vehicle waste water discharge equipment
	EN 17023:2018				Railway applications - Railway vehicle maintenance - Creation and modification of maintenance plan
	EN 17018:2019				Railway applications - Rolling stock maintenance - Terms and definitions
	EN 17095:2019				Railway applications - Rolling stock maintenance - Maintenance records
	EN 17824:2023				Railway applications - Ground based services - Exhaust treatment fluid (AUS 32) refilling equipment
	EN 17863:2023				Railway applications - Ground based services - Coach hygiene requirements

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	EN 50500:2008 + A1:2015	Measurement procedures of magnetic field levels generated by electronic and electrical apparatus in the railway environment with respect to human exposure			
	EN 62110:2009	Electric and magnetic field levels generated by AC power systems - Measurement procedures with regard to public exposure			
	IRS 50563:2023	Railway applications - Passenger vehicles - Fittings in the interest of hygiene and cleanliness			
	IRS 50565-2:2023	Railway applications - Passenger vehicles with onboard catering services - Functional, comfort and hygiene requirements			
	ISO 9879:2024	Railway applications — Rolling stock maintenance — Vocabulary			

■ 供電系統

表 3-4 我國鐵道標準整體架構-供電系統列表

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
架空線 Overhead contact line	IEC 60913:2023	Railway applications - Fixed installations - Electric traction overhead contact lines		IEC 62128-1:2013	Railway applications - Fixed installations - Electrical safety, earthing and the return circuit - Part 1: Protective provisions against electric shock
	IEC 62498-2:2010	Railway applications - Environmental conditions for equipment - Part 2: Fixed electrical installations	設備/元件 Facilities and components		Railway applications - Fixed installations - Particular requirements for a.c. switchgear - Part 3-1: Measurement, control and protection devices for specific use in a.c. traction systems - Devices
	IEC 63190:2023	Railway applications - Fixed installations - Electric traction - Copper and copper alloy catenary wires for overhead contact line systems		IEC 62505-3-1:2020	
	EN 50122-1:2022	Railway applications - Fixed installations - Electrical safety, earthing and the return circuit - Part 1: Protective provisions against electric shock		IEC 62621:2011	Railway applications - Fixed installations - Electric traction - Specific requirements for composite insulators used for overhead contact line systems

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	EN 50367:2020+A1:2022	Railway applications- Fixed installations and rolling stock- Criteria to achieve technical compatibility between pantographs and overhead contact line			
	IRS 70021:2023	Fixed Installations - Protection from Corrosion: measures to be taken on direct current catenaries to reduce the risk of corrosion of adjacent piping and cable systems		IEC 63438:2024	Railway applications - Fixed installations - Protection principles for AC and DC electric traction power supply systems
				EN 50119:2009	Railway applications - Fixed installations - Electric traction overhead contact lines
				EN 50149:2012	Railway applications - Fixed installations - Electric traction - Copper and copper alloy grooved contact wires
				EN 50317: 2012+A1:2022	Railway applications - Current collection systems - Requirements for and validation of measurements of the dynamic interaction between pantograph and overhead contact line

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	EN 50318: 2018+A1:2022				Railway applications - Current collection systems - Validation of simulation of the dynamic interaction between pantograph and overhead contact line
	EN 50345:2009				Railway applications - Fixed installations - Electric traction - Insulating synthetic rope assemblies for support of overhead contact lines
	EN 50405:2015+A1:2016				Railway applications - Current collection systems - Pantographs, testing methods for contact strips
	EN 50533:2011				Railway applications - Three-phase train line voltage characteristics
	EN 50562:2018				Railway applications - Fixed installations - Process, protective measures and demonstration of safety for electric traction systems
	EN 50633:2016				Railway applications - Fixed installations - Protection principles for AC and DC electric traction systems

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
變電站 Substation				EN 62924:2017	Railway applications - Fixed installations - Stationary energy storage system for DC traction systems
				IRS 70014:2024	Maintenance Guidelines for OCL
				IRS 70791:2024	Railway Infrastructure - Electrical Supply - Quality assurance of overhead contact line equipment
	CNS 15156-103:2024 [IEC 62271-103:2021]	高電壓開關裝置及控制裝置 —第 103 部：額定電壓高於 1 kV 且在 52 kV 以下之交 流開關	開關設備 Switchgear	IEC TR 60890:2014	A method of temperature-rise verification of low-voltage switchgear and controlgear assemblies by calculation
	IEC 61936-1:2021 IEC 62271-103:2021	Power installations exceeding 1 kV AC and 1.5 kV DC - Part 1: AC		IEC 60947-1:2020	Low-voltage switchgear and controlgear - Part 1: General rules
				IEC 60947-2:2016+ AMD1:2019	Low-voltage switchgear and controlgear - Part 2: Circuit-breakers

78

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	IEC 62505-3-2:2020	Railway applications - Fixed installations - Particular requirements for a.c. switchgear - Part 3-2: Measurement, control and protection devices for specific use in a.c. traction systems - Current transformers		IEC 60947-3:2020+ COR1:2021	Corrigendum 1 - Low-voltage switchgear and controlgear - Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units
	IEC 62505-3-3:2020	Railway applications - Fixed installations - Particular requirements for a.c. switchgear - Part 3-3: Measurement, control and protection devices for specific use in a.c. traction systems - Voltage transformers		IEC 62271-1:2017	High-voltage switchgear and controlgear - Part 1: Common specifications for alternating current switchgear and controlgear
	IEEE 80:2013	IEEE Guide for Safety in AC Substation Grounding		IEC 62271-3:2015	High-voltage switchgear and controlgear - Part 3: Digital interface based on IEC 61850
	IEEE 519:2014	Recommended Practice and Requirements for Harmonic Control in Electric Power Systems		IEC 62271-4:2013	High-voltage switchgear and controlgear - Part 4: Handling procedures for sulphur hexafluoride (SF ₆) and its mixtures

79

I 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	IRS 70782:2023	Digital Control of Substation - User Interface		IEC 62271-37-013: 2015	High-voltage switchgear and controlgear - Part 37-013: Alternating current generator circuit-breakers
				IEC 62271-37-082: 2012	High-voltage switchgear and controlgear - Part 37-082: Standard practice for the measurement of sound pressure levels on alternating current circuit-breakers
				IEC 62271-100:2021	High-voltage switchgear and controlgear - Part 100: Alternating-current circuit-breakers
				IEC 62271-101:2021	High-voltage switchgear and controlgear - Part 101: Synthetic testing
				IEC 62271-102:2018	High-voltage switchgear and controlgear - Part 102: Alternating current disconnectors and earthing switches
				IEC 62271-104:2020	High-voltage switchgear and controlgear - Part 104: Alternating current switches for rated voltages

I 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
					標準標題 higher than 52 kV
				IEC 62271-105:2021	High-voltage switchgear and controlgear - Part 105: Alternating current switch-fuse combinations for rated voltages above 1 kV up to and including 52 kV
				IEC 62271-106:2021	High-voltage switchgear and controlgear - Part 106: Alternating current contactors, contactor-based controllers and motor-starters
				IEC 62271-107:2019	High-voltage switchgear and controlgear - Part 107: Alternating current fused circuit-switchers for rated voltages above 1 kV up to and including 52 kV
				EC 62271-108:2020	High-voltage switchgear and controlgear - Part 108: High-voltage alternating current disconnecting circuit-breakers for rated voltages above 52 kV
				IEC 62271-109:2019	High-voltage switchgear and controlgear - Part 109:

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
		Alternating-current series capacitor by-pass switches			
	IEC 62271-110:2017	High-voltage switchgear and controlgear - Part 110: Inductive load switching			
	IEC 62271-111:2019	High-voltage switchgear and controlgear - Part 111: Automatic circuit reclosers for alternating current systems up to and including 38 kV			
	IEC 62271-112:2021	High-voltage switchgear and controlgear - Part 112: Alternating current high-speed earthing switches for secondary arc extinction on transmission lines			
	IEC 62271-200:2021	High-voltage switchgear and controlgear - Part 200: AC metal-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV			
	IEC 62271-201:2014	High-voltage switchgear and controlgear - Part 201: AC solid-insulation enclosed switchgear and			

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
					controlgear for rated voltages above 1 kV and up to and including 52 kV
	IEC 62271-202:2014				High-voltage switchgear and controlgear - Part 202: High-voltage/ low-voltage prefabricated substation
	IEC 62271-203:2011				High-voltage switchgear and controlgear - Part 203: Gas-insulated metal-enclosed switchgear for rated voltages above 52 kV
	IEC 62271-204:2011				High-voltage switchgear and controlgear - Part 204: Rigid gas-insulated transmission lines for rated voltage above 52 kV
	IEC 62271-205:2008				High-voltage switchgear and controlgear - Part 205: Compact switchgear assemblies for rated voltages above 52 kV
	IEC 62271-207:2012				High-voltage switchgear and controlgear - Part 207: Seismic qualification for gas-insulated switchgear assemblies for rated

I 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
		voltages above 52 kV			
		High-voltage switchgear and controlgear - Part 209: Cable connections for gas-insulated metal-enclosed switchgear for rated voltages above 52 kV - Fluid-filled and extruded insulation cables - Fluid-filled and dry-type cable-terminations			
	IEC 62271-209:2019				
		High-voltage switchgear and controlgear - Part 211: Direct connection between power transformers and gas-insulated metal-enclosed switchgear for rated voltages above 52 kV			
	IEC 62271-211:2014				
		High-voltage switchgear and controlgear - Part 212: Compact Equipment Assembly for Distribution Substation (CEADS)			
	IEC 62271-212:2016				
		High-voltage switchgear and controlgear - Part 213: Voltage detecting and indicating system			
	IEC 62271-213:2021				

I 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
		High-voltage switchgear and controlgear - Part 214: Internal arc classification for metal-enclosed pole-mounted switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV			
	IEC 62271-214:2019				
		High-voltage switchgear and controlgear - Part 215: Phase comparator used with YDIS			
	IEC 62271-215:2021				
		Railway applications - Fixed installations - D.C. switchgear - Part 1: General			
	EN 50123-1:2003				
		Railway applications - Fixed installations - D.C. switchgear - Part 2: D.C. circuit breakers			
	EN 50123-2:2003				
		Railway applications - Fixed installations - D.C. switchgear - Part 3: Indoor d.c. disconnectors, switch-disconnectors and earthing switches			
	EN 50123-3:2003				
		Railway applications - Fixed installations - D.C. switchgear - Part 4: Outdoor d.c. disconnectors, switch-disconnectors, and earthing switches			
	EN 50123-4:2003				

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
					switch-disconnectors and earthing switches
				EN 50123-6:2003	Railway applications - Fixed installations - D.C. switchgear - Part 6: D.C. switchgear assemblies
				EN 50123-7-1:2003	Railway applications - Fixed installations - D.C. switchgear - Part 7-1: Measurement, control and protection devices for specific use in d.c. traction systems - Application guide
				EN 50123-7-2:2003	Railway applications - Fixed installations - D.C. switchgear - Part 7-2: Measurement, control and protection devices for specific use in d.c. traction systems - Isolating current transducers and other current measuring devices
				EN 50123-7-3:2003	Railway applications - Fixed installations - D.C. switchgear - Part 7-3: Measurement, control and protection devices for specific use in d.c. traction systems -

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
					isolating voltage transducers and other voltage measuring devices
				EN 50152-1:2012	Railway applications - Fixed installations - Particular requirements for alternating current switchgear - Part 1: Circuit-breakers with nominal voltage above 1 kV
				EN 50152-2:2012	Railway applications - Fixed installations - Particular requirements for alternating current switchgear - Part 2: Disconnectors, earthing switches and switches with nominal voltage above 1 kV
				EN 50152-3-1:2017	Railway applications - Fixed installations - Particular requirements for a.c. switchgear - Part 3-1: Measurement, control and protection devices for specific use in a.c. traction systems - Devices

1 階項目	標準號碼	2 階項目	標準號碼	標準標題
			EN 61439-1:2021	Low voltage switchgear and control gear assemblies- General rules.
			IEC 62695:2014	Railway applications - Fixed installations - Traction transformers
			IEEE C57.12.00-2015	Standard For General Requirements For Liquid-Immersed Distribution, Power, And Regulating Transformers
		變壓器 Transformer	IEEE C57.12.01-2020	Standard For General Requirements For Dry-Type Distribution And Power Transformers
			IEEE C57.12.10-2017	Standard Requirements For Liquid-Immersed Power Transformers
				Standard For Overhead-Type Distribution Transformers 500 KVA And Smaller, High Voltage, 34 500 V And Below; Low Voltage, 7970/13 800V V And Below
			IEEE C57.12.20-2017	

1 階項目	標準號碼	2 階項目	標準號碼	標準標題
			IEEE C57.12.21-2018	Standard For Submersible Single-Phase Transformers, 250 KVA And Smaller, High Voltage 34 500 GrdY/19 920 V And Below; Low Voltage 600 V And Below
			IEEE C57.12.24-2016	Standard For Submersible, Three-Phase Transformers, 3750 KVA And Smaller, High Voltage, 34 500 GrdY/19 920 Volts And Below, Low Voltage, 600 Volts And Below
			IEEE C57.12.28-2014	Standard For Pad-Mounted Equipment—Enclosure Integrity
			IEEE C57.12.29-2014	Standard For Pad-Mounted Equipment—Enclosure Integrity For Coastal Environments
			IEEE C57.12.30-2020	Standard For Pole-Mounted Equipment—Enclosure Integrity For Coastal Environments
			IEEE C57.12.31-2020	Standard For Pole-Mounted Equipment—Enclosure Integrity
			IEEE C57.12.32-2019	Standard For Submersible Equipment—Enclosure Integrity

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
				IEEE C57.12.34-2015	Standard Requirements For Pad-Mounted, Compartmental-Type, Self-Cooled, Three-Phase Distribution Transformers, 10 MVA And Smaller, High-Voltage, 14.5 KV Nominal System Voltage And Below, Low-Voltage, 15 KV Nominal System Voltage And Below
				IEEE C57.12.35-2013	Standard Bar Coding For Distribution Transformers And Step-Voltage Regulators
				IEEE C57.12.36-2017	Standard Requirements For Liquid-Immersed Distribution Substation Transformers
				IEEE C57.12.37-2015	Standard For The Electronic Reporting Of Distribution Transformer Test Data
				IEEE C57.12.38-2014	Standard For Pad-Mounted-Type, Self-Cooled, Single-Phase Distribution Transformers 250 KVA And Smaller: High Voltage, 34 500 GrdY/19 920 V And

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
					Below, Low Voltage, 480/240 V And Below
				IEEE C57.12.39-2017	Standard For Requirements For Distribution Transformer Tank Pressure Coordination
				IEEE C57.12.40-2017	Standard For Network, Three-Phase Transformers, 2500 KVA And Smaller, High Voltage, 34 500 V And Below, Low Voltage, 600 V And Below, Subway And Vault Types (Liquid Immersed)
				IEEE C57.12.44-2014	Standard Requirements For Secondary Network Protectors
				IEEE C57.12.51-2019	Guide For Mechanical Interchangeability Of Ventilated Dry-Type Transformers
				IEEE C57.12.52-2012	Standard For Sealed Dry-Type Power Transformers, 501 KVA And Higher, Three-Phase, With High-Voltage 601 To 34500 Volts, Low-Voltage 208Y/120 To 4160 Volts

I 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	IEEE C57.12.58-2017	Guide For Conducting A Transient Voltage Analysis Of A Dry-Type Transformer Coil			
	IEEE C57.12.59-2015	Guide For Dry-Type Transformer Through-Fault Current Duration Standard For Thermal Evaluation			
	IEEE C57.12.60-2020	Of Insulation Systems For Dry-Type Power And Distribution Transformers			
	IEEE C57.12.70-2020	Standard For Standard Terminal Markings And Connections For Distribution And Power Transformers			
	IEEE C57.12.90-2015	Standard Test Code For Liquid-Immersed Distribution, Power, And Regulating Transformers			
	IEEE C57.12.91-2020	Standard Test Code For Dry-Type Distribution And Power Transformers			
	IEEE C57.13-2016	Requirements for Instrument Transformers			
	IEC 60076-1:2011	Power transformers - Part 1: General	變比器 (PT/CT)		

I 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	IEC 60076-2:2011		Instrument transformer (PT/CT)	IEC 60076-2:2011	Power transformers - Part 2: Temperature rise for liquid-immersed transformers
	IEC 60076-3:2013+AMD1:2018			IEC 60076-3:2013+AMD1:2018	Power transformers - Part 3: Insulation levels, dielectric tests and external clearances in air
	IEC 60076-4:2002			IEC 60076-4:2002	Power transformers - Part 4: Guide to the lightning impulse and switching impulse testing - Power transformers and reactors
	IEC 60076-5:2006			IEC 60076-5:2006	Power transformers - Part 5: Ability to withstand short circuit
	IEC 60076-6:2007			IEC 60076-6:2007	Power transformers - Part 6: Reactors
	IEC 60076-7:2018			IEC 60076-7:2018	Power transformers - Part 7: Loading guide for mineral-oil-immersed power transformers
	IEC 60076-8:1997			IEC 60076-8:1997	Power transformers - Part 8: Application guide
	IEC 60076-10:2016			IEC 60076-10:2016	Power transformers - Part 10: Determination of sound levels
	IEC 60076-10-1:2016+AMD1:2020			IEC 60076-10-1:2016+AMD1:2020	Power transformers - Part 10-1: Determination of sound levels - Application guide

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	IEC 60076-11:2018	Power transformers - Part 11: Dry-type transformers			
	IEC 60076-12:2008	Power transformers - Part 12: Loading guide for dry-type power transformers			
	IEC 60076-13:2006	Power transformers - Part 13: Self-protected liquid-filled transformers			
	IEC 60076-14:2013	Power transformers - Part 14: Liquid-immersed power transformers using high-temperature insulation materials			
	IEC 60076-15:2015	Power transformers - Part 15: Gas-filled power transformers			
	IEC 60076-18:2012	Power transformers - Part 18: Measurement of frequency response			
	IEC 60076-21:2018	Power transformers - Part 21: Standard requirements, terminology, and test code for step-voltage regulators			
	IEC 60076-22-1:2019	Power transformers - Part 22-1: Power transformer and reactor fittings - Protective devices			

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	IEC 60076-22-2:2019	Power transformers - Part 22-2: Power transformer and reactor fittings - Removable radiators			
	IEC 60076-22-3:2019	Power transformers - Part 22-3: Power transformer and reactor fittings - Insulating liquid to air heat exchangers			
	IEC 60076-22-4:2019	Power transformers - Part 22-4: Power transformer and reactor fittings - Insulating liquid to water heat exchangers			
	IEC 60076-22-5:2021	Power transformers - Part 22-5: Power transformer and reactor fittings - Electric pumps for transformers			
	IEC 60076-22-6:2021	Power transformers - Part 22-6: Power transformer and reactor fittings - Electric fans for transformers			
	IEC 61869-2:2012	Instrument transformers - Part 2: Additional requirements for current transformers			

I 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
				IEC 61869-3:2011	Instrument transformers - Part 3: Additional requirements for inductive voltage transformers
				IEC 61869-5:2011	Instrument transformers - Part 5: Additional requirements for capacitor voltage transformers
				IEC 60146-1-1:2009	Semiconductor converters - General requirements and line commutated converters - Part 1-1: Specification of basic requirements
			整流器 Converter	IEC 60146-1-2:2019	Semiconductor converters - General requirements and line commutated converters - Part 1-2: Application guidelines
				IEC 60146-2:1999	Semiconductor converters - Part 2: Self-commutated semiconductor converters including direct d.c. converters
				IEC 62590:2019	Railway applications - Fixed installations - Electronic power converters for substations

I 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
電力品質 Power quality				IEC 62590-3-1:2022	Railway applications - Fixed installations - Electronic power converters - Part 3-1: AC traction applications - Electronic power compensators
				EN 50327:2003	Railway applications - Fixed installations - Harmonisation of the rated values for converter groups and tests on converter groups
			雜散電流 Stray current	IEC 62128-2:2013	Railway applications - Fixed installations - Electrical safety, earthing and the return circuit - Part 2: Provisions against the effects of stray currents caused by d.c. traction systems
				EN 50122-2:2022	Railway applications - Fixed installations - Electrical safety, earthing and the return circuit - Part 2: Provisions against the effects of stray currents caused by d.c. traction systems

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
				EN 50162:2004	Protection against corrosion by stray current from direct current systems
				IEC 60099-4:2014	Surge arresters - Part 4: Metal-oxide surge arresters without gaps for a.c. systems
				IEC 60099-5:2018	Surge arresters - Part 5: Selection and application recommendations
				IEC 60099-6:2019	Surge arresters - Part 6: Surge arresters containing both series and parallel gapped structures - System voltage of 52 kV and less
			突波 Surge	EN 50526-1:2012	Railway applications - Fixed installations - D.C. surge arresters and voltage limiting devices - Part 1: Surge arresters
絕緣防護 Insulation and protection				EN 50526-2:2014	Railway applications - Fixed installations - D.C. surge arresters and voltage limiting devices - Part 2: Voltage limiting devices
	CNS 16224-2:2024 [IEC 62497-2:2010]	鐵路應用－絕緣協調－第2部：過電壓及相關防護	絕緣 Insulation	IEC 62497-1:2010+ AMD1:2013	Railway applications - Insulation coordination - Part 1: Basic requirements - Clearances and creepage distances for all

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
					electrical and electronic equipment
	IEC 60204-1:2016	Safety of machinery - Electrical equipment of machines - Part 1: General requirements		EN 50181: 2010	Plug-in type bushings above 1 kV up to 52 kV and from 250 A to 2,50 kA for equipment other than liquid filled transformers
			防護 Protection	CNS 14165:2015 [IEC 60529:2013]	電器外殼保護分類等級(IP 碼)
			第三軌 Third rail		
電纜 Cable	IEC 60331-1:2018	Tests for electric cables under fire conditions - Circuit integrity - Part 1: Test method for fire with shock at a temperature of at least 830 °C for cables of rated voltage up to and including 0.6/1.0 kV and with an overall diameter exceeding 20 mm		IEC 60228:2004	Conductors of insulated cables
			電纜 Cable		
	IEC 60332-3-10:2018	Tests on electric and optical fibre cables under fire conditions - Part 3-10: Test for vertical flame spread of		IEC 60332-1-1:2004+ AMD1:2015	Tests on electric and optical fibre cables under fire conditions - Part 1-1: Test for vertical flame propagation for a single insulated wire or cable - Apparatus

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
		vertically-mounted bunched wires or cables - Apparatus			
		Tests on electric and optical fibre cables under fire conditions - Part 3-21: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category A P/R			Tests on electric and optical fibre cables under fire conditions - Part 3-21: Test for vertical flame propagation for a single insulated wire or cable - Procedure for 1 kW pre-mixed flame
	IEC 60332-3-21:2018			IEC 60332-1-2:2004+AMD1:2015	
		Tests on electric and optical fibre cables under fire conditions - Part 3-22: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category A			Tests on electric and optical fibre cables under fire conditions - Part 1-3: Test for vertical flame propagation for a single insulated wire or cable - Procedure for determination of flaming/droplets/particles
	IEC 60332-3-22:2018			IEC 60332-1-3:2004+AMD1:2015	
		Tests on electric and optical fibre cables under fire conditions - Part 3-23: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category B			Tests on electric and optical fibre cables under fire conditions - Part 2-1: Test for vertical flame propagation for a single small insulated wire or cable - Apparatus
	IEC 60332-3-23:2018			IEC 60332-2-1:2004	
		Tests on electric and optical fibre cables under fire			Tests on electric and optical fibre cables under fire conditions - Part
	IEC 60332-3-24:2018			IEC 60332-2-2:2004	

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
		for vertical flame spread of vertically-mounted bunched wires or cables - Category C			2-2: Test for vertical flame propagation for a single small insulated wire or cable - Procedure for diffusion flame
		Tests on electric and optical fibre cables under fire conditions - Part 3-25: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category D			Power cables with extruded insulation and their accessories for rated voltages from 1 kV (Um = 1.2 kV) up to 30 kV (Um = 36 kV) - Part 1: Cables for rated voltages of 1 kV (Um = 1.2 kV) and 3 kV (Um = 3.6 kV)
	IEC 60332-3-25:2018			IEC 60502-1:2021	
					Power cables with extruded insulation and their accessories for rated voltages from 1 kV (Um = 1.2 kV) up to 30 kV (Um = 36 kV) - Part 2: Cables for rated voltages from 6 kV (Um = 7.2 kV) up to 30 kV (Um = 36 kV)
				IEC 60502-2:2014	
					Power cables with extruded insulation and their accessories for rated voltages from 1 kV (Um = 1.2 kV) up to 30 kV (Um = 36 kV) - Part 4: Test requirements on accessories for cables with rated
				IEC 60502-4:2010	

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
					voltages from 6 kV ($U_m = 7.2$ kV) up to 30 kV ($U_m = 36$ kV)
					Power cables with extruded insulation and their accessories for rated voltages above 30 kV ($U_m = 36$ kV) up to 150 kV ($U_m = 170$ kV) - Test methods and requirements
				IEC 60840:2011	
					Calculation of the cyclic and emergency current rating of cables. Part 1: Cyclic rating factor for cables up to and including 18/30(36) kV
				IEC 60853-1:1985	
					Calculation of the cyclic and emergency current rating of cables. Part 2: Cyclic rating of cables greater than 18/30 (36) kV and emergency ratings for cables of all voltages
				IEC 60853-2:1989	
					Calculation of the cyclic and emergency current rating of cables - Part 3: Cyclic rating factor for cables of all voltages, with partial drying of the soil
				IEC 60853-3:2002	

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
					Railway applications - Railway rolling stock power and control cables having special fire performance - General requirements
				EN 50264-1:2008	
					Railway applications - Railway rolling stock power and control cables having special fire performance - Part 2-1: Cables with crosslinked elastomeric insulation - Single core cables
				EN 50264-2-1:2008	
					Railway applications - Railway rolling stock power and control cables having special fire performance - Part 2-2: Cables with crosslinked elastomeric insulation - Multicore cables
				EN 50264-2-2:2008	
					Railway applications - Railway rolling stock power and control cables having special fire performance - Part 3-1: Cables with crosslinked elastomeric insulation with reduced dimensions - Single core cables
				EN 50264-3-1:2008	

I 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
		Railway applications - Railway rolling stock power and control cables having special fire performance. Cables with crosslinked elastomeric insulation with reduced dimensions.		EN 50264-3-2:2008	Railway applications - Railway rolling stock power and control cables having special fire performance. Cables with crosslinked elastomeric insulation with reduced dimensions.
		Multicore cables			
		Railway applications - Railway rolling stock cables having special fire performance - Test methods		EN 50305:2002	Railway applications - Railway rolling stock cables having special fire performance - Test methods
		Railway applications - Railway rolling stock cables having special fire performance - Thin wall - Part 1: General requirements		EN 50306-1:2020	Railway applications - Railway rolling stock cables having special fire performance - Thin wall - Part 1: General requirements
		Railway applications - Railway rolling stock cables having special fire performance - Thin wall - Part 2: Single core cables		EN 50306-2:2002	Railway applications - Railway rolling stock cables having special fire performance - Thin wall - Part 2: Single core cables
		Railway applications - Railway rolling stock cables having special fire performance - Thin wall - Part 3: Single core and multicore cables (pairs, triples and quads) screened and thin wall sheathed		EN 50306-3:2002	Railway applications - Railway rolling stock cables having special fire performance - Thin wall - Part 3: Single core and multicore cables (pairs, triples and quads) screened and thin wall sheathed

I 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
				EN 50306-4:2002	Railway applications - Railway rolling stock cables having special fire performance - Thin wall - Part 4: Multicore and multipair cables standard wall sheathed
				EN 50355:2013	Railway applications - Railway rolling stock cables having special fire performance - Guide to use
				EN 50382-1:2008+A1:2013	Railway applications. Railway rolling stock high temperature power cables having special fire performance. Part 1: General requirements
				EN 50382-2:2008+A1:2013	Railway applications. Railway rolling stock high temperature power cables having special fire performance. Part 2: Single core silicone rubber insulated cables for 120 °C or 150 °C
遠端控制系統 Telecontrol system	IEC TR 60870-1-1:1988	Telecontrol equipment and systems. Part 1: General considerations. Section One: General principles	遠端控制設備 Telecontrol equipment	IEC 60870-2-1:1995	Telecontrol equipment and systems. Part 2: Operating conditions - Section 1: Power supply and electromagnetic compatibility

1 階項目	標準號碼	2 階項目	標準號碼	標準標題
			IEC 60870-3:1989	Telecontrol equipment and systems, Part 3: Interfaces (electrical characteristics)
			IEC 60870-4:1990	Telecontrol equipment and systems, Part 4: Performance requirements
			IEC 60870-5:2022 Series	Telecontrol equipment and systems - Part 5: Transmission protocols - ALL PARTS
其他 Others		其他 Others		

■ 號誌與通訊系統

表 3-5 我國鐵道標準整體架構-號誌系統列表

號誌 Signalling system				
1 階項目	標準號碼	標準標題	2 階項目	標準號碼
自動列車控制系統 Automatic train control system	CNS 16208:2023 [EN 50129:2018]	鐵路應用—通訊、號誌及處理系統—號誌之安全性相關電子系統		
	CNS 62279:2023 [IEC 62279:2015]	鐵路應用—通訊、號誌及處理系統—鐵路控制及防護系統之軟體	車載號誌設備 Carborne signalling equipment	CNS 16134:2020 [EN 50155:2017] EN 50155:2021
	50128:2011+A2:2020			
	CNS 62280:2021 [IEC 62280:2014]	鐵路應用—通訊、號誌及處理系統—傳輸系統之安全相關通訊		
	50159:2010+A1:2020			
				鐵路應用—鐵路車輛—電子設備

號誌 Signalling system			
1 階項目	標準號碼	2 階項目	標準標題
	IEC 62236-1:2018	Railway applications - Electromagnetic compatibility - Part 1: General	CNS 61375-2-4:2021 [IEC TS 61375-2-4:2017]
	IEC 62236-2:2018	Railway applications - Electromagnetic compatibility - Part 2: Emission of the whole railway system to the outside world	CNS 62498-3:2020 [IEC 62498-3:2010]
	IEC 62290-1:2014	Railway applications - Urban guided transport management and command/control systems - Part 1: System principles and fundamental concepts	Electronic railway equipment - Train communication network (TCN) - Part 2: TCN conformance test
	IEC 62290-2:2014	Railway applications - Urban guided transport management and command/control systems - Part 2: Functional requirements specification	Electronic railway equipment - On-board driving data recording system - Part 1: System specification
	IEC 62290-3:2019+COR1:2020	Railway applications - Urban guided transport management and command/control systems - Part 3: System requirements specification	Electronic railway equipment - On board driving data recording system - Part 2: Conformity testing
			Emission and immunity of fixed power supply installations and apparatus.

號誌 Signalling system			
1 階項目	標準號碼	2 階項目	標準標題
	EN 50668:2019	Railway applications - Signalling and control systems for non UGTMS Urban Rail systems	Railway applications - Insulation coordination - Part 1: Basic requirements - Clearances and creepage distances for all electrical and electronic equipment
	IEEE 1474.1-2004	IEEE Standard for Communications-Based Train Control (CBTC) Performance and Functional Requirements	Railway applications - Insulation coordination - Part 2: Overvoltages and related protection
	IEEE 1474.2-2003	IEEE Standard for User Interface Requirements in Communications-Based Train Control (CBTC) Systems	
	IEEE 1474.3-2008	IEEE Recommended Practice for Communications-Based Train Control (CBTC) System Design and Functional Allocations	
	IEEE 1474.4-2011	IEEE Recommended Practice for Functional Testing of a Communications-Based Train Control (CBTC) System	
		進步規格	CNS 14546:2023
			發光二極體交通號誌燈座面及燈箱

號誌 Signalling system			
1 階項目	標準號碼	標準標題	2 階項目
	CNS 16134:2020 [EN 50155:2017] EN 50155:2021	鐵路應用－鐵路車輛－電子設備	Wayside equipment
	CNS 62498-3:2010 [IEC 62498-3:2010]	鐵路應用－設備之環境條件－第 3 部：號誌及電訊設備	
	CNS 62912:2022 [IEC 62912:2015]	鐵路應用－N 型及 C 型直流號誌單穩態繼電器	
	CNS 62912-2:2024 [IEC 62912-2:2019]	鐵路應用－直流號誌單穩態繼電器－第 2 部：彈簧型繼電器	
	CNS 16164-1:2022 [EN 50238-1:2019]	鐵路應用－鐵路車輛與列車偵測系統間相容性－第 1 部：通則	
	CNS 62236-4:2024 [IEC 62236-4:2018]	鐵路應用－電磁相容－第 4 部：號誌與電信裝置之輻射與抗擾度	列車偵測設備 Train detection device
	EN 50592:2016	Railway applications - Testing of rolling stock for electromagnetic compatibility with axle counters	
	EN 50617-1:2024	Railway applications - Technical parameters of train detection systems for	

號誌 Signalling system			
1 階項目	標準號碼	標準標題	2 階項目
	EN 50617-2:2024		
	IEC 62427:2024		
	CNS 16208:2023 [EN 50129:2018]	鐵路應用－通訊、號誌及處理系統－號誌之安全性相關電子系統	
	CNS 62279:2023 [IEC 62279:2015] EN 50128:2011+A2:2020	鐵路應用－通訊、號誌及處理系統－鐵路控制及防護系統之軟體	
號誌聯鎖系統 Interlocking system			繼電器 Relay
	CNS 62912:2022 [IEC 62912:2015]		
	CNS 62912-2:2024 [IEC 62912-2:2019]		

基礎 Signalling system				
1 階項目	標準號碼	標準標題	2 階項目	標準標題
	IEC 62280:2014 EN 50159:2010+A1:2020			
	IEC 62290-1:2014	Railway applications - Urban guided transport management and command/control systems - Part 1: System principles and fundamental concepts		Measuring relays and protection equipment - Part 1: Common requirements
	IEC 62290-2:2014	Railway applications - Urban guided transport management and command/control systems - Part 2: Functional requirements specification		Measuring relays and protection equipment - Part 121: Functional requirements for distance protection
	IEC 62290-3:2019+COR1:2020	Railway applications - Urban guided transport management and command/control systems - Part 3: System requirements specification		Electromechanical elementary relays - Part 3: Relays with forcibly guided (mechanically linked) contacts
				Relays with forcibly guided (mechanically linked) contacts

號誌 Signalling system				
1 階項目	標準號碼	標準標題	2 階項目	標準標題
	EN 50578:2013			Railways applications - Direct current signalling relays
	EN 50592:2016			Railway applications - Testing of rolling stock for electromagnetic compatibility with axle counters
			電子聯鎖系統 Electronic interlocking system	
	CNS 16133:2020 [EN 13232-4:2005+A1:2011] EN 13232-4:2023	鐵路應用—通訊、號誌及處理系統—號誌之安全性相關電子系統		鐵路應用—軌道—尖軌及岔心—第 4 部:致動、鎖定及檢查
邊旁號誌設備 Sideway signalling equipment	CNS 16208:2023 [EN 50129:2018] CNS 62279:2023 [IEC 62279:2015] EN 50128:2011+A2:2020	鐵路應用—通訊、號誌及處理系統—通訊控制及防護系統之軟體	轉轍器 Switch	鐵路應用—電磁相容—第 4 部:號誌與電信裝置之放射與抗擾度

號誌 Signalling system				
I 階項目	標準號碼	標準標題	標準號碼	標準標題
			CNS 62498-3:2020 [IEC 62498-3:2010]	鐵路應用—設備之環境條件—第3部: 發光及電氣設備
			EN 15689:2009	Railway applications. Track. Switches and crossings. Crossing components made of cast austenitic manganese steel
			EN 50121-5:2017+ A1:2019	Emission and immunity of fixed power supply installations and apparatus.
			EN 50124-1:2017	Railway applications - Insulation coordination - Part 1: Basic requirements - Clearances and creepage distances for all electrical and electronic equipment
	發光顯示裝置 Signalling display device			
	軸軸器 Axle counter		EN 50592:2016	Railway applications - Testing of rolling stock for electromagnetic compatibility with axle counters
			EN 50617-2:2024	Railway Applications - Technical parameters of train detection systems for the interoperability of the trans-European railway system - Part 2: Axle counters

號誌 Signalling system				
I 階項目	標準號碼	標準標題	2 階項目	標準號碼
			其他 Others	CNS 62236-5 [IEC 62236-5:2018]
	CNS 16208:2023 [EN 50129:2018]	鐵路應用—通訊、號誌及處理系統—號誌之安全性相關電子系統		
車地通訊 Vehicle-to-ground communication	CNS 61375- 2-6:2024 [IEC 61375- 2-6:2018]	鐵路電子設備—列車通訊網路(TCN)—第2-6部:車載對地面通訊	車地通訊 Vehicle-to-ground communication	
	CNS 62279:2023 [IEC 62279:2015] EN 50128:2011+ A2:2020	鐵路應用—通訊、號誌及處理系統—鐵路控制及防護系統之軟體		
行控中心/機房 CTC	CNS 16208:2023 [EN 50129:2018]	鐵路應用—通訊、號誌及處理系統—號誌之安全性相關電子系統	行控中心/機房 CTC	

號誌 Signalling system			
1 階項目	標準號碼	2 階項目	標準標題
	CNS 62279:2023 [IEC 62279:2015] EN 50128:2011+A2:2020	鐵路應用—通訊、號誌及處理系統—鐵路控制及防護系統之軟體	

表 3-6 我國鐵道類標準整體架構-通訊系統列表

通訊 Communication System			
1 階項目	標準號碼	標準標題	2 階項目
列車、道旁通訊與設備 Train、wayside communication network and equipment	CNS 16208:2023 [EN 50129:2018]	鐵路應用—通訊、號誌及處理系統—鐵路之安全性相關電子系統	
	CNS 62279:2023 [IEC 62279:2015] EN 50128:2011+A2:2020	鐵路應用—通訊、號誌及處理系統—鐵路控制及防護系統之軟體	列車通訊網路 TCN, Train communication network
	ISO 8802-3:2021	Telecommunications and exchange between information technology systems - Requirements for local and metropolitan area networks - Part 3: Standard for Ethernet	
	IEEE 802.11-2020	Telecommunications and Information Exchange between Systems - Local and Metropolitan	
	CNS 61375-1:2024 [IEC 61375-1:2012]	鐵路電子設備—列車通訊網路(TCN)—第 1 部：一般架構	
	CNS 61375-2:4:2021 [IEC TS 61375-2-4:2017]	電子化鐵路設備—列車通訊網路(TCN)—第 2-4 部：TCN 應用規範	
	CNS 61375-2-6:2024 [IEC 61375-2-6:2018]	鐵路電子設備—列車通訊網路(TCN)—第 2-6 部：車載對地面通訊	
	IEC 61375-2-1:2012	Electronic railway equipment - Train communication network (TCN) - Part 2-1: Wire Train Bus (WTB)	

通訊 Communication System			
1 階項目	標準號碼	2 階項目	標準標題
		Area Networks--Specific Requirements - Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications	
			Electronic railway equipment - Train communication network (TCN) - Part 2-2: Wire Train Bus conformance testing
	EN 16683: and communication device - 2015		Electronic railway equipment - Train communication network (TCN) - Part 2-5: Ethernet train backbone
			Electronic railway equipment - Train communication network (TCN) - Part 2-8: TCN conformance test
		IEC 61375-3-1:2012	Electronic railway equipment - Train communication network (TCN) - Part 3-1: Multifunction Vehicle Bus (MVB)
			Electronic railway equipment - Train communication network (TCN) - Part 3-2: MVB (Multifunction Vehicle Bus) conformance testing

通訊 Communication System			
1 階項目	標準號碼	2 階項目	標準標題
	IEC 61375-3-3:2012		Electronic railway equipment - Train communication network (TCN) - Part 3-3: CANopen Consist Network (CCN)
			Electronic railway equipment - Train communication network (TCN) - Part 2-3: TCN communication profile
	EN 61375-3-4:2014+A11:2017		Electronic railway equipment - Train communication network (TCN) - Part 3-4: Ethernet Consist Network (ECN)
			Short Range Devices: Measurement Techniques for Automotive and Surveillance Radar Equipment
	EN 30396:2016		Short Range Devices: Transport and Traffic Telematics (TTT); Radar equipment operating in the 76 GHz to 77 GHz range; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU; Part 1: Ground based vehicular radar
			Short Range Devices: Transport and Traffic Telematics (TTT); Radar equipment operating in the 76 GHz to 77 GHz range; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU; Part 1: Ground based vehicular radar
	EN 301091-1:2017	無線電頻譜 Radio spectrum	Short Range Devices: Transport and Traffic Telematics (TTT); Radar equipment operating in the 76 GHz to 77 GHz range; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU; Part 1: Ground based vehicular radar
	EN 301091-2:2017		Short Range Devices: Transport and Traffic Telematics (TTT); Radar equipment operating in the 76 GHz to 77 GHz range; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU; Part 1: Ground based vehicular radar

通訊 Communication System				
1 階項目	標準號碼	標準標題	2 階項目	標準號碼
		covering the essential requirements of article 3.2 of Directive 2014/53/EU: Part 2: Fixed infrastructure radar equipment		
		Short Range Devices; Transport and Traffic Telematics (TTT); Radar equipment operating in the 76 GHz to 77 GHz range; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU; Part 3: Railway/Road Crossings obstacle detection system applications		EN 301091-3:2017
		Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 12: Specific conditions for Very Small Aperture Terminal, Satellite Interactive Earth Stations operated in the frequency ranges between 4 GHz and 30 GHz in the Fixed Satellite Service (FSS) Harmonised Standard for electromagnetic compatibility	電磁相容 EMC, Electromagnetic compatibility	EN 301489-12:2020

通訊 Communication System				
1 階項目	標準號碼	標準標題	2 階項目	標準號碼
	EN 301489-51:2020	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 51: Specific conditions for Automotive, Ground based Vehicles and Surveillance Radar Devices using 24.05 GHz to 24.25 GHz, 24.05 GHz to 24.5 GHz, 76 GHz to 77 GHz and 77 GHz to 81 GHz; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU		
	EN 303446-1:2020	ElectroMagnetic Compatibility (EMC) standard for combined and/or integrated radio and non-radio equipment; Part 1: Requirements for equipment intended to be used in residential, commercial and light industry locations		
	EN 303446-2:2020	ElectroMagnetic Compatibility (EMC) standard for combined and/or integrated radio and non-radio equipment; Part 2: Requirements for equipment intended to be used in industrial locations		
	EN 303204-1:2021	Electromagnetic compatibility and Radio spectrum Matters (ERM); Network		

通訊 Communication System			
1 階項目	標準號碼	標準標題	2 階項目
		Based Short Range Devices (SRD); Radio equipment to be used in the 870 MHz to 876 MHz frequency range with power levels ranging up to 500 mW; Part 1: Technical characteristics and test methods	
	EN 300330-1:2015	Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment in the frequency range 9 kHz to 25 MHz and inductive loop systems in the frequency range 9 kHz to 30 MHz; Part 1: Technical characteristics and test methods	
	EN 302999:2013	Safety; Remote Power Feeding Installations; Safety requirements for the erection and operation of information technology installations with remote power feeding	安全性 Safety
	IEC 60950-1:2005+AMD2:2013	Information technology equipment - Safety - Part 1: General requirements	網路交換機 Network switch
	IEC 61000-4-2:2008	Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement	

通訊 Communication System			
1 階項目	標準號碼	標準標題	2 階項目
		techniques - Electrostatic discharge immunity test	
	IEC 61000-4-3:2020	Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	
	IEC 61000-4:2012	Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	
	IEC 61000-4-5:2014+AMD1:2017	Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test	
	IEC 61000-4-6:2013	Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields	
	IEC 61000-4-7:2002+AMD1:2008	Electromagnetic compatibility (EMC) - Part 4-7: Testing and measurement techniques - General guide on harmonics and interharmonics measurements and	

通訊 Communication System			
1 階項目	標準號碼	標準標題	2 階項目
		instrumentation, for power supply systems and equipment connected thereto	
		Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test	
	IEC 61000-4-8:2009		
		Electromagnetic compatibility (EMC) - Part 4-9: Testing and measurement techniques - Impulse magnetic field immunity test	
	IEC 61000-4-9:2016		
		Electromagnetic compatibility (EMC) - Part 4-10: Testing and measurement techniques - Dumped oscillatory magnetic field immunity test	
	IEC 61000-4-10: 2016		
		Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests for equipment with input current up to 16 A per phase	
	IEC 61000-4-11: 2020		
		Electromagnetic Compatibility (EMC) - Part 4-12: Testing and measurement techniques - Ring wave immunity test	
	IEC 61000-4-12: 2017		

通訊 Communication System			
1 階項目	標準號碼	標準標題	2 階項目
		Electromagnetic compatibility (EMC) - Part 4-13: Testing and measurement techniques - Harmonics and interharmonics including mains signalling at a.c. power port, low frequency immunity tests	
	IEC 61000-4-13: 2002+AMD2:2015		
		Electromagnetic compatibility (EMC) - Part 4-14: Testing and measurement techniques - Voltage fluctuation immunity test for equipment with input current not exceeding 16 A per phase	
	IEC 61000-4-14: 1999+AMD2:2009		
		Electromagnetic compatibility (EMC) - Part 4-15: Testing and measurement techniques - Flicker meter - Functional and design specifications	
	IEC 61000-4-15: 2010		
		Electromagnetic compatibility (EMC) - Part 4-16: Testing and measurement techniques - Test for immunity to conducted, common mode disturbances in the frequency range 0.1 Hz to 150 kHz	
	IEC 61000-4-16: 2015		
		Electromagnetic compatibility (EMC) - Part 4-17: Testing and measurement techniques	
	IEC 61000-4-17: 1999+AMD2:2008		

通訊 Communication System			
1 階項目	標準號碼	2 階項目	標準標題
			techniques - Ripple on d.c. input power port immunity test
	IEC 61000-4-18: 2019		Electromagnetic compatibility (EMC) - Part 4-18: Testing and measurement techniques - Damped oscillatory wave immunity test
	IEC 61000-4-19: 2014		Electromagnetic compatibility (EMC) - Part 4-19: Testing and measurement techniques - Test for immunity to conducted, differential mode disturbances and signalling in the frequency range 2 kHz to 150 kHz at a.c. power ports
	IEC 61000-4-20: 2010		Electromagnetic compatibility (EMC) - Part 4-20: Testing and measurement techniques - Emission and immunity testing in transverse electromagnetic (TEM) waveguides
	IEC 61000-4-21: 2011		Electromagnetic compatibility (EMC) - Part 4-21: Testing and measurement techniques - Reverberation chamber test methods

通訊 Communication System			
1 階項目	標準號碼	2 階項目	標準標題
	IEC 61000-4-22: 2010		Electromagnetic compatibility (EMC) - Part 4-22: Testing and measurement techniques - Radiated emissions and immunity measurements in fully anechoic rooms (FARs)
	IEC 61000-4-23: 2016		Electromagnetic compatibility (EMC) - Part 4-23: Testing and measurement techniques - Test methods for protective devices for HEMP and other radiated disturbances
	IEC 61000-4-24: 2015		Electromagnetic compatibility (EMC) - Part 4-24: Testing and measurement techniques - Test methods for protective devices for HEMP conducted disturbance
	IEC 61000-4-25: 2001+AMD2:2019		Electromagnetic compatibility (EMC) - Part 4-25: Testing and measurement techniques - HEMP immunity test methods for equipment and systems
	IEC 61000-4-27: 2000+ AMD1:2009		Electromagnetic compatibility (EMC) - Part 4-27: Testing and measurement techniques - Unbalance, immunity test for equipment with input current not exceeding 16 A per phase

通訊 Communication System			
1 階項目	標準號碼	標準標題	標準號碼
		Electromagnetic compatibility (EMC) - Part 4-28: Testing and measurement techniques - Variation of power frequency, immunity test for equipment with input current not exceeding 16 A per phase	IEC 61000-4-28: 1999+AMD2:2009
		Electromagnetic compatibility (EMC) - Part 4-29: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations on d.c. input power port immunity tests	IEC 61000-4-29: 2000
		Electromagnetic compatibility (EMC) - Part 4-30: Testing and measurement techniques - Power quality measurement methods	IEC 61000-4-30: 2013+AMD1:2021
		Electromagnetic compatibility (EMC) - Part 4-31: Testing and measurement techniques - AC mains ports broadband conducted disturbance immunity test	IEC 61000-4-31: 2016
		Electromagnetic compatibility (EMC) - Part 4-33: Testing and measurement techniques - Measurement methods for high-power transient parameters	IEC 61000-4-33: 2005

通訊 Communication System			
1 階項目	標準號碼	標準標題	標準號碼
		Electromagnetic compatibility (EMC) - Part 4-34: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests for equipment with mains current more than 16 A per phase	IEC 61000-4-34: 2005+ AMD1:2009
		Electromagnetic compatibility (EMC) - Part 4-36: Testing and measurement techniques - IEM1 immunity test methods for equipment and systems	IEC 61000-4-36: 2020
		Electromagnetic compatibility (EMC) - Part 4-39: Testing and measurement techniques - Radiated fields in close proximity - Immunity test	IEC 61000-4-39: 2017
		Audio/video, information and communication technology equipment - Part 1: Safety requirements	IEC 62368-1:2023
		Power line communication apparatus used in low-voltage installations - Radio disturbance characteristics - Limits and methods of measurement - Part 1: Apparatus for in-home use	EN 50561-1:2013

通訊 Communication System					
1 階項目	標準號碼	標準標題	2 階項目	標準號碼	
	EN 55032:2015+A1:2020	Electromagnetic compatibility of multimedia equipment - Emission Requirements		EN 55032:2015+A1:2020	
		Rail Telecommunications (RT); Global System for Mobile communications (GSM); Usage of Session Initiation Protocol (SIP) on the Network Switching Subsystem (NSS) to Fixed Terminal Subsystem (FTS) interface for GSM Operation on Railways			
	EN TS 103389:2022			EN 300607-1:2001	
			全球行動通信系統 Global system for mobile communication-systems	EN 300910:2002	
				EN 300919:2001	

通訊 Communication System				
1 階項目	標準號碼	標準標題	2 階項目	標準號碼
	EN 300925:2000	Digital cellular telecommunications system (Phase 2+) (GSM); Voice Group Call Service (VGCS) - Stage 1 (GSM 02.68 version 7.0.2 Release 1998)		EN 300925:2000
		Digital cellular telecommunications system (Phase 2+) (GSM); Voice Broadcast Service (VBS) - Stage 1 (GSM 02.69 version 8.0.1 Release 1999)		
	EN 300965:2001	Digital cellular telecommunications system (Phase 2+) (GSM); Full rate speech; Voice Activity Detector (VAD) for full rate speech traffic channels (GSM 06.32 version 7.0.1 Release 1998)		EN 300965:2001
	EN 301087:2001	Digital cellular telecommunications system (Phase 2+ and Phase 2+) (GSM); Base Station System (BSS) equipment specification; Radio aspects (GSM 11.21 version 8.2.1 Release 1999)		EN 301087:2001
	EN 301419-1:2000	Digital cellular telecommunications system (Phase 2) (GSM); Attachment requirements for Global System for Mobile communications (GSM); Part 1: Mobile stations (GSM 09.00 version 8.2.1 Release 1999)		EN 301419-1:2000

通訊 Communication System			
1 階項目	標準號碼	2 階項目	標準標題
			1 800 bands; Access (GSM 13.01 version 4.1.1)
	EN 301419-3:2006		Digital cellular telecommunications system (Phase 2+); Attachment requirements for Global System for Mobile communications (GSM); Advanced Speech Call Items (ASCI); Mobile Stations; Access (GSM 13.68 version 5.0.2 Release 1996)
	EN 301419-7:2006		Digital cellular telecommunications system (Phase 2+); Attachment requirements for Global System for Mobile communications (GSM); Railways Band (R-GSM); Mobile Stations; Access (GSM 13.67 version 5.1.1 Release 1996)
	EN 301502:2016		Global System for Mobile communications (GSM); Base Station (BS) equipment; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU
	EN 301511:2016		Global System for Mobile communications (GSM); Mobile Stations

132

通訊 Communication System			
1 階項目	標準號碼	2 階項目	標準標題
			(MS) equipment; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU
	EN 301515:2018		Global System for Mobile communication (GSM); Requirements for GSM operation on railways
	EN 303609:2016		Global System for Mobile communications (GSM); GSM Repeaters; Harmonised Standard covering the essential requirements of article 3.2 of the Directive 2014/53/EU
	EN TS 122289:2022		LTE; 5G; Mobile communication system for railways (3GPP TS 22.289 version 17.0.0 Release 17)
鐵路專用無線電 Railway radio	CNS 16208:2023 EN 50129:2018	鐵路專用無線電 鐵路應用一通訊、發送及處理系統一鐵路之安全性相關電子系統 Railway radio	ElectroMagnetic Compatibility and Radio Spectrum Matters (ERM); Short Range Devices (SRD); Automatic Vehicle Identification (AVI) for railways operating in the 2.45 GHz frequency

133

通訊 Communication System				
1 階項目	標準號碼	標準標題	2 階項目	標準號碼
	CNS 62279:2023 [IEC 62279:2015 EN 50128:2011 + A2:2020]	鐵路應用—通訊、號誌及處置系統—鐵路控制及防護系統之軟體		EN 300761-2:2002
	EN 50239: 2018	Railway applications - Radio remote control system of traction vehicles for shunting application		EN 302065:2016
				EN 302065-2:2016

通訊 Communication System				
1 階項目	標準號碼	標準標題	2 階項目	標準號碼
				EN 302065-3:2016
				EN 302448:2016
				EN 302608:2017

通訊 Communication System				
1 階項目	標準號碼	標準標題	2 階項目	標準號碼
列車間通訊 Train communication	CNS 16208:2023 [EN 50129:2018]	鐵路應用—通訊、號誌及處理系統— 統一號誌之安全性相關電子系統	列車間通訊 Train communication	
	CNS 62279:2023 [IEC 62279:2015]	鐵路應用—通訊、號誌及處理系統— 統一鐵路控制及防護系統之軟體		
	EN 61375- 2-3:2015 + A11:2017	Electronic railway equipment - Train communication network (TCN) - Part 2-3: TCN communication profile		
車地通訊 Vehicle-to-	CNS 16208:2023	鐵路應用—通訊、號誌及處理系統— 統一號誌之安全性相關電子系統	車地通訊	

通訊 Communication System				
1 階項目	標準號碼	標準標題	2 階項目	標準號碼
ground communication	[EN 50129:2018]		Vehicle-to-ground communication	
	CNS 61375-2- 6:2024 [IEC 61375-2-6: 2018]	鐵路電子設備—列車通訊網路 (TCN)—第 2-6 部:車載對地面通訊		
	[IEC 62279:2023] EN 50128:2011 + A2:2020	鐵路應用—通訊、號誌及處理系統— 統一鐵路控制及防護系統之軟體		

■ 軌道系統

表 3-7 我國鐵道標準整體架構-軌道系統列表

1 階項目	標準號碼	標準名稱	2 階項目	標準號碼	標準名稱
鋼軌 Vignole rail	CNS 14827:2004 [UIC 861-3: 1969]	60kg 普通鋼軌之剖面	軌道焊接 Track welding	EN 14587-1:2018	Railway applications - Infrastructure - Flash butt welding of new rails - Part 1: R220, R260, R260Mn, R320Cr, R350HT, R350LHT, R370GHT and R400HT grade rails in a fixed plant
	CNS 14828:2004 [UIC 861-1: 1969]	54kg 普通鋼軌之剖面		EN 14587-2:2024	Railway applications - Track - Flash butt welding of rails - Part 2: New R220, R260, R260Mn and R350HT grade rails by mobile welding machines at sites other than a fixed plant
	CNS 15219:2009 [UIC 860: 2008]	標準型鋼軌		EN 14730-1:2017	Railway applications - Track - Aluminothermic welding of rails - Part 1: Approval of welding processes
	CNS 16075- 1:2018 [EN 13674-1: 2011]	鋼軌應用—鋼軌—第 1 部: 46 kg/m 以上鋼軌		EN 14730-2:2006	Railway applications - Track - Aluminothermic welding of rails - Part 2: Qualification of aluminothermic welders, approval of contractors and acceptance of welds

1 階項目	標準號碼	標準名稱	2 階項目	標準號碼	標準名稱
	ISO 23054- 1:2022	Railway applications - Track geometry quality - Part 1: Characterization of track geometry and track geometry quality	軌道檢測 Rail inspection	EN 15594:2009	Railway applications - Track - Restoration of rails by electric arc welding
	ISO 23300- 1:2021	Railway infrastructure - Rail welding - Part 1: General requirements and test methods for rail welding		EN 16771:2016	Railway applications - Infrastructure - Aluminothermic welding of grooved rails
	EN 10027-1: 2016	Designation systems for steels - Part 1: Steel names		IRS 71720:2024	Railway Infrastructure - Laying and maintenance of track - Tracks with continuous welded rails
	EN 13674-4: 2019	Railway applications - Track - Rail - Part 4: Vignole railway rails from 27 kg/m to, but excluding 46 kg/m		ISO 5735-1:2024	Railway infrastructure — Non-destructive testing on rails in track — Part 1: Requirements for ultrasonic testing and evaluation principles
	EN 13803: 2017	Railway applications - Track - Track alignment design parameters - Track gauges 1 435 mm and wider		EN 13977:2011	Railway applications - Track - Safety requirements for portable machines and trolleys for construction and maintenance
	EN 13848-1: 2019	Railway applications - Track - Track geometry quality - Part 1: Characterization of track geometry		EN 14033-1:2017	Railway applications - Track - Railbound construction and maintenance machines - Part 1: Technical requirements for running
	EN 13848-2: 2006	Railway applications - Track - Track geometry quality - Part 2: Measuring systems - Track recording vehicles		EN 14033-2:2017	Railway applications - Track - Railbound construction and maintenance machines - Part 2: Technical requirements for travelling and working

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	EN 13848-3:2021	Railway applications - Track - Track geometry quality - Part 3: Measuring systems - Track construction and maintenance machines		EN 14033-3:2017	Railway applications - Track - Railbound construction and maintenance machines - Part 3: General safety requirements
	EN 13848-4:2011	Railway applications - Track - Track geometry quality - Part 4: Measuring systems - Manual and lightweight devices		EN 14033-4:2019	Railway applications - Track - Railbound construction and maintenance machines - Part 4: Technical requirements for running, travelling and working on urban rail
	EN 13848-5:2017	Railway applications - Track - Track geometry quality - Part 5: Geometric quality levels - Plain line, switches and crossings		EN 15746-1:2010+A1:2011	Railway applications - Track - Road-rail machines and associated equipment - Part 1: Technical requirements for running and working
	EN 13848-6:2014	Railway applications - Track - Track geometry quality - Part 6: Characterisation of track geometry quality		EN 15746-2:2010+A1:2011	Railway applications - Track - Road-rail machines and associated equipment - Part 2: General safety requirements
	EN 15427-1-1:2022	Railway applications - Wheel/Rail Friction management - Part 1-1: Equipment and Application - Flange Lubricants		EN 16729-1:2016	Railway applications - Infrastructure - Non-destructive testing on rails in track - Part 1: Requirements for ultrasonic inspection and evaluation principles
				EN 16729-2:2020	Railway applications - Infrastructure - Non-destructive testing on rails in track - Part 2: Eddy current testing of rails in track

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	EN 15427-2-1:2022	Railway applications - Wheel/Rail Friction management - Part 2-1: Properties and Characteristics - Flange lubricants		EN 16729-3:2018	Railway applications - Infrastructure - Non-destructive testing on rails in track - Part 3: Requirements for identifying internal and surface rail defects
				EN 16729-4:2018	Railway applications - Infrastructure - Non-destructive testing on rails in track - Part 4: Qualification of personnel for non-destructive testing on rails
				EN 16729-5:2023	Railway applications - Infrastructure - Non-destructive testing on rails in track - Part 5: Non-destructive testing on welds in track
				EN 17069-1:2019	Railway applications - Systems and procedures for change of track gauge - Part 1: Automatic Variable Gauge Systems
				IRS 70712: 2018	Rail Defects

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
				IRS 70712-1: 2023	Broken Rail Detection (BRD) Systems - Guidelines and Recommendations for Use
				IRS 71725:2024	Railway Infrastructure - Laying and maintenance of track - Treatment of rail defects
			軌距 Gauges	EN 13803:2017	Railway applications - Track - Track alignment design parameters - Track gauges 1435 mm and wider
				IRS 70710:2020	Railway application - Minimum track gauge in curves
				EN 13674-3: 2006+A1:2010	Railway applications - Track - Rail - Part 3: Check rails

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
			其他 Others	CNS 14566:2001 [UIC 864-1:1982] IRS 80864-1: 2022	螺旋道釘
				CNS 14567:2001 [UIC 864-1:1982] IRS 80864-1: 2022	螺旋道釘檢驗法
				CNS 14568:2001 [UIC 864-2:1982] IRS 80864-2: 2022	軌道用螺栓及螺帽
				CNS 14569:2001 [UIC 864-2:1982] IRS 80864-2: 2022	軌道用螺栓及螺帽檢驗法
				CNS 14625:2002 [UIC 864-3:1982] IRS 80864-3: 2022	軌道用彈簧墊圈
				CNS 14626:2005 [UIC 866:1985] EN 13231-2:2020	螺絲釘
					Railway applications - Track - Acceptance of works - Part 2: Acceptance of reprofiling

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
		rails in plain line, switches, crossings and expansion devices			
	EN 13231-3:2012	Railway applications - Track - Acceptance of works - Part 3: Acceptance of reprofiling rails in track			
	EN 14811:2019	Railway applications - Track - Special purpose rail - Grooved rails and associated construction profiles			
	EN 15302:2008+ A1:2010	Railway applications - Method for determining the equivalent conicity			
	EN 15427:2008+ A1:2010	Railway applications - Wheel/rail friction management - Flange lubrication			
	EN 15954-1:2013	Railway applications - Track - Trailers and associated equipment - Part 1: Technical requirements for running and working			
	EN 15954-2:2013	Railway applications - Track - Trailers and associated equipment - Part 2: General safety requirements			
	EN 15955-1:2013	Railway applications - Track - Demountable machines and associated equipment - Part 1: Technical requirements for running and working			

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	EN 15955-2:2013	Railway applications - Track - Demountable machines and associated equipment - Part 2: General safety requirements			
	EN 16273:2014	Railway applications - Track - Forged rail transitions			
	EN 16843:2024	Railway applications - Infrastructure - Mechanical requirements for joints in running rails			
	EN 17636:2023	Railway applications - Infrastructure - Track alignment design parameters - Urban rail			
	UIC 774-3:2001	Track- Bridge Interaction.			
	IRS 80864-4:2023	Recommendations for calculations			
		Supply of steel fishplates			
	EN 16432-1:2017	Railway applications - Ballastless track systems - Part 1: General requirements	道床軌道		
	IRS 70719-1:2023	Way and Works - Track and Structure - Recommendations for the use of Under Ballast Mass (UBM)	Ballasted track		
	EN 16432-2:2017	Railway applications - Ballastless track systems - Part 2: System design, subsystems and components	無道床軌道		
	EN 16432-3:2021	Railway applications - Ballastless track systems - Part 3: Acceptance	Ballastless track		

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
EN 13232-2: 2023	Railway applications - Track - Switches and crossings - Part 2: Requirements for geometric design	Railway applications - Infrastructure - Resilient element for floating slab system		EN 17682:2022	Railway applications - Track - Concrete sleepers and bearers - Part 1: General requirements
EN 13674-2: 2019	Railway applications - Track - Rail - Part 2: Switch and crossing rails used in conjunction with Vignole railway rails 46 kg/m and above				
IRS 70719:2020	Track & Structure - "Earthworks and track bed layers for railway lines" - Design and construction principles		木質軌枕 Wood sleeper	EN 13145:2001 + A1:2011	
IRS 70722:2023	Maintaining and improving earthworks and track bed layers		空心軌枕 Hollow sleeper	EN 16431:2014	Railway applications - Track - Hollow sleepers and bearers
			混凝土軌枕 Concrete sleeper	ISO 22480-1: 2022	Railway applications - Concrete sleepers and bearers for track - Part 1: General requirements
				ISO 22480-2: 2022	Railway applications - Concrete sleepers and bearers for track - Part 2: Prestressed monoblock sleepers

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	EN 13230-1:2016			EN 13230-1:2016	Railway applications - Track - Concrete sleepers and bearers - Part 1: General requirements
	EN 13230-2:2016			EN 13230-2:2016	Railway applications - Track - Concrete sleepers and bearers - Part 2: Prestressed monoblock sleepers
	EN 13230-3:2016			EN 13230-3:2016	Railway applications - Track - Concrete sleepers and bearers - Part 3: Twill-block reinforced sleepers
	EN 13230-4:2016			EN 13230-4:2016	Railway applications - Track - Concrete sleepers and bearers - Part 4: Prestressed bearers for switches and crossings
	EN 13230-5:2016			EN 13230-5:2016	Railway applications - Track - Concrete sleepers and bearers - Part 5: Special elements
	EN 16730:2016			EN 16730:2016	Railway applications - Track - Concrete sleepers and bearers with under sleeper pads
	IRS 70713:2023			IRS 70713:2023	Recommendations for the design and use of prestressed monoblock concrete sleeper
	ISO 12856-2: 2020	合成軌枕 Composite sleeper		ISO 12856-2: 2020	Railway applications - Polymeric composite sleepers, bearers and transoms - Part 2: Product testing
	IRS 70701:2024			IRS 70701:2024	Polymeric composite sleepers - Recommendations for use

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
			其他 Others	EN 16494:2015	Railway applications - Requirements for ERTMS Trackside Boards
特殊軌 Special track			道岔 Crossing	CNS 16133:2020 [EN 13232-4:2003+A1:2011] EN 13232-4:2023	鐵路應用—軌道—尖軌及岔心—第 4 部: 致動、鎖定及檢查
				EN 13231-1:2023	Railway applications - Track - Acceptance of works - Part 1: Works on ballasted track - Plain line, switches and crossings
				EN 13231-4:2023	Railway applications - Track - Acceptance of works - Part 4: Acceptance of reprofiling rails in switches and crossings
				EN 13231-5:2023	Railway applications - Track - Acceptance of works - Part 5: Procedures for rail reprofiling in plain line, switches, crossings and expansion devices
				EN 13232-3:2023	Railway applications - Track - Switches and crossings - Part 3: Requirements for wheel/rail interaction
				EN 13232-5:2023	Railway applications - Track - Switches and crossings - Part 5: Switches

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	EN 13232-6:2023				Railway applications - Track - Switches and crossings - Part 6: Fixed common and obtuse crossings
	EN 13232-7:2023				Railway applications - Track - Switches and crossings - Part 7: Crossings with moveable parts
	EN 13232-8:2023				Railway applications - Track - Switches and crossings - Part 8: Expansion devices
	EN 13232-9:2023				Railway applications - Track - Switches and crossings - Part 9: Layouts
	EN 14587-3:2012				Railway applications - Track - Flash butt welding of rails - Part 3: Welding in association with crossing construction
	EN 15689:2009				Railway applications - Track - Switches and crossings - Crossing components made of cast austenitic manganese steel
	EN 16725:2016				Railway applications - Track - Restoration and repair of manganese crossings
扣件系統 Fastening system	CNS 16175-1:2022 [EN 13146-1:2019]		扣件性能測試 FS performance test		鐵路應用—軌道—扣件系統之試驗法—第 1 部：鋼軌鋼岔夾制之測定
	CNS 16143-2:2020 [EN 13481-2:2023]	鐵路應用—軌道—扣件系統之性能要求—第 2 部：混凝土軌枕用扣件系統			鐵路應用—軌道—扣件系統之試驗法—第 2 部：抗扭力之測定

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	2012+A1:2017]			[EN 13146-2: 2012]	
	EN 13481-2: 2022			CNS 16175-3: 2023 [EN 13146-3: 2012]	鐵路應用—軌道—扣件系統之試驗法—第 3 部：衝擊負載測試之測定
				CNS 16175-4: 2023 [EN 13146-4: 2012+A1:2014]	鐵路應用—軌道—扣件系統之試驗法—第 4 部：重複負載之效應
	CNS 16143-5: 2022 [EN 13481-5: 2012+A1:2017]			CNS 16175-7: 2022 [EN 13146-7: 2019]	鐵路應用—軌道—扣件系統之試驗法—第 7 部：扣壓力與上舉強度之測定
	EN 13481-5: 2022	鐵路應用—軌道—扣件系統之性能要求— 第 5 部：既設軌道用鋼軌安裝於表面 或埋入槽內之扣件系統		CNS 16175-8: 2022 [EN 13146-8: 2012]	鐵路應用—軌道—扣件系統之試驗法—第 8 部：營運線上測試
	ISO 22074-1: 2020	Railway infrastructure - Rail fastening systems - Part 1: Vocabulary		CNS 16175-9: 2023 [EN 13146-9: 2009+A1:2011]	鐵路應用—軌道—扣件系統之試驗法—第 9 部：動度之測定

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	EN 13481-1: 2012	Railway applications - Track - Performance requirements for fastening systems - Part 1: Definitions		CNS 16175-10: 2023 [EN 13146-10: 2017]	鐵路應用—軌道—扣件系統之試驗法—第 10 部：抗扭強度負載試驗
	EN 13481-3: 2022	Railway applications - Track - Performance requirements for fastening systems - Part 3: Fastening systems for wood and polymeric composite sleepers		ISO 22074-2: 2021	Railway infrastructure - Rail fastening systems - Part 2: Test method for longitudinal rail restraint
	EN 13481-4: 2022	Railway applications - Track - Performance requirements for fastening systems - Part 4: Fastening systems for steel sleepers in ballast		ISO 22074-3: 2021	Railway infrastructure - Rail fastening systems - Part 3: Proof load test method for pull-out resistance
	EN 13481-7: 2022	Railway applications - Track - Performance requirements for fastening systems - Part 7: Fastening systems for switches and crossings, check rails, insulated rail		ISO 22074-4: 2022	Railway infrastructure - Rail fastening systems - Part 4: Test methods for resistance to repeated loading

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
	EN 13481-8:2006	Railway applications - Track - Performance requirements for fastening systems - Part 8: Fastening systems for track with heavy axle loads		ISO 22074-5:2021	Railway infrastructure - Rail fastening systems - Part 5: Test method for electrical resistance
	EN 17495:2022	Railway Applications - Acoustics - Determination of the dynamic stiffness of elastic track components related to noise and vibration: Rail pads and rail fastening assemblies		ISO 22074-6:2021	Railway infrastructure - Rail fastening systems - Part 6: Test method for resistance to severe environmental conditions
	IRS 80864-5:2024	Technical specification - Permanent Way - Supply of rail pads		ISO 22074-7:2021	Railway infrastructure - Rail fastening systems - Part 7: Test method for clamping force and uplift stiffness
	IRS 80864-6:2024	Technical Specification - Permanent Way - Supply of steel ribbed baseplates		ISO 22074-8:2022	Railway infrastructure - Rail fastening systems - Part 8: Test method for vertical stiffness
				EN 13146-5:2012+AC:2017	Railway applications - Track - Test methods for fastening systems - Part 5: Determination of electrical resistance

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
安全措 施 Safety measure				EN 13146-6:2012	Railway applications - Track - Test methods for fastening systems - Part 6: Effect of severe environmental conditions
			軌道預警系統 Track warning systems	EN 16704-2-1:2016	Railway applications - Track - Safety protection on the track during work - Part 2-1: Common solutions and technologies - Technical requirements for Track Warning Systems (TWS)
			止衝檔 Buffer stops		
			阻輪器 Wheel stop		
			其他 Others	EN 16704-2-2:2016	Railway applications - Track - Safety protection on the track during work - Part 2-2: Common solutions and technology - Requirements for barriers
				EN 16704-3:2021	Railway applications - Track - Safety protection on the track during work - Part 3: Competences for personnel related to work on or near tracks

■ 智慧鐵道系統

表 3-8 我國標準鐵道系統智慧鐵道系統列表

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
通訊系統 Communication system	CNS 61375-1:2024	鐵路電子設備—列車通訊網路 (TCN)—第 1 部：一般架構	通訊安全 Communication safety	CNS 27001:2023 [ISO 27001:2022]	資訊安全、網路安全及隱私保護—資訊安全管理系統—要求事項
	IEC 61375-1:2012]				
	CNS 61375-2-4:2021 [IEC TS 61375-2-4:2017]	電子化鐵路設備—列車通訊網路 (TCN)—第 2-4 部：TCN 應用規範		ISO/IEC TR 24587: 2021	Software and systems engineering - Agile development - Agile adoption considerations
	CNS 61375-2-6:2024 [IEC 61375-2-6:2018]	鐵路電子設備—列車通訊網路 (TCN)—第 2-6 部：車載對地面通訊			
	CNS 62280:2021 [IEC 62280:2014] EN 50159:2010+A1:2020]	鐵路應用—通訊、號誌及處理系統—傳輸系統之安全相關通訊			
	IEC 61375-2-1:2012	Electronic railway equipment - Train communication			

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
		network (TCN)			
		Part 2-1: Wire Train Bus (WTB)			
	IEC 61375-2-2:2012	Electronic railway equipment - Train communication network (TCN) Part 2-2: Wire Train Bus conformance testing			
	IEC 61375-2-5:2015	Electronic railway equipment - Train communication network (TCN) - Part 2-5: Ethernet train backbone			
	IEC 61375-2-8:2021	Electronic railway equipment - Train communication network (TCN) - Part 2-8: TCN conformance test			
	IEC 61375-3-1:2012	Electronic railway equipment - Train communication network (TCN) - Part 3-1: Multifunction Vehicle Bus (MVB)			
	IEC 61375-3-2:2012	Electronic railway equipment - Train communication network (TCN) - Part 3-2: MVB (Multifunction Vehicle Bus) conformance testing			

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
系統介面 System interface	IEC 61375-3-3:2012	Electronic railway equipment - Train communication network (TCN) Part 3-3: CANopen Consist Network (CCN)	系統相容性 System compatibility	CNS 16164-1:2022 [EN 50238-1:2019]	系統相容性-標準車輛與列車偵測系統間相容性-第 1 部：通用
	EN 61375-2-3:2015 + A11:2017	Electronic railway equipment - Train communication network (TCN) - Part 2-3: TCN communication profile			
	EN 61375-3-4:2014+ A11:2017	Electronic railway equipment - Train communication network(TCN) Part 3-4: Ethernet Consist Network (ECN)			
	CNS 62279:2023 [IEC 62279:2015] EN 50128:2011+A2:2020	鐵路應用—通訊、號誌及處理系統—鐵路控制及防護系統之軟體	安全要求 Safety requirement	CNS 16208:2023 [EN 50129:2018]	鐵路應用—通訊、號誌及處理系統—號誌之安全性相關電子系統

1 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
雲端設備 Cloud equipment	IEC 62443-2-1:2010	Industrial communication networks - Network and system security - Part 2-1: Establishing an industrial automation and control system security program	軟體要求 Software requirement	EN 50716:2023	Railway applications - Requirements for software development
	IEC 62443-2-4:2015+AMD1:2017	Security for industrial automation and control systems - Part 2-4: Security program requirements for IACS service providers			
	IEC 62443-3-2:2020	Security for industrial automation and control systems - Part 3-2: Security risk assessment for system design			
	IEC 62443-3-3:2013	Industrial communication networks - Network and system security - Part 3-3: System security requirements and security levels			
	IEC 62443-4-1:2018	Security for industrial automation and control systems - Part 4-1:			

I 階項目	標準號碼	標準標題	2 階項目	標準號碼	標準標題
環境監測 Environmental monitoring		Secure product development lifecycle requirements			
	IEC 62443-4-2:2019	Security for industrial automation and control systems - Part 4-2: Technical security requirements for IACS components			
	CNS 62498-1:2023	鐵路應用—設備之環境條件—[EN 50125-1:2014] 第 1 部：鐵路車輛及車載設備			
	CNS 62498-3:2020	鐵路應用—設備之環境條件—[IEC 62498-3:2010]			
	IEC 62498-2:2010	Railway applications - Environmental conditions for equipment - Part 2: Fixed electrical installations	裝置安裝需求 Device installation requirement		
	IEC 60364-4-41:2005+AMD1:2017	Low voltage electrical installations - Part 4-41: Protection for safety - Protection against electric shock			
			安全要求 Safety requirement		

■ 系統驗證(RAMS)

表 3-9 我國鐵道標準整體架構-系統驗證列表 (系統驗證常習慣稱為系統保證)

I 階項目	標準號碼	標準標題	項目	標準號碼	標準標題
軟體鐵道系統驗證 Total railway system RAMS	CNS 16208:2023	鐵路應用—通訊、號誌及處理系統—號誌之安全性相關電子系統	號誌驗證 Signalling RAMS	CNS 62279:2023	鐵路應用—通訊、號誌及處理系統—號誌控制及防護系統之軟體
	IEC TR 61508-0:2005	Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 0: Functional safety and IEC 61508	通訊驗證 Communication RAMS	CNS 62280:2021	鐵路應用—通訊、號誌及處理系統—傳輸系統之安全相關通訊
	IEC 61508-1:2010	Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 1: General requirements	車輛驗證 Vehicle RAMS	CNS 61377:2021	鐵路應用—鐵路車輛—牽引系統綜合試驗法
	IEC 61508-2:2010	Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 2: Requirements for electrical/electronic/programmable electronic safety-related systems		CNS 61881-3:2021	鐵路應用—鐵路車輛設備—電力電子之電容器—第 3 部：電解電容器
				IEC 61881-3:2012+A1:2013	

I 階項目	標準號碼	標準標題	項目	標準號碼	標準標題
	IEC 61508-3: 2010	Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 3: Software requirements			
	IEC 61508-4: 2010	Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 4: Definitions and abbreviations	供電輸出 Power supply RAMS		
	IEC 61508-5: 2010	Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 5: Examples of methods for the determination of safety integrity levels	軌道安全 Track safety	CNS 16175-8: 2022 [EN 13146-8: 2012]	鐵路應用-軌道-扣件系統之試驗法-第8部：營運線上測試
	IEC 61508-6: 2010	Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 6: Guidelines on the application of IEC 61508-2 and IEC 61508-3	系統風險與評估 System risk evaluation		
	IEC 61508-7: 2010	Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 7: Overview of techniques and measures			

I 階項目	標準號碼	標準標題	項目	標準號碼	標準標題
	IEC 62278: 2002	Railway applications - Specification and demonstration of reliability, availability, maintainability and safety (RAMS)			
	EN 50126-1: 2024	Railway Applications - The Specification and Demonstration of Reliability, Availability, Maintainability and Safety (RAMS) - Part 1: Generic RAMS Process			
	EN 50126-2: 2024	Railway Applications - The Specification and Demonstration of Reliability, Availability, Maintainability and Safety (RAMS) - Part 2: Systems Approach to Safety			
	EN 50716:2023	Railway applications - Requirements for software development			

■ 其他系統

表 3-10 我國標準與國際標準之對應關係-其他系統列表

I 階項目	標準號碼	標準標題
一般機電系統 General electromechanical system	ISO 14443-1:2018	Cards and security devices for personal identification - Contactless proximity objects - Part 1: Physical characteristics
	ISO 14443-2:2020 + COR1:2021	Corrigendum 1 - Cards and security devices for personal identification - Contactless proximity objects - Part 2: Radio frequency power and signal interface
	ISO 14443-3:2018	Cards and security devices for personal identification - Contactless proximity objects - Part 3: Initialization and anticollision
	ISO 14443-4:2018	Cards and security devices for personal identification - Contactless proximity objects - Part 4: Transmission protocol
	ISO 22888:2020	Railway applications - Concepts and basic requirements for the planning of railway operation in the event of earthquakes
	ISO 23019:2022	Railway applications - Driving simulator for drivers' training
	ISO 24675-1:2022	Railway Applications - Running time calculation for timetabling - Part 1: Requirements
	IEC 60598-1:2020	Luminaires - Part 1: General requirements and tests
	EN 81-73:2020	Safety rules for the construction and installation of lifts. Particular applications for passenger and goods passenger lifts - Behaviour of lifts in the event of fire
	EN 115-1:2017	Safety of escalators and moving walks - Construction and installation
	EN 115-2:2021	Safety of escalators and moving walks - Rules for the improvement of safety of existing escalators and moving walks
	EN 16334-2:2020	Railway applications - Passenger Alarm System - Part 2: System requirements for urban rail
	EN 17168:2021	Railway applications - Platform barrier systems
	EN 16334-1:2014+A1:2022	Railway applications - Passenger Alarm System - Part 1: System requirements for mainline rail

162

I 階項目	標準號碼	標準標題
標誌與標示 Logos and signs	IRS 30311:2024	Financial relations between railway undertakings - Principles and terms of application
	IRS 60660:2024	Measures to ensure the technical compatibility of High-Speed Trains
	IRS 60683:2024	Design of a High-Speed Railway - Interface
	IRS 70017:2023	Railway Application - Fixed Installations - Evaluation of incidents on the railway energy system
	IRS 90918-0:2023	Electronic seat/berth reservation and electronic production of travel documents - General regulations
	IRS 90918-4:2023	e-Ticket Exchange for Control
	ISO 3864-1:2011	Graphical symbols - Safety colours and safety signs - Part 1: Design principles for safety signs and safety markings
	ISO 3864-2:2016	Graphical symbols - Safety colours and safety signs - Part 2: Design principles for product safety labels
	ISO 3864-3:2012	Graphical symbols - Safety colours and safety signs - Part 3: Design principles for graphical symbols for use in safety signs
	ISO 3864-4:2011	Graphical symbols - Safety colours and safety signs - Part 4: Colorimetric and photometric properties of safety sign materials
	ISO 7000:2019	Graphical symbols for use on equipment - Registered symbols
	ISO 7001:2007+AMD 4:2017	Graphical symbols - Public information symbols - Amendment 4
	ISO 7010:2019+AMD 1:2020	Graphical symbols - Safety colours and safety signs - Registered safety signs - Amendment 1
	EN 15380-1:2006	Railway applications - Designation system for railway vehicles - Part 1: General principles
	EN 15380-2:2006	Railway applications - Designation system for railway vehicles - Part 2: Product groups
	EN 15380-3:2006	Railway applications - Designation system for railway vehicles - Part 3: Designation of installation sites and locations
	EN 15153-2:2013	Railway applications - External visible and audible warning devices for trains - Part 2: Warning horns

163

! 陸項目	標準號碼	標準標題
	IRS 20219:2023	DIUM - Uniform distance table for international freight traffic: List of railway stations - List of handover/delivery points used by the railways
	IRS 20221:2023	Harmonised Commodity Code (NHM)
	IRS 50580:2023	Railway applications - Markings, pictograms, tactile signs and controls, destination boards and number plates, seat reservation indicators to be affixed to passenger vehicles used in international traffic
	EN 14067-1:2003	Railway applications - Aerodynamics - Part 1: Symbols and units
空氣動力學 Aerodynamics	EN 14067-3:2003	Railway applications - Aerodynamics - Part 3: Aerodynamics in tunnels
	EN 14067-4:2024	Railway applications - Aerodynamics - Part 4: Requirements and test procedures for aerodynamics on open track
	EN 14067-5:2021+AC:2023	Railway applications - Aerodynamics - Part 5: Requirements and test procedures for aerodynamics in tunnels
	EN 14067-6:2018	Railway applications - Aerodynamics - Part 6: Requirements and test procedures for cross wind assessment
工程圖要求 Drawings	EN 15016-1:2023	Technical drawings - Railway applications - Part 1: General Principles
	EN 15016-2:2023	Technical drawings - Railway applications - Part 2: Parts lists
	EN 15016-3:2023	Technical drawings - Railway applications - Part 3: Handling of modifications of technical documents
	EN 15016-4:2023	Technical drawings - Railway applications - Part 4: Data exchange
行動不便 PRM	EN 16384-1:2017	Railway applications - Design for PRM use - General requirements - Part 1: Contrast Information
	EN 16384-2:2017	Railway applications - Design for PRM use - General requirements - Part 2: Information
	EN 16384-3:2017	Railway applications - Design for PRM use - General requirements - Part 3: Optical and friction characteristics
	EN 16385-1:2017	Railway applications - Design for PRM use - Equipment and components onboard rolling stock - Part 1: Toilets
	EN 16385-2:2017	Railway applications - Design for PRM use - Equipment and components on board rolling stock - Part 2: Elements for sitting, standing and moving

164

! 陸項目	標準號碼	標準標題
	EN 16385-3:2017	Railway applications - Design for PRM use - Equipment and components on board rolling stock - Part 3: Clearways and internal doors
	EN 16386-1:2017	Railway applications - Design for PRM use - Accessibility of persons with reduced mobility to rolling stock - Part 1: Steps for access and egress
	EN 16386-2:2017	Railway applications - Design for PRM use - Accessibility of persons with reduced mobility to rolling stock - Part 2: Boarding aids
	EN 16387:2017	Railway applications - Design for PRM Use - Requirements on obstacle free routes for infrastructure
	IRS 10145:2023	Recommendations for the organisation of assistance services for persons with disabilities and persons with reduced mobility
	IEC 62267:2009	Railway applications - Automated urban guided transport (AUGT) - Safety requirements
	EN 16704-1:2021	Railway applications - Track - Safety protection on the track during work - Part 1: Railway risks and common principles for protection of fixed and mobile work sites
	EN 50500:2008 + A1:2015	Measurement procedures of magnetic field levels generated by electronic and electrical apparatus in the railway environment with respect to human exposure
安全要求 Safety	EN 50553:2012+ A2:2020	Railway applications - Requirements for running capability in case of fire on board of rolling stock
品質管理系統 Quality management system	IRS 20201:2024	Carriage of dangerous goods - Emergency planning guidance for rail marshalling yards
	ISO 22163:2023+A1:2024	Railway applications - Railway quality management system - ISO 9001:2015 and specific requirements for application in the railway sector
	EN ISO 22163:2024	Railway applications - Railway quality management system - ISO 9001:2015 and specific requirements for application in the railway sector
		specific requirements for application in the railway sector (ISO 22163:2023)

165