## Overview of existing standards and standards under development

## First column: type of standard

- A General Information
- B Test Methods
- C Safety or EMC requirements
- D Miscellaneous

Second column: rough classification by relevance

1) Utmost important 2) Important 3) May have some interest 4) Superseded

Type	Class.	Technical Domain \\ Standardisation Corpus	EN (CEN)	EN (CENELEC)	ISO	IEC	SAE	UL	General Comments
		Electric road vehicle - Vocabulary							
Α	2	Electric road vehicles – Vocabulary			ISO 8713:2005 under revision				
Α	3	Electrically propelled road vehicles - Terminology	EN 13447:2001		ISO 8713				
Α		Graphical symbols for use on equipment				IEC 60417			
Α		Basic and safety principles for man-machine interface, marking and identification. Identification of conductors by colours or numerals		EN 60446		IEC 60446			
Α	3	Degrees of protection provided by enclosures (IP Code)		EN 60529		IEC 60529			

Type	Class.	Technical Domain \\ Standardisation Corpus	EN (CEN)	EN (CENELEC)	ISO	IEC	SAE	UL	General Comments
		Cycles, Mopeds and Motorcycles Applications							
Α	1	Electrically propelled mopeds and motorcycles — Terminology			ISO/WD 13062				Vehicles of Category L
Α	1	Electrically propelled mopeds and motorcycles - Safety specifications			ISO/WD 13063				Vehicles of Category L
Α	1	Battery-electric mopeds and motorcycles, Performance - Reference energy consumption and range			ISO/WD 13064-1				Vehicles of Category L
В	1	Battery-electric mopeds and motorcycles, Performance - Road operating characterictics			ISO/WD 13064-2				Vehicles of Category L
В	1	Cycles - Electrically power assisted cycles - EPAC Bicycles	EN 15194:2009-01						Vehicles of Category L
С	2	Safety requirements for secondary batteries and battery installations.  Batteries for use in portable appliances		EN 50272 -4					Vehicles of Category L
Α	2	Secondary cells and batteries containing alkaline or other non-acid electrolytes Mechanical tests for sealed portable secondary cells and batteries				IEC 61959			Vehicles of Category L
Α	2	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Secondary lithium cells and batteries for portable applications				IEC 61960			Vehicles of Category L
С	2	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for portable sealed secondary cells, an for batteries made from them, for use in portable applications	C	EN 62133		IEC 62133			Vehicles of Category L
Α	2	Secondary cells and batteries containing alkaline or other non acid electrolytes – Design and manufacturing recommendations for portable batteries made from sealed secondary cells				IEC/TR 62188			Vehicles of Category L
		Batteries							
Α	2	General requirements for battery powered trucks	EN 1175 -1						
		Safety requirements for secondary batteries and battery installations.	LIN 1173-1						
С	3	Stationary batteries Safety requirements for secondary batteries and battery installations.		EN 50272 -1					
С	3	Stationary batteries		EN 50272 -2					
С	2	Safety requirements for secondary batteries and battery installations.  Traction batteries		EN 50272 -3					
С	1	Electric road vehicles - Safety specifications			ISO 6469-1:2009 Ed.				
		- Part 1: On-board rechargeable energy storage system (RESS)		1	2			1	
		Electrically propelled road vehicles — Test specification for lithium-ion			ISO/DIS 12405-1				
В	1	traction battery packs and systems  — Part 1: High power applications			under Revision				
		Electrically propelled road vehicles — Test specification for lithium-ion							
В	1	traction battery packs and systems			ISO/WD 12405-2				
		— Part 1: High energy applications			under devlopement				
		Preferred sizes and voltages of battery monoblocs for electric							
Α	1	vehicle applications				IEC 61894			
С	3	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for large format secondary lithium cells and batteries for use in industrial applications				IEC 62619			
Α	2	International Electrotechnical Vocabulary (IEV) - Part 482: Primary and				IEC 60050-482			
Α	2	secondary batteries International Electrotechnical Vocabulary (IEV) - Chapter 486:Secondary				IEC 60050-486			
	-	cells and batteries		ļ		1 11111 100			
Α	3	Secondary cells and batteries containing alkaline or other non-acid electrolytes Sealed nickel-cadmium prismatic rechargeable single cells		EN 60622		IEC 60622			
Α	3	Secondary cells and batteries containing alkaline or other non-acid electrolytes Vented nickel-cadmium prismatic rechargeable single cells		EN 60623		IEC 60623			
Α	2	Secondary cells and batteries containing alkaline or other non-acid electrolytes Guide to the designation of current in alkaline secondary cell and battery standards		EN 61434		IEC 61434			
D	1	Marking of secondary cells and batteries with the international recycling symbol ISO 7000-1135		EN 61429		IEC 61429			

Type	Class.	Technical Domain \\ Standardisation Corpus	EN (CEN)	EN (CENELEC)	ISO	IEC	SAE	UL	General Comments
		Batteries (Continuation)							
А	3	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Portable sealed rechargeable single cells – Part 1: Nickel-cadmium		EN 61951		IEC 61951-1			
А	2	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Portable sealed rechargeable single cells Part 2 :Nickel-metal hydride		EN 61952		IEC 61951-2			
А	3	Secondary cells and batteries containing alkaline or other non-acid electrolytes Mechanical tests for sealed portable secondary cells and batteries		EN 61959		IEC 61959			
А	2	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Secondary lithium cells and batteries for portable applications		EN 61960		IEC 61960			
В	2	Secondary batteries (except lithium) for the propulsion of electric road vehicles - Part 1: Test parameters		EN 61982-1		IEC 61982-1 under revision			
В	1	Secondary batteries for the propulsion of electric road vehicles - Part 2: Dynamic discharge performance test and dynamic endurance test		EN 61982-2		IEC 61982-2			
В	1	Secondary batteries for the propulsion of electric road vehicles - Part 3: Performance and life testing (traffic compatible, urban use vehicles)		EN 61982-3		IEC 61982-3			
С	2	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications				IEC 62133			
А	2	Secondary cells and batteries containing alkaline or other non acid electrolytes – Design and manufacturing recommendations for portable batteries made from sealed secondary cells				IEC/TR 62188			
А	3	Secondary cells and batteries containing alkaline or other non-acid electrolytes Nickel-cadmium prismatic secondary single cells with partial gas recombination		EN 62259		IEC 62259			
С	1	Safety of primary and secondary lithium cells and batteries during transport		EN 62281		IEC 62281			
В	1	Secondary batteries for the propulsion of electric road vehicles - Performance testing for lithium-ion cells and batteries		EN 62660-1		IEC 62660-1			
В	1	Secondary batteries for the propulsion of electric road vehicles - Reliability and abuse testing for lithium-ion cells		EN 62660-2		IEC 62660-2			
В	1	Electric Double-Layer Capacitors for Use in Hybrid Electric Vehicles -Test Methods for Electrical Characteristics (IEC 69/155/CD:2008)		EN 625576		IEC 62576			
С	3	Safety requirements for secondary batteries and battery installations  – Part 1: Stationary batteries				IEC 62485-1			
С	3	Safety requirements for secondary batteries and battery installations  – Part 2: Stationary batteries				IEC 62485-2			
С	1	Safety requirements for secondary batteries and battery installations  – Part 3: Traction batteries				IEC 62485-3			
А	2	Possible safety and health hazards in the use of alkaline secondary cells and batteries nd health hazards in the use of alkaline secondary cells and batteries Guide to equipment manufacturers and users				IEC/TS 61438			

Type	Class.	Technical Domain \\ Standardisation Corpus	EN (CEN)	EN (CENELEC)	ISO	IEC	SAE	UL	General Comments
		Batteries (Continuation)							
Α		cells and batteries – Guide to equipment manufacturers and users				IEC/TS 61382-1			
В	2	Life Test for Automotive Storage Batteries					J 240		
Α	2	Storage Batteries					J 537		
В	2	Test Procedure for Battery Flame Retardant Venting Systems					J 1495		
Α	2	Recommended Practice for Packaging of Electric Vehicle Battery					J 1797		
Α	2	Recommended Practice for Performance Rating of Electric Vehicle					J 1798	<u> </u>	
Α	3	Battery Modules					J1766:2005		
В	3	Life Test for Heavy-Duty Storage Batteries					J 2185		
В	2	Comprehensive Life Test for 12 V Automotive Storage Batteries					J 2801		
В	2	Life Cycle Testing of Electric Vehicle Battery Modules					J 2288		
Α	2	Electric Driver Battery Pack System Functional Guidelines					J2289:2000		
В	2	Electric Vehicle Battery Abuse Testing			I		J 2464:1999	I	
В	2	Vibration Testing of Electric Vehicle Batteries					J 2380		
С	1	Electric and Hrybrid vehicle propulsion battery system standard - Lithium					J2929		
		based reachargeable cells				<u></u>	02020	<u></u>	
В	1	Safety of Lithium-Ion Batteries – Testing						UL1642:2005	
Α	1	Outline of Investigation for Batteries for use in Electric Vehicles						UL 2580:2009	
		Charging Systems			1	1		ļ	
С	1	Type-tested low-voltage switchgear and controlgear assembly		EN 60439-1	1	IEC 60439-1		ļ	
Α	1	Low-voltage switchgear and controlgear – Part 1: General rules		EN 60947-1	<del></del>	IEC 60947-1		<u> </u>	
Α	1	Low-voltage switchgear and controlgear – Part 2 : Circuit-breakers	<u> </u>	EN 60947-2		IEC 60947-2		<u> </u>	
Α	1	Low-voltage switchgear and controlgear Part 3: Switches,		EN 60947-3		IEC 60947-3			
		disconnectors, switch-disconnectors and fuse-combination units			4			<u> </u>	
А	1	Electric vehicle conductive charging system - Part 1: General requirements		EN 61851-1		IEC 61851-1 2nd edition			EMC requirements are included into this standard and part of them are safety requirements
С	1	Electric vehicle conductive charging system - Part 21: Electric vehicle requirements for conductive connection to an a.c./d.c. supply		EN 61851-21		IEC 61851-21 under revision			
С	1	Electric vehicle conductive charging system - Part 22: AC electric vehicle charging station		EN 61851-22		IEC 61851-22 under revision			EMC requirements are included into this standard and part of them are safety requirements
Α	1	Electric vehicle conductive charging system - Part 23: d.c. electric vehicle charging station				IEC 61851-23 New Work Item approved			
+		Electric vehicle conductive charging system - Part 24: Communication	+	+	+	1.	+	+	
Α	2	protocol between off-board charger and electric vehicle				IEC 61851-24			
D	3	Uninterruptible power systems (UPS) - Part 2: Electromagnetic compatibility (EMC) requirements		EN 62040-2	<u> </u>	IEC 62040-2		<u> </u>	
А	1	Plugs, socket-outlets, vehicle couplers and vehicle inlets - Conductive charging of electric vehicles - Part 1: Charging of electric vehicles up to		EN 62196-1:2003		IEC 62196-1 under revision			
А	1	250 A a.c. and 400 A d.c. Plugs, socket-outlets and vehicle couplers – Conductive charging of electricity vehicles – Part 2: Dimensional interchangeability requirements for a.c. pin and contact-tube accessories				IEC 62196-2 under development			
Α	1	Conductive charging for electric vehicles Part 1: D.C. charging station		CLC/prTS 50457- 1:2006					
Α	1	Conductive charging for electric vehicles Part 2: Communication protocol between off-board charger and electric vehicle		CLC/prTS 50457- 2:2006					

Type	Class.	Technical Domain \\ Standardisation Corpus	EN (CEN)	EN (CENELEC)	ISO	IEC	SAE	UL	General Comments
Турс	Oldoo.	Charging Systems (Continuation)	Lit (OLIT)	Lit (OLITELEO)		120	OAL	02	Contrar Comments
		Electric vehicle conductive charging system Part 22: AC electric vehicle							
Α	1	charging station		EN 61851-22:2002					
		Electric vehicle conductive charging system Part 21: Electric vehicle							
С	1	requirements for conductive connection to an a.c/d.c. supply		EN 61851-21:2002					
		Electric vehicle conductive charging system Part 1: General		EN 04054 4 0004					
С	1	requirements		EN 61851-1:2001					
	2	·		ENV 50275-1:1998					
Α	2	Conductive charging for electric vehicles Part 1: General considerations		ENV 50275-1:1998					
Α	2	Conductive charging for electric vehicles Part 2-1: Connection of an		ENV 50275-2-1:1998					
^		electric vehicle to an a.c./d.c. supply		LINV 30273-2-1.1990					
Α	2	Conductive charging of electric vehicles Part 2-2: A.C. charging station		ENV 50275-2-2:1998					
		Conductive changing or discuss vernoises. If and 2 217 its conditing station		2.11 002.0 2 2.1000					
Α	2	Conductive charging for electric vehicles Part 2-3: D.C. charging station		ENV 50275-2-3:1998					
Α	2	Conductive charging for electric vehicles Part 2-4: Communication protocol between off-board charger and electric vehicle		ENV 50275-2-4:1998					
D	3	Industrial battery chargers						UL 1564:2006	
A	2	Electric vehicle Charging System Equipment (2nd edition)						UL 2202:2009	
D	2	Outline of Investigation for Electric Vehicle Supply Circuit						UL 2594:2009	
A	2	Vehicle On-Board Charging Power Quality					J 2894	OL 2001.2000	
							<u> </u>		
		Wiring, Connectors, Controllers, Rotating machines							
	1	Semiconductor converters - General requirements and line commutated	EN 60146-1						
		converters - Part 1-1: Specification of basic requirements	EN 60146-1						
С	1	Road vehicles – 60 V and 600 V single-core cables – Dimensions, test			ISO 6722				
Ü	'	methods and requirements			130 0722				
С	1	Multi-core connecting cables – Part 1: Test methods and requirements for			ISO 4141-1				
		basic performance sheathed cables							
С	1	Multi-core connecting cables – Part 2: Test methods and requirements for	•		ISO 4141-2				
		high performance sheathed cables							
Α	1	Multi-core connecting cables – Part 3: Construction, dimensions and			ISO 4141-3				
		marking of unscreened sheathed low-voltage cables  Multi-core connecting cables – Part 4: Test methods and requirements for							
С	1	coiled cable assemblies			ISO 4141-4				
		Road vehicles – Round, unscreened 60 V and 600 V multicore sheathed							
С	1	cables – Test methods and requirements for basic and high performance			ISO 14572				
-		cables							
D	2	Road vehicles – Data cables – Test methods and requirements			ISO/TS 16553				
С	1	Road vehicles - Circuit breakers - Part 1: Definitions and general test			ISO 10924-1				
C		requirements			130 10924-1				
Α	1	Road vehicles – Circuit breakers – Part 4: Medium circuit breakers with			ISO 10924-4				
- ' '		tabs (blade type), Form CB15		ļ	.55 10027-7				
		Electric cables - Low voltage energy cables of rated voltages up to and		EN 50525-xxunder	1	IEC 50525-xxunder			
Α	1	including 450/750 V - Cables for general applications High flexibility		devlopment	1	developement			
		braided cables			-	-			
Α	2	(all parts) Plugs, socket-outlets and couplers for industrial purposes		EN 60309	1	IEC 60309			
Α	1	Plugs, socket-outlets and couplers for industrial purposes – Part 1:		EN 60309-1		IEC 60309-1			
		General requirements Plugs, socket-outlets and couplers for industrial purposes – Part 2:			-				
Α	1	Dimensional interchangeability requirements for pin and contact-tube		EN 60309-2	1	IEC 60309-2			
(1)	'	accessories		L11 00000-Z		120 00000-2			
		Plugs, socket-outlets and couplers for industrial purposes – Part 4:							
Α	1	Switched socket-outlets and connectors with or without interlock		EN 60309-4		IEC 60309 -4			
Α	1	Wiring and connectors for electric road vehicles				IEC/TR 60783			
		Polyvinyl chloride insulated cables of rated voltages up to and including		EN 00007 5					
Α	1	450/750 V – Part 5: Flexible cables (cords)		EN 60227-5	1	IEC 60227-5			
		Polyvinyl chloride insulated cables of rated voltages up to and including							
Α	1	450/750 V - Part 7: Flexible cables screened and unscreened with two or		1	1	IEC 60227-7			
		more conductors							

Туре	Class.	Technical Domain \\ Standardisation Corpus	EN (CEN)	EN (CENELEC)	ISO	IEC	SAE	UL	General Comments
		Wiring, Connectors, Controllers, Rotating machines (continuation)							
		Rubber insulated cables – Rated voltages up to and including 450/750 V				150 00045 0			
Α	1	Part 3: Heat resistant silicone rubber cables				IEC 60245-3			
		Rubber insulated cables - Rated voltages up to and including 450/750 V -				150 00045 4			
Α	1	Part 4: Cords and flexible cables				IEC 60245-4			
		Rubber insulated cables - Rated voltages up to and including 450/750 V -							
Α	1	Part 8: Cords for applications requiring high flexibility				IEC 60245-8			
		Insulation coordination for equipment within low-voltage systems Part 2-1:							
Α	1	Application guide - Explanation of the application of the IEC 60664 series,		EN 60664-1		IEC 60664-1			
		dimensioning examples and dielectric testing		2.7 5555		.20 000011			
		Electric vehicle conductive charging system - Part 21: Electric vehicle							
Α	1	requirements for conductive connection to an a.c./d.c. Supply				IEC 60664-2-1			
Α	1	Wiring and connectors for electric road vehicles				IEC/TR 60783			
A	1	Instrumentation for electric road vehicles				IEC/TR 60784			
A	1	Rotating machines for electric road vehicles				IEC/TR 60785			
В	2	Electric and optical fibre cables – Test methods for non-metallic materials		EN 60811-serie		IEC 60811-serie			
Α	1	Plugs and socket-outlets for households and similar purposes				IEC 60884			
	<u> </u>	Conductors of insulated cables – Data for AWG and kcmil sizes 1 SAE J	<del> </del>			1			
Α	3	2183 60 V and 600 V Single-Core Cables 1	1			IEC/TR 62602			
Α	2	High Voltage Primary Cable	<del> </del>				J1654:2004		
A	2	High Voltage Automotive Wiring Assembly Design					J1673:1996		
		<u> </u>	<del> </del>						
Α	2	Connections for High Voltage On-Board Road Vehicle Electrical Wiring	1				J1742:2005		
Α	2	SAE Electric Vehicle Conductive Charge Coupler			+		J1772:2010		
A	2	SAE Electric Vehicle Inductive Charge Couplet			+		J1773:1999		
В	2	60 V and 600 V Single Core Cables – Test Methods					J2183:2006		
ь		Round. Screened and Unscreened. 60 V and 600 V Multi;Core Sheathed			+		32 163.2000		
Α	2	Cables					J2501:2007		
Α	2	Plugs, Receptacles and Couplers for EVs						UL 2251:2002	
A	2	Electric Vehicle Inductively Coupled Charging					J 1773	UL 2231.2002	
		Electric equipment for the supply of energy to electric road vehicles using					3 1773		
С	2	an inductive coupling – Part 1: General requirements				IEC 61980-1			
					+				
Α	2	Electric equipment for the supply of energy to electric road vehicles using				IEC 61980-2			
^	2	an inductive coupling - Part 2: Manual connection system using a paddle				IEC 01900-2			
Α	2	On board electric power equipment for electric road vehicles				IEC 61981			
^		Road vehicles - Intelligent power switches - Part 1: High-side intelligent			+	IEC 01901			
Α	1				ISO 10483-1				
		power switch							
Α	1	Road vehicles – Intelligent power switches – Part 2: Low-side intelligent			ISO 10483-2				
		power switch				IEC/TR 60786			
Α	1	Controllers for electric road vehicles				IEC/1R 60/86			
			-		+				
		Electric read vehicles / Communication							
-		Electric road vehicles: Communication			+				
,		Road vehicles - Communication protocol between electric vehicle and gric			100/150 45440.0				
Α	1	Part 1: Definitions and use-case, Part 2: Sequence diagrams and	1		ISO/IEC 15118-2				
		communication layers	<u> </u>	_		-		_	
Α	1	Road vehicles - Communication protocol between electric vehicle and gric	1		ISO 15188-2				
		- Part 2:Sequence diagrams and communication layers							
Α	1	Information processing systems Open Systems Interconnection Basic	1		ISO/IEC 7498-1	ISO/IEC 7498-1			
		Reference Model - Part 1: The Basic Mode	ļ						
С	1	Information processing systems Open Systems InterconnectionBasic	1		ISO/IEC 7498-2	ISO/IEC 7498-2			
ŭ		Reference Model Part 2: Security Architecture	ļ		.00/120 1400-2	.55/125 / 450-2			
Α	1	Information processing systems Open Systems Interconnection -Basic	1		ISO/IEC 7498-3	ISO/IEC 7498-3			
^		Reference Model - Part 3: Naming and addressing	<u> </u>		130/1LC 1490-3	100/1LC / 480-3			
		Information technology – Telecommunication and information exchange							
Α	1	between systems – Power line communication (PLC) – High speed PLC	1		ISO/IEC 121391	ISO/IEC 121391			
^	'	medium access & control (MAC) and physical layer (PHY) – Part 1:			130/1EC 12 1381	100/1EC 121091			
		General requirements	<u>l                                      </u>						
		Road vehicles – Extended data link security			ISO 15764				

Type	Class.	Technical Domain \\ Standardisation Corpus	EN (CEN)	EN (CENELEC)	ISO	IEC	SAE	UL	General Comments
7.		Electric road vehicles : Communication (continuation)	· · ·	,					
Α	1	Coupling devices for power line carrier systems				IEC 60481			
Α	1	Communication networks and systems in substations				IEC 61850 serie			
Α	1	IntelliGrid Methodology for Developing Requirements for Energy Systems				IEC/PAS 62559			
A	'					IEC/FA3 02559			
Α	2	Energy Transfer System for Electric Vehicles–Part 1: Functional					J 2293-1		
^		Requirements and System Architectures					J 2293-1		
Α	2	Energy Transfer System for Electric Vehicles–Part 2: Communication					J 2293-2		
		Requirements and Network Architecture							
Α	2	Power Line Carrier Communications for Commercial Vehicles					J 2487		
Α	2	Use Cases for Communication between Plug-in Vehicles and the Utility Grid					J 2836/1		
Α	2	Use Cases for Communication between Plug-in Vehicles and the Supply Equipment (EVSE)					J 2836/2		
		Use Cases for Communication between Plug-in Vehicles and the Utility							
Α	2	Grid for Reverse Power Flow					J 2836/3		
Α	2	Communication between Plug-in Vehicles and the Utility Gric					J 2847/1		
		Communication between Plug-in Vehicles and the Supply Equipment							
Α	2	(EVSE)					J 2847/2		
Α	2	Communication between Plug-in Vehicles and the Utility Grid for Reverse					J 2847/3		
^	2	Power Flow					J 2047/3		
		vehicle safety & personnel protection							
С	1	Electrically propelled road vehicles - Specific requirements for safety -	EN 1987-1:1997		ISO 6469-1				
		Part 1: On board energy storage							
С	2	Electrically propelled road vehicles - Specific requirements for safety - Part 2:Functional safety means and protection against failures	EN 1987-2:1997						
-		Electrically propelled road vehicles - Specific requirements for safety -							
С	2	Part 3: Protection of users against electrical hazards	EN 1987-3:1998						
A	3	Proposals for the braking of electrical vehicles	CR 1955:1995						
		Electric road vehicles - Safety specifications - Part 2: Vehicle operational	CIX 1955.1995		ISO 6469-2:2009 Ed.				
С	1	safety means and protection against failures			2				
		· · · · · · · · · · · · · · · · · · ·			ISO 6469-3:2001 ISO				
С	1	Electric road vehicles - Safety specifications - Part 3: Protection of			6469-3:2001/Cor				
		persons against electric hazards			1:2003				
		Electric road vehicles - Safety specifications - Part 3: Protection of			ISO/DIS 6469-3* ed. 2				
С	1	persons against electric hazards			under voting				
		Road vehicles Fuse-links Part 1: Definitions and general test							
В	1	requirements			ISO 8820-1:2008				
Α	2	Road vehicles Fuse-links Part 2: User's guide			ISO 8820-2:2005				
		Road vehicles Fuse-links Part 3: Fuse-links with tabs (blade type)			100 0000 0.0040				
Α	1	Type C (medium), Type E (high current) and Type F (miniature			ISO 8820-3:2010				
Α	1	Road vehicles Fuse-links Part 4: Fuse-links with female contacts			ISO 8820-4:2010				
A		(type A) and bolt-in contacts (type B) and their test fixtures			150 0020-4.2010				
В	1	Road vehicles Fuse-links Part 5: Fuse-links with axial terminals (Strip			ISO 8820-5:2007				
		fuse-links) Types SF 30 and SF 51 and test fixtures							
Α	1	Road vehicles Fuse-links Part 6: Single-bolt fuse-links			ISO 8820-6:2007				
Α	1	Road vehicles Fuse-links Part 7: Fuse-links with tabs (Type G) with rated voltage of 450 V			ISO 8820-7:2007				
Α	1	IEC standard voltages	1			IEC 60038		+	
A	1	EC standard current ratings				IEC 60059		+	
		Basic and safety principles for man-machine interface, marking and	1						
Α	1	identification – Coding principles for indicators and actuators				IEC 60073			
		Protection against electrical shock – Common aspects for installation and							
С	1	equipment		EN 61140		IEC 61140			
Α	1	Effects of current on human beigns and livestock				IEC 60479			
Α	1	Low-voltage fuses – Part 1 : General requirements		EN 60269-1		IEC 60269-1			
Α	3	Uninterruptible power systems (UPS) - Part 1: General and safety		EN 62040-1		IEC 62040-1			
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Type	Class.	Technical Domain \\ Standardisation Corpus	EN (CEN)	EN (CENELEC)	ISO	IEC	SAE	UL	General Comments
7,		vehicle safety & personnel protection (Continuation)	,	,					
		Uninterruptible power systems (UPS) - Part 2: Electromagnetic compatibility (EMC)		EN 00040 0		150 000 40 0			
С	2	requirements		EN 62040-2		IEC 62040-2			
В	3	Uninterruptible Power Systems (UPS) - Part 3:Method of Specifying the		EN 62040-3		IEC 62040-3			
	J	Performance and Test Requirements		LIN 02040-3		ILC 02040-3			
Α	1	Circuit breakers – Switched protective earth portable residual current				IEC 62335			
		devices for class I and battery powered vehicle applications							
Α	1	General requirements for residual current operated devices				IEC 60755		<u> </u>	
Α	1	Electrical accessories . Portable residual current devices without integral		EN 61540		IEC 61540			
Α	3	overcurrent protection for household and similar use (prods requirements for UPS used in operator access areas					J 2344:1998	<del> </del>	
		Personnel Protection Systems for EV Supply Circuits: Part 1: General			1		J 2344.1990	<del>                                     </del>	
С	2	Requirements						UL 2231-1:2002	
		Personnel Protection Systems for Electric Vehicle (EV) Supply Circuits:							
С	2	Particular Requirements for Protection Devices for Use in Charging						UL 2231-2:2002	
		Systems							
		Functional safety (Road vehicles)			100 00005			<u> </u>	
Α	1	Road vehicles - Functional safety - Part 1: Vocabulary			ISO 26262-1			<del> </del>	
Α	1	Road vehicles – Functional safety – Part 2: Management of functional safety			ISO 26262-2				
A	1	Road vehicles – Functional safety – Part 3: Concept phase			ISO 26262-3				
		Road vehicles – Functional safety – Part 4: Product development :system						+	
Α	1	level			ISO 26262-4				
	<u> </u>	Road vehicles – Functional safety – Part 5: Product development :			10.0 00000 5				
Α	1	hardware level			ISO 26262-5				
Α	1	Road vehicles – Functional safety - Part 6: Product development :			ISO 26262-6				
^	'	software level							
Α	1	Road vehicles – Functional safety - Part 7: Production and operation			ISO 26262-7				
Α	1	Road vehicles – Functional safety - Part 8: Supporting processes			ISO 26262-8				
С	1	Road vehicles – Functional safety - Part 9: ASIL-oriented and safety-			ISO 26262-9				
	4	oriented analyses Road vehicles – Functional safety - Part 10: Guideline			ISO 26262-10				
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		EMC (Electro-Magnetic-Compatibility)							
В	1	Test methods for electrical disturbances from electrostatic discharge			ISO 10605				
		Vehicle test methods for electrical disturbances from narrowband radiated							
Α	1	electromagnetic energy			ISO 11451-1				
		Part 1: General principles and terminology							
		Vehicle test methods for electrical disturbances from narrowband radiated							
В	1	electromagnetic energy			ISO 11451-2				
		-Part 2: Off-vehicle radiation sources							
В	1	Vehicle test methods for electrical disturbances from narrowband radiated electromagnetic energy			ISO 11451-3				
В	1				130 11451-3				
-		Vehicle test methods for electrical disturbances from narrowband radiated						<del>                                     </del>	
Α	1	electromagnetic energy			ISO 11451-4				
1		-Part 4: Bulk current injection (BCI)							
		Component test methods for electrical disturbances from narrowband							
В	1	radiated electromagnetic energy			ISO 11452-1				
		Part 1: General principles and terminology							
		Component test methods for electrical disturbances from narrowband							
В	1	radiated electromagnetic energy			ISO 11452-2				
<u> </u>	-	− Part 2: Absorberlined shielded enclosure						<del>                                     </del>	
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BPC (Electro Magnetic Compatibility) continuation)	Type	Class.	Technical Domain \\ Standardisation Corpus	EN (CEN)	EN (CENELEC)	ISO	IEC	SAE	UL	General Comments
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Part   Immunity to impact										
- Part 8. Immunity to magnetic fields  Rod vehicles - Component test methods for electrical disturbances from narrowband radiated electromagnetic energy  - Part 9. Portise treatments  1	В	1				ISO 11452-8				
Road vehicles - Component test methods for electrical disturbances from particular processing of the p										
B 1 narrowband radiated electromagnetic energy										
- Part 9: Portable transmitters  B 1 Part 10: Immunity to conducted disturbances in the extended audio frequency range  Road vehicles - Component test methods for electrical disturbances from narrowband radiated electromagnetic energy  Road vehicles - Component test methods for electrical disturbances from narrowband radiated electromagnetic compatibility (EMC) - Part 3-2. Limits - Limits for harmonic current emissions (equipment input current < 16 A per phase A1: 2009+A2: 2009    Electromagnetic compatibility (EMC) - Part 3-3. Limits - Limitation of voltage changes, voltage ch	В	1				ISO 11452-9				
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- Part 11: Reverberation chamber C 1 Electromagnetic current emissions (equipment input current < 16 A per phase Electromagnetic current emissions (equipment input current < 16 A per phase Electromagnetic current emissions (equipment input current < 16 A per phase Electromagnetic current emissions (equipment input current < 16 A per phase Electromagnetic current emissions (equipment with rated currents 16 A per phase and not subjected to conditional connection  Electromagnetic compatibility (EMC) - Part 3-1 Limitation of subjected to conditional connection  Electromagnetic compatibility (EMC) - Part 3-4 Limits - Limitation of emission of harmonic currents in low-voltage power supply systems for equipment with rated currents 16 A per place of emission of harmonic currents in low-voltage power supply systems for equipment with rated currents in low-voltage systems. Equipment with rated currents 16 A per place and subjected to conditional connection  C 1 Electromagnetic Compatibility (EMC) - Part 3-11 - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage systems. Equipment with rated currents 75 A per phase and subjected to conditional connection and flicker in public low-voltage systems with input current 1 = 16 A and 5 75 A per phase explains and subjected to conditional connection.  C 1 Connection and the public low-voltage systems with input current 1 = 16 A and 5 75 A per phase explains and subjected to public low-voltage systems with input current 1 = 16 A and 5 75 A per phase explains and subjected to public low-voltage systems with input current 1 = 16 A and 5 75 A per phase explains and subjected to public low-voltage systems with input current 1 = 16 A and 5 75 A per phase explains and subjected to public low-voltage systems with input current 1 = 16 A and 5 75 A per phase explains and subjected to public low-voltage systems with input current 1 = 16 A and 5 75 A per phase explains and subjected to public low-voltage systems with input current 1 = 16 A and 5 75 A per pha	В	1				ISO 11452-11				
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B 1 Electromagnetic Compatibility (EMC) – Part 4-4 – Testing and measurement techniques – Electrical fast transients/burst immunity tes  B 1 Electromagnetic Compatibility (EMC) – Part 4-5 – Testing and measurement techniques – Surge immunity tesl  Electromagnetic Compatibility (EMC) – Part 4-6 – Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields  B 2 IEC 61000-4-6  Electromagnetic Compatibility (EMC) – Part 4-6 – Testing and IEC 61000-4-6  Electromagnetic Compatibility (EMC) – Part 4-8 – Testing and IEC 61000-4-7  Electromagnetic Compatibility (EMC) – Part 4-8 – Testing and IEC 61000-4-7	В	2					IEC 61000-4-3			
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B   1   Electromagnetic Compatibility (EMC) – Part 4-5 – Testing and measurement techniques – Surge immunity tes	В	1					IEC 61000-4-4			
B 2 Electromagnetic Compatibility (EMC) – Part 4-8 – Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields  B 2 IEC 61000-4-6  B 2 IEC 61000-4-7  Electromagnetic Compatibility (EMC) – Part 4-8 – Testing and		<u> </u>		ļ		ļ				
B   2   Electromagnetic Compatibility (EMC) – Part 4-8 – Testing and by radio-frequency fields   Electromagnetic Compatibility (EMC) – Part 4-8 – Testing and by radio-frequency fields   IEC 61000-4-6   Electromagnetic Compatibility (EMC) – Part 4-8 – Testing and   IEC 61000-4-7   Electromagnetic Compatibility (EMC) – Part 4-8 – Testing and   IEC 61000-4-8   IEC 61000-4   IE	В	1					IEC 61000-4-5			
B 2 measurement techniques – Immunitý to conducted disturbances, induced by radio-frequency fields  B 2 IEC 61000-4-7  Electromagnetic Compatibility (EMC) – Part 4-8 – Testing and		<u> </u>		ļ		ļ				
by radio-frequency fields  B 2 IEC 61000-4-7  Electromagnetic Compatibility (EMC) – Part 4-8 – Testing and										
B 2 IEC 61000-4-7  B Electromagnetic Compatibility (EMC) – Part 4-8 – Testing and	В	2					IEC 61000-4-6			
B   Electromagnetic Compatibility (EMC) – Part 4-8 – Testing and   UFC 64000 4.8			by radio-frequency fields	ļ		ļ				
	В	2				ļ	IEC 61000-4-7			
			Electromagnetic Compatibility (EMC) – Part 4-8 – Testing and							
	В	1					IEC 61000-4-8			
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Type	Class.	Technical Domain \\ Standardisation Corpus	EN (CEN)	EN (CENELEC)	ISO	IEC	SAE	UL	General Comments
7,		EMC (Electro-Magnetic-Compatibility) (continuation)	,	,				_	
		Electromagnetic compatibility (EMC) – Part 4-11: Testing and							
В	1	measurement techniques – Voltage dips, short interruptions and voltage				IEC 61000-4-11			
		variations immunity tests							
		Electromagnetic compatibility (EMC) - Part 4-13: Testing and							
В	1	measurement techniques - Harmonics and interharmonics including main:				IEC 61000-4-13			
		signalling at a.c. power port, low frequency immunity tests							
В	2					IEC 61000-4-15			
Α	2	Electromagnetic Compatibility (EMC) – Part 6-1 – Generic standards		EN 61000-6-1:2007		IEC 61000-6-1:2005			
		Immunity for residential, commercial and light-industrial environments				120 0 1000-0-1.2003			
Α	1	Electromagnetic Compatibility (EMC) – Part 6-2 – Generic standards		EN 61000-6-2:2005+		IEC 61000-6-2			
		Immunity for industrial environments		AC:2005					
		Electromagnetic Compatibility (EMC) – Part 6-3 – Generic standards				150 04000 0 0 0000			
Α	1	Emission standard for residential, commercial and light-industrial		EN 61000-6-3:2007		IEC 61000-6-3:2006			
-	ļ	environments  Electromagnetic Compatibility (EMC) – Part 6-4 – Generic standards							
Α	2	Emission standard for industrial environments		EN 61000-6-4:2007		IEC 61000-6-4:2006			
		Electromagnetic compatibility (EMC) – Part 4-21: Testing and							
В	2	measurement techniques – Reverberation chamber test methods	EN 61000-4-21			IEC 61000-4-21			
		Signalling on low-voltage electrical installations in the frequency range 3							
Α	1	kHz to 148,5 kHz. General requirements, frequency bands and		EN 50065-1:2001					
		electromagnetic disturbances		+A1:2010					
		Signalling on low-voltage electrical installations in the frequency range 3							
		kHz to 148,5 kHz Part 2-1: Immunity requirements for mains		EN 50005 0 4.0000 .					
Α	1	communications equipment and systems operating in the range of		EN 50065-2-1:2003 + A1:2005+ AC:2003					
		frequencies 95 kHz to 148,5 kHz and intended for use in residential,		A1.2005+ AC.2003					
		commercial and light industrial environments							
		Signalling on low-voltage electrical installations in the frequency range 3							
		kHz to 148,5 kHz Part 2-2: Immunity requirements for mains							
Α	1	communications equipment and systems operating in the range of		EN 50065-2-2:2003 +					
		frequencies equipment and systems operating in the range of frequencies		A1:2005 + AC:2003					
		95 kHz to 148,5 kHz and intended for use in industrial environments							
	1	Signalling on low-voltage electrical installations in the frequency range 3							
		kHz to 148,5 kHz Part 2-3: Immunity requirements for mains		EN 50065-2-					
Α	1	communications equipment and systems operating in the range of		3:2003+A1:2005+AC:2					
		frequencies 3 kHz to 95 kHz and intended for use by electricity suppliers		003					
		and distributors							
	3	Road vehicles Electrical disturbances from conduction and coupling			ISO 7637-1				
Α	3	Part 1: Definitions and general considerations			130 7037-1				
С	2	Road vehicles Electrical disturbances from conduction and coupling			ISO 7637-2				
		Part 2: Electrical transient conduction along supply lines only			100 7007-2				
1 _	_	Road vehicles Electrical disturbances from conduction and coupling			100 7007 6				
С	2	Part 3: Electrical transient transmission by capacitive and inductive			ISO 7637-3				
-	-	coupling via lines other than supply lines Information Technology Equipment Radio Disturbance Characteristics -		-		-	-	-	
С	1	Limits and Methods of Measurement.	EN 55022			CISPR 22			
	1	Industrial, Scientific and Medical (ISM) Radio-Frequency Equipment							
С	1	Electromagnetic Disturbance Characteristics Limits and Methods of	EN 55011			CISPR 11			
<u> </u>	l .	Measurement.				1			
	_	Specification for radio disturbance and immunity measuring apparatus and	EN FFOAC V V			CICDD 4C V V			
В	1	methods	EN 55016-X-X			CISPR 16-X-X	<u> </u>		
		Radio disturbance characteristics for the protection of receivers used on				_	_		
С	1	board vehicles, boats, and on devices - Limits and methods of	EN 55025			CISPR 25			
		measurement							
1		Vehicles, boats and internal combustion engine driven devices - Radio							
С	1	disturbance characteristics - Limits and methods of measurement for the	EN 55012			CISPR 12			
		protection of receivers except those installed in the vehicle/boat/device							
1	-	itself or in adjacent vehicles/boats/devices.		-				-	
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Type	Class.	Technical Domain \\ Standardisation Corpus	EN (CEN)	EN (CENELEC)	ISO	IEC	SAE	UL	General Comments
- 7		EMC (Electro-Magnetic-Compatibility) (continuation)	()				0.12		
		Low-Voltage Power Supplies, D.C. Output				150 04004 0			
Α	2	- Part 3: Electromagnetic Compatibility (EMC)				IEC 61204-3			
		Uninterruptible power systems (UPS)				150 000 10 0			
С	2	- Part 2: Electromagnetic compatibility (EMC) requirements				IEC 62040-2			
	3	International Electrotechnical Vocabulary (IEV) – Chapter 161:				IEC 000E0 (404)			
D	3	Electromagnetic compatibility				IEC 60050 (161)			
		Telecontrol equipment and systems							EMC of socket => IEC
Α	2	<ul> <li>Part 2: Operating conditions – Section 1: Power supply and</li> </ul>				IEC 60870-2-1			61851-22
		electromagnetic compatibility							01031-22
В	3	EMC measurements					J 1113-i		
В	3	GB/T 18387 : Limits and test methods of magnetic and electricc field strength from							
	Ü	electric vehicle, broadband, 9 kHz to 30 MHz.							
В	2	Magnetic and Floatric Field Strongth from Floatric Vehicles, Procedured					J551-5		
В		Magnetic and Electric Field Strength from Electric Vehicles, Broadband, 9					J551-5		
		711 6/107							
		Environmental conditions							
		Environmental conditions and testing for electrical and electronic							
В	1	equipment			ISO 16750-1				
		– Part 1: General							
		Road vehicles – Environmental conditions and testing for electrical and							
В	1	electronic equipment			ISO 16750-2				
		- Part 2: Electrical loads							
_		Environmental conditions and testing for electrical and electronic			100 10==0 0				
В	1	equipment			ISO 16750-3				
		Part 3: Mechanical loads     Road vehicles – Environmental conditions and testing for electrical and							
В	1				ISO 16750-4				
В	'	electronic equipment  – Part 4: Climatic loads			150 16750-4				
		ISO 16750-5 Road vehicles – Environmental conditions and testing for							
В	1	electrical and electronic equipment			ISO 16750-5				
	'	- Part 5: Chemical loads			130 10730-3				
A	2	Environmental testing: IEC 60068 serie		EN 60068 serie		IEC 60068 serie			
Α	2	Classification of environmental conditions : IEC 60811serie		EN 60721 serie		IEC 60721 serie			
		Electric and optical fibre cables							
В	2	- Test methods for non-metallic materials : IEC 60811serie		EN 60811		IEC 60811			
		Measurements of Electrical vehicle performances							
Α	1	Electric road vehicles - Road operating characteristics			ISO 8715:2001				
В	1	Electric road vehicles - Reference energy consumption and range - Test		1	ISO 8714:2002				
	<b> </b>	procedures for passenger cars and light commercial vehicles	1	+	-			+	
В	1	Electrically propelled road vehicles - Measurement of road operating ability	EN 1821-1:1996		ISO 8715				
	<del>                                     </del>	- Part 1: Pure electric vehicles		+	+			+	
В	1	Electrically propelled road vehicles – Measurement of road operating ability – Part 2: Thermal electric hybrid vehicles	EN 1821-2						
	1	Electrically propelled road vehicles - Measurement of energy	-		_			-	
В	1	performances - Part 1: Pure electric vehicles	EN 1986-1:1997		ISO 8714				
<b>-</b>	1	Electrically propelled road vehicles – Measurement of energy	1	+	+			+	
В	1	performances – Part 2: Thermal electric hybrid vehicles	EN 1986-2						
	1	Electrically propelled road vehicles - Airborne acoustical noise of vehicle	<del> </del>	+				+	
В	1	during charging with on-board chargers - Determination of sound power	EN 12736:2001						
Ī -	]	level							
	<u> </u>	Electrically propelled road vehicles – Measurement of emissions of hybrid	EN 10111						
В	1	vehicles – Part 1: Thermal electric hybrid vehicles	EN 13444-1	1					
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Type	Class.	Technical Domain \\ Standardisation Corpus	EN (CEN)	EN (CENELEC)	ISO	IEC	SAE	UL	General Comments
		Measurements of Electrical vehicle performances (continuation)							
_		Hybrid-electric road vehicles – Exhaust emissions and fuel consumption			100 00074 4				
В	1	measurements – Part 1: Non-externally chargeable vehicles			ISO 23274-1				
		Hybrid-electric road vehicles – Exhaust emissions and fuel consumption			100 00074 0				
В	1	measurements – Part 2: Externally chargeable vehicles			ISO 23274-2				
В	1	Hybrid-electric road vehicles – Exhaust emissions and fuel consumption			ISO 23274-3				
		measurements – Part 3: Forced charge mode  Recommended Practice for Measuring the Exhaust Emissions and Fuel							
В	2	Economy of Hybrid-Electric Vehicles					J 1711		
В	-1	Electric road vehicles – Reference energy consumption and range Test			ISO 8714				
В	,	procedures for passenger cars and light commercial vehicles			130 67 14				
Α	1	Utility Factor Definitions for Plug-In Hybrid Electric Vehicles Using 2001 U.S. DOT National Household Travel Survey Data					J 2841		
		Electric traction - Rotating electrical machines for rail and road vehicles -							
В	1	Part 2: Electronic converter-fed alternating current motors		EN 60349-2		IEC 60349-2			
		Hybrid Electrical Vehicles							
		Hybrid-electric road vehicles - Guidelines for charge balance							
Α	1	measurement			ISO/TR 11955:2008				
В	1	Hybrid-electric road vehicles - Exhaust emissions and fuel consumption			ISO 23274:2007				
		measurements - Non-externally chargeable vehicles			100 2021 112001				
В	1	Hybrid-electric road vehicles - Exhaust emissions and fuel consumption			ISO/WD 23274-2 New				
		measurements - Part 2: Externally chargeable vehicles			Work Item approved				
В	1	Electric double-layer capacitors for use in hybrid electric vehicles - Test				IEC 62576			
	'	methods for electrical characteristics				ILC 02370			
В	2	Electrically propelled road vehicles - Measurement of emissions of hybrid vehicles - Part 1: Thermal electric hybrid vehicles	EN 13444-1:2001						
		Electrically propelled road vehicles - Measurement of road operating abilit							
В	2	- Part 2: Thermal electric hybrid vehicles	EN 1821-2:1999						
В	2	Electrically propelled road vehicles - Measurement of energy	EN 1986-2:2001						
	_	performances - Part 2: Thermal electric hybrid vehicles	LIV 1300-2.2001				1.0707		
A	2	Hybrid Terminology Hybrid Electric Vehicle (HEV) & Electric Vehicle (EV) Terminology					J 2787 J 1715		
		Recommended Practice for Measuring the Exhaust Emissions and Fuel							
В	2	Economy of Hybrid-Electric Vehicles					J 1711		
A	1	Definition of the Utility Factor for Plug-In Hybrid Electric Vehicles Using					J 2841		
	'	NHTS Data					0 2041		