

**The sustainable freight railway: Designing the freight vehicle – track system for higher delivered tonnage with improved availability at reduced cost**

**SUSTRAIL**

**Grant Agreement n°:** 265740 FP7 - THEME [SST.2010.5.2-2.]  
**Project Start Date:** 2011-06-01  
**Duration:** 48 months

D2.1

Summary of standards and externally imposed definitions of duty

Due date of deliverable: 30/11/2011

Actual submission date: 19/12/2011

<b>Work Package Number:</b>	WP 2 (Task 2.1 'TSI and Standards')
<b>Dissemination Level:</b>	PU
<b>Status:</b>	Draft
<b>Leader of this deliverable:</b>	Francis Franklin, Newcastle University
<b>Prepared by:</b>	Paul Hyde, Newcastle University Francis Franklin, Newcastle University Andrew Jablonski, on behalf of Network Rail María García Santiago, ADIF Enrique Mario García Moreno, ADIF
<b>Verified by:</b>	Paul Richards, Network Rail

<b>Dissemination Level</b>	
PU	Public
PP	Restricted to other programme participants (including the Commission Services)
RE	Restricted to a group specified by the consortium (including the Commission Services)
CO	Confidential, only for members of the consortium (including the Commission Services)

<b>Document History</b>			
<b>Version</b>	<b>Date</b>	<b>Author/s</b>	<b>Description</b>
D1	2011-10-28	Paul Hyde	Initial draft: EN
D2	2011-11-11	Paul Hyde	UIC added
V1	2011-11-21	Paul Hyde, Francis Franklin	Final draft
V2	2011-12-02	Paul Hyde, Francis Franklin	Inclusion of Spanish standards and reorganisation of tables.
V3	2011-12-16	Paul Hyde, Francis Franklin	Finalise author list and set submission date.

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## 1. INTRODUCTION

SUSTRAIL will be developing infrastructure and freight vehicle modifications to enable higher delivered tonnage, whether through higher axle loads or higher speed operation. During this development, it is important to be aware of the many standards, policies and guidelines that may have an impact. These represent external restrictions and definitions of duty.

This deliverable identifies and summarises relevant standards and externally imposed definitions of duty. These provide a window within which any new or replacement technology must operate.

## 2. STANDARDS INCLUDED

### 2.1 European Standards

Tables A.01-A.06 contain a summary of the European Standards for Railway Engineering and a summary of the UIC leaflets. Each table summarises the standards within a particular area of the railway engineering standards; the area of the standards detailed in each table is as follows:

- Table A.01: - European Standards related to Railway engineering in general
- Table A.02: - European Standards related to Materials and components for railway engineering
- Table A.03: - European Standards related to Railway rolling stock
- Table A.04: - European Standards related to Rails and railway components
- Table A.05: - European Standards related to Equipment for railway/cableway construction and maintenance
- Table A.06: - UIC leaflets related to all aspects of railways

There is an additional section of the European Standards for Railway Engineering which relates to Equipment for railway/cableway construction and maintenance. This has not been summarised as it is not anticipated that it will be relevant to the SUSTRAIL project.

### 2.2 TSIs

Tables A.07-A.11 contain a summary of each of the Technical Standards for Interoperability (TSIs) relating to conventional rail, each table summarising a different area covered by the TSIs which is thought to be applicable to the SUSTRAIL project. Which table summarises which area of the TSIs is as follows:

- Table A.07: - Applicable standards in CR Control – Command and Signalling TSI
- Table A.08: - Applicable standards in CR Operation TSI
- Table A.09: - Applicable standards in CR Rolling stock – Freight wagons TSI
- Table A.10: - Applicable standards in TSI for noise aspects of conventional rolling stock
- Table A.11: - Applicable standards in TSI on Safety in Railway Tunnels in the trans-European conventional and high-speed rail system

Note: In the TSIs, CR is used as an abbreviation of Conventional Rail, the alternative classification is High-Speed Rail.

### 2.3 National Standards

Tables A.12-A.14 summarise the additional national standards relating to railway engineering which are only applicable to individual nations and geographical areas and are imposed by that nations' standards organisation or other regulatory body. These standards do not have the status of European Standards, and are summarised in separate tables according to the nationality and types of the standards as listed below:

- Table A.12: - GB National Standards – Railway Group and Network Rail Company Standards (applicable to the UK railway network, excluding Northern Ireland).
- Table A.13: - British non-EN Standards applicable to railway engineering
- Table A.14: - Spanish non-EN Standards applicable to railway engineering

## 2.4 Note on Formatting

There are two versions of Tables A.01-A.06 and Table A.13. These versions are identified by the suffix "a" or "b"; the version with the "a" suffix contains an abridged version of the information contained in the version with the "b" suffix. This has been done to enable the versions of the tables with the suffix "a" representing some of the fields of information on these standards to be presented in this document in a clear and concise manner, which is also in a format suitable for physical reproduction. The version of tables A.01-A.06 with the suffix "a" can be found in the appendix of this document. A spreadsheet containing electronic versions of the tables with the additional information is included as an annex to this deliverable; these tables have the suffix "b". The additional information consists mainly of the details related to each individual standard listed.

Tables A.07-A.12 and Table A.14 contain the same information both as reproduced in this document and in electronic format; therefore these tables in both formats are identical and no distinction is made between the electronic and hard copy versions.

### **3. ANNEX**

SUSTRAIL 2.1.1 TSI and Standards Summary:- Table A.01a

## European Standards - Railway engineering:

### Railway engineering in general

European standard No.	Status	SUSTRAIL to Relevance	Name of Standard
CLC/TR 50126-2:2007	Published Document	High	Railway applications — The specification and demonstration of Reliability, Availability, Maintainability and Safety (RAMS) — Part 2: Guide to the application of EN 50126-1 for safety
CLC/TR 50126-3:2008	Published Document	High	Railway applications — The specification and demonstration of Reliability, Availability, Maintainability and Safety (RAMS) — Part 3: Guide to the application of EN 50126-1 for rolling stock RAM
CLC/TR 50451:2007	Published Document	Medium	Railway applications — Systematic allocation of safety integrity requirements
CLC/TR 50452:2007	Published Document	Low	Railway applications — Radio remote control system of traction vehicle for freight traffic in multiple traction operation
CLC/TR 50459-7:2007	Published Document	None-Low	Railway applications — Communication, signalling and processing systems — European Rail Traffic Management System — Driver-Machine interface — Part 7: Specific Transmission Modules
CLC/TR 50501-1:2007	Published Document	Low	Railway applications — Rolling stock — Intercommunication between vehicles and train/wayside — Part 1: Data dictionary and rules for functional standardisation
CLC/TR 50542:2010	Published Document	None	Railway applications — Communication means between safety equipment and man-machine interfaces (MMI)
EN 15016-1:2004	Full	High	Technical drawings — Railway applications Part 1: General Principles
EN 15016-2:2004	Full	High	Technical drawings — Railway applications Part 2: Parts lists
EN 15016-3:2004	Full	High	Technical drawings — Railway applications Part 3: Handling of modifications of technical documents
EN 15016-4:2006	Full	High	Technical drawings — Railway applications Part 4: Data exchange
EN 15273-1:2009	Full	High	Railway applications — Gauges Part 1: General — Common rules for infrastructure and rolling stock
EN 15273-2:2009	Full	High	Railway applications — Gauges Part 2: Rolling stock gauge
EN 15273-3:2009	Full	None-Low	Railway applications — Gauges Part 3: Structure gauges
EN 50121-1:2006	Full	Low	Railway applications — Electromagnetic compatibility — Part 1: General
EN 50121-2:2006	Full	Low	Railway applications — Electromagnetic compatibility — Part 2: Emissions of the whole railway system to the outside world



EN 50121-4:2006	Full	None-Low	Railway applications — Electromagnetic compatibility — Part 4: Emission and immunity of the signalling and telecommunications apparatus
EN 50121-5:2006	Full	None-Low	Railway applications — Electromagnetic compatibility — Part 5: Emission and immunity of fixed power supply installations and apparatus
EN 50124-1:2001+A2:2005	Full	Low	Railway applications — Insulation coordination — Part 1: Basic requirements — Clearances and creepage distances for all electrical and electronic equipment
EN 50124-2:2001	Full	Low	Railway applications — Insulation coordination — Part 2: Overvoltages and related protection
EN 50126-1:1999	Full	High	Railway applications — The specification and demonstration of Reliability, Availability, Maintainability and Safety (RAMS) — Part 1: Basic requirements and generic process
EN 50128:2011	Full	Low	Railway applications — Communication, signalling and processing systems — Software for railway control and protection systems
EN 50159:2010	Full	None-Low	Railway applications — Communication, signalling and processing systems — Safety-related communication in transmission systems
EN 50500:2008	Full	None-Low	Measurement procedures of magnetic field levels generated by electronic and electrical apparatus in the railway environment with respect to human exposure
EN 62290-1:2006	Full	None	Railway applications — Urban guided transport management and command/control systems — Part 1: System principles and fundamental concepts
ENISO 3095	Draft for Public Comment	High	Draft BS ENISO 3095 Railway applications - Acoustics - Measurement of noise emitted by railbound vehicles
FprEN 50517	Final Draft	None	Draft BS EN 50517 Railway applications - Communication, signalling and processing systems- European rail traffic management system - Definition of trackside objects in addition to cab-signalling
prEN 15839	Draft	High	Draft BS EN 15839 Railway Applications - Testing for the acceptance of running characteristics of railway vehicles - Freight wagons - Testing of running safety under longitudinal compressive forces

SUSTRAIL 2.1.1 TSI and Standards Summary:- Table A.02a

## European Standards - Railway engineering: Materials and components for railway engineering

European standard No.	Status	SUSTRAIL to Relevance	Name of Standard
CEN/TS 13979-2:2011	Draft for Development	High	Railway applications — Wheelsets and bogies — Monobloc wheels — Technical approval procedure Part 2: Cast wheels
CEN/TS 15718:2011	Draft for Development	High	Railway applications — Wheelsets and bogies — Product requirements for cast wheels
EN 12080:2007 +A1:2010	Full	High	Railway applications — Axleboxes — Rolling bearings
EN 12081:2007 +A1:2010	Full	High	Railway applications — Axleboxes — Lubricating greases
EN 12082:2007 +A1:2010	Full	High	Railway applications — Axleboxes — Performance testing
EN 13103:2009 +A1:2010	Full	High	Railway applications — Wheelsets and bogies — Non-powered axles — Design method
EN 13104:2009 +A1:2010	Full	Low	Railway applications — Wheelsets and bogies — Powered axles — Design method
EN 13260:2009 +A1:2010	Full	High	Railway applications — Wheelsets and bogies — Wheelsets — Product requirements
EN 13261:2009 +A1:2010	Full	High	Railway applications — Wheelsets and bogies — Axles — Product requirements
EN 13262:2004 +A2:2011	Full	High	Railway applications — Wheelsets and bogies — Wheels — Product requirements
EN 13715:2006 +A1:2010	Full	High	Railway applications — Wheelsets and bogies — Wheels — Tread profile
EN 13749:2011	Full	High	Railway applications — Wheelsets and bogies — Method of specifying the structural requirements of bogie frames
EN 13802:2004	Full	High	Railway applications — Suspension components — Hydraulic dampers
EN 13913:2003	Full	High	Railway applications — Rubber suspension components — Elastomer-based mechanical parts
EN 13979-1:2003 +A2:2011	Full	High	Railway applications — Wheelsets and bogies — Monobloc wheels — Technical approval procedure — Part 1: Forged and rolled wheels
EN 14200:2004	Full	High	Railway applications — Suspension components — Parabolic springs, steel
EN 14817:2006	Full	Medium	Railway applications — Suspension components — Air-spring control elements
EN 14865-1:2009 +A1:2010	Full	Medium	Railway Applications — Axlebox lubricating greases Part 1: Method to test the ability to lubricate
EN 14865-2:2006 +A2:2010	Full	Medium	Railway applications — Axlebox lubricating greases — Part 2: Method to test the mechanical stability to cover vehicle speeds up to 200 km/h
EN 15313:2010	Full	High	Railway applications — In-service wheelset operation requirements — Inservice and off-vehicle wheelset maintenance

EN 15427:2008 +A1:2010	Full	High	Railway applications — Wheel/rail friction management — Flange lubrication
EN 15566:2009 +A1:2010	Full	High	Railway applications — Railway rolling stock — Draw gear and screw coupling
EN 15806:2010	Full	High	Railway applications — Braking — Static brake testing
EN 15807:2011	Full	High	Railway applications — Pneumatic half couplings
EN 15827:2011	Full	High	Railway applications — Requirements for bogies and running gears
prEN 16116-1	Draft for Public Comment	None	Draft BS EN 16116-1 Railway applications - Design requirements for steps, handrails and associated staff access Part 1: Passenger vehicles, luggage vans and locomotives
prEN 16241:2011	Draft for Public Comment	High	Draft BS EN 16241 Railway applications - Slack adjuster

SUSTRAIL 2.1.1 TSI and Standards Summary:- Table A.03a

## European Standards - Railway engineering: Railway rolling stock

European standard No.	Status	SUSTRAIL to Relevance	Name of Standard
CEN/TS 13149-3:2007	Draft for Dev	None	Public transport — Road vehicle scheduling and control systems — Part 3: WorldFIP message content
CEN/TS 13149-6:2005	Draft for Dev	None	Public transport — Road vehicle scheduling and control systems — Part 6: CAN message content
CEN/TS 45545-1:2009	Draft for Dev	Low	Railway applications — Fire protection on railway vehicles Part 1: General
CEN/TS 45545-2:2009	Draft for Dev	Low	Railway applications — Fire protection on railway vehicles Part 2: Requirements for fire behaviour of materials and components
CEN/TS 45545-3:2009	Draft for Dev	Low	Railway applications — Fire protection on railway vehicles Part 3: Fire resistance requirements for fire barriers
CEN/TS 45545-4:2009	Draft for Dev	Low	Railway applications — Fire protection on railway vehicles Part 4: Fire safety requirements for railway rolling stock design
CEN/TS 45545-6:2009	Draft for Dev	Low	Railway applications — Fire protection on railway vehicles Part 6: Fire control and management systems
CEN/TS 45545-7:2009	Draft for Dev	Low	Railway applications — Fire protection on railway vehicles Part 7: Fire safety requirements for flammable liquid and flammable gas installations
CLC/TR 50452:2007	Published Document	Low	Railway applications — Radio remote control system of traction vehicle for freight traffic in multiple traction operation
CLC/TR 50459-7:2007	Published Document	None	Railway applications — Communication, signalling and processing systems — European Rail Traffic Management System — Driver-Machine interface — Part 7: Specific Transmission Modules
CLC/TR 50501-1:2007	Published Document	None-Low	Railway applications — Rolling stock — Intercommunication between vehicles and train/wayside — Part 1: Data dictionary and rules for functional standardisation
CLC/TR 50507:2007	Published Document	None	Railway applications — Interference limits of existing track circuits used on European railways
CLC/TS 45545-5:2009	Draft for Dev	Low	Railway applications — Fire protection on railway vehicles Part 5: Fire safety requirements for electrical equipment including that of trolley buses, track guided buses and magnetic levitation vehicles
CLC/TS 50206-3:2010	Draft for Development	None	Railway applications — Rolling stock — Pantographs: Characteristics and tests Part 3: Interface between pantograph and rolling stock for rail vehicles

CLC/TS 50238-2:2010	Draft for Development	High	Railway applications — Compatibility between rolling stock and train detection systems Part 2: Compatibility with track circuits
CLC/TS 50238-3:2010	Draft for Development	High	Railway applications — Compatibility between rolling stock and train detection systems - Part 3: Compatibility with axle counters
CLC/TS 50459-1:2005	Draft for Dev	None	Railway applications — Communication, signalling and processing systems — European Rail Traffic Management System — Driver-Machine Interface — Part 1: Ergonomic principles for the presentation of ERTMS/ETCS/GSM-R information
CLC/TS 50459-2:2005	Draft for Dev	None	Railway applications — Communication, signalling and processing systems — European Rail Traffic Management System — Driver-machine Interface — Part 2: Ergonomic arrangements of ERTMS/ETCS information
CLC/TS 50459-3:2005	Draft for Dev	None	Railway applications — Communication, signalling and processing systems — European Rail Traffic Management System — Driver-Machine Interface — Part 3: Ergonomic arrangements of ERTMS/GSM-R information
CLC/TS 50459-4:2005	Draft for Dev	None	Railway applications — Communication, signalling and processing systems — European Rail Traffic Management System — Driver-Machine Interface — Part 4: Data entry for the ERTMS/ETCS/GSM-R systems
CLC/TS 50459-5:2005	Draft for Dev	None	Railway applications — Communication, signalling and processing systems — European Rail Traffic Management System — Driver- Machine Interface — Part 5: Symbols
CLC/TS 50459-6:2005	Draft for Dev	None	Railway applications — Communication, signalling and processing systems — European Rail Traffic Management System — Driver-Machine Interface — Part 6: Audible information
CLC/TS 50467:2008	Draft for Dev	Medium	Railway applications — Rolling stock — Electrical connectors, requirements and test methods
CLC/TS 50502:2008	Draft for Dev	None	Railway applications — Rolling stock — Electric equipment in trolley buses — Safety requirements and connection systems
CLC/TS 50534:2010	Draft for Dev	None	Railway applications — Generic system architectures for onboard electric auxiliary power systems
CLC/TS 50535:2010	Draft for Dev	None	Railway applications — Onboard auxiliary power converter systems
CLC/TS 50537-1:2010	Draft for Development	None-Low	Railway applications — Mounted parts of the traction transformer and cooling system Part 1: HV bushing for traction transformers
CLC/TS 50537-2:2010	Draft for Development	None	Railway applications — Mounted parts of the traction transformer and cooling system Part 2: Pump for insulating liquid for traction transformers and reactors
CLC/TS 50537-3:2010	Draft for Development	None	Railway applications — Mounted parts of the traction transformer and cooling system Part 3: Water pump for traction converters
CLC/TS 50537-4:2010	Draft for Development	None	Railway applications — Mounted parts of the traction transformer and cooling system Part 4: Gas and liquid actuated (Buchholz) relay for liquid immersed transformers and reactors with conservator for rail vehicles

Draft IEC 60571	Draft	Low	Draft BS IEC 60571 Railway applications - Electronic equipment used on rolling stock
EN 12299:2009	Full	None	Railway applications — Ride comfort for passengers — Measurement and evaluation
EN 12561-1:2011	Full	Medium	Railway applications — Tank wagons Part 1: Identification plates for tank wagons for the carriage of dangerous goods
EN 12561-2:2011	Full	Medium	Railway applications — Tank wagons Part 2: Bottom emptying devices for liquid products including vapour return
EN 12561-3:2011	Full	Medium	Railway applications — Tank wagons Part 3: Bottom filling and emptying devices for gases liquefied under pressure
EN 12561-4:2011	Full	Medium	Railway applications — Tank wagons Part 4: Devices for top filling and emptying of liquid products
EN 12561-5:2011	Full	Medium	Railway applications — Tank wagons Part 5: Devices for vapour return while filling or emptying of liquid products
EN 12561-6:2011	Full	Medium	Railway applications — Tank wagons Part 6: Manholes
EN 12561-7:2011	Full	Medium	Railway applications — Tank wagons Part 7: Platforms and ladders
EN 12561-8:2011	Full	Medium	Railway applications — Tank wagons Part 8: Heating connections
EN 12663-1:2010	Full	High	Railway applications — Structural requirements of railway vehicle bodies Part 1: Locomotives and passenger rolling stock (and alternative method for freight wagons)
EN 12663-2:2010	Full	High	Railway applications — Structural requirements of railway vehicle bodies Part 2: Freight wagons
EN 13129-1:2002	Full	None	Railway applications — Air conditioning for main line rolling stock — Part 1: Comfort parameters
EN 13129-2:2004	Full	None	Railway applications — Air conditioning for main line rolling stock — Part 2: Type tests
EN 13149-1:2004	Full	None	Public transport — Road vehicle scheduling and control systems — Part 1: WORLDIFIP definition and application rules for onboard data transmission
EN 13149-2:2004	Full	None	Public transport — Road vehicle scheduling and control systems — Part 2: WORLDIFIP cabling specifications
EN 13149-4:2004	Full	None	Public transport — Road vehicle scheduling and control systems — Part 4: General application rules for CANopen transmission buses
EN 13149-5:2004	Full	None	Public transport — Road vehicle scheduling and control systems — Part 5: CANopen cabling specifications
EN 13272:2001	Full	None	Railway applications — Electrical lighting for rolling stock in public transport systems
EN 13298:2003	Full	High	Railway applications — Suspension components — Helical suspension springs, steel
EN 13452-1:2003	Full	None-Low	Railway applications — Braking — Mass transit brake systems — Part 1: Performance requirements
EN 13452-2:2003	Full	None-Low	Railway applications — Braking — Mass transit brake systems — Part 2: Methods of test
EN 13597:2003	Full	Medium	Railway applications — Rubber suspension components — Rubber diaphragms for pneumatic suspension springs
EN 13775-1:2003	Full	High	Railway applications — Measuring of new and modified freight wagons — Part 1: Measuring principles
EN 13775-2:2003	Full	High	Railway applications — Measuring of new and modified freight wagons — Part 2: Freight wagons with bogies

EN 13775-3:2003	Full	High	Railway applications — Measuring of new and modified freight wagons — Part 3: Freight wagons with 2 wheelsets
EN 13775-4:2004	Full	High	Railway applications — Measuring of new and modified freight wagons — Part 4: Bogies with 2 wheelsets
EN 13775-5:2004	Full	High	Railway applications — Measuring of new and modified freight wagons — Part 5: Bogies with 3 wheelsets
EN 13775-6:2004	Full	High	Railway applications — Measuring of new and modified freight wagons — Part 6: Multiple and articulated freight wagons
EN 14067-1:2003	Full	High	Railway applications — Aerodynamics — Part 1: Symbols and units
EN 14067-2:2003	Full	High	Railway applications — Aerodynamics — Part 2: Aerodynamics on open track
EN 14067-3:2003	Full	High	Railway applications — Aerodynamics — Part 3: Aerodynamics in tunnels
EN 14067-4:2005 +A1:2009	Full	High	Railway applications — Aerodynamics — Part 4: Requirements and test procedures for aerodynamics on open track
EN 14067-5:2006+A1:2010	Full	High	Railway applications — Aerodynamics — Part 5: Requirements and test procedures for aerodynamics in tunnels
EN 14067-6:2010	Full	High	Railway applications — Aerodynamics Part 6: Requirements and test procedures for cross wind assessment
EN 14198:2004	Full	High	Railway applications — Braking — Requirements for the brake system of trains hauled by a locomotive
EN 14363:2005	Full	High	Railway applications — Testing for the acceptance of running characteristics of railway vehicles — Testing of running behaviour and stationary tests
EN 14478:2005	Full	High	Railway applications — Braking — Generic vocabulary
EN 14531-1:2005	Full	High	Railway applications — Methods for calculation of stopping distances, slowing distances and immobilization braking — Part 1: General algorithms
EN 14531-6:2009	Full	High	Railway applications — Methods for calculation of stopping and slowing distances and immobilisation braking Part 6: Step by step calculations for train sets or single vehicles
EN 14535-1:2005+A1:2011	Full	Medium	Railway applications — Brake discs for railway rolling stock — Part 1: Brake discs pressed or shrunk onto the axle or drive shaft, imensions and quality requirements
EN 14535-2:2011	Full	Medium	Railway applications — Brake discs for railway rolling stock Part 2: Brake discs mounted onto the wheel, dimensions and quality requirements
EN 14601:2005+A1:2010	Full	High	Railway applications — Straight and angled end cocks for brake pipe and main reservoir pipe
EN 14750-1:2006	Full	None	Railway applications — Air conditioning for urban and suburban rolling stock — Part 1: Comfort parameters
EN 14750-2:2006	Full	None	Railway applications — Air conditioning for urban and suburban rolling stock — Part 2: Type tests
EN 14752:2005	Full	None	Railway applications — Bodyside entrance systems

EN 14813-1:2006 + A1:2010	Full	None	Railway applications — Air conditioning for driving cabs — Part 1: Comfort parameters
EN 14813-2:2006 + A1:2010	Full	None	Railway applications — Air conditioning for driving cabs — Part 2: Type tests
EN 14841:2005	Full	Low	LPG equipment and accessories — Discharge procedures for LPG rail tankers
EN 15020:2006+A1:2010	Full	None	Railway applications — Rescue coupler — Performance requirements, specific interface geometry and test methods
EN 15049:2007	Full	Medium	Railway applications — Suspension components — Torsion bar, steel
EN 15085-1:2007	Full	High	Railway applications — Welding of railway vehicles and components — Part 1: General
EN 15085-1:2007/prA1	Draft Amendment	High	Draft BS EN 15085-1:2007/A1 Railway applications - Welding of railway vehicles and components Part 1: General
EN 15085-2:2007	Full	High	Railway applications — Welding of railway vehicles and components — Part 2: Quality requirements and certification of welding manufacturer
EN 15085-3:2007	Full	High	Railway applications — Welding of railway vehicles and components — Part 3: Design requirements
EN 15085-4:2007	Full	High	Railway applications — Welding of railway vehicles and components — Part 4: Production requirements
EN 15085-5:2007	Full	High	Railway applications — Welding of railway vehicles and components — Part 5: Inspection, testing and documentation
EN 15152:2007	Full	None-Low	Railway applications — Front windscreens for train cabs
EN 15153-1:2007	Full	None-Low	Railway applications — External visible and audible warning devices for high speed trains — Part 1: Head, marker and tail lamps
EN 15153-2:2007	Full	None-Low	Railway applications — External visible and audible warning devices for high speed trains — Part 2: Warning horns
EN 15179:2007	Full	None	Railway applications — Braking — Requirements for the brake system of coaches
EN 15220-1:2008+A1	Full	High	Railway applications — Brake indicators Part 1: Pneumatically operated brake indicators
EN 15227:2008+A1:2010	Full	None	Railway applications — Crashworthiness requirements for railway vehicle bodies
EN 15302:2008+A1:2010	Full	Low	Railway applications — Method for determining the equivalent conicity
EN 15327-1:2008	Full	None	Railway applications — Passenger alarm subsystem Part 1: General requirements and passenger interface for the passenger emergency brake system
EN 15355:2008+A1:2010	Full	High	Railway applications — Braking — Distributor valves and distributor isolating devices
EN 15380-1:2006	Full	High	Railway applications — Designation system for railway vehicles — Part 1: General principles
EN 15380-2:2006	Full	High	Railway applications — Designation system for railway vehicles — Part 2: Product groups
EN 15380-3:2006	Full	High	Railway applications — Designation system for railway vehicles — Part 3: Designation of installation sites and locations



EN 15437-1:2009	Full	High	Railway applications — Axlebox condition monitoring — Interface and design requirements Part 1: Track side equipment and rolling stock axlebox
EN 15528:2008	Full	High	Railway applications — Line categories for managing the interface between load limits of vehicles and infrastructure
EN 15551:2009+A1:2010	Full	High	Railway applications — Railway rolling stock — Buffers
EN 15566:2009+A1:2010	Full	High	Railway applications — Railway rolling stock — Draw gear and screw coupling
EN 15595:2009+A1	Full	Medium	Railway applications — Braking — Wheel slide protection
EN 15611:2008+A1:2010	Full	High	Railway applications — Braking — Relay valves
EN 15612:2008+A1:2010	Full	High	Railway applications — Braking — Brake pipe accelerator valve
EN 15624:2008+A1:2010	Full	High	Railway applications — Braking — Emptyloaded changeover devices
EN 15625:2008+A1:2010	Full	High	Railway applications — Braking — Automatic variable load sensing devices
EN 15663:2009	Full	High	Railway applications — Definition of vehicle reference masses
EN 15686:2010	Full	Medium	Railway applications — Testing for the acceptance of running characteristics of railway vehicles with cant deficiency compensation system and/or vehicles intended to operate with higher cant deficiency than stated in EN 14363:2005, Annex G
EN 15687:2010	Full	High	Railway applications — Testing for the acceptance of running characteristics of freight vehicles with static axle loads higher than 225 kN and up to 250 kN
EN 15723:2010	Full	High	Railway applications — Closing and locking devices for payload protecting devices against environmental influences — Requirements for durability, operation, indication, maintenance, recycling
EN 15734-1:2010	Full	None-Low	Railway applications — Braking systems of high speed trains Part 1: Requirements and definitions
EN 15734-2:2010	Full	None-Low	Railway applications — Braking systems of high speed trains Part 2: Test methods
EN 15806:2010	Full	High	Railway applications — Braking — Static brake testing
EN 15807:2011	Full	High	Railway applications — Pneumatic half couplings
EN 15892:2011	Full	None	Railway applications — Noise Emission — Measurement of noise inside driver's cabs
EN 286-3:1995	Full	High	Simple unfired pressure vessels designed to contain air or nitrogen — Part 3: Steel pressure vessels designed for air braking equipment and auxiliary pneumatic equipment for railway rolling stock
EN 286-4:1995	Full	High	Simple unfired pressure vessels designed to contain air or nitrogen — Part 4: Aluminium alloy pressure vessels designed for air braking equipment and auxiliary pneumatic equipment for railway rolling stock
EN 50121-3-1:2006	Full	High	Railway applications — Electromagnetic compatibility — Part 3-1: Rolling stock — Train and complete vehicle
EN 50121-3-2:2006	Full	Medium	Railway applications — Electromagnetic compatibility — Part 3-2: Rolling stock — Apparatus
EN 50125-1:1999	Full	Medium	Railway applications - Environmental conditions for equipment - Part 1: Equipment on board rolling stock

EN 50153:2002	Full	Medium	Railway applications — Rolling stock — Protective provisions relating to electrical hazards
EN 50153:2002	Full	Low	Railway applications — Rolling stock — Protective provisions relating to electrical hazards
EN 50155:2007	Full	Medium	Railway applications — Electronic equipment used on rolling stock
EN 50206-2:2010	Full	None	Railway applications — Rolling stock — Pantographs: Characteristics and tests Part 2: Pantographs for metros and light rail vehicles
EN 50215:2009	Full	High	Railway applications — Rolling stock — Testing of rolling stock on completion of construction and before entry into service
EN 50238:2003	Full	High	Railway applications — Compatibility between rolling stock and train detection systems
EN 50239:2000	Full	None-Low	Railway applications - Radio remote control system of traction vehicle for freight traffic
EN 50261:1999	Full	Low	Railway applications - Mounting of electronic equipment
EN 50264-1:2008	Full	None-Low	Railway applications — Railway rolling stock power and control cables having special fire performance — Part 1: General requirements
EN 50264-2-1:2008	Full	None-Low	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 50264-2-2:2008	Full	None-Low	Railway applications — Railway rolling stock power and control cables having special fire performance — Part 2-2: Cables with crosslinked elastomeric insulation — Multicore cables
EN 50264-3-1:2008	Full	None-Low	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 50264-3-2:2008	Full	None-Low	Railway applications — Railway rolling stock power and control cables having special fire performance — Part 3-2: Cables with crosslinked elastomeric insulation with reduced dimensions — Multicore cables
EN 50305:2002	Full	Low	Railway applications — Railway rolling stock cables having special fire performance — Test methods
EN 50306-1:2002	Full	None-Low	Railway applications — Railway rolling stock cables having special fire performance — Thin wall — Part 1: General requirements
EN 50306-2:2002	Full	None-Low	Railway applications — Railway rolling stock cables having special fire performance — Thin wall — Part 2: Single core cables
EN 50306-3:2002	Full	None-Low	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 50306-4:2002	Full	None-Low	Railway applications — Railway rolling stock cables having special fire performance — Thin wall — Part 4: Multicore and multipair cables standard wall sheathed

EN 50311:2003	Full	None-Low	Railway applications — Rolling stock — D.C. supplied electronic ballasts for lighting fluorescent lamps
EN 50343:2003	Full	High	Railway applications — Rolling stock — Rules for installation of cabling
EN 50355:2003	Full	Low	Railway applications — Railway rolling stock cables having special fire performance — Thin wall and standard wall — Guide to use
EN 50382-1:2008	Full	None-Low	Railway applications — Railway rolling stock high temperature power cables having special fire performance — Part 1: General requirements
EN 50382-2:2008	Full		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
EN 50388:2005	Full	None	Railway applications — Power supply and rolling stock — Technical criteria for the coordination between power supply (substation) and rolling stock to achieve interoperability
EN 50463:2007	Full	None-Low	Railway applications — Energy measurement on board trains
EN 50547	Draft	Low	Draft BS EN 50547 Railway applications - Batteries for auxiliary power supply systems
EN 60077-1:2002	Full	Low	Railway applications — Electric equipment for rolling stock — Part 1: General service conditions and general rules
EN 60077-2:2002	Full	Low	Railway applications — Electric equipment for rolling stock — Part 2: Electrotechnical components — General rules
EN 60077-3:2002	Full	Low	Railway applications — Electric equipment for rolling stock — Part 3: Electrotechnical components — Rules for d.c. circuit-breakers
EN 60077-4:2003	Full	Low	Railway applications — Electric equipment for rolling stock — Part 4: Electrotechnical components — Rules for AC circuit-breakers
EN 60077-5:2003	Full	None-Low	Railway applications — Electrotechnical equipment for rolling stock — Part 5: Electrotechnical components — Rules for HV fuses
EN 60310:2004	Full	None-Low	Railway applications — Traction transformers and inductors on board rolling stock
EN 60322:2001	Full	Low	Railway applications — Electric equipment for rolling stock — Rules for power resistors of open construction
EN 60349-2:2010	Full	None	Electrical traction — Rotating electrical machines for rail and road vehicles Part 2: Electronic converter-fed alternating current motors
EN 61287-1:2006	Full	Low	Railway applications — Power convertors installed on board rolling stock — Part 1: Characteristics and test methods
EN 61373:2010	Full	High	Railway applications — Rolling stock equipment — Shock and vibration tests
EN 61377-1:2006	Full	None	Railway applications — Rolling stock — Part 1: Combined testing of inverter-fed alternating current motors and their control system
EN 61377-2:2002	Full	None	Railway applications — Rolling stock — Combined testing — Part 2: Chopper-fed direct current traction motors and their control

EN 61377-3:2002	Full	None-Low	Railway applications — Rolling stock — Part 3: Combined testing of alternating current motors, fed by an indirect convertor, and their control system
EN 61881-1:2011	Full	Low	Railway applications — Rolling stock equipment — Capacitors for power electronics Part 1: Paper/plastic film capacitors
EN 62267:2009	Full	None	Railway applications — Automated urban guided transport (AUGT) — Safety requirements
EN 62290-1:2006	Full	None	Railway applications — Urban guided transport management and command/control systems — Part 1: System principles and fundamental concepts
EN 62290-2:2011	Full	Min	Railway applications — Urban guided transport management and command/control systems Part 2: Functional requirements specification
EN 62520:2011	Full	Min	Railway applications — Electric traction — Short-primary type linear induction motors (LIM) fed by power converters
EN ISO 3095:2005	Full	High	Railway applications — Acoustics — Measurement of noise emitted by railbound vehicles
EN ISO 3381:2011	Full	None-Low	Railway applications — Acoustics — Measurement of noise inside railbound vehicles (ISO 3381:2005)
ENV 12694	Draft for Development	None	Public transport— Road vehicles— Dimensional requirements for variable electronic external signs
FprEN 50388	Final Draft	None-Low	Draft British Standard BS EN 50388 Railway Applications - Power supply and rolling stock - Technical criteria for the coordination between power supply (substation) and rolling stock to achieve interoperability
IEC/TR 62267-2:2011	Published Document	None	Railway applications — Automated urban guided transport (AUGT) — Safety requirements Part 2: Hazard analysis at top system level
prEN 13272	Draft	None	Draft BS EN 13272 Railway applications - Electrical lighting for rolling stock in public transport systems
prEN 14067-4:2011	Draft	High	Draft BS EN 14067-4 Railway applications - Aerodynamics Part 4: Requirements and test procedures for aerodynamics on open track
prEN 14752:2011	Draft	None	Draft BS EN 14752 Railway applications - Bodyside Entrance Systems for rolling stock
prEN 15153-1	Draft for Public Comment	Low	Draft BS EN 15153-1 Railway applications - External visible and audible warning devices for trains Part 1: Head, marker and tail lamps
prEN 15153-2	Draft for Public Comment	Low	Draft BS EN 15153-2 Railway applications - External visible and audible warning devices for trains Part 2: Warning horns
prEN 15220-2	Draft	Low	Draft BS EN 15220-2 Railway applications - Brake indicators Part 2: Electrical operation brake indicators
prEN 15380-4	Draft	High	Draft BS EN 15380-4 Railway applications - Classification system for railway vehicles Part 4: Function groups
prEN 15437-2	Draft	Medium	Draft BS EN 15437-2 Railway applications - Axlebox condition monitoring - Performance requirements Part 2: Onboard systems for temperature monitoring
prEN 15877-1	Draft	High	Draft BS EN 15877-1 Railway applications - Marking on railway vehicles Part 1: Freight wagons

prEN 16019	Draft	Low	Draft BS EN 16019 Railway applications - Automatic coupler - Performance requirements, specific interface geometry and test method
prEN 16116-2	Draft	High	Draft BS EN 16116-2 Railway applications - Design requirements for steps, handrails and associated staff access Part 2: Freight wagons
prEN 16185-1	Draft	None	Draft BS EN 16185-1 Railway applications - Braking systems of multiple unit trains Part 1: Requirements and definitions
prEN 16185-2	Draft	None	Draft BS EN 16185-2 Railway applications - Braking systems of multiple unit trains Part 2: Test methods
prEN 16186-1	Draft for Public Comment	None	Draft BS EN 16186-1 Railway applications - Driver's cab Part 1: Visibility, layout, access
prEN 16207	Draft	Low	Draft BS EN 16207 Railway applications - Braking - Functional and performance criteria of Electromagnetic Track Brake systems for use in railway rolling stock
prEN 16235	Draft	None-Low	Draft BS EN 16235 Railway applications - 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
prEN 16251:2011	Draft	High	Draft BS EN 16251 Railway application - Environmental conditions - Design and test of rolling stock under severe conditions
prEN 16286-1	Draft	None	Draft BS EN 16286-1 Railway Applications - Gangway systems between vehicles Part 1: Main applications
prEN 16286-1:2011	Draft	None	Draft BS EN 16286-1 Railway Applications - Gangway systems between vehicles Part 1: Main applications
prEN 16286-2	Draft	None	Draft BS EN 16286-2 Railway applications - Gangway systems between vehicles Part 2: Acoustic measurements
prEN 16334	Draft	None	Draft BS EN 16334 Railway applications - Passenger Alarm System - System requirements
prEN 45545-1	Draft	None	Draft BS EN 45545-1 Railway applications - Fire protection on railway vehicles Part 1: General
prEN 45545-2	Draft	None	Draft BS EN 45545-2 Railway applications - Fire protection on railway vehicles Part 2: Requirements for fire behaviour of materials and components
prEN 45545-3	Draft	None	Draft BS EN 45545-3 Railway applications - Fire protection on railway vehicles Part 3: Fire resistance requirements for fire barriers
prEN 45545-4	Draft	None	Draft BS EN 45545-4 Railway applications - Fire protection on railway vehicles Part 4: Fire safety requirements for rolling stock design
prEN 45545-5	Draft	Low	Draft BS EN 45545-5 Railway applications - Fire protection on railway vehicles Part 5: Fire safety requirements for electrical equipment including that of trolley buses, track guided buses and magnetic levitation vehicles
prEN 45545-6	Draft	None	Draft BS EN 45545-6 Railway applications - Fire protection on railway vehicles Part 6: Fire control and management systems

prEN 45545-7	Draft	None	Draft BS EN 45545-7 Railway applications - Fire protection on railway vehicles Part 7: Fire safety requirements for flammable liquid and flammable gas installations
prEN 50388	Draft	None-Low	Draft BS EN 50388 Railway applications - Power supply and rolling stock - Technical criteria for the coordination between power supply (substation) and rolling stock to achieve interoperability
prEN 50463-1	Draft	None-Low	Draft BS EN 50463-1 Railway applications - Energy measurement on board trains Part 1: General
prEN 50463-2:2011	Draft	None	Draft BS EN 50463-2 Railway applications - Energy measurement on board trains Part 2: Energy measuring
prEN 50463-3	Draft	None	Draft BS EN 50463-3 Railway applications - Energy measurement on board trains Part 3: Data handling
prEN 50463-4	Draft	None-Low	Draft BS EN 50463-4 Railway applications - Energy measurement on board trains Part 4: Communication
prEN 50463-5	Draft	None	Draft BS EN 50463-5 Railway applications - Energy measurement on board trains Part 5: Conformity assessment
prEN 50533:2009	Draft	None	Draft BS EN 50533 Railway applications - Three-phase train line voltage characteristics
prEN 50553	Draft	Medium	Draft BS EN 50553 Railway applications - Requirements for running capability in case of fire on board of rolling stock
prEN 61375-1	Draft	Low	Draft BS EN 61375-1 Electronic railway equipment - Train communication network Part 1: TCN - Train Communication Network General Architecture
prEN 61881-2	Draft	None-Low	Draft BS EN 61881-2 Railway applications - Rolling stock equipment - Capacitor for power electronics Part 2: Aluminium electrolytic capacitors with non solid electrolyte
prEN 61881-3	Draft	None-Low	Draft BS EN 61881-3 Railway applications - Rolling stock equipment - Capacitor for power electronics Part 3: Electric double-layer capacitors

SUSTRAIL 2.1.1 TSI and Standards Summary:- Table A.04a

## European Standards - Railway engineering:

### Rails and railway components

European standard No.	Status	SUSTRAIL to Relevance	Name of Standard
EN 13145:2001	Full	High	Railway applications — Track — Wood sleepers and bearers
EN 13146-1:2002	Full	High	Railway applications — Track — Test methods for fastening systems — Part 1: Determination of longitudinal rail restraint
EN 13146-2:2002	Full	High	Railway applications — Track — Test methods for fastening systems — Part 2: Determination of torsional resistance
EN 13146-3:2002	Full	High	Railway applications — Track — Test methods for fastening systems — Part 3: Determination of attenuation of impact loads
EN 13146-4:2002 +A1:2006	Full	High	Railway applications — Track — Test methods for fastening systems — Part 4: Effect of repeated loading
EN 13146-5:2002	Full	High	Railway applications — Track — Test methods for fastening systems — Part 5: Determination of electrical resistance
EN 13146-6:2002	Full	Medium	Railway applications — Track — Test methods for fastening systems — Part 6: Effect of severe environmental conditions
EN 13146-7:2002	Full	High	Railway applications — Track — Test methods for fastening systems — Part 7: Determination of clamping force
EN 13146-8:2002 +A1:2006	Full	High	Railway applications — Track — Test methods for fastening systems — Part 8: In service testing
EN 13146-9:2009 +A1:2011	Full	High	Railway applications — Track — Test methods for fastening systems Part 9: Determination of stiffness
EN 13230-1:2009	Full	High	Railway applications — Track — Concrete sleepers and bearers Part 1: General requirements
EN 13230-2:2009	Full	High	Railway applications — Track — Concrete sleepers and bearers Part 2: Prestressed monoblock sleepers
EN 13230-3:2009	Full	High	Railway applications — Track — Concrete sleepers and bearers Part 3: Twin-block reinforced sleepers
EN 13230-4:2009	Full	High	Railway applications — Track — Concrete sleepers and bearers Part 4: Prestressed bearers for switches and crossings
EN 13230-5:2009	Full	Medium	Railway applications — Track — Concrete sleepers and bearers Part 5: Special elements
EN 13231-1:2006	Full	High	Railway applications — Track — Acceptance of works — Part 1: Works on ballasted track — Plain line
EN 13231-2:2006	Full	Medium	Railway applications - Track - Acceptance of works - Part 2: Works on ballasted track - Switches and crossings

EN 13231-3:2006	Full	Medium	Railway applications — Track — Acceptance of works — Part 3: Acceptance of rail grinding, milling and planing work in track
EN 13232-1:2003	Full	Medium	Railway applications - Track - Switches and crossings - Part 1: Definitions
EN 13232-2:2003	Full	Medium	Railway applications - Track - Switches and crossings - Part 2: Requirements for geometric design
EN 13232-3:2003	Full	Medium	Railway applications — Track — Switches and crossings — Part 3: Requirements for wheel/rail interaction
EN 13232-4:2005	Full	Medium	Railway applications - Track - Switches and crossings - Part 4: Actuation, locking and detection
EN 13232-5:2005	Full	Medium	Railway applications — Track — Switches and crossings — Part 5: Switches
EN 13232-6:2005	Full	Medium	Railway applications — Track — Switches and crossings — Part 6: Fixed common and obtuse crossings
EN 13232-7:2006	Full	Medium	Railway applications — Track — Switches and crossings — Part 7: Crossings with moveable parts
EN 13232-8:2007	Full	Medium	Railway applications — Track — Switches and crossings — Part 8: Expansion devices
EN 13232-9:2006	Full	Medium	Railway applications — Track — Switches and crossings — Part 9: Layouts
EN 13481-1:2002 +A1:2006	Full	High	Railway applications — Track — Performance requirements for fastening systems — Part 1: Definitions
EN 13481-2:2002 +A1:2006	Full	High	Railway applications — Track — Performance requirements for fastening systems — Part 2: Fastening systems for concrete sleepers
EN 13481-3:2002 +A1:2006	Full	High	Railway applications — Track — Performance requirements for fastening systems — Part 3: Fastening systems for wood sleepers
EN 13481-4:2002 +A1:2006	Full	High	Railway applications — Track — Performance requirements for fastening systems — Part 4: Fastening systems for steel sleepers
EN 13481-5:2002	Full	Medium	Railway applications — Track — Performance requirements for fastening systems — Part 5: Fastening systems for slab track
EN 13481-7:2003 +A1:2006	Full	High	Railway applications — Track — Performance requirements for fastening systems — Part 7: Special fastening systems for switches and crossing and check rails
EN 13481-8:2006	Full	High	Railway applications — Track — Performance requirements for fastening systems — Part 8: Fastening systems for track with heavy axle loads
EN 13674-1:2011	Full	High	Railway applications - Track - Rail - Part 1: Vignole railway rails 46 kg/m and above
EN 13674-2:2006 +A1:2011	Full	High	Railway applications — Track — Rail — Part 2: Switch and crossing rails used in conjunction with Vignole railway rails 46 kg/m and above
EN 13674-3:2006 +A1:2011	Full	High	Railway applications — Track — Rail — Part 3: Check rails
EN 13674-4:2006 +A1:2006	Full	Low	Railway applications — Track — Rail — Part 4: Vignole railway rails from 27 kg/m to, but excluding 46 kg/m



EN 13803-1:2010	Full	High	Railway applications — Track — Track alignment design parameters — Track gauges 1435 mm and wider Part 1: Plain line
EN 13803-2:2006 +A1:2009	Full	High	Railway applications — Track — Track alignment design parameters — Track gauges 1 435 mm and wider — Part 2: Switches and crossings and comparable alignment design situations with abrupt changes of curvature
EN 13848-1:2003 +A1:2009	Full	High	Railway applications — Track — Track geometry quality — Part 1: Characterisation of track geometry
EN 13848-2:2006	Full	High	Railway applications — Track — Track geometry quality — Part 2: Measuring systems — Track recording vehicles
EN 13848-3:2009	Full	Medium	Railway applications — Track — Track geometry quality Part 3: Measuring systems — Track construction and maintenance machines
EN 13848-5:2008 +A1:2010	Full	High	Railway applications — Track — Track geometry quality — Part 5: Geometric quality levels — Plain line
EN 14587-1:2007	Full	High	Railway applications — Track — Flash butt welding of rails — Part 1: New R220, R260, R260Mn and R350HT grade rails in a fixed plant
EN 14587-2:2009	Full	High	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
EN 14730-1:2006 +A1:2010	Full	Medium	Railway applications — Track — Aluminothermic welding of rails — Part 1: Approval of welding processes
EN 14730-2:2006	Full	Medium	Railway applications — Track — Aluminothermic welding of rails — Part 2: Qualification of aluminothermic welders, approval of contractors and acceptance of welds
EN 14811:2006 +A1:2009	Full	Low	Railway applications — Track — Special purpose rail — Grooved and associated construction
EN 14969:2006	Full	Low	Railway applications — Track — Qualification system for railway trackwork contractors
EN 15461:2008 +A1:2010	Full	High	Railway applications — Noise emission — Characterization of the dynamic properties of track selections for pass by noise measurements
EN 15594:2009	Full	Medium	Railway applications — Track — Restoration of rails by electric arc welding
EN 15689:2009	Full	Medium	Railway applications — Track — Switches and crossings — Crossing components made of cast austenitic manganese steel
EN 50327:2003	Full	Low	Railway applications — Fixed installations — Harmonisation of the rated values for converter groups and tests on converter groups
ENV 13481-6:2002	Draft for Dev	High	Railway applications — Track — Performance requirements for fastening systems — Part 6: Special fastening systems for attenuation of vibration
prEN 13231-1 rev	Draft for Public Comment	High	Draft BS EN 13231-1 Railway applications - Track - Acceptance of works Part 1: Works on ballasted track - Plain line, switches and crossings
prEN 13231-3	Draft for Public Comment	Medium	Draft BS EN 13231-3 Railway applications - Track - Acceptance of works Part 3: Acceptance of reprofiling rails in track

prEN 13848-4	Draft for Public Comment	Medium	Draft BS EN 13848-4 Railway applications - Track - Track geometry quality Part 4: Measuring systems - Manual and lightweight devices
prEN 13848-4	Draft for Public Comment	High	Draft BS EN 13848-4 Railway applications - Track - Track geometry quality Part 4: Measuring systems - Manual and lightweight devices
prEN 14587-3	Draft for Public Comment	Medium	Draft BS EN 14587-3 Railway applications - Track - Flash butt welding of rails Part 3: Welding in association with crossing construction
prEN 14587-3	Draft for Public Comment	High	Draft BS EN 14587-3 Railway applications - Track - Flash butt welding of rails Part 3: Welding in association with crossing construction
prEN 15954-1	Draft for Public Comment	Low	Draft BS EN 15954-1 Railway applications - Track - Trailers and associated equipment Part 1: Technical requirements for running and working
prEN 15954-2	Draft for Public Comment	Low	Draft BS EN 15954-2 Railway applications - Track - Trailers and associated equipment Part 2: General safety requirements
prEN 15955-1	Draft for Public Comment	Low	Draft BS EN 15955-1 Railway applications - Track - Demountable machines and associated equipment
prEN 15955-2	Draft for Public Comment	Low	Draft BS EN 15955-2 Railway applications - Track - Demountable machines and associated equipment

## European Standards - Railway engineering: Equipment for railway/cableway construction and maintenance

European standard No.	Status	SUSTRAIL to Relevance	Name of Standard
EN 13977:2011	Full	None	Railway applications — Track — Safety requirements for portable machines and trolleys for construction and maintenance
EN 14033-1:2011	Full	None	Railway applications — Track — Railbound construction and maintenance machines Part 1: Technical requirements for running
EN 14033-2:2008	Full	None	Railway applications — Track — Railbound construction and maintenance machines Part 2: Technical requirements for working
EN 14033-3:2009 +A1:2011	Full	None	Railway applications — Track — Railbound construction and maintenance machines Part 3: General safety requirements
EN 15746-1:2010 +A1:2011	Full	None	Railway applications — Track — Roadrail machines and associated equipment Part 1: Technical requirements for running and working
EN 15746-2:2010 +A1:2011	Full	None	Railway applications — Track — Roadrail machines and associated equipment Part 2: General safety requirements

SUSTRAIL 2.1.1 TSI and Standards Summary:- Table A.06a

## UIC Leaflets

\* = The leaflets marked with an asterisk have been computerised and improved in terms of structure and lay-out without however any major changes to the contents.

**Key:**

O = Obligatory  
 R=Recommendatory  
 I = Informatory  
 N/A = Not Applicable

Leaflet Number	Category	Leaflet Name	Edition (As of Nov 2011)
<b>0: Passenger and Baggage Traffic: International tariffs</b>			
106	O	Special Conditions for International Carriage (SCIC)	13th edition, February 2011
108-1	O	Computer generation and exchange of tariff information of TCV and OWT volume II and III on computer medium	3rd edition, February 2006
108-2	O	Computer generation of global prices and exchange of fare information on computer medium	2nd edition, May 2008
<b>12: Passenger and Baggage Traffic: Domestic tariffs</b>			
<b>13: Passenger and Baggage Traffic: Travel agencies</b>			
130	O	Commercial framework for the international distribution of rail products	19th edition, August 2008
<b>14: Passenger and Baggage Traffic: Commercial measures to be taken in order to develop passenger</b>			
140	R	Accessibility to stations in Europe	2nd edition, January 2008
149	O	Catering on international Trains	Withdrawn on 17.11.04
<b>17: Passenger and Baggage Traffic: Commercial measures with regard to facilities to be provided in</b>			
170	O	Regulations governing production of manual reservation vouchers	10th edition, July 2002
171	O	Regulations governing production of reservation lists	7th edition, July 2002
172	R	Measures intended to facilitate the crossing of frontiers by passengers and baggage conveyed by rail	Withdrawn on 1.11.02
174	O	Diversion of trains in the event of interruptions to traffic	Leaflet withdrawn on 1.7.2006
175	OR	Standard commercial conditions relating to the international reservation of accomodation by electronic means	Withdrawn on 1.6.00

176	O	Specifications for passenger information displayed electronically in trains	1st edition, July 2001
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### 18: Passenger and Baggage Traffic: Relations with other transport modes

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### 20: Freight Traffic: International regulations and agreements

201	R	Carriage of dangerous goods - Emergency planning guidance for rail marshalling yards	1st edition, March 2003
206	OR	Use of computers for establishing tariffs and tables for allocation of receipts	2nd edition of 1.1.78 and 1 Amendment
209	O	Rules for the acceptance and forwarding of international part-load traffic	1st edition of 1.5.85 incorporating 2 Amendments

### 21: Freight Traffic: International tariffs

211	OR	International tariff for the conveyance of freight traffic in full wagonloads - Model tariff	7th edition of 1.9.81 and 9 Amendments
212	R	Division of publishing costs (International freight tariffs)	3rd edition of 1.1.78 and 1 Amendment
213	R	Recommendations for the logistical optimisation of the use RU-kept freight wagons in international jointly-operated traffic - Cost accounting and allocations guidelines	1st edition, August 2011
215	OR	Fixed charge system for the use of railway-owned sheets in international traffic	3rd edition of 1.9.75 - Reprint dated 1.1.90 incorporating 13 Amendments
217	O	Inclusive charging of interest in delivery in international traffic	1st edition of 1.1.65 - Reprint dated 1.1.93 incorporating 3 Amendments
218	OR	Low-loader wagons - Tariff conditions for consignments in international traffic	2nd edition of 15.7.81 and 6 Amendments
219	O	DIUM - Uniform distance table for international freight traffic: List of railway stations. List of handover/unloading points used by the railways	2nd edition, March 2008

### 22: Freight Traffic: Domestic tariffs

221	O	Harmonised Commodity Code (NHM)	5th edition, September 2009
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### 23: Freight Traffic: Customs

### 25: Freight Traffic: Measures to be taken to develop freight traffic

251	OR	Cooperation agreement between freight forwarders and railways	2nd edition of 1.7.93
252	R	Guidelines for the execution of customer satisfaction analyses as a basis for international benchmarking	1st edition, October 2002

### 26: Freight Traffic: Packing and labelling of freight by the public

260	OR	Approval of packing by the railways - UIC quality label	7th edition of 1.1.93
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### 27: Freight Traffic: Relations with other transport modes - Use of containers and pallets

273	OR	Small and medium-sized containers - Tariff conditions for the carriage of goods in small and medium-sized containers in international traffic	11th edition of 1.7.90 and 3 Amendments
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**28: Freight Traffic: Private owners' wagon traffic**

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**29: Freight Traffic: Combined transport**

290	R	Combined transport - Definitions	3rd edition, December 2009
291	R	Relations between railway undertakings in international combined transport	2nd edition, December 2009
292	R	Relations between railway undertakings and buyers of rail transport services in international combined transport	2nd edition, February 2010
293	R	Manual for establishing and managing quality in international combined transport	1st edition, March 2002

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**30: Finance, Accountancy, Costs, Statistics: Exchange and elementary accounts**

301	O	Accountancy regulations for international 'Passenger' traffic	3rd edition, January 2011
301-0	O	Accountancy regulations applicable to: -international 'Reservations' traffic -international 'Passenger' traffic for services included in a computerised product which may be accessed by message in real time by foreign railways	Withdrawn on 1.1.05
301-1	O	Accountancy regulations for international passenger traffic	6th edition, April 2002
301-2	O	Accountancy regulations to international 'Reservations' traffic	Withdrawn on 1.10.2004
304	O	Accountancy and allocation regulations between carriers applicable to international freight	5th edition, September 2009
305	O	Accountancy regulations applicable to computer-based international freight and express parcels traffic	Withdrawn on 1.1.05
306	O	Framework principles and conventions governing relationships between parties involved in passenger rail transport with respect to accounting and financial arrangements for international transport services and ancillary services	2nd edition, December 2004

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**31: Finance, Accountancy, Costs, Statistics: General accounts**

310	O	Evaluation rules applied by European railways	1st edition of 1.7.93
311	OR	Financial relations between railways undertakings - Principles and terms of application	21th edition, January 2007
313	R	Accountancy system - structure of the balance sheet - structure of the profit and loss account	3rd edition of 1.1.91
314	R	Criteria for distinguishing between investment expenditure and renewal and maintenance costs recommended for use in accountancy and statistics	2nd edition of 1.10.78

318	I	Detailed list of compensation granted to the Railways by the States in 1978 - Survey of the various methods of calculation permitted	2nd edition of 1.10.80
<b>32: Finance, Accountancy, Costs, Statistics: Railway Productivity</b>			
320	R	Calculation of railway productivity	1st edition of 1.1.78 and 1 Amendment
<b>33: Finance, Accountancy, Costs, Statistics: Standardisation measures</b>			
330	R	Railway specific environmental performance indicators	1st edition, August 2008
<b>35: Finance, Accountancy, Costs, Statistics: Financial facilities granted to users</b>			
352	O	Tariff rebates	Withdrawn on 1.3.2005
<b>36: Finance, Accountancy, Costs, Statistics: Work organisation</b>			
361	O	Revenue securing in international passenger traffic for application in the fields: passengers, IT department, internal audits, finance and all other fields concerned	5th edition, May 2008
<b>37: Finance, Accountancy, Costs, Statistics: Costs</b>			
374	OR	Principles and methods of costing international rail transport - Wagonload freight traffic - Passenger traffic	4th edition of 1.1.92 incorporating supplement dated 1.1.94
<b>38: Finance, Accountancy, Costs, Statistics: Costs</b>			
382	R	Method of establishing the cost of international passenger trains	1st edition of 1.1.75
383	O	Performance costing methods for hauled passenger stock in international traffic	2nd edition, August 2002
383-1	O	Performance costing methods for rolling stock in international service. Hauled passenger stock	Withdrawn on 1.1.05
<b>39: Finance, Accountancy, Costs, Statistics: Statistics</b>			
390-1	R	Railway statistical and costs terminology	6th edition of 1.3.80 - Reprint dated 1.1.88 and 3 Amendments
390-4	R	Rules for calculating the performance of passenger vehicles and the performance of goods wagons	2nd edition of 1.1.70 and 1 Amendment
390-5	R	Methods for compiling statistics required for calculating passenger traffic costs	1st edition of 1.1.61 and 1 Amendment
390-6	R	Compilation of statistics for passenger transport cost price calculations - Survey methods	1st edition of 1.1.61 and 1 Amendment (Available in French and German only)
390-7	R	Statistical determination of wagon turnaround time	Withdrawn on 1.9.02
394-3	R	Rules governing the compilation of international sleeping-car traffic statistics	Leaflets withdrawn on 1.2.2005
394-4	R	Rules governing the compilation of international couchette-coach traffic statistics	Withdrawn on 1.2.2005
398-1	R	Instructions for compiling the International Railway Statistics - Statistics of individual railways	2nd edition of 1.1.86
398-2	R	Instructions for compiling the Supplementary Statistics to the International Railway Statistics	1st edition of 1.1.86 and 3 Amendments

398-3	R	Regulations for establishing the breakdown of traffic recorded by the European countries according to mode of transport (in abridged form)	Withdrawn on 1.2.2005
398-4	R	Regulations for compiling the monthly statistics of railway passenger and freight traffic	2nd edition of 1.10.88 and 2 Amendments
398-5	R	Rules for compiling special international passenger traffic statistics : Traffic between railways - City-to-city rail traffic and air traffic	1st edition of 1.10.88
398-6	R	Rules for compiling special international freight traffic statistics	1st edition of 1.10.88
sta 4/84	I	Computerised international freight traffic statistics (STIMTRI) - Preparation of detailed statistics on international wagonload traffic flows using electronic data processing systems	Withdrawn on 1.2.2005

### 3a: Finance, Accountancy, Costs, Statistics: Reports

DOC 35	N/A	Terminal and transit operations in the calculation of specific costs	October 1983
STA 6/90	N/A	Rules for compiling flow statistics for international passenger traffic	September 1991

### 34: Finance, Accountancy, Costs, Statistics: Environment

345	R	Environmental specifications for new rolling stock	1st edition, June 2006 - Original
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### 40: Operating: General organisation of operations

400	I	Economic operation of light traffic lines	3rd edition of 1.1.80
401*	R	Information requirements of operating departments concerning the transport process, delays and other disruptions; criteria for assessing operating efficiency and measures for speeding up the operating process	2nd edition, December 2000
404-1	I	Centralised and integrated freight traffic management	2nd edition of 1.1.79
404-2	O	Compendium of the data to be exchanged between Railway Undertakings (Rus) for the purpose of conveying freight traffic	4th edition, February 2008
404-3	O	Regulations governing the provision of data to registration railways concerning utilisation of their wagons on foreign networks	2nd edition of 1.1.89 and 1 Amendment
404-4	O	Regulations governing inter-railway exchanges of data on the conveyance of goods in trainloads/through trains in international traffic	Withdrawn on 1.12.08
405	OR	Links between railway infrastructure capacity and the quality of operations	1st edition of 1.1.96
406	R	Capacity	1st edition, September 2004
407	R	Computer-based data exchange between traffic control centres	Leaflet withdrawn on 1.11.2005
407-1	O	Standardised data exchange for the execution of train operations, including international punctuality analysis	1st edition, November 2009

### 41: Operating: Passenger, baggage and express parcels traffic



410	O	Composition and calculation of the weight and braking of passenger trains	Composition and calculation of the weight and braking of passenger trains
411	OR	Form, content and composition of timetables	Withdrawn on 1.11.02
413	O	Measures to facilitate travel by rail	10th edition, January 2008
414	R	Baggage - Labelling of baggage by the public - Baggage collection from and delivery to domicile - Transport of hand luggage in stations	Withdrawn on 1.11.02
419-1	OR	Analytical numbering of international passenger trains	2nd edition of 1.1.93
419-2	O	Systematic numbering of international freight trains	3rd edition, April 2011
<b>42: Operating: Freight traffic</b>			
421	OR	Rules for the consist and braking of international freight trains	8th edition, June 2011
422	OR	Products to be used and methods to be applied for the ordinary disinfection of wagons	4th edition of 1.1.67
423	R	Arrangements for the use of shock recorders in international freight traffic	3rd edition of 1.1.96 with Amendment No. 1 incorporated
424	R	Mini-trainload (MTC) consignments in international traffic	1st edition of 1.7.80
425-1	OR	Train advices and supervision of train running in connection with international goods services	1st edition of 1.1.62 and 1 Amendment
425-2	R	Transport plan for international freight traffic	1st edition of 1.7.78
425-3	R	Monitoring and subsequent checks into the forwarding of international wagonload consignments	1st edition of 1.1.80
425-4	R	Prior advice to consignees and senders of the arrival of loaded and empty wagons	1st edition of 1.1.61 and 1 Amendment
426	OR	Standardised railway seals - Europlombs - Guidelines for sealing wagons and intermodal transport units (ITU)	1st edition, May 2007
427	OR	Protection of livestock on international services	1st edition of 1.1.74 and 3 Amendments
428-1	O	International sorting system for wagonload traffic	1st edition of 1.10.77 and 1 Amendment
428-2	OR	International labelling of wagons	2nd edition of 1.10.83 - Reprint dated 1.7.93
428-3	OR	Formation of international trains and groups of wagons	2nd edition, April 2011
428-4	OR	Organisation of international part-load traffic movements	2nd edition of 1.1.87
429*	OR	Operating conditions for complete trains or sections of trains formed of road semi-trailers running on rail bogies	2nd edition, December 2000
<b>43: Operating: Freight rolling stock - Characteristics, use and exchange</b>			
430-1	OR	Conditions with which wagons must comply in order to be accepted for transit between standard gauge railways and the Spanish and Portuguese broad gauge railways	3rd edition, August 2006
430-2	OR	Conditions to be observed by coaches in order to be accepted for transfer between France and Spain with changing of bogies at the transit point	1st edition of 1.1.75

		Freight wagons Technical conditions for freight wagons capable of running on both standard-gauge and Finnish broad gauge systems	2nd edition of 1.7.95
430-3	OR		
430-4	OR	Wagons. Operation between 1435 mm gauge and 1520 mm gauge networks. Technical provisions and approval conditions	1st edition, May 2004
430-5	O	Regulations for the exchange and use of new generation freight wagons between railways with gauges of 1435 mm and 1520 mm	1st edition, November 2003
431-1	OR	Carriage of goods in wagons and large containers under controlled temperature conditions	10th edition of 1.7.89
432	OR	Wagons. Running speeds. Technical conditions to be observed	12th edition, October 2008
433	O	Standard General Conditions (SGC) for the introduction into service and operation of privately owned wagons	20th edition, September 2003
434	O	Regulations concerning the repatriation of wagons for maintenance	1st edition of 1.7.94
435-1	OR	Characteristics of loading pallets used in international traffic	5th edition of 1.11.87
435-2	O	Standard of quality for EUR flat pallet made of wood measuring 800 mm x 1200 mm (EUR-1)	10th edition, April 2010
435-3	O	Standard of quality for a European 'Y' charge carrier made of steel (EUR box-pallet), measuring 800 mm x 1200 mm)	9th edition, January 2009
435-4	O	Repair of EUR flat pallets and EUR box pallets	3rd edition, April 2010
435-5	O	Standard of quality for a EUR flat pallet made of wood and measuring 1 200 mm x 1 000 mm (EUR-2) and 1 000 mm x 1 200 mm (EUR-3)	2nd edition, April 2010
435-6	O	Standard of quality for a European flat pallet made of wood, measuring 800 mm x 600 mm (EUR-6)	2nd edition, April 2010
438-1	O	Identification marking for passenger rolling stock	3rd edition, April 2004
438-2	O	Identification marking for freight rolling stock	7th edition, May 2004
438-3	O	Identification marking for tractive stock	1st edition of 1.1.71 and 3 Amendments of 1.8.1977, 1.1.1980, 1.6.1984
438-4	O	Identification marking for special vehicles	1st edition, December 2005
<b>44: Operating: Passenger rolling stock : Characteristics, use and exchange</b>			
440*	OR	Public-address systems in coaches (RIC)	4th edition, December 2001
441	R	Clauses to be included in registration contracts for private owners' coaches	1st edition of 1.7.84
<b>45: Operating: Passenger rolling stock : Train running and safety regulations</b>			
450-1	OR	Real-time inter-railway information interchanges on international train running	2nd edition of 1.1.97
450-2	OR	Assessment of the performance of the network related to rail traffic operation for the purpose of quality analyses - delay coding and delay cause attribution process	5th edition, June 2009

451-1*	OR	Timetable recovery margins to guarantee timekeeping - Recovery margins	4th edition, December 2000
451-2	O	Coordination of work sites and operating measures to be taken on main lines particularly for international traffic	3rd edition, December 2000
452	R	Removable tail signal for passenger and freight trains	1st edition of 1.1.75
453*	OR	Procedures for air brake tests effected with a powered unit - Provisions concerning international trains	2nd edition, July 2001

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**46: Operating: Passenger rolling stock : Service facilities provided in stations and on trains**

461	O	Service telegrams - Regulations governing exchange of international service telegrams between UIC Member Railways	8th edition of 1.1.84 and 3 Amendments
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**47: Operating: Passenger rolling stock : Frontier stations and line sections**

470	RI	General arrangements concerning the financing and operating of frontier stations	2nd edition of 1.1.57 - Reprint dated 1.11.75 and 1 Amendment
471-1	OR	Principles and guidance covering agreements for the management of border sections	6th edition under preparation
471-2	O	Conditions governing the exchange of wagons between railway undertakings	2nd edition, March 2005
471-3	O	Inspections of dangerous goods consignments	6th edition, December 2010
472	O	Braking sheet and consist list for international freight trains	6th edition, September 2007
473*	R	Advance consist messages for international passenger trains	2nd edition, April 2001
474	O	Catalogue of harmonised train procedures for cross-border freight operations	1st edition, September 2007
475	O	Rules for the capture, control and transmission of data on the exchange of freight wagons in international traffic	4th edition of 1.7.91
476	OR	Procedures for the accelerated transfer of freight trains between cooperating Railway Undertakings (RUs) at handover points	1st edition, April 2011

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**48: Operating: Passenger rolling stock : Information Interchange Systems**

481	O	Regulations concerning the content and interchange of information in the international dangerous goods database	Withdrawn on 1.12.08
482	O	Regulations concerning the content and exchange of information in the NHM (Harmonised Commodity Code) international data base	Withdrawn on 01.11.08

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**49: Operating: Passenger rolling stock : Terminal cartage - Ancillary services and transhipment**

491	R	Promotion, construction and operating of private sidings	2nd edition of 1.10.80
495	R	Measures to be taken for mechanising operations and modernising installations for handling sundries traffic at stations and road depots	1st edition of 1.4.76

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**50: Rolling Stock : General provisions concerning Way and Works**

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500*	O	Standardisation of transport stock and components. Principles, procedures, results	2nd edition, December 2000
501	O	Visibility of rolling stock axle-boxes to fixed hot axle-box detection systems	1st edition, December 2008
502	O	Special consignments - Provisions concerning the preparation and conveyance of special consignments	Leaflet withdrawn on 1.12.2005
502-1	O	Exceptional consignments - Regulations concerning the preparation and management of exceptional consignments	2nd edition, October 2009
502-2	O	Exceptional consignments - Outline procedure	1st edition, November 2009
503	O	Continental wagons running in Great Britain (via the Channel Tunnel and on Network Rail Infrastructure) - General conditions (reference profile, axle-load, etc.) for the acceptance, in international traffic with Great-Britain, of 2-axle and bogie wagons registered with other UIC member Rus	7th edition, March 2007
504	OR	Shunting, unloading, lifting and rerailling appliances for wagons	5th edition of 1.1.78 and 1 Amendment
505-1	OR	Railway transport stock - Rolling stock construction gauge	10th edition, May 2006
505-4	ORI	Effects of the application of the kinematic gauges defined in the 505 series of leaflets on the positioning of structures in relation to the tracks and of the tracks in relation to each other	4th edition, November 2007
505-5	OR	History, justification and commentaries on the elaboration and development of UIC leaflets of the series 505 and 506 on gauges	3rd edition, October 2010
505-6	O	General rules for interoperable rolling stock gauges (without unloading freight or disembarking passengers) in cross-border traffic between UIC and OSJD Rus	2nd edition, August 2010
506	OR	Rules governing application of the enlarged GA, GB, GB1, GB2, GC and GI3 gauges	2nd edition, January 2008
507	O	Wagons - Conditions governing wagons conveyed on ferries	1st edition of 1.7.89 - Reprint dated 1.7.97
508-1	R	Interaction between passenger rolling stock and fixed installations	1st edition of 1.1.94
508-2	I	Installations for servicing and stabling passenger rolling stock ready for operation	1st edition of 1.1.94
508-3	OR	Passenger coaches - General requirements for running gear with dual gauge wheelsets for railways with 1 435 mm and 1 520 mm gauges	1st edition, January 2010

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**51: Rolling Stock : Running and suspension gear**

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510-1	O	Wagons - Running gear - Normalisation	9th edition of 1.1.78 and 14 Amendments
510-2	OR	Trailing stock: wheels and wheelsets. Conditions concerning the use of wheels of various diameters	4th edition, May 2004

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510-3	O	Wagons - Strength testing of 2 and 3-axle bogies on test rig	1st edition of 1.1.89 - Reprint dated 1.7.94
510-4*	R	Wagons - Variable-gauge running gear for 1435 mm/1520 mm and 1668 mm. Recommendations for bilateral agreements	2nd edition, April 2002
510-5	OR	Technical approval of monobloc wheels - Application document for standard EN 13979-1	2nd edition, May 2007
511	O	Trailing stock - Wheelbase	7th edition of 1.7.87 and 1 Amendment
512	OR	Rolling stock - Conditions to be fulfilled in order to avoid difficulties in the operation of track circuits and treadles	8th edition of 1.1.79 and 2 Amendments
513	OR	Guidelines for evaluating passenger comfort in relation to vibration in railway vehicles	1st edition of 1.7.94
515	OR	Coaches - Running gear	Withdrawn on 1.1.01
515-0	OR	Passenger rolling stock - Trailer bogies - Running gear	2nd edition, April 2001
515-1	OR	Passenger rolling stock - Trailer bogies - Running gear - General provisions applicable to the components of trailers bogies	2nd edition, March 2003
515-3	OR	Rolling stock - Bogies - Running gear - Axle design calculation method	Leaflet withdrawn on 1.8.2006. This Leaflet is replaced by the standards EN 13103 and EN 13104.
515-4	OR	Passenger rolling stock - Trailer bogies - Running gear - Bogie frame structure strength tests	1st edition of 1.1.93
515-5	OR	Powered and trailing stock - Bogies - Running gear - Tests for axle-boxes	1st edition of 1.7.94
517	OR	Wagons - Suspension gear - Standardisation	7th edition, May 2007 - Translation
518	OR	Testing and approval of railway vehicles from the point of view of their dynamic behaviour - Safety - Track fatigue - Ride quality	4th edition, October 2009
518-1	OR	Supplement to UIC Leaflet 518: application to vehicles equipped with a cant deficiency compensation system and/or to vehicles intended to operate with a higher cant deficiency than stated for categories I to III	Withdrawn on 1.11.2009
518-2	OR	Supplement to UIC Leaflet 518: application to wagons with axleloads more than 22,5 t and up to 25 t	Withdrawn on 1.11.2009
519	OR	Method for determining the equivalent conicity	1st edition, December 2004
<b>52: Rolling Stock : Buffing and draw gear</b>			
520*	OR	Wagons, coaches and vans - Draw gear - Standardisation	7th edition, December 2003
521	O	Coaches and vans, wagons, tractive stock - Clearance to be provided at vehicle extremities	1st edition of 1.1.87 and 1 Amendment
522	R	Technical conditions to be fulfilled by the automatic coupler of the UIC and OSJD Member Railways	4th edition of 1.1.90
522-2*	OR	Conditions for the acceptance of draw-only automatic couplers	2nd edition, April 2002

523	O	Technical conditions with which automatic couplers of the UIC and OSJD Member Railways must comply in order to ensure compatibility of couplers	1st edition of 1.7.81 and 1 Amendment
524	O	Wagons - Technical specifications governing spring devices for wagons fitted with automatic couplers belonging to the UIC and OSJD member railways	1st edition of 1.1.78 and 6 Amendments
526-1	OR	Wagons - Buffers with a stroke of 105 mm	3rd edition, July 2008
526-2	OR	Wagons - Buffers with a stroke of 75 mm	1st edition of 1.1.81 and 2 Amendments
526-3	O	Wagons- Buffers with a stroke of 130 and 150 mm	3rd edition, October 2008
527-1	OR	Coaches, vans and wagons - Dimensions of buffer heads - Track layout on S-curves	3rd edition, April 2005
527-2	OR	Coaches, vans and wagons - Dimensions of buffer heads - Rolling stock built before 1-1-65	2nd edition of 1.1.60 and 3 Amendments of 1.1.1962, 1.1.1965, and 1.1.1981
528	OR	Buffer gear for coaches	8th edition, September 2007
529	O	Long-stroke hydrodynamic shock absorbers - Technical conditions - Wagons	1st edition of 1.1.78

### 53: Rolling Stock : Underframes and vehicle bodies

530-1	OR	Constructional conditions for wagons to be observed with a view to fitting the automatic coupler of the Member Railways of the UIC and OSJD respectively	2nd edition of 1.4.82 and 3 Amendments
530-2	OR	Wagons - Running safety	6th edition, October 2008
530-4	OR	Permissible state of equipment on wagons in international traffic during the period of introduction of automatic couplers	2nd edition of 1.7.82
530-5	OR	Uniform design of wagon ends	Withdrawn on 1.7.2000
532	OR	Trailing stock - Signal lamp brackets - Coaches - Fixed electric signal lamps	9th edition of 1.1.79 - Reprint dated 1.1.91 and Amendment Nr 2
533	OR	Vehicles, protection by earthing of metal parts	3rd edition, April 2011
534	OR	Signal lamps and signal-lamp brackets for locomotives, railcars and all tractive and self-propelled stock	4th edition, August 2002
535-1	O	Standardisation of steps and handrails on wagons	5th edition of 1.1.72 and 2 Amendments
535-2	O	Standardisation and positioning on wagons of steps, end platforms, gangways, handrails, tow hooks, automatic coupler (AC), automatic draw-on coupling and brake valve controls on the UIC member RUs and OSJD member Rus	4th edition, May 2006
535-3	O	Equipping of wagons with devices for passing from one to the other and with screw brakes	1st edition of 1.1.76 - Reprint dated 1.7.95
536	OR	Cable hooks for wagons	3rd edition of 1.1.67 - Reprint dated 1.1.96
537	OR	Pipe connections for wagons equipped for pneumatic discharge	2nd edition of 1.7.86
538	O	Safety regulations for wagons equipped with machines operated independently or from an external source of energy	1st edition of 1.7.79

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**54: Rolling Stock : Underframes and vehicle bodies**

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540	O	Brakes - Air Brakes for freight trains and passenger trains	5th edition, November 2006
541-00	OR	Issuing of the UIC seal of approval/UIC label for vehicle components	3rd edition, March 2011
541-03	OR	Brakes - Regulations concerning manufacture of the different brake parts - Driver's brake valve	1st edition of 1.1.84
541-04	OR	Brakes - Regulations concerning the manufacture of brake components - Self-adjusting load-proportional braking system and automatic 'empty-loaded' control device	3rd edition, November 2006 - Translation
541-05	OR	Brakes - Specifications for the construction of various brake parts - Wheel Slide Protection device (WSP)	2nd edition, November 2005
541-06	OR	Brakes - Regulations concerning the construction of the various brake components : Magnetic brakes	1st edition of 1.1.92 and Amendment No. 1
541-07	OR	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	1st edition of 1.1.92
541-08	OR	Brakes - Regulations concerning the manufacture of the different brake parts - Derailment detectors for wagons	4th edition, June 2007
541-1	OR	Brakes - Regulations concerning the design of brake components	7th edition, September 2010
541-2	OR	Dimensions of hose connections (brake hoses) and electric cables; types of pneumatic and electric connections and their positioning on wagons and coaches equipped with automatic couplers of the UIC and OSJD Member Railways	1st edition of 1.7.81 and 2 Amendments
541-3	OR	Brakes - Disc brakes and their application - General conditions for the approval of brake pads	7th edition, October 2010
541-4	OR	Brakes - Brakes with composite brake blocks - General conditions for certification of composite brake blocks	4th edition, December 2010
541-5	OR	Brakes - Electropneumatic brake (ep brake) - Electropneumatic emergency brake override (EBO)	4th edition, May 2006
541-6	OR	Brakes - Electropneumatic brake (ep brake) and Passenger alarm signal (PAS) for vehicles used in hauled consists	1st edition, October 2010
542	O	Brake parts - Interchangeability	5th edition, September 2010
543	O	Brakes - Regulations governing the equipment of trailing stock	13th edition, April 2007
543-1	ORI	Brakes - A study of minimum standards for maintenance of goods wagon brakes	2nd edition, March 2010
544-1	O	Brakes - Braking power	4th edition, October 2004

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		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	2nd edition of 1.1.83
544-2	OR		
545	O	Brakes - Inscriptions, marks and signs	9th edition, September 2010
546	OR	Brakes - High power brakes for passenger trains	5th edition of 1.1.67 - Reprint dated 1.1.80 incorporating 5 Amendments
547	O	Brakes - Air brake - Standard programme of tests	4th edition of 1.7.89
549	OR	Equipment of hand brakes for wagons used on international services and accepted for running in Great Britain	4th edition of 1.1.85 - Reprint dated 1.9.87
<b>55: Rolling Stock : Power supply, lighting and heating</b>			
550	OR	Power supply installations for passenger stock	11th edition, April 2005
550-1	OR	Electrical switch cabinets on passenger stock	1st edition of 1.1.90
550-2	OR	Power supply systems for passenger coaches - Type testing	1st edition of 1.1.94
550-3	O	Power supply installations for passenger stock - Effect on electrical installations outside passenger coaches	1st edition - April 2005
551	OR	Steam heating	10th edition of 1.1.62 brought up-to-date on 15.5.1962, 1.1.1966, 15.1.1968
552	OR	Electrical power supply for trains - Standard technical characteristics of the train line	10th edition, June 2005 - Translation
553	OR	Heating, ventilation and air-conditioning in coaches	6th edition, February 2004 - Translation
553-1	OR	Heating, ventilation and air-conditioning in coaches - Standard tests	2nd edition, October 2005
554-1	OR	Power supply to electrical equipment on stationary railway vehicles from a local mains system or another source of energy at 220 V or 380 V, 50 Hz	3rd edition of 1.1.79
554-2	OR	Power supply to mechanically-refrigerated wagons running in rafts - Safety measures and electric installations	1st edition of 1.1.78
555	OR	Electric lighting in passenger rolling stock	1st edition of 1.1.78 and 7 Amendments
555-1	OR	Transistorised inverters for supplying fluorescent lamps	1st edition of 1.1.84
556	OR	Information transmission in the train (train bus)	5th edition, August 2009 - Translation (available on CD-Rom only)
557	OR	Diagnostics on passenger rolling stock	2nd edition of 1.1.98
558	OR	Remote control and data cable - Standard technical features for the equipping of RIC coaches	1st edition of 1.1.96
559	O	Specification 'Diagnostic Data Transmission' from railway vehicles (This Leaflet is to be published in English only)	1st edition, January 2010 - Original
<b>56: Rolling Stock : Various regulations concerning coaches and baggage vans</b>			
560	OR	Doors, footboards, windows, steps, handles and handrails of coaches and luggage vans	12th edition, March 2002



561	OR	Means of intercommunication for coaches	8th edition of 1.1.91 and Amendment No.1
562	OR	Space for baggage racks, coat-hooks and lockers - Measures to prevent baggage theft	5th edition of 1.1.91
563	OR	Fittings provided in coaches in the interests of hygiene and cleanliness	8th edition of 1.1.90 and 4 Amendments
564-1	OR	Coaches - Windows made from safety glass	6th edition of 1.1.79 - Reprint dated 1.1.90
564-2	OR	Regulations relating to fire protection and firefighting measures in passenger carrying railway vehicles or assimilated vehicles used on international services	3rd edition of 1.1.91 and 2 Amendments
565-1	O	Special design and fittings features of vehicles accepted for use in international passenger night traffic	4th edition, March 2007
565-2	OR	Special comfort and constructional characteristics and rules of hygiene for restaurant-cars accepted in international traffic	1st edition of 1.1.79 and 3 Amendments
565-3*	OR	Indications for the layout of coaches suitable for conveying disabled passengers in their wheelchairs	2nd edition, May 2003
566	OR	Loadings of coach bodies and their components	3rd edition of 1.1.90 and addenda and 1 Amendment
567	OR	General provisions for coaches	2nd edition, November 2004
567-1	OR	Standard X and Y coaches accepted for running on international services	4th edition of 1.1.78 and 7 Amendments
567-2	OR	Standard Z-type coaches accepted for running in international traffic - Characteristics	4th edition of 1.7.91 and 2 Amendments
567-3	O	Constructional arrangements on coaches with a view to the application of the automatic coupler on the UIC member railways and on the OSJD member railways	1st edition of 1.1.83 and 1 Amendment
567-4	OR	Standard open bogie van adapted for the conveyance of motor cars - Characteristics	1st edition of 1.1.69 - Reprint dated 1.1.80 incorporating 6 Amendments
567-5	OR	Standard A-type coaches accepted for running on international services - Characteristics	1st edition of 1.1.95
567-6	R	Standard B-type coaches accepted for running in international traffic - Characteristics	1st edition of 1.1.95
567-7	I	Standard M-type coaches accepted for running on international services - Characteristics	1st edition of 1.1.95
568	OR	Loudspeaker and telephone systems in RIC coaches Standard technical characteristics	3rd edition of 1.1.96
569	O	Regulations to be observed in the construction of coaches and vans suitable for conveyance by train ferry	2nd edition of 1.7.79 and 2 Amendments
<b>57: Rolling Stock : Various regulations concerning wagons - Types of wagons</b>			
570	OR	Wagons - Interchangeable parts	6th edition of 1.1.81 - Reprint dated 1.1.95

571-1	OR	Standard wagons - Ordinary two-axle wagons - Characteristics	5th edition, October 2004
571-2*	OR	Standard wagons - Ordinary bogie wagons - Characteristics	6th edition, February 2001
571-3	OR	Standard wagons - Special-purpose wagons - Characteristics	6th edition, November 2004
571-4	OR	Standard wagons - Wagons for combined transport - Characteristics	5th edition, April 2011
572	OR	Wagons composed of permanently-coupled units (multiple wagons) and articulated wagons	3rd edition under preparation
573	OR	Technical conditions for the construction of tank wagons	7th edition, April 2008
574	O	Insulated, refrigerator and mechanically-refrigerated wagons and containers. Procedure to be followed for the determination of the thermic transmission coefficient of the body	3rd edition of 1.7.71
575	O	Wagons - Label holders (Interchangeability) and hazard identification panels	4th edition of 1.1.95
576	OR	Wagon doors and securing devices (Interchangeability)	5th edition of 1.7.75 and 6 Amendments
577	OR	Wagon stresses	4th edition, December 2005
578	OR	Stanchions and bolsters - Standardisation	5th edition of 1.1.95
579-1*	OR	Wagons - Periodic overhaul - Methods for establishing its frequency and nature	3rd edition, March 2003
579-2	O	Conditions for the technical transfer inspection of wagons	Withdrawn on 1.2.03

#### **58: Rolling Stock : Conventional marks and inscriptions on and in vehicles**

		Inscriptions and markings, route indicators and number plates to be affixed to coaching stock used in international traffic	
580	OR		6th edition of 1.1.90 and 3 Amendments
581	OR	Wagons - Lifting - Rerailing	1st edition of 1.1.83 and 1 Amendment
582	O	Marks on unified and standard wagons	3rd edition of 1.2.77
583	O	Wagons - Application of a special mark on interchangeable parts	5th edition of 1.1.86 - Reprint dated 1.7.95
584	OR	Directives for the drawing up of service instructions to assist staff in the use of equipment in coaches authorised to run on international services	1st edition of 1.1.73 and 1 Amendment of 1.1.1976

#### **59: Rolling Stock : Containers, pallets, road vehicles**

590	OR	Small and medium containers - Technical conditions with which containers must comply in order to be accepted for use in international traffic	Withdrawn on 1.1.04
591	OR	Roller units for horizontal transshipment - Technical conditions governing their use in international traffic	3rd edition, October 2007
592	OR	Intermodal Transport Units (other than semi-trailers) for vertical transshipment and suitable for carriage on wagons - Minimum requirements	1st edition, July 2010

592-2	OR	Large containers for transport on wagons - Technical conditions to be fulfilled by large containers accepted for use in international traffic	6th edition, October 2004
592-3	O	Large containers (CT), swap bodies (CM) and transport frames for horizontal transshipment (CA) - Standard report on acceptance tests	2nd edition of 1.1.98
592-4	OR	Swap bodies for grab handling and spreader gripping - Technical conditions	3rd edition, May 2007 - Translation 2nd edition of 1.1.70 - Reprint dated
593	OR	Privately-owned containers, transcontainers and T containers - Conditions of approval	1.4.81 incorporating Amendment 1
596-5	OR	Transport of road vehicles on wagons - Technical organisation - Conveyance of semi-trailers with P coding or N coding on recess wagons	4th edition, February 2008 - Translation
596-6	OR	Conveyance of road vehicles on wagons - Technical organisation - Conditions for coding combined-transport load units and combined-transport lines	5th edition, November 2006
597	OR	Piggyback system - Semi-trailers on bogies - Characteristics	1st edition of 1.1.91 - Reprint dated 1.7.93 incorporating 7 Amendments
599	OR	Equipment for loading and unloading containers or vehicles used in combined transport on/from wagons	2nd edition of 1.1.86 and 2 Amendments
<b>60: Traction : General regulations concerning electric traction lines</b>			
600*	OR	Electric traction with aerial contact line	4th edition, November 2003
603	O	Measures to be taken to prevent the formation of sparks from traction current in areas where filling and emptying installations for inflammable liquids or gases are located	6th edition of 1.1.81
604	OR	List of electrified lines (OHL - 3rd rail)	Withdrawn on 1.2.02
605	OR	Protection from corrosion - Measures to be taken on direct current catenaries to reduce the risks on adjacent piping and cable systems	2nd edition of 1.1.81
606-1	OR	Consequences of the application of the kinematic gauge defined by UIC Leaflets in the 505 series on the design of the contact lines	1st edition of 1.1.1987 and 1 Amendment
606-2	OR	Installation of 25 kV and 50 or 60 Hz overhead contact lines	4th edition of 1.1.86
608*	OR	Conditions to be complied with for the pantographs of tractive units used in international services	3rd edition, April 2003
<b>61: Traction : Electric traction</b>			
610	OR	Rules for testing of electric rolling stock on completion of construction and before entry into service	Withdrawn on 1.2.02
611*	OR	Regulations governing acceptance of electric locomotives, power cars and multiple-unit sets for running on international services	6th edition, February 2001

612-0	OR	Driver Machines Interfaces for EMU/DMU, Locomotives and driving coaches - Functional and system requirements associated with harmonised Driver Machine Interfaces	1st edition, June 2009
612-01	OR	Display System in driver cabs (DDS) - General requirements, set up and technical specifications	1st edition, July 2011
612-03	OR	Display System in Driver's Cab (DDS) Technical and Diagnostic Display (TDD)	1st edition, July 2011
612-1	O	Rolling stock configurations and main activated functions for EMU/DMU, locomotives and driving coaches	1st edition, February 2009
612-2	OR	Specific sub-system requirements (traction, braking, etc.) for EMU/DMU, locomotives and driving coaches (Rolling stock sub-system requirements, requirements for economic purposes, requirements for railway standardisation)	1st edition, October 2009
613	OR	Graphical symbols for electric traction	Withdrawn on 1.2.02
614	O	Definition of the rated output of electric locomotives and motive power units	3rd edition of 1.7.90
615-0*	O	Tractive units - Bogies and running gear - General provisions	2nd edition, February 2003
615-1*	OR	Tractive units - Bogies and running gear - General conditions applicable to component parts	2nd edition, February 2003
615-4*	OR	Motive power units - Bogies and running gear - Bogie frame structure strength tests	2nd edition, February 2003
616	OR	Rules for electric traction equipment	Withdrawn on 1.2.02
617-3	OR	Regulations concerning the position, type and direction of operation of the main control equipment on electric tractive stock	1st edition of 1.1.62 and 2 Amendments (brought up-to-date 1.1.1967)
617-4	OR	Position of front and side windows and of other windows situated in the driving compartments of electric powered stock	1st edition of 1.1.63 and 1 Amendment
617-5	OR	Special safety regulations for drivers' cabs of tractive units	2nd edition of 1.1.77 and 1 Amendment
617-6	OR	Regulations covering the layout of drivers' compartments in powered stock	2nd edition of 1.1.77 and 1 Amendment
617-7	O	Regulations concerning conditions of visibility from driving compartments of electric powered stock	1st edition of 1.1.64 and 1 Amendment
618	OR	Rules for traction transformers and reactors	Withdrawn on 1.2.02
619	OR	Rules for rotating electrical machines for rail and road vehicles	Withdrawn on 1.2.02
<b>62: Traction : Diesel traction</b>			
622	O	Definition of the nominal power of locomotives and railcars fitted with internal combustion engines	4th edition of 1.7.80
623-1	OR	Approval procedures for diesel engines of motive power units	5th edition, February 2008
623-2	OR	Approval tests for diesel engines of motive power units	6th edition, March 2010

623-3*	R	Series test and acceptance conditions for diesel engines of motive power units	3rd edition, December 2003
624	O	Exhaust emission tests for diesel traction engines	3rd edition, February 2006
625-2	OR	Fitting of front windows, side windows and other windows installed in drivers' cabs of motive power units with internal combustion engines, and in driving trailers (with a view to ensuring protection for the staff)	1st edition of 1.1.59 and 1 Amendment
625-5	OR	Rules concerning the position, type and direction of operation of the main control equipment on combustion-engined tractive stock	1st edition of 1.1.61 and 2 Amendments (brought up-to-date on 1.1.1967)
625-6	O	Regulations concerning conditions of visibility from driving compartments of combustion-engined powered stock	1st edition of 1.1.63 and 3 Amendments (brought up-to-date on 1.1.1964, 1.1.1977, 1.1.1987)
625-7	OR	Regulations concerning the impact withstandability in service of combustion-engined railcars and multiple-unit trains	1st edition of 1.1.66 and 1 Amendment
626*	OR	Production of electrical power on diesel tractive units for supplying the train cable	3rd edition, April 2004
627-1	OR	Minimum operating range of tractive stock with internal combustion engines	2nd edition of 1.7.80
627-2	O	Filling devices for diesel stock	2nd edition of 1.7.80
627-4	O	Regulations relating to buffing and draw gear and the braking system to be used on internal combustion-engined railcars and multiple-unit sets, to enable them to be hauled in an emergency by any tractive unit	2nd edition of 1.7.80
627-5	O	Regulations applicable to the construction of internal combustion-engined railcars accepted on international train ferry services	2nd edition of 1.7.80
<b>63: Traction : Other modes of traction</b>			
631	OR	Rules for gas turbines for traction	2nd edition of 1.7.77
<b>64: Traction : General regulations governing various modes of traction</b>			
640*	OR	Motive power units - Inscriptions, marks and signs	3rd edition, October 2003
641*	O	Conditions to be fulfilled by automatic vigilance devices used in international traffic	4th edition, February 2001
642	OR	Special provisions concerning fire precautions and fire-fighting measures on motive power units and driving trailers in international traffic	2nd edition, September 2001
643	O	Regulations regarding the audibility of shunting whistles and detonators in driving compartments of powered units	4th edition of 1.7.80
644	O	Warning devices used on tractive units employed on international services	2nd edition of 1.7.80
645	O	Regulations applicable to powered units used on international services when running over curves	2nd edition of 1.7.80
646	R	Standardisation of steps and handrails on diesel and electric shunting powered units	2nd edition of 1.7.80
647	OR	Functional model for the remote control of traction units	1st edition, March 2006

648*	OR	Connections for electric cables and air pipes on headstocks of locomotives and driving trailers	4th edition, September 2001
649	O	Rules for ohmic resistors used in the power circuits of electrically powered vehicles	1st edition of 1.11.71
<b>65: Traction : General regulations governing various modes of traction General regulations governing</b>			
650	O	Standard designation of axle arrangement on locomotives and multiple-unit sets	5th edition of 1.1.83
651	OR	Layout of driver's cabs in locomotives, railcars, multiple-unit trains and driving trailers	4th edition, July 2002
<b>66: Traction : High speed trains</b>			
660	OR	Measures to ensure the technical compatibility of high-speed trains	2nd edition, August 2002
<b>70: Way and Works : General characteristics of lines</b>			
700	O	Classification of lines - Resulting load limits for wagons	10th edition, November 2004
702	OR	Static loading diagrams to be taken into consideration for the design of rail carrying structures on lines used by international services	3rd edition, March 2003
703	R	Layout characteristics for lines used by fast passenger trains	2nd edition of 1.1.89 and 1 Amendment
705	RI	Infrastructure for tilting trains	1st edition, August 2003
<b>71: Way and Works : Laying and maintenance of track</b>			
710*	R	Minimum track gauge in curves	3rd edition, October 2004 1st edition of 1.1.81.
711	R	Geometry of points and crossings with UIC rails permitting speeds of 100 km/h or more on the diverging track	Leaflet 'frozen' in accordance with the Infrastructure Forum's decision. The topic is presently being developed under the EN 13803-2
712	R	Rail defects	4th edition, January 2002
713	R	Design of monoblock concrete sleepers	1st edition, November 2004
714*	R	Classification of lines for the purpose of track maintenance	4th edition, February 2009
715	R	Factors affecting track maintenance costs - Their relative importance	3rd edition of 1.1.92 2nd edition, May 2004 - Translation Leaflet 'frozen' in accordance with the Infrastructure Forum's decision. The topic is presently being developed under the EN 13848 - part 5.
715-1*	R	Application of digital track geometry analysis to the planning of tamping and lining/levelling work	is presently being developed under the EN 13848 - part 5.
715-2*	R	Recommendations for management of rails	2nd edition, August 2003
716*	R	Maximum permissible wear profiles for switches	2nd edition, May 2004
717	R	Recommendations for the design of bridges to satisfy track requirements and reduce noise emissions	2nd edition, September 2010
717-3	R	Steel bridges - Laying of track on steel without ballast - Direct laying	1st edition of 1.1.67

718-1	R	Criteria to be taken into consideration when approving mechanical track maintenance equipment	1st edition of 1.7.76 Leaflet 'frozen' in accordance with the Infrastructure Forum's decision. The topic is presently being developed under the EN 14033 - part 1.
718-2	R	Criteria to be taken into consideration when approving tamping and lining machines for plain track	1st edition of 1.1.78 Leaflet 'frozen' in accordance with the Infrastructure Forum's decision. The topic is presently being developed under the EN 14033 - part 1.
718-3	R	Criteria to be taken into consideration when approving tamping-lining machines for points and crossings	1st edition of 1.1.80 Leaflet 'frozen' in accordance with the Infrastructure Forum's decision. The topic is presently being developed under the EN xx xxx.
718-4	R	Guidelines for the measurement of noise emitted by track machines	1st edition of 1.1.88 Leaflet 'frozen' in accordance with the Infrastructure Forum's decision. The topic is presently being developed under the EN 14033 - part 2.
719	R	Earthworks and track bed construction for railway lines	3rd edition, February 2008
719-1	R	Recommendations for the use of Under Ballast Mats. UBM (This leaflet will only be published in english)	1st edition, June 2011
<b>72: Way and Works : Laying and maintenance of track (continuation)</b>			
720	R	Laying and Maintenance of CWR Track	2nd edition, March 2005
721	R	Recommendations for the use of rail steel grades	2nd edition, March 2005
722	R	Methods of improving the track formation of existing lines	2nd edition, October 2011
723	R	Vegetation control - Technical and management aspects	2nd edition, January 2004
724	R	Track equipment for 25 tons (250 kN) axle loads on ballasted track	1st edition, May 2005
725	R	Treatment of rail defects	1st edition, June 2007
728	R	Absolute coordinates for track engineering work - A Railway Geodesy approach	1st edition - January 2009
<b>73: Way and Works : Signalling and interlocking</b>			
730-3*	R	Automatic warning of track maintenance gangs	3rd edition, June 2002
731	R	Inspection of signalling installations	1st edition of 1.7.71
732*	R	Principles for signalling trains routes using wayside signals	3rd edition, May 2002
734*	R	Adaptation of safety installations to high-speed requirements	2nd edition, January 2004
736	R	Signalling relays	4th edition, June 2004
737-1*	I	Combination of track circuits and treadles	3rd edition, June 2002
737-2	I	Measures to be taken to improve track circuits shunting sensitivity	3rd edition, December 2004
737-3*	R	Application of thyristors in railway technology - Measures for the prevention of functional disturbance in signalling installations	2nd edition, February 2004

737-4	R	Measures for limiting the disturbance of light current installations by electric traction (in particular thyristor apparatus)	2nd edition, February 2003
738	R	Processing and transmission of safety information	2nd edition of 1.1.90
739	R	Slip limits beyond signals	2nd edition of 1.1.92

#### **74: Way and Works : Buildings**

741	OR	Passenger stations - Height of platforms - Regulations governing the positioning of platform edges in relation to the track	5th edition, September 2007
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#### **75: Way and Works : Telecommunications**

750	I	Railway telecommunications links - Improvements to be expected from the use of telecommunications for operating purposes	3rd edition, February 2006
751-1*	R	Railway radio equipment - Fixed and mobile units - General technical considerations	4th edition, July 2002
751-2*	R	Railway radio equipment - Technical specifications	4th edition, August 2002
751-3*	ORI	Technical regulations for international ground-train radio systems	4th edition, July 2005
751-4	ORI	The co-ordination of GSM-R systems and radio planning at borders	1st edition, December 2005
752	OR	General regulations concerning the establishment and technical operating of international teleprinter circuits	4th edition of 1.1.82
753-1	OR	Technical regulations concerning international railway telephone circuits	5th edition, January 2005
753-2	OR	General technical regulations governing establishment and development of communication capacity over the railway telecommunications network of UIC members	5th edition, June 2004
753-3	OR	General procedures governing maintenance, operating and performance criteria for the UIC member railways telecommunication network	2nd edition, April 2005
754	I	Omnibus telephone circuits - Regulations for construction and equipment	3rd edition, December 2004
755-1	RI	Laying of telecommunications and signalling cables and their protection against mechanical damage	1st edition of 1.7.69 and 1 Amendment (brought up-to-date on 1.1.1970)
755-2	R	Protection of telecommunications staff and plant against a large earth potential due to a neighbouring electric traction line	1st edition of 1.1.70
756	I	Fixed and portable lineside telephones	2nd edition, July 2004
757	RI	Installation of public address systems at passenger stations	1st edition of 1.1.67 and 1 Amendment
758	I	Use of mobile radio on the railways - Antennas	2nd edition, May 2005
759	ORI	Technical conditions for small-diameter co-axial pairs	1st edition of 1.1.66 and 1 Amendment

#### **76: Way and Works : Level crossings**

760	I	Level crossings - Road signs and signals	7th edition, September 2007
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761	I	Guidance on the automatic operation of level crossings	4th edition, January 2004
762	R	Safety measures to be taken at level crossings on lines operated from 120 to 200 km/h	2nd edition, July 2005
<b>77: Way and Works : Structural works</b>			
770	OR	Code of practice for the use of high strength friction grip bolts in bridges and structures constructed or maintained by railway authorities	Leaflet withdrawn on 1.1.2007
771-1	OR	Rolled steels for bridges (sections, bars, wide flats, heavy plates)	Leaflet withdrawn on 1.1.2007
771-2	OR	Recommendations for the use of the various qualities and grades of steel contained in Leaflet 771-1	Leaflet withdrawn on 1.1.2007
771-3	R	Recommendations for the connection of rail-bearers to cross-girders for steel railway bridges	2nd edition of 1.1.83 Leaflet 'frozen' in accordance with the Infrastructure Forum's decision. The topic is presently being developed under the Eurocode 3.
772-1	R	Standard principles for the use of bearings made from various materials for railway bridges	1st edition of 1.7.87 Leaflet 'frozen' in accordance with the Infrastructure Forum's decision. The topic is presently being developed under the EN 1337.
772-2	R	Code for the use of rubber bearings for rail bridges	1st edition of 1.7.89 Leaflet 'frozen' in accordance with the Infrastructure Forum's decision. The topic is presently being developed under the EN 1337
773	R	Recommendations for the design of joist-in-concrete railway bridges	5th edition, May 2010 - Translation
774-1	R	Recommendations for the fatigue design of railway bridges in reinforced and prestressed-concrete	3rd edition, February 2005
774-2	R	Distribution of axle-loads on ballasted railway bridges	2nd edition of 1.7.94 Leaflet 'frozen' in accordance with the Infrastructure Forum's decision. The topic is presently being developed under the EN 1991-2
774-3	R	Track - bridge Interaction. Recommendations for calculations	2nd edition, October 2001
775	R	Use of welding in the construction of railway bridges	2nd edition of 1.1.84 Leaflet 'frozen' in accordance with the Infrastructure Forum's decision. The topic is presently being developed under the EN 1090.
776-1	R	Loads to be considered in railway bridge design	5th edition, August 2006
776-2	R	Design requirements for rail-bridges based on interaction phenomena between train, track and bridge	2nd edition, June 2009
776-3	R	Deformation of bridges	1st edition of 1.1.89
776-4	R	Computer-aid calculation for bridges and other civil engineering structures	Withdrawn on 1.2.09
777-1*	R	Measures to protect railway bridges against impacts from road vehicles, and to protect rail traffic from road vehicles fouling the track	2nd edition, June 2002

777-2	R	Structures built over railway lines - Construction requirements in the track zone	2nd edition, September 2002
778-1	R	Recommendations for the consideration of fatigue in the design of steel railway bridges, especially with orthotropic decks	3rd edition under preparation
778-2	R	Recommendations for determining the carrying capacity of existing metal structures	1st edition of 1.7.86 and 1 Amendment
778-3	R	Recommendations for the inspection, assessment and maintenance of masonry arch bridges	2nd edition, April 2011
778-4	R	Defects in railway bridges and procedures for maintenance	2nd edition, March 2011
779-1	R	Effect of the slipstream of passing trains on structures adjacent to the track	1st edition of 1.1.96
779-10	R	Management and maintenance principles for existing tunnels	2nd edition, February 2011
779-11	OR	Determination of railway tunnel cross-sectional areas on the basis of aerodynamic considerations	2nd edition, February 2005
779-9	R	Safety in railway tunnels	1st edition, August 2003

#### **78: Way and Works : Remote control installations**

780	I	Remote control of signalling installations	1st edition of 1.1.65
781	I	Transmission systems and methods of remote control for signalling installations	1st edition of 1.1.67

#### **79: Way and Works : Miscellaneous**

790	R	Use of axle counters	1st edition of 1.7.75
791	R	Quality assurance of overhead line equipment	2nd edition of 1.1.90
791-1	R	Maintenance guidelines for overhead contact lines	1st edition, October 2006
791-2	R	Diagnosis of the OCL conditions	1st edition, May 2009
791-3	R	Safety measures to be adopted when working on or nearby overhead contact lines	1st edition, February 2011
792	R	Principles for the manufacture and use of portable units for earthing overhead electric-traction power lines through the rail	1st edition of 1.1.83
793	R	Working methods for mechanised overhead line installation	1st edition of 1.1.95
794	O	Pantograph-overhead line interaction on the european high-speed network	1st edition of 1.1.96
794-1	OR	Pantograph/overhead line interaction for DC - electrified railway lines	1st edition, August 2001
795	O	Minimum installed power - Line categories	1st edition of 1.7.96
796	O	Voltage at the Pantograph	1st edition, April 2000
797	O	Coordination of electrical protection substations-traction units	1st edition, April 2000
798	O	Integration periods over which parameters can be averaged	1st edition of 1.7.96
799	OR	Characteristics of a.c. overhead contact systems for high-speed lines worked at speeds of over 200 km/h	1st edition, March 2002
799-1	OR	Characteristics of direct-current overhead contact systems for lines worked at speeds of over 160 km/h and up to 250 km/h	1st edition, June 2000

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**7a: Way and Works : Reports**

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IF 1/85	N/A	Possibility of creating a standard computer-aided track appraisal system for the planning of track maintenance work	June 1985
IF 2/85	N/A	Interference generated in low power electrical systems by electric traction installations	June 1985
IF 3/89	N/A	Defects in railway bridges and procedures for maintenance and strengthening	January 1989
IF 4/91	N/A	Measures to limit and reduce the risk of accidents in underground railway installations with particular reference to the risk of fire and the transport of dangerous goods	June 1991
IF 5/91	N/A	Admission of higher curving speeds for special trains	June 1991
IF 6/96	N/A	Safety assessment for components at risk from impact - Developments with superstructures	February 1996
IF 7/96	N/A	Maintenance of high-speed lines	April 1996

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**80: Technical Specifications : Selective lists**

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800	OR	List of basic standards developed by the UIC Sub-Committee for Dimensional Standardisation - Leaflets in series 800	Withdrawn on 1.1.04
800-00	O	Application within the UIC of international units of measurement (S.I. Units)	1st edition of 1.1.69 and 4 Amendments (brought up-to-date on 1.1.1970, 1.4.1971, 1.1.1975, 1.7.1977)
800-01	O	Use of certain railway concepts taking into account the international system of measurement (S.I.)	1st edition of 1.1.77 - Reprint dated 1.7.89 and 4 Amendments
800-09	O	Principles and definitions of identification characteristic lists	1st edition of 1.7.90
800-10	O	Minimum values of bending radii for bending, cold flanging and shaping by rolling of flat metal products	2nd edition of 1.7.77
800-11	O	Minimum curve radii for the cold bending of metal tubing	1st edition of 1.7.80
800-30	OR	Selection of ISO threads	1st edition of 1.7.71
800-50	O	Allowable variations on dimensions when no tolerances are indicated for parts shaped by removal of metal	1st edition of 1.7.73
800-51	OR	Permissible variations on dimensions when no tolerances are given for welded structures	1st edition of 1.7.80
800-52	OR	System of dimensional tolerances for castings	2nd edition of 1.1.92
800-53	OR	Permissible deviations on dimensions when no tolerances are indicated for cut metal parts	1st edition of 1.7.82
800-55	OR	Permissible variations on dimensions when no tolerances are given on aluminium structural parts for welded structures	1st edition of 1.7.81
800-57	OR	Permissible tolerances on dimensions where no tolerances are shown for die-forged parts made of aluminium and aluminium alloy	1st edition of 1.7.84 and 1 Amendment

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800-58	OR	Permissible tolerances on dimensions where no tolerances are shown for stamped parts made of steel	1st edition of 1.7.83 - Reprint dated 1.7.87 and 1 Amendment
800-60	OR	Directives for technical drawings - Principles of representation and dimensions	Withdrawn on 1.1.04
800-61	OR	Inscription panel for drawings	Withdrawn on 1.1.04
800-62	OR	Identification symbols to denote assembly units	Withdrawn on 1.1.04
800-63	OR	Representation and indications of electroplated and chemical coatings on drawings	Withdrawn on 1.1.04
800-64	OR	Representation and indications on drawings to denote the final condition of heat-treated parts	Withdrawn on 1.1.04
801-00	OR	List of UIC-standardised semi-finished products Leaflets in series 801	Withdrawn on 1.1.04
801-11	OR	Selective list of dimensions of channel sections in steel	Withdrawn on 1.1.04
801-12	OR	Selective list of steel angle irons with equal arms	Withdrawn on 1.1.04
801-13	OR	Selective list of dimensions for steel angles with unequal arms	Withdrawn on 1.1.04
801-14	OR	Selective list of dimensions for round steels	Withdrawn on 1.1.04
801-15	OR	Selective list of dimensions for square steels	Withdrawn on 1.1.04
801-16	OR	Selective list of hot rolled steel flats	Withdrawn on 1.1.04
801-17	OR	Selection of samples of hot-rolled ribbed and grooved flats for spring leaves	3rd edition of 1.7.90
801-18	OR	Selective list of wide flats	Withdrawn on 1.1.04
801-19	R	Selective list of special steel sections for lightweight construction	1st edition of 1.7.87
802-00	OR	List of UIC-standardised securing devices - Leaflets in series 802	Withdrawn on 1.1.04
802-01	OR	Selective lists of hexagon head bolts	Withdrawn on 1.1.04
802-02	OR	Selective list of bolts with countersunk lugged head	Withdrawn on 1.1.04
802-03	OR	Selective list of bolts with round lugged head	Withdrawn on 1.1.04
802-04	OR	Selective list of clip-bolts with curved head	Withdrawn on 1.1.04
802-05	OR	Selective list of clip-bolts with curved head	Withdrawn on 1.1.04
802-06	OR	Selective lists of screws with countersunk or raised, countersunk slotted or cross recessed head	Withdrawn on 1.1.04
802-07	OR	Selective list of nuts	Withdrawn on 1.1.04
802-08	OR	Selective list of wood screws with round slotted or cruciform slotted head	3rd edition of 1.7.81
802-09	OR	Selective list of wood screws with countersunk slotted or cruciform slotted head	Withdrawn on 1.1.04
802-10	OR	Selective list of wood screws with curved countersunk slotted or cruciform slotted head	Withdrawn on 1.1.04
802-11	OR	Selective list of wood screws with hexagonal head	3rd edition of 1.7.81
802-12	OR	Selective list of steel hexagon socket head cap screws	Withdrawn on 1.1.04
802-13	OR	Selective list of sheet metal screws with slotted or cross recessed large cylindrical head or with hexagonal head	Withdrawn on 1.1.04
802-14	OR	Selective list of sheet metal screws with slotted or cross recessed flat or curved countersunk head	Withdrawn on 1.1.04

802-15	OR	Selective list of self-tapping slotted cheese-headed, raised recessed headed or hexagonal headed screws	Withdrawn on 1.1.04
802-16	OR	Selective list of self-tapping countersunk screws, flat or raised, slotted or recessed	Withdrawn on 1.1.04
802-21	OR	Selective list of dimensions for round-headed rivets in steel other than those for use on boilers	Withdrawn on 1.1.04
802-22	OR	Selective list of blind rivets made of aluminium and steel	Withdrawn on 1.1.04
802-23	OR	Selective list of countersunk rivets made of flat or countersunk steel or aluminium alloys	1st edition of 1.7.91
802-24	OR	Selective list of sealing ring bolts	1st edition of 1.7.92
802-30	OR	Selective list of pin joints	5th edition of 1.7.75
802-31	OR	Selective list of pins with heads	1st edition of 1.7.92
802-32	OR	Selective list of pins without heads	1st edition of 1.7.92
802-33	OR	Selective list of Pressed-in Bushes	1st edition of 1.1.94
802-40	OR	Selective list of split pins - Split pins for use with bolts and pins	Withdrawn on 1.1.04
802-41	OR	Selective list of cylindrical dowel pins	Withdrawn on 1.1.04
802-42	OR	Selective list of dimensions for spring-pins - Thick series	Withdrawn on 1.1.04
802-44	OR	Selective list of taper pins	Withdrawn on 1.1.04
802-45	OR	Selective list of washers, primarily for hexagonal head bolts and nuts and cylindrical head screws	Withdrawn on 1.1.04
802-46	OR	Selective list of washers, preferably for wood screws	Withdrawn on 1.1.04
802-50	OR	Selective lists of clearance holes for fasteners and correspondence with the external diameters of these fasteners	Withdrawn on 1.1.04
802-70	OR	Mechanical characteristics of bolts, screws and nuts	Withdrawn on 1.1.04
802-71	OR	Mechanical stainless steel fasteners (hexagonal head screws and nuts)	Withdrawn on 1.1.04
802-72	OR	Locking elements for bolted connections	1st edition of 1.1.95
803-00	OR	List of UIC-standardised tubes and fittings - Leaflets in series 803	Withdrawn on 1.1.04
803-10	OR	Selective list of steel tubes	Withdrawn on 1.1.04
803-11	OR	Selective list of copper tubing	Withdrawn on 1.1.04
803-12	OR	Selective list of aluminium tubing	Withdrawn on 1.1.04
803-13	OR	Selective list of stainless steel tubes	Withdrawn on 1.1.04
803-30	R	Selective list of ordinary pipe clips with single bolt hole	2nd edition of 1.7.88 and 1 Amendment
803-31	R	Selective list of ordinary pipe clips with two bolt holes	2nd edition of 1.7.88 and 1 Amendment
803-34	OR	Selective list of rigid pipe connections for copper pipes	1st edition of 1.7.89
803-35	OR	Selective list of pipe connections for steel pipes (screw type pipe couplings)	1st edition of 1.7.88 and 1 Amendment
805-01	OR	Selective list of lubricators	2nd edition of 1.7.80
805-30	R	Selective list of dimensions for square locking profiles	2nd edition of 1.1.68

805-70	OR	Tapped pipe-inlets used for the hydraulic keying and unkeying of tightened joints	2nd edition of 1.7.86
806	R	Technical specification for the supply of sheets for protecting loads on open wagons	1st edition of 1.7.79

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**81: Technical Specifications : Running gear**

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810-1	O	Technical specification for the supply of rough rolled non-alloy steel tyres for tractive and trailing stock	5th edition, January 2003 - Translation
810-2	OR	OR Technical specification for the supply of rough tyres for tractive and trailing stock - Tolerances	4th edition of 1.1.85
810-3	O	Technical specification for the supply of non-alloy flat and sectional steel for tyre retention spring rings	1st edition of 1.7.90
811-1	OR	Technical specification for the supply of axles for tractive and trailing stock	Leaflet withdrawn on 1.8.2006. This Leaflet is replaced by the standard EN 13261.
811-2*	OR	Technical specification for the supply of axles for tractive and trailing stock - Tolerances	2nd edition, February 2004
812-1	OR	Technical specification for the supply of rolled or forged wheel centres for tyred wheels for trailing stock. Quality requirements	4th edition of 1.1.89
812-2*	OR	Solid wheels for tractive and trailing stock - Tolerances	2nd edition, December 2002
812-3	O	Technical specification for the supply of solid wheels in rolled non-alloy steel for tractive and trailing stock	Leaflet withdrawn on 1.8.2006. This Leaflet is replaced by the standard EN 13262
812-4	OR	Technical specification for the supply of tyred wheels for tractive and trailing stock. Type fitting and tolerances	1st edition of 1.7.90
812-5	OR	Technical specification for the supply of rolled or forged steel wheel centres for tractive and trailing stock - tolerances and surface roughness	1st edition of 1.7.88
813*	O	Technical specification for the supply of wheelsets for tractive and trailing stock - Tolerances and assembly	2n edition, December 2003
814	OR	Technical specification for the official testing and supply of greases intended for the lubrication of railway vehicle roller bearing axle boxes	2nd edition of 1.7.88

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**82: Technical Specifications : Suspension, buffing and draw gear**

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820*	O	Technical specification for the supply of spring steel flat bars for parallel leaf or volute springs	6th edition, December 2003
821*	O	Technical specification for the supply of parallel leaf springs for vehicles	6th edition, November 2003
822*	O	Technical specification for the supply of helical compression springs, hot or cold coiled for tractive and trailing stock	5th edition, November 2003
823	O	Technical specification for the supply of volute springs for vehicles	3rd edition of 1.1.66 and 1 Amendment

825	O	Technical specification for the supply of draw hooks with nominal load equal to 250 kN, 600 kN or 1000 kN for tractive and trailing stock	3rd edition, May 2004
826	O	Technical provisions for the supply of screw couplings for tractive and trailing stock	3rd edition, May 2004
827-1	O	Technical specification for the supply of elastomer components for buffers	2nd edition of 1.1.90
827-2	O	Technical specification for the supply of steel rings for buffer springs	3rd edition of 1.1.81
828	O	Technical specification for the supply of welded components for buffers	1st edition of 1.1.60 and 1 Amendment (brought up-to-date on 1.10.1975)
829-1	R	Technical specification for the supply of heads for the UIC type automatic coupler with centre buffer for tractive and trailing stock	3rd edition of 1.7.79
829-2	R	Technical specification for the supply of castings in gray iron, malleable cast iron or spheroidal graphite cast iron for the UIC type automatic coupler with a centre buffer for tractive and trailing stock	2nd edition of 1.7.75
829-3	R	Provisional technical specification for the supply of parts in forged or rolled steel intended for the UIC type automatic coupler with a centre buffer for tractive and trailing stock	1st edition of 1.1.73
829-4	R	Provisional technical specification for the supply of springs intended for the UIC type automatic coupler with a centre buffer for tractive and trailing stock	1st edition of 1.1.73 and 1 Amendment
829-5	O	Technical specification for the protection and packing of ferrous parts of automatic couplers	1st edition of 1.1.76
829-6	R	Technical specification for the supply of elastomer parts for automatic coupler connections (compressed air brake and other components)	1st edition of 1.7.77
829-7	R	Technical specification for the supply of cross suspension slide bars for automatic wagon couplers	1st edition of 1.7.77

### **83: Technical Specifications : Brake parts**

830-1	O	Technical specification for the supply of elastomer hoses for compressed air brake couplings	4th edition of 1.7.81 and 2 Amendments
830-2*	O	Technical specification for the supply of ring-shaped elastomer joints for brake coupling heads	4th edition, November 2003
830-3*	O	Technical specification for the supply of coupler heads	3rd edition, June 2001
831*	R	Technical specification for the supply of elastomer packing rings for brake cylinder pistons	3rd edition, December 2001
832*	O	Technical specification for the supply of brake-shoes made from phosphoric iron for tractive and trailing stock	3rd edition, January 2004
833*	O	Technical specification for the supply of brake triangles	3rd edition, February 2004

834	OR	Technical specification for the supply of simple pressure receptacles of steel, not fired, for air braking equipment and auxiliary pneumatic equipment for railway rolling stock	1st edition of 1.1.93
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**84: Technical Specifications : Trailing stock parts**

840-2	O	Technical specification for the supply of steel castings for tractive and trailing stock	3rd edition of 1.1.81
842-1	R	Technical specification for the supply of paint products for the protection of railway vehicles and containers	1st edition of 1.7.75
842-2	R	Technical specification for methods for testing paint products	3rd edition of 1.7.75
842-3	O	Technical specification for the surface preparation of metallic and non-metallic materials used in the construction of railway vehicles and containers	2nd edition of 1.7.79
842-4	O	Technical specification for the protection against corrosion and painting of wagons and containers	2nd edition of 1.7.79
842-5	O	Technical specification for the protection against corrosion and painting of coaches and tractive units	1st edition of 1.7.75
842-6	O	Technical specification for the quality inspection of railway vehicle paint systems	2nd edition of 1.7.79
844-1*	O	Technical specification for the supply of rough and machined planks for wagon floorboards	4th edition, January 2004
844-2	O	Technical specification for the supply of rough and machined planks for wagons and vans	2nd edition of 1.1.67 and 1 Amendment of 1.1.1970
844-3*	R	Technical specification for the supply of plywood panels, glued together and protected by phenolic resin, for the walls of covered wagons	4th edition, June 2001
844-4	R	Technical specification for the supply of layered panels, with decorative surface, with a base of heat-hardening resins	2nd edition of 1.7.82
845*	R	Technical specification for the supply of elastomer flange connections for intercommunicating gangways	3rd edition, January 2004
846	R	Technical specification for the supply of roller-bearing axle box cases made of spheroidal graphite cast iron	1st edition of 1.1.66 and 1 Amendment (brought up-to-date on 1.7.1995)

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**85: Technical Specifications : Tractive stock parts**

852-1	R	Technical specification for the supply of elastomer connections for water pipes of cooling and heating systems installed on stock with internal combustion engines	2nd edition of 1.1.83
854	R	Technical specification for the supply of alkaline and lead-acid starter batteries	1st edition of 1.7.71

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**86: Technical Specifications : Permanent way**

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860	R	Technical specification for the supply of rails	9th edition, January 2008 - Translation Leaflet 'frozen' in accordance with the Infrastructure Forum's decision. The topic is presently being developed under the EN 13674 - parts 1,2,3,4.
861-1	O	Standard 54 kg/m rail profiles - Types UIC 54 and 54E 3rd edition of 1.1.69	3rd edition of 1.1.69 Leaflet 'frozen' in accordance with the Infrastructure Forum's decision. The topic is presently being developed under the EN 13674 - parts: 1,2,3,4.
861-2	O	Standard sections for points rails adapted to the UIC 54 and 60 kg/m rail sections	3rd edition of 1.1.89 Leaflet 'frozen' in accordance with the Infrastructure Forum's decision. The topic is presently being developed under the EN 13674 - parts: 1,2,3,4.
861-3	O	Standard 60 kg/m rail profiles - Types UIC 60 and 60E	3rd edition of 1.1.69 Leaflet 'frozen' in accordance with the Infrastructure Forum's decision. The topic is presently being developed under the EN 13674 - parts: 1,2,3,4.
861-4	O	Standard UIC 61 R (61.13 kg/m) and UIC 68 R (68.46 kg/m) rail sections for laying in tunnels	1st edition of 1.1.67 Leaflet 'frozen' in accordance with the Infrastructure Forum's decision. The topic is presently being developed under the EN 13674 - parts: 1,2,3,4.
861-5	O	Standard UIC type 71 (71 kg/m) rail section	1st edition of 1.10.77 Leaflet 'frozen' in accordance with the Infrastructure Forum's decision. The topic is presently being developed under the EN 13674 - parts 1,2,3,4.
863	O	Technical specification for the supply of non-treated track support (wooden sleepers for standard and broad-gauge track and crossing timbers)	2nd edition of 1.1.81 Leaflet 'frozen' in accordance with the Infrastructure Forum's decision. The topic is presently being developed under the EN 13145.
863-1	OR	Use of non-European timbers for the manufacture of sleepers	1st edition of 1.1.86 Leaflet 'frozen' in accordance with the Infrastructure Forum's decision. The topic is presently being developed under the EN 13145.
864-1	O	Technical specification for the supply of sleeper screws	3rd edition of 1.1.82
864-2	O	Technical specification for the supply of steel track bolts	3rd edition of 1.1.82
864-3	O	Technical specification for the supply of spring steel washers for use in permanent way	2nd edition of 1.1.82
864-4	O	Technical specification for the supply of fish-plates or sections for fish-plates made of rolled steel	3rd edition of 1.1.83
864-5	O	Technical specification for the supply of rail seat pads	4th edition of 1.1.86

864-6	O	Technical specification for the supply of base-plates or sections for base-plates made of rolled steel	3rd edition of 1.1.83
864-7	O	Rolled profiles for base-plates for UIC rails	3rd edition of 1.1.83
864-8	O	Rolled profiles for fish-plates for 54 kg/m and 60 kg/m rails	3rd edition of 1.1.83
864-9	O	Rolled profile for fish-plates for UIC 71 rails	2nd edition of 1.1.83
865-1	O	Technical specification for the supply of steel sleepers	3rd edition of 1.1.83
865-2	O	Standard profile for 28 kg/m steel sleepers	2nd edition of 1.1.83
866	O	Technical specification for the supply of cast manganese steel crossings for switch and crossing work	2nd edition of 1.1.85

### **87: Technical Specifications : Electric traction permanent fixtures**

870	O	Technical specification for grooved contact wires	1st edition of 1.1.56 and 3 Amendments
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### **89: Technical Specifications : Miscellaneous**

890	O	Technical specification for the supply of paper hand towels	2nd edition of 1.9.80 - Reprint dated 1.1.94
891	O	Technical specification for the supply of toilet soap in cake form for use in dispensers	1st edition of 1.1.79
893*	O	Technical specification for sheets for wearing plates or wearing plates in manganese steel	2nd edition, June 2004
895	OR	Technical specification for the supply of insulated electric cables for railway vehicles	3rd edition of 1.7.76
896-2	R	Recommendations for the protection of steel structures against corrosion	1st edition of 1.6.66
897-1	OR	Technical specification for the acceptance and supply of coated electrodes for manual arc welding of carbon, carbon-manganese and low-alloy steels	2nd edition of 1.1.86
897-11	O	Technical specification for the acceptance of welders for fusion welding of steels	2nd edition of 1.1.91
897-12	O	Technical specification for acceptance or welding procedures for arc welding in steels	2nd edition of 1.1.92
897-13	O	Technical specification for the quality control of welded joints on steel rolling stock	3rd edition of 1.1.93
897-14	O	Technical specification for the execution and control of test joints in steel - Test pieces	1st edition of 1.1.93
897-2	OR	Technical specification for symbols for coated electrodes for manual arc-welding of carbon, carbon-manganese and low-alloy steels	2nd edition of 1.1.86
897-20	O	Technical specification for the approval of welders for fusion-welding of aluminium and aluminium alloys	1st edition of 1.1.93
897-21	O	Technical specification for the approval of a procedure for fusion welding on aluminium and its alloys	1st edition of 1.1.93
897-22	O	Technical specification for the quality control of welded joints on rolling stock in aluminium and aluminium alloys	1st edition of 1.1.94

897-23*	O	Technical specification for the execution and control of test joints in aluminium and aluminium alloys (Mock-ups)	2nd edition, June 2004
897-4	OR	Technical specification for the acceptance and supply of combinations of wire electrodes and flux for automatic submerged arc welding of carbon, carbon-manganese and low-alloy steels	2nd edition of 1.1.87
897-5	OR	Technical specification for a system of symbols for wire electrodes and flux for automatic submerged arc welding of carbon, carbon-manganese and low-alloy steels	2nd edition of 1.1.87
897-6	OR	Technical specification for the acceptance of combinations of wire electrodes (solid or cored) and gases and also for the supply of wire electrodes (solid or cored) for automatic and semi-automatic gas-shielded welding of plain carbon or low-alloy steels	2nd edition of 1.1.86
897-7	OR	Technical specification for a system of symbols for solid or cored wire-electrodes, gases and wire-electrode and gas combinations for automatic and semi-automatic gas-shielded welding of plain carbon or low-alloy steels	2nd edition of 1.1.86
897-8	OR	Technical specification for determining the nominal output and coefficient of reposition of cored wire electrodes for automatic and semi-automatic gas-shielded welding of plain carbon or low-alloy steels	2nd edition of 1.1.88
897-9	O	Technical specification for the preparation for welding of the edges of rolled products made of plain carbon or low-alloy steels with a tensile strength of less than 610 N/mm <sup>2</sup> , for arc welding with coated electrodes and for semi-automatic arc welding	2nd edition of 1.7.79 and Amendment 1
898	R	Provision of services relating to the quality of railway products: General framework	2nd edition, June 1999

#### **90: Information Technology, Miscellaneous : Documentation**

900-2	OR	International cooperation regarding railway documentation - Data capture rules for leaflet 900-1 - Bibliography input form	Withdrawn on 1.4.02
900-4	OR	International cooperation regarding railway documentation - Recommendations for the exchange of computerised files and use of telecommunications	Withdrawn on 1.4.02
901	I	Use of polymeric materials for railway superstructure and infrastructure and in engineering structures	1st edition of 1.1.77
902	O	Procedure, method and organisation for the development of international Computer systems within the UIC-PROMETEO	Withdrawn on 1.7.04

#### **91: Information Technology, Miscellaneous : Remote data transmission and data processing**

910	R	Railway Public Key Infrastructure Recommendations for Interoperability	1st edition, May 2004 - Original
911-4	ORI	Standard provisions for modems and transmission lines used in data links with a binary rate of 600 to 9600 bits/s	2nd edition of 1.1.83
912	O	Principles governing standard messages for data exchange at international level	2nd edition of 1.7.94 and 2 Amendments
912-2	O	Exchange of information between railways by means of magnetic tape	2nd edition of 1.1.70 and 2 Amendments, brought up-to-date on 1.1.79
912-3	O	Directory of railway messages in the EDIFACT structure	2nd edition of 1.7.98
913	OR	Self-checking of registration numbers	1st edition of 1.1.64
914	R	Technical security standards for electronic sales and distribution systems (This Leaflet is to be published in English only)	1st edition, August 2006
915	I	Structured (data model) representation of passenger traffic data (This Leaflet is to be published in English only)	2nd edition, February 2009
917-1	RI	Technical provisions for the international interconnected Railway data transmission networks	4th edition, July 2007
917-2	ORI	Maintenance of the international railway data transmission network for use by the railways	3rd edition, May 2004
917-3	RI	Standardized Interface for Telematics Applications (This leaflet will only be published in english)	1st edition, July 2011
917-4	OR	Information and instructions for the maintenance of the telecommunication lines used by the railways for the interconnection of data transmission networks	3rd edition, October 2004
917-5	O	Description of the HERMES system (This Leaflet is to be published in English only)	3rd edition, June 2009
917-6	O	Hermes high-level protocols	Withdrawn on 1.7.04
917-7	O	Description of the HERMES transport station	Leaflets withdrawn on 1.7.04
917-8	O	X.400 - Message Handling Systems	Leaflets withdrawn on 1.7.04
917-9	O	File transfer, access and management - FTAM	Withdrawn on 1.7.04
918-0	O	Electronic seat/berth reservation and electronic production of travel documents - General regulations	2nd edition, December 2005
918-1	O	Electronic reservation of seats/berths and electronic production of travel documents - Exchange of messages	5th edition, June 2011
918-2	O	Electronic seat/berth reservation and electronic issuing of transport documents RCT2 Standard (This leaflet is to be published only in english)	4th edition, December 2010 - Original (This leaflet may be viewed in full only by UIC Members)
918-3	O	International Rail Ticket for Home Printing (This leaflet is to be published only in english)	1st edition, May 2007 - Original (This leaflet may be viewed in full only by UIC Members)
918-4	R	Data exchange for ticket check and after sales operations with electronic information (barcodes, other security certificates) (This Leaflet is to be published only in English)	1st edition, August 2011

918-6	O	Electronic reservation of assistance for persons with reduced mobility - Exchange of messages (This leaflet will only be published in english)	1st edition, July 2011
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919*	R	Specification of criteria for the computer-aided production of passenger and freight train timetables	2nd edition, August 2002
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### 92: Information Technology, Miscellaneous : Coding

920	O	General principles governing the preparation and administration of coding	5th edition, June 2004
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920-1	O	Standard numerical coding for railway undertakings, infrastructure managers and others companies involved in rail-transport chains	6th edition, November 2005
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920-10	O	Standard numerical code for railway customers	1st edition of 1.7.74 and 1 Amendment
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920-11	O	Standard numerical coding of information concerning damage occurring abroad to the various parts of wagons	1st edition of 1.4.74
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920-12	O	Standard numerical coding of damage to freight in international traffic	1st edition of 1.10.78
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920-13	O	Standard coding and data structures of general information required for international freight traffic	2nd edition, April 2011
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920-14	O	Standard numerical country coding for use in railway traffic	2nd edition, March 2005
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920-15	O	Standard numerical coding of unit loads and transport packaging	2nd edition, January 2004
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920-2	O	Standard numerical coding of locations	5th edition, January 2010
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920-3*	O	Standard coding of currencies	5th edition, December 2000
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920-4	ORI	Standard coding of dates and periods	3rd edition, May 2004
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920-5	O	Standard numerical coding of routings for international goods traffic	1st edition of 1.1.70 and 1 Amendment
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920-6	O	Standard numerical coding of additional charges, customs duties and other charges	3rd edition, June 2011
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920-7	O	Standard numerical coding for instructions concerning methods of payment	2nd edition, July 2011
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920-8	O	Standard numerical coding of international freight tariffs	2nd edition, October 2002
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920-9	O	Standard numerical coding of international passenger routes	2nd edition, March 2009
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### 96: Information Technology, Miscellaneous : Staff

960*	O	Qualification and certification of personnel responsible for the non-destructive testing of rolling-stock components and assemblies in the course of maintenance operations	2nd edition, December 2001
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961	R	Guidelines - Required competencies and relevant training for management to improve safety performance	1st edition, February 2005
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962	I	Secondment of management staff to foreign railways	3rd edition of 1.1.93 (This Leaflet may be viewed in full by UIC Members only)
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963	O	Free travel for train staff on international services	1st edition of 28.5.67 and 2 Amendments
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964	R	International cooperation amongst railways in connection with applied psychology	1st edition of 1.1.77
965	R	Instructions governing the behaviour and safety of staff working on the track (obsolete)	1st edition of 1.1.80 out of print
966	R	Measures intended to promote safety-consciousness in staff	1st edition of 1.1.80
967*	R	Safety of shunting staff at work (obsolete)	2nd edition, April 2002: out of print
968	R	Safety requirements to be taken into consideration in the design and use of heavy track maintenance machines	Withdrawn on 1.6.04
969	R	Safety of staff working in tunnels during normal service	2nd edition of 1.7.95

#### **98: Information Technology, Miscellaneous : Supplies**

980	I	Use of tariff contracts and order contracts for restocking	2nd edition of 1.7.78
981	R	Collaboration between the supplies departments and the commercial departments of the various railways for the purpose of orders placed in foreign countries	2nd edition of 1.7.78 and 1 Amendment (This Leaflet may be viewed in full by UIC Members only)
982-2	R	Economic limit between direct purchasing and centralised restocking	1st edition of 1.1.70
983	R	General clauses and conditions applicable to supplies and rolling stock contracts	2nd edition of 1.1.78

#### **99: Information Technology, Miscellaneous : Miscellaneous agreements**

990	O	Division between railways of the financial consequences in the event of injury or damage occurring during the course of tests	4th edition of 1.1.74 (This Leaflet may be viewed in full by UIC Members only)
991	O	Responsibility of the operating railway for injury caused to railway staff and to members of their family while travelling	2nd edition of 1.1.74 (This Leaflet may be viewed in full by UIC Members only)
992	O	Apportionment between railway undertakings (RU) of compensation for damage or injury resulting from the use or running of privately owned wagons	9th edition, January 2004
993	R	Specimen agreement governing the reciprocal use of service marks without charge	1st edition of 1.3.86

#### **9a: Information Technology, Miscellaneous : Reports**

INF 1/84	I	Rules to be followed when implementing computer projects: preliminary analysis (Report A), conceptual analysis and invitation to tender (Report B), decision for implementation (Report C), commissioning and maintenance	May 1984
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#### **93: Information Technology, Miscellaneous : Exchange of Energy consumption data**

930	R	Exchange of data for cross-border railway energy settlement	1st edition, September 2009 - Original
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SUSTRAIL 2.1.1 TSI and Standards Summary:- Table A.07

**Applicable standards in CR Control-Command and Signalling TSI (2006/679/EC)**

<i>Standards or other documents referred to in the CR Control-Command and Signalling TSI (and therefore mandatory)</i>		
<b>TSI Sections</b>	<b>Characteristics</b>	<b>Mandatory Specifications or Standards</b>
4.2.16	Visibility of track-side Control-Command objects	Reserved 06E068 ETCS marker board definition
4.3.2.5 Index A4	Interface to the Subsystem Rolling Stock: Physical environmental conditions	EN 50125-1: 1999 Railway applications – Environmental conditions for equipment – Part 1: equipment on board rolling stock
4.3.2.6 Index A6	Electromagnetic Compatibility between Rolling Stock and Control Command On-Board equipment	EN 50121-3-2: 2000 Railway applications – Electromagnetic compatibility - Part 3-2: Rolling stock – Apparatus
4.3.3.3 Index A5	Interfaces to Subsystem Infrastructure: Physical environmental conditions	EN 50125-3: 2003 Railway applications – Environmental conditions for equipment – Part 3: equipment for signalling and telecommunications
4.3.3.4 Index A7	Interfaces to Subsystem Infrastructure: Electromagnetic Compatibility	EN 50121-4: 2000 Railway applications - Electromagnetic compatibility - Part 4: Emission and immunity of the signalling and telecommunications apparatus
4.3.3.4 Index A6	Interfaces to Subsystem Infrastructure: Electromagnetic Compatibility	EN 50121-3-2: 2000 Railway applications – Electromagnetic compatibility - Part 3-2: Rolling stock – Apparatus
4.3.4.1. Index A7	Interfaces to Subsystem Energy: Electromagnetic Compatibility:	EN 50121-4: 2000 Railway applications - Electromagnetic compatibility - Part 4: Emission and immunity of the signalling and telecommunications apparatus
4.3.4.1. Index A6	Interfaces to Subsystem Energy: Electromagnetic Compatibility:	EN 50121-3-2: 2000 Railway applications – Electromagnetic compatibility - Part 3-2: Rolling stock – Apparatus
6.1.2 Index A1	Interoperability constituents: Modules	EN 50126: 1999 Railway applications – The specification and demonstration of reliability, availability, maintain-ability and safety (RAMS) Part 1: Basic requirements and generic process Part 2: Guide to the application of EN 50126-1 for safety (CLC/TR) Part 3: Guide to the application of EN 50126-1 for rolling stock RAM (CLC/TR)
6.1.2 Index A2	Interoperability constituents: Modules	EN 50128: 2001 Railway applications – Communication, signalling and processing systems – Software for railway control and protection systems
6.1.2 Index A3	Interoperability constituents: Modules	EN 50129: 2003 Railway applications – Communication, signalling and processing systems – Safety related electronic systems for signalling
6.2.2.3 Index A1	Modules: Conditions for use of Modules for on-board and trackside Assemblies	EN 50126: 1999 Railway applications – The specification and demonstration of reliability, availability, maintain-ability and safety (RAMS)

6.2.2.3 Index A2		EN 50128: 2001 Railway applications – Communication, signalling and processing systems – Software for railway control and protection systems
6.2.2.3 Index A3		EN 50129: 2003 Railway applications – Communication, signalling and processing systems – Safety related electronic systems for signalling
ANNEX C List, N° 9 Index A8	List of specific technical characteristics and the requirements associated with an interoperable line and with an interoperable train	EN 50238: 2003 Railway applications – Compatibility between rolling stock and train detection systems
(ref to EN 50238)	Susceptibility of track-side C/C equipment to emission from trains in terms of EMC Electromagn. emission of the train with respect to admission of the trains in terms of EMC	Parts added: Part 2: Compatibility with track circuits Part 3: Compatibility with axle counters (version 2003 will become Part 1)
ANNEX C List, N° 10 Index A5	Climatic conditions and physical conditions along the line	EN 50125-3: 2003 Railway applications – Environmental conditions for equipment – Part 3: equipment for signalling and telecommunications
ANNEX C List, N° 10 Index A4	Climatic conditions and physical conditions in which the on-board assembly can work	EN 50125-1: 1999 Railway applications – Environmental conditions for equipment – Part 1: equipment on board rolling stock

***Standards or other documents not referred in the CR Control-Command and Signalling TSI (and therefore voluntary)***

*The list of voluntary standards is available in Annex A of CCS TSI as modified by Commission Decision*



SUSTRAIL 2.1.1 TSI and Standards Summary:- Table A.08

**Applicable standards in CR Operation TSI (2006/920/EC)**

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***Standards or other documents referred to in the CR operation TSI (and therefore mandatory)***

<b>TSI Sections</b>	<b>Characteristics</b>	<b>Mandatory Specifications or Standards</b>
Annex P14.	Letter marking for special vehicles	EN 14033-1 Railway applications – Track – Technical requirements for railbound construction and maintenance machines – Part 1: Running of railbound

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SUSTRAIL 2.1.1 TSI and Standards Summary:- Table A.09

**Applicable standards in CR Rolling stock - Freight wagons TSI (2006/861/EC)**

<b>Standards or other documents referred to in the rolling stock- freight wagons TSI (and therefore mandatory)</b>		
<b>TSI Sections</b>	<b>Characteristics</b>	<b>Mandatory Specifications or Standards</b>
4.2.2.3.1	General Annex ZZ Structures and mechanical parts, Permissible stress based on elongation criteria	EN 12663:2000 Railway applications - Structural requirements of railway vehicle bodies Section 3 and 5 Clauses 3.4 and 3.6 + clause 3.4.3
4.2.2.3.2.1	Longitudinal Design Loads Annex Z Structures and mechanical parts, Impact (Buffing) test	EN 12663:2000 Railway applications - Structural requirements of railway vehicle bodies Clause 3.4 + Tables 1-4
4.2.2.3.2.2	Maximum Vertical Load	EN 12663:2000 Railway applications - Structural requirements of railway vehicle bodies Table 8
4.2.2.3.2.3	Load combinations	EN 12663:2000 Railway applications - Structural requirements of railway vehicle bodies 3.4 +4.4
4.2.2.3.2.4	Lifting and Jacking	EN 12663:2000 Railway applications - Structural requirements of railway vehicle bodies 4.3.2 + Tables 9-10
4.2.2.3.2.5	Equipment Attachment (Including body/bogie) -Annex Z	EN 12663:2000 Railway applications - Structural requirements of railway vehicle bodies Tables 12-14 of Section 4.5
4.2.2.3.2.6	Other Exceptional Loads Annex Y	EN 12663:2000 Railway applications - Structural requirements of railway vehicle bodies
4.2.2.3.3.1	Sources of load input. Annex N ; Annex CC;	EN 12663:2000 Railway applications - Structural requirements of railway vehicle bodies
4.2.2.3.3.2	Demonstration of fatigue strength Annex N	EN 12663 :2000 Railway applications - Structural requirements of railway vehicle bodies Clause 4.6 + 5.2 + 6.3 + Table 16
4.2.2.6	Dangerous goods	EN 12972:2001 Tanks for transport of dangerous goods - Testing, inspection and marking of metallic tanks
4.2.2.6.3	Additional legislation applicable to tanks	EN 12972 :2001 Tanks for transport of dangerous goods - Testing, inspection and marking of metallic tanks
4.2.2.6.4	Maintenance rules	EN 12972 :2001 Tanks for transport of dangerous goods - Testing, inspection and marking of metallic tanks
4.2.4.1.2.7	Air-supply	ISO 8573 Compressed air
4.2.4.1.2.8	Parking brake	EN 60721-3-5:1997 Classification of environmental conditions Part 3: Classification of groups of environmental parameters and their severities Section 5: Ground vehicle installations
4.2.5.2.2.	Communication Information between ground and vehicle	ISO 18000-6 :2004 Information technology -- Radio frequency identification for item management -- Part 6: Parameters for air interface communications at 860 MHz to 960 MHz
4.2.6.1.2.8		EN 60721-3-5:1997 Classification of environmental conditions Part 3: Classification of groups of environmental parameters and their severities
6.2.3.4.1.1.	Resistance to pollution	Section 5: Ground vehicle installations

		EN 50355: 2003 Railway applications - Railway rolling stock cables having special fire performance - Thin wall and standard wall - Guide to use.
	Fire safety	EN ISO 4589-2: 1999 Plastics - Determination of burning behaviour by oxygen index - Part 2: Ambient-temperature test (ISO 4589-2:1996)
4.2.7.2.2.2	Thermal insulation	EN ISO 5659-2: 1998 Plastics - Smoke generation - Part 2: Determination of optical density by a single-chamber test EN 1363-1: 1999 Fire resistance tests - Part 1: General requirements
4.2.7.2.2.3	Design Rules	ISO 5658-2: 1996 Reaction to fire tests -- Spread of flame -- Part 2: Lateral spread on building products in vertical configuration
4.2.7.2.2.4	Material requirement	EN 1363-1:1999 Fire resistance tests - Part 1: General requirements EN ISO 4589-2: 1999 Plastics - Determination of burning behaviour by oxygen index - Part 2: Ambient-temperature test (ISO 4589-2:1996) EN ISO 5659-2: 1998 Plastics - Smoke generation - Part 2: Determination of optical density by a single-chamber test ISO 5658-2: 1996 Reaction to fire tests -- Spread of flame -- Part 2: Lateral spread on building products in vertical configuration
6.2.3.2.3.	Measuring the freight wagons	EN 13775-1-2-3:2003 Railway applications - Measuring of new and modified freight wagons - Part 1: Measuring principles prEN 13775- 4-5- 6
Annex C	Vehicle track interaction and gauging Kinematic Gauge 2.2.6. Coefficient of flexibility	Railway applications - Measuring of new and modified freight wagons - Part 4: Bogies with 2 wheelsets UIC 505-5 ( for flexibility coefficient calculation ratio )
Annex H	Infrastructure and rolling stock register Rolling Stock register Requirements for the Freight Wagon Register	UIC 438-2 Identification marking for freight rolling stock
L.1.4.2.2	Decision criteria	EN 13262 :2004 Railway applications - Wheelsets and bogies - Wheels - Product requirements EN 13979-1:2003 Railway applications - Wheelsets and bogies - Monobloc wheels - Technical approval procedure
L.1.4.3.2	Wheel fracture bench test procedure	EN 13262: 2004 Railway applications - Wheelsets and bogies - Wheels - Product requirements EN 13979-1:2003 Railway applications - Wheelsets and bogies - Monobloc wheels - Technical approval procedure
L.2.2.1	Impact test characteristics	EN 10045 -1:1990 Metallic materials - Charpy impact test - Part 1: Test method

L.2.3.1	Micrographic cleanliness	ISO 4967 Steel -- Determination of content of nonmetallic inclusions -- Micrographic method using standard diagrams
L.2.6 Table L9	Geometrical tolerances	ISO 1101 Geometrical Product Specifications (GPS) -- Geometrical tolerancing -- Tolerances of form, orientation, location and run-out
M.2.2	Microstructure characteristics	ISO 643 Steels -- Micrographic determination of the apparent grain size
M.2.3	Material micrographic cleanliness	ISO 4967 Steel -- Determination of content of nonmetallic inclusions -- Micrographic method using standard diagrams
M.2.6.3	Geometrical and dimensional tolerances	EN 22768-2:1993 General tolerances - Part 2: Geometrical tolerances for features without individual tolerance indications
Module D:	Production quality management system 3. Quality management system	EN ISO 9001: 2000 Quality management systems – Requirements
Annex W	Specific cases Kinematic gauge Finland, static gauge FIN1 W.7. Rules and later instructions 7.1.	UIC 505-1 or 506 Rules governing application of the enlarged GA, GB, GB1, GB2, GC and GI3 gauges . UIC 507( for the lower part) Wagons - Conditions governing wagons conveyed on ferries
Annex AA	Assessment procedures Modules for the EC verification of subsystems 5.4 Quality management system	EN ISO 9001: 2000 Quality management systems – Requirements
Annex KK	Infrastructure and RST register	EN 13848 -1: 2003 Railway applications - Track - Track geometry quality - Part1: Characterisation of track geometry
<b><i>Standards or other documents not referred in the rolling stock –freight wagons TSI (and therefore voluntary)</i></b>		
<b>TSI sections</b>	<b>Interoperability constituents</b>	<b>Relevant standards or other documents</b>
4.2.2.1.2.1 6.1.3.1.1	Buffers	prEN 15551 Railway applications - Railway rolling stock - Buffers
4.2.2.1.2.2 6.1.3.1.2	Draw gear	prEN 15566 Railway applications - Railway rolling stock - Draw gear and screw coupling
4.2.2.1.2.3	Interaction of draw and buffing gear	prEN 15551 Railway applications - Railway rolling stock - Buffers prEN 15566 Railway applications - Railway rolling stock - Draw gear and screw coupling
4.2.2.2	Safe access and egress for RST	UIC 521 Coaches and vans, wagons, tractive stock - Clearance to be provided at vehicle extremities UIC 535-2 Standardisation and positioning on wagons of steps, end platforms, gangways, handrails, tow hooks, automatic coupler (AC), automatic draw-on coupling and brake valve controls on the UIC member RUs and OSJD member Rus
4.2.2.3	Strength of Main Vehicle structure and Securing of Freight	prEN 15663 Railway applications - Definition of vehicle reference masses

4.2.2.3.4.2	Modes of vibration	EN 14363:2005 Railway applications – Testing for the acceptance of running characteristics of railway vehicles – Testing of running behaviour and stationary tests
4.2.2.3.4.3	Torsional stiffness	EN 14363: 2005 Railway applications – Testing for the acceptance of running characteristics of railway vehicles – Testing of running behaviour and stationary tests)
4.2.2.3.5	Securing of freight	UIC-577 Wagon stresses UIC- 571-4 Standard wagons - Wagons for combined transport - Characteristics EN 12663-2 Railway applications - Structural requirements of railway vehicle bodies
4.2.2.4	Doors closing and locking	prEN 15663 Railway applications - Definition of vehicle reference masses
4.2.2.5		
6.1.3.1.3	Marking of freight wagons	Appendix 11 - GCU
4.2.2.6	Dangerous goods	EN 12972:2007 Tanks for transport of dangerous goods - Testing, inspection and marking of metallic tanks
4.2.2.6.3	Additional legislation applicable to tanks	EN 12972:2007 Tanks for transport of dangerous goods - Testing, inspection and marking of metallic tanks
4.2.2.6.4	Maintenance rules	EN 12972:2007 Tanks for transport of dangerous goods - Testing, inspection and marking of metallic tanks
4.2.3.1	Kinematic gauge	UIC 505-1 Railway transport stock - Rolling stock construction gauge
4.2.3.2	Static axle load and linear load	EN 15528:2008 Railway applications - Line categories for managing the interface between load limits of vehicles and infrastructure prEN 15663 Railway applications - Definition of vehicle reference masses
4.2.3.3.1	Electrical resistance	UIC 533 Protection by the earthing of metal parts of vehicles
4.2.3.3.2	HABD	pr EN 15437-1 Railway applications - Axlebox condition monitoring - Interface and design requirements - Part 1: Track side equipment and rolling stock axlebox
4.2.3.4.2.1		EN 14363:2005 Railway applications - Testing for the acceptance of running characteristics of railway vehicles - Testing of running behaviour and stationary tests
6.2.3.2.1		UIC 432 Wagons. Running speeds. Technical conditions to be observed
6.2.3.2.2	Safety against derailment and running stability	prEN 15663 Railway applications - Definition of vehicle reference masses
4.2.3.4.2.2	On twisted tracks	EN 14363:2005 Railway applications - Testing for the acceptance of running characteristics of railway vehicles - Testing of running behaviour and stationary tests UIC 530-2 Wagons - Running safety

4.2.3.4.2.3	Wheelset dimensions and tolerances for standard gauge Maintenance rules	prEN 15313 Railway applications - In-service wheelset operation requirements - In-service and off-vehicle wheelset maintenance
4.2.3.5	Longitudinal compressive forces	EN 14363:2005 Railway applications - Testing for the acceptance of running characteristics of railway vehicles - Testing of running behaviour and stationary tests prEN 15839 Railway applications - Testing for the acceptance of running characteristics of railway vehicles - Freight wagons - Testing of running safety under longitudinal compressive forces UIC 530-2 Wagons - Running safety
	Wheel slide protection	prEN 15595 Railway applications - Braking - Wheel slide protection
	Methods for calculation of stopping distances and slowing distances and immobilization braking – Part 6: Step by step calculations for train sets or single vehicles	prEN14531-6 Railway applications - Methods for calculation of stopping and slowing distances and immobilisation braking - Part 6: High Speed Trains EN 15220-:2008 Railway applications - Brake indicators - Part 1: Pneumatically operated brake indicators
4.2.4.1.2.6	Brake indicators – Part 1 pneumatically operated brake indicators	prEN 15595 Railway applications - Braking - Wheel slide protection
4.2.4.1.2.8	Wheel Slide Protection	prEN 14531-6 Railway applications - Methods for calculation of stopping and slowing distances and immobilisation braking - Part 6: High Speed Trains
4.2.6.2	Parking brake Aerodynamic effects Requirements and test procedures for aerodynamics in tunnels	EN 14067 – 5: 2006 Railway applications - Aerodynamics - Part 5: Requirements and test procedures for aerodynamics in tunnels
4.2.7.2.2.2	Fire safety Thermal insulation	EN ISO 5659-2:2006 supersede 1998 version Plastics - Smoke generation - Part 2: Determination of optical density by a single-chamber test
4.2.7.2.2.4	Material requirement	EN ISO 5659-2:2006 supersede 1998 version Plastics - Smoke generation - Part 2: Determination of optical density by a single-chamber test
4.2.7.3.2.1	Electrical protection Freight wagon	UIC 533 Protection by the earthing of metal parts of vehicles
4.2.7.3.2.2	electrical equipement bonding	EN 50153 Railway applications. Rolling stock. Protective provisions relating to electrical hazards
4.2.7.4.1	Fixing of tail lamps – General	UIC 532 Trailing stock - Signal lamp brackets -
4.2.7.4.2	Functional and technical specifications	Coaches - Fixed electric signal lamps

		UIC 512 Rolling stock - Conditions to be fulfilled in order to avoid difficulties in the operation of track circuits and treadles EN 15528:2008 Railway applications - Line categories for managing the interface between load limits of vehicles and infrastructure prEN 15663 Railway applications - Definition of vehicle reference masses
4.3.2.1	Static axle load	
4.3.2.3	RST parameters which influence ground based train monitoring system	UIC 512 Rolling stock - Conditions to be fulfilled in order to avoid difficulties in the operation of track circuits and treadles
4.3.3.1	Interface between vehicles, between sets of vehicles and between trains	UIC 521 Coaches and vans, wagons, tractive stock - Clearance to be provided at vehicle extremities
4.3.3.4	Marking of freight wagons	UIC 438 – 2 Identification marking for freight rolling stock
4.3.3.12	Emergency Measures	UIC 581 Wagons - Lifting - Rerailing
4.3.8	Conventional rail noise	prEN 15313 Railway applications - In-service wheelset operation requirements - In-service and off-vehicle wheelset maintenance
5.4.1.1.	Buffers	pr EN 15551 Railway applications - Railway rolling stock - Buffers
5.4.1.2.	Draw Gear	prEN 15566 Railway applications - Railway rolling stock - Draw gear and screw coupling
5.4.1.3.	Decals for Markings	Appendix 11 of the GCU
5.4.2.	Vehicle track interaction and gauging	EN 14363:2005 Railway applications - Testing for the acceptance of running characteristics of railway vehicles - Testing of running behaviour and stationary tests

		<p>EN 13749:2005 Railway applications – Wheelsets and bogies – Methods of specifying structural requirements for bogies frames</p> <p>EN 13597: 2003 Railway applications - Rubber suspension components - Rubber diaphragms for pneumatic suspension springs</p> <p>EN 13802: 2004 Railway applications - Suspension components - Hydraulic dampers</p> <p>EN 13913: 2003 Railway applications - Rubber suspension components - Elastomer-based mechanical parts</p> <p>EN 14817: 2006 Railway applications - Suspension components - Air spring control elements</p> <p>EN 14200: 2004 Railway applications - Suspension components - Parabolic springs, steel</p> <p>EN 14363: 2005 Railway applications – Testing for the acceptance of running characteristics of railway vehicles – Testing of running behaviour and stationary tests</p> <p>EN 15049 : 2007 Railway applications - Suspension components - Torsion bar, steel</p> <p>EN 12080 :2007 Railway applications - Axleboxes - Rolling bearings</p> <p>EN 12081:2007 Railway applications - Axleboxes - Lubricating greases</p> <p>EN 12082:2007 Railway applications - Axleboxes - Performance testing</p> <p>prEN 14865-1</p>
5.4.2.1	<p>Bogie and Running Gear Annex Y Interoperability constituents: Bogies and running gear</p>	
5.4.2.2	Wheelsets	<p>EN 13260:2003 Railway applications - Wheelsets and bogies - Wheelsets - Products requirements</p> <p>EN 13715: 2006 Railway applications - Wheelsets and bogies - Wheels - Wheels</p>
5.4.2.3	Wheels	<p>EN 13262:2004 Railway applications - Wheelsets and bogies - Wheels - Product requirements</p> <p>EN 13979-1:2003 Railway applications - Wheelsets and bogies - Monobloc wheels - Technical approval procedure - Part 1: Forged and rolled wheels</p>
5.4.2.4	Axles	<p>EN 13261:2003 Railway applications - Wheelsets and bogies - Axles - Product requirements</p> <p>EN 13103:2001 Railway applications - Wheelsets and bogies - Non-powered axles - Design method</p>



		EN 14601:2005 Railway applications - Straight and angled end cocks for brake pipe and main reservoir pipe
		EN 14535-1:2005 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
		prEN 14535-2 prEN 15355 Railway applications - Braking - Distributor valves and distributor-isolating devices
		EN 15611:2008 Railway applications - Braking - Relay valves
		EN 15612:2008 Railway applications - Braking - Brake pipe accelerator valve
		EN 15624:2008 Railway applications - Braking - Empty-loaded changeover devices
5.4.3.1-12	Interoperability constituents	EN 15625:2008 Railway applications - Braking - Automatic variable load sensing devices
6.1.3.1.1	Specifications for assesement Buffers	pr EN 15551 Railway applications - Railway rolling stock - Buffers
6.1.3.1.2	Draw gear	prEN 15566 Railway applications - Railway rolling stock - Draw gear and screw coupling
6.1.3.1.3	Marking of freight wagons	Appendix 11 of the GCU prEN 15877 Railway applications - Marking on railway vehicles - Freight wagons
		EN 14363:2005 Railway applications - Testing for the acceptance of running characteristics of railway vehicles - Testing of running behaviour and stationary tests
6.1.3.2	Vehicle track interaction and gauging	UIC 510 -3 Wagons - Strength testing of 2 and 3- axle bogies on test rig
6.2.3.2.1.1.	Application of the partial type approval procedure .	UIC 518 Testing and approval of railway vehicles from the point of view of their dynamic behaviour - Safety - Track fatigue - Ride quality
		UIC 518 Testing and approval of railway vehicles from the point of view of their dynamic behaviour - Safety - Track fatigue - Ride quality
6.2.3.2.1.2.	Certification of new wagons	EN 14363:2005 Railway applications - Testing for the acceptance of running characteristics of railway vehicles - Testing of running behaviour and stationary tests
	Exemptions from dynamic behaviour test for wagons built or converted to run up to 100 km/h or 120 km/h	
6.2.3.2.1.3.		UIC 432 Wagons. Running speeds. Technical conditions to be observed
6.2.3.2.2.	Longitudinal compressive forces for freight wagons with side buffers	UIC 530-2 Wagons - Running safety
6.2.3.2.3.	Measuring the freight wagons	EN 13775 - 4 - 5-6: 2004 Railway applications - Measuring of new and modified freight wagons - Part 4: Bogies with 2 wheelsets
Annex I	(Interfaces of braking interoperability constituents)	EN 14601:2005 Railway applications - Straight and angled end cocks for brake pipe and main reservoir pipe

		EN 14601:2005 Railway applications - Straight and angled end cocks for brake pipe and main reservoir pipe
		prEN 15355 Railway applications - Braking - Distributor valves and distributor-isolating devices
		EN 15611:2008 Railway applications - Braking - Relay valves
		EN 15612:2008 Railway applications - Braking - Brake pipe accelerator valve
		EN 15624:2008 Railway applications - Braking - Empty-loaded changeover devices
Annex P	(Braking performance, Assessment of interoperability constituents)	EN 15625:2008 Railway applications - Braking - Automatic variable load sensing devices
Annex L	Vehicle track interaction and gauging	EN 13715:2006 Railway applications - Wheelsets and bogies - Wheels - Wheels
		EN 13103:2001 Railway applications - Wheelsets and bogies - Non-powered axles - Design method
		EN 13260:2003 Railway applications - Wheelsets and bogies - Wheelsets - Products requirements
		EN 13261:2003 Railway applications - Wheelsets and bogies - Axles - Product requirements
		EN 13262 :2004 Railway applications - Wheelsets and bogies - Wheels - Product requirements
Wheels Annex M axle	Wheels	prEN 15313 Railway applications - In-service wheelset operation requirements - In-service and off-vehicle wheelset maintenance
Module D:	Production quality management system 3. Quality management system	New version is foreseen by end of 2008
Annex AA	Assessment procedures Modules for the EC verification of subsystems 5.4 Quality management system	New version is foreseen by end of 2008
Annex KK	Infrastructure and RST register	EN 13848 -1: 2003 Railway applications - Track - Track geometry quality

SUSTRAIL 2.1.1 TSI and Standards Summary:- Table A.10

**Applicable standards in TSI for noise aspects of conventional rolling stock (2006/66/EC)**

<b><i>Standards or other documents referred to in the Noise TSI (and therefore mandatory)</i></b>		
<b>TSI Sections</b>	<b>Characteristics</b>	<b>Mandatory Specifications or Standards</b>
4.2.1.1. 4.2.2.4	Limits for pass-by noise	prEN ISO 3095:2001 Railway applications - Acoustics - Measurement of noise emitted by rail bound vehicles
4.2.1.2.	Limits for stationary noise	prEN ISO 3095:2001 Railway applications - Acoustics - Measurement of noise emitted by rail bound vehicles - Chapter 7.5
4.2.2.2	Limits for stationary noise	prEN ISO 3095:2001 Railway applications - Acoustics - Measurement of noise emitted by rail bound vehicles
4.2.2.3	Limits for starting noise	prEN ISO 3095:2001 Railway applications - Acoustics - Measurement of noise emitted by rail bound vehicles
Annex A1.	Deviations from prEN ISO 3095:2001	prEN ISO 3095:2001 Railway applications - Acoustics - Measurement of noise emitted by rail bound vehicles
Annex A.2.2.	Measurement system	EN ISO CEI 17025:2000 General requirements for the competence of testing and calibration laboratories
Annex A.2.4.	Test report	EN ISO 3740:2000 Acoustic — Determination of sound power levels of noise sources — Guidelines for the use of basic standards. IEC 60263 Scales and sizes for plotting frequency characteristics and polar diagrams
<b><i>Standards or other documents not referred to in the Noise TSI (and therefore voluntary)</i></b>		
<b>TSI sections</b>	<b>Interoperability constituents</b>	<b>Relevant standards or other documents</b>
4.2.1. 4.2.1.1. 4.2.2. 4.2.2.4	Noise emitted by freight wagons Limits for pass-by noise Noise emitted by locomotives, multiple units and coaches Reference track for pass-by noise Measuring Conditions	EN ISO 3381:2005 Railway applications - Acoustics - Measurement of noise inside rail bound vehicles
ANNEX A A.1.4. A.2. A.2.1	Reference Track for pass-by noise Characterisation of the dynamic performances of the reference tracks Measurement procedure	EN 15461:2008 Railway applications - Noise emission - Characterisation of the dynamic properties of track sections for pass by noise measurements

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4.2.1.	Noise emitted by freight wagons	
4.2.1.1.	Limits for pass-by noise	
4.2.2.	Noise emitted by locomotives, multiple units and coaches	
4.2.2.4.	Limits for pass-by noise	prEN 15610:2008 Railway applications - Noise emission - Rail roughness measurement related to rolling noise generation
ANNEX A	Measuring Conditions Reference	
A.1.4.	Track for pass-by noise	

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SUSTRAIL 2.1.1 TSI and Standards Summary:- Table A.11

**Applicable standards in TSI on Safety in Railway Tunnels in the trans-European conventional and high-speed rail system (2008/163/EC)**

<i>Standards or other documents referred to in the Safety in Railway Tunnels TSI (and therefore mandatory)</i>		
<b>TSI Sections</b>	<b>Characteristics</b>	<b>Mandatory Specifications or Standards</b>
1.1.3		prEN 45545-1 TS 45545-1: Railway applications/Fire protections on railway vehicles – part1: General
4.2.5.3.2.	Driver's protection	EN 1363-1:1999 Fire resistance tests, Part 1: General requirements
4.2.2.4.	Fire safety requirements for building material	EN 13501-1:2002 Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests
4.2.2.9	Escape signage	ISO 3864-1 Graphical symbols -- Safety colours and safety signs -- Part 1: Design principles for safety signs in workplaces and public areas
4.2.3.4.	Requirements for electrical cables in tunnels	EN 50267-2-1:1998 Common test methods for cables under fire conditions - Tests on gases evolved during combustion of materials from cables - Part 2-1: Procedures - Determination of the amount of halogen acid gas.
		EN 50268-2:1999 Common test methods for cables under fire conditions. Measurement of smoke density of cables burning under defined conditions Part 2: Procedure.
		EN 50268-2:1999 Common test methods for cables under fire conditions. Measurement of smoke density of cables burning under defined conditions Part 2: Procedure.
6.2.8.2	Self-rescue device	EN 401:1994 Respiratory protective devices for self-rescue. – Self-contained closed-circuit breathing apparatus – Chemical oxygen escape apparatus – Requirements, testing, marking
		EN 402:2003 Respiratory protective devices for escape – Self-contained open-circuit compressed air breathing apparatus with full face mask or mouthpiece assembly - Requirements, testing, marking
		EN 403:2004 Respiratory protective devices for self-rescue – Filtering devices with hood for self rescue from fire - Requirements, testing, marking

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***Standards or other documents not referred to in the Safety in Railway Tunnels TSI (and therefore voluntary)***

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<b>TSI sections</b>	<b>Interoperability constituents</b>	<b>Relevant standards or other documents</b>
General	Recommended measures for safety in new and existing tunnels. Covers the subsystems of infrastructure, energy, rolling stock and operation.	UIC leaflet 779-9 R :2003 Safety in Railway Tunnels UNECE document TRANS/AC.9/09:2003

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SUSTRAIL 2.1.1 TSI and Standards Summary:- Table A.12

## GB National Standards - Railway Group and Network Rail Company Standards

<b>Railway Group Standards etc for Freight trains</b>	
GM/RT2100: Issue 4, Dec 2010	Requirements for rail vehicle structure
GM/GN2688 Issue 1, Dec 2010	Guidance note on the structural design of rail freight wagons including rail tank wagons
GM/RT2142 Issue 3, June 2009	Resistance of Railway vehicles to Roll-over in gales
BS 8535:2011	Railway applications. Wheelsets and bogies. Powered and non-powered axles with inboard bearings. Design method
GM/RT2043 Issue 2, June 2011	Braking systems performance and acceptance for freight trains
GN/RT 2000	Engineering Acceptance
RIS-2702-RST: Issue 1, June 2011	Rail Industry Standard for In-Service Examination and Reference Limits for Freight Wagons
GM/RT2466 Issue 3, Feb 2010	Railway Wheelsets
<b>Rail Track and Infrastructure</b>	
NR/L2/TRK/001/A01 Issue 04 Dec 2009	Inspection and maintenance of permanent way – Inspection
NR/L1/TRK/002 Issue 1 March 2011	Categorisation of Track – includes cost of running freight vehicles.
NR/L1/CIV/032, Issue 2 September 2009	The management of structures
NR/L3/CIV/006/1C, Issue 4, December 2010	Handbook for the examination of Structures; Part 1C: Risk categories and examination Intervals
NR/L2/TRK 0053 Issue 5, August 2008	Inspection and repair to reduce the risk of derailment at switches
NR/L2/TRK 2049 Issue 12, March 2010	NR/L2/TRK 2049 Issue 12, March 2010 Track Design Handbook
NR/L2/TRK 8006 Issue 2, August 2008	Installation and management of rail mounted lubricators
NR/L2/TRK 8100 Issue 4 June 2009	Railway Ballast and Stoneblower aggregate
NR/SP/TRK/029 Issue 4 Dec 2005	Wood sleepers, bearers and longitudinal sleepers
NR/SP/TRK/030 Issue 2 Aug 2003	Concrete Sleepers and bearers
NR/SP/TRK/9039 Issue 1 Dec 2005	Formation treatments
GC/RT5021 Issue 2 Oct 2003	Track System requirements
NR/L2/TRK/001 and issued 28 August 2008	Inspection and Maintenance of Permanent Way”

## British Standards section: 45 - Railway engineering - Non-EN standards:

### 45.020 - Railway engineering in general

British Standard Number	Status	Relevance to SUSTRAIL	Name of Standard
BS 376-1:1951	Full	None	Railway signalling symbols — Part 1: Schematic symbols
BS 376-2:1954	Full	None	Railway signalling symbols — Part 2: Wiring symbols and written circuits
Draft BS 376-1 DPC: 11 / 30244342 DC	Draft for Public Comment	None	Draft BS 376-1 Railway signalling symbols - Part 1: Specification for schematic symbols

### 45.040 - Materials and components for railway engineering

British Standard Number	Status	Relevance to SUSTRAIL	Name of Standard
BS 8535:2011	Full	Medium	Railway applications. Wheelsets and bogies. Powered and non-powered axles with inboard bearings. Design method
BS 714:1950	Full	None	Specification for Cartridge fuse-links for use in railway-signalling circuits
BS 442:1950	Full	None	Specification for Terminals — For electrical apparatus — For railway signalling purposes
BS 519:1950	Full	None	Specification for Tractive armature direct current neutral-polar line relays for railway signalling
BS 561:1951	Full	None	Specification for Alternating-current line relays double-element 3-position (for railway signalling)
BS 581:1950	Full	None-Low	Specification for Electrically-driven — Point-operating machines for railways
BS 1659:1950	Full	None	Specification for Tractive armature direct current neutral track and line relays for railway signalling
BS 1745:1951	Full	None	Specification for Alternating-current relays for railway signalling — Track relays (double-element, 2-position) — Line relays (single-element, 2-position)
BS 3347:1961	Full	None	Specification for Capacitors for railway signalling track circuits
BS 3682-2: 1969	Full	None	Railway brake hose — Part 2: Specification for vacuum brake hose



BS 3710:1964	Full	High	Specification for Brake hose couplings for locomotives and rolling stock
BS 3818:1964	Full	None-Low	Specification for Self-sealing fuelling couplings for diesel locomotives and diesel railcars
BS 5892-2: 1992	Full	High	Railway rolling stock materials — Part 2: Specification for forged and rolled wheel centres
BS 5892-4: 1992	Full	High	Railway rolling stock materials — Part 4: Specification for forged and rolled tyres
BS 3682-1: 1994	Full	High	Railway brake hose — Part 1: Specification for compressed air brake hose
BS 3711:1964	Full	None	Specification for Railway vacuum brake cylinders — Rolling ring type
BS 469:1995	Full	Low	Specification for Railway signalling lamps
BS 5892-6: 1992	Full	High	Railway rolling stock materials —Part 6: Specification for wheelsets for traction and trailing stock
Draft BS EN 16028 DPC: 09/30168502 DC	Draft for Public Comment	None-Low	Draft BS EN 16028 Railway applications - Wheel/rail friction management - Lubricants for trainborne and trackside applications
BS 5892-5: 1987+A2:2008	Full	High	Railway rolling stock material (metric) —Part 5: Specification for steel bars for retaining rings for tyred wheels
BS 5892-3: 1992+A2:2009	Full	High	Railway rolling stock materials — Part 3: Specification for monobloc wheels for traction and trailing stock
BS 5892-1: 1992+A3:2009	Full	High	Railway rolling stock materials — Part 1: Specification for axles for traction and trailing stock
Draft BS 5892-8	Draft for Public Comment	Medium	Draft BS 5892-8 Railway applications - Wheelsets and bogies - Powered and non-powered wheelsets with inboard bearings - Product requirements

## 45.060 - Railway rolling stock

<b>British Standard Number</b>	<b>Status</b>	<b>Relevance to SUSTRAIL</b>	<b>Name of Standard</b>
DPC: 11 / 30206274 DC	Draft	None	Draft BS EN 60349-4 Electric traction Rotating electrical machines for rail and road vehicles Part 4: Permanent magnet synchronous electrical machines connected to an electronic converter
BS 5842:1980	Full	None-Low	Thermoplastic hose assemblies for dock, road and tanker use
BS ISO 10326-2:2001	Full	None	Mechanical vibration — Laboratory method for evaluating vehicle seat vibration — Part 2: Application to railway vehicles
BS 6853:1999	Full	None	Code of practice for fire precautions in the design and construction of passenger carrying trains

BS 857:1967 + A1, A2, A3, A4, & A5	Full	None	Specification for Safety glass for land transport
BS 6853+A2	Draft	None	Draft BS 6853+A2 Code of practice for fire precautions in the design and construction of passenger carrying trains
BS IEC 62718	Draft	None-Low	Draft BS IEC 62718 Railway applications - Rolling stock - D.C. supplied electronic ballasts for lighting fluorescent lamps

## 45.080 - Rails and railway components

<b>British Standard Number</b>	<b>Status</b>	<b>Relevance to SUSTRAIL</b>	<b>Name of Standard</b>
BS 456:1961	Full	Low	Specification for Dimensions of track circuit insulation
BS 4521-1.1: 1971	Full	Low	Specification for Railway turnouts for private users — Part 1: Turnouts over which British Railways locomotives operate — Section 1.1: Turnouts using bull head rails
BS 4521-1.2: 1971	Full	Low	Specification for Railway turnouts for private users — Part 1: Turnouts over which British Railways locomotives operate — Section 1.2: Turnouts using flat bottom rail
BS 4521-2: 1975	Full	None-Low	Specification for Railway turnouts for private users — Part 2: Light grade turnouts over which British Railways locomotives do not operate, for axle loads not exceeding 10 tons, using flat bottom rails
BS 4521-3.1: 1974	Full	None-Low	Specification for Railway turnouts for private users — Part 3: Medium grade turnouts for axle loads not exceeding 25 tons — Section 3.1: Turnouts using bull head rail
BS 4521-3.2: 1975	Full	None-Low	Specification for Railway turnouts for private users — Part 3: Medium grade turnouts over which British Railways locomotives do not operate, for axle loads not exceeding 25 tons — Section 3.2: Turnouts using flat bottom rails
BS 4521-4: 1975	Full	None-Low	Specification for Railway turnouts for private users — Part 4: Heavy grade turnouts over which British Railways locomotives do not operate, for axle loads which may exceed 25 tons, using flat bottom rails
BS 47-1:1991	Full	Medium	Fishplates for railway rails — Part 1: Specification for rolled steel fishplates
BS 64: 1992	Full	Medium	Specification for Normal and high strength steel bolts and nuts for railway rail fishplates
BS 7865 : 1997	Full	Low	Specification for Steel electrical conductor rail for railway motive power supply
BS 500:2000	Full	High	Steel sleepers
BS 11:1985	Full	High	Specification for railway rails

BS ISO 6305-2:2007	Full	Medium	Railway components — Technical delivery requirements — Part 2: Non-alloy carbon steel baseplates
BS ISO 14837-1:2005	Full	Medium	Mechanical vibration — Ground-borne noise and vibration arising from rail systems — Part 1: General guidance

## 45.120 - Equipment for railway/cableway construction and

<b>British Standard Number</b>	<b>Status</b>	<b>Relevance to SUSTRAIL</b>	<b>Name of Standard</b>
BS 8020:2002	Full	None	Tools for live working— Insulating hand tools for work on or near conductor rail systems operating at voltages up to 1 000 V a.c. or 1 500 V d.c.
BS 8020:2011	Full	None	Tools for live working – Specification for insulating hand tools for work on or near conductor rail systems operating at voltages up to 1 000 V a.c. or 1 500 V d.c.

## Spanish Standards - Railway engineering - Non-EN standards:

Spanish Standard Number	Name of Standard
Norma	Título
UNE 25003:1978	Tensor de enganche para vehículos de ferrocarril de ancho normal español. Carga mínima de rotura, 85 T.
UNE 25036:1953	Comprobación de los bastidores de los vagones.
UNE 25040:1954	Tensor de enganche. Para material ferroviario para vía de 1 m de ancho.
UNE 25041:1955	Muelle de choque y tracción. Para material ferroviario de vía estrecha.
UNE 25042:1957	Aparatos de choque y tracción para material ferroviario, de vía de 1 m de ancho. Tracción a cabecero.
UNE 25043:1954	Aparato de tracción continua. Para material ferroviario de vía de 1 metro de ancho.
UNE 25077:1955	Tolerancias de muelles de ballesta montados para material ferroviario. Embridados en frío o en caliente.
UNE 25078:1954	Tolerancias para las hojas de los muelles de ballesta del material ferroviario.
UNE 25082:1955	Muelles de ballesta para material ferroviario, embridados en frío o en caliente. Velas, estribos, soportes y manos de suspensión. Juegos de montaje.
UNE 25087:1974	Terminología del material rodante ferroviario.
UNE 25093:1965	Orientación del material ferroviario y numeración de las cajas de grasa.
UNE 25105:1974	Placas de dirección y de número de orden para coches de ferrocarril.
UNE 25106:1959	Placas de matriculación para los vehículos ferroviarios de ancho normal español.
UNE 25107:1957	Placa de constructor de vehículos ferroviarios.
UNE 25119:1959	Boca de carga para depósitos de agua, y otros, en vehículos de ferrocarril.
UNE 25120:1959	Acoplamiento para boca de carga de depósitos de agua, y otros, en vehículos de ferrocarril.
UNE 25154:1961	Gancho para maniobras, en los vagones de ferrocarril.
UNE 25201:1973	Muelle para tracción continua tipo ore.
UNE 25202:1974	Gancho para tracción continua en vagones tipo ore.
UNE 25203:1975	Tracción continua tipo ore.
UNE 25204:1978	Muelles para suspensión de doble anilla tipo ore.
UNE 25205:1976	Bulón de la suspensión de los vagones tipo ore.