

## BUREAU OF INDIAN STANDARDS

### Program of Work

#### ETD 11 : Secondary Cells And Batteries

**Scope:** To prepare standards for all rechargeable cells and batteries (starter batteries, stationary batteries, traction batteries etc.)

**Liaison:** **IEC TC-21 (P): Secondary cells and batteries** **IEC TC-21 SC-21A (P): Secondary cells and batteries containing alkaline or other non-acid electrolytes**

### Published Standards

S.No	IS No.	TITLE	Reaffirm M-Y	No. of Amds	Eqv.
1	IS 10893 : 1984 Reviewed In : 2018	Specification for sealed nickel cadmium button type rechargeable single cells	December, 2018	-	Indigenous
2	IS 10918 : 1984 Reviewed In : 2018 Open nickel cadmium prismatic rechargeable cells. International Electrotechnical Commission. Specifi	Specification for vented type nickel cadmium batteries	December, 2018	2	Modified/Technically Equivalent
3	IS 1146 : 1981 Reviewed In : 2018	Specification for rubber and plastics containers for lead - Acid storage batteries (Second Revision)	December, 2018	3	Indigenous
4	IS 12013 : 1987 Reviewed In : 2017 Reaffirmed but not taken up for revision	Specification for lead acid batteries for 110 volts train lighting system with monobloc containers	September, 2017	-	Indigenous
5	IS 13300 : 1992 Reviewed In : 2017 BS3G 205 : 1983 Specification for lead-acid and nickel-cadmium rechargeable batteries. British Stand	Nickel cadmium aircraft batteries (Aerobatic Andnon - Aerobatic) - Specification	September, 2017	-	Modified/Technically Equivalent
6	IS 13315 : 1992 Reviewed In : 2017 IEC Pub 623 : 1983 Open nickel-cadmium prismatic rechargeable cells - Part 1: General requirements a	Nickel cadmium batteries for electric locomotives - Specification	September, 2017	-	Modified/Technically Equivalent
7	IS 13369 : 1992	Stationary lead - Acid batteries	September, 2017	3	Indigenous

	Reviewed In : 2017	(With Tubular Positive Plates) in monobloc container - Specification			
8	IS 13514 : 2015 IEC 61982 : 2012 Reviewed In : 2017 IEC 61982 : 2012	Secondary batteries (Except Lithium) for the propulsion of electric road vehicles - Performance and endurance tests (First Revision)	September, 2017	-	Identical under dual numbering
9	IS 13514 (Part 4) : 2018 IEC 61982-4 : 2015 IEC 61982-4 : 2015	Secondary Batteries (Except Lithium) for the Propulsion of Electric Road Vehicles Part 4 Safety Requirements of Nickel-Metal Hydride Cells and Modules		-	Identical under dual numbering
10	IS 13568 : 1992 Reviewed In : 2017	Lead acid light weight storage batteries for motor cycles and similar vehicles fitted with ac circuitry - Specification	September, 2017	1	Indigenous
11	IS 13595 : 1992 Reviewed In : 2017 HAL Nasik Specification TS/IND/72 117 A/C Storage battery 15-STS-45B and 15-SSTS-45B b) JSS 55555 E	Silver oxide zinc batteries for aircraft - Specification	September, 2017	-	Modified/Technically Equivalent
12	IS 14217 : 1994 Reviewed In : 2018 Reaffirmed but not taken up for revision BS 4945 : 1973	Miners cap lamp batteries (Alkaline Type) - Specification	December, 2018	-	Modified/Technically Equivalent
13	IS 14218 : 1994 Reviewed In : 2018	Sealed cylindrical type rechargeable nickel cadmium cells - Specification	December, 2018	-	Indigenous
14	IS 14257 : 2019 NULL	Lead - Acid storage batteries for motor vehicles with light weight and high cranking performance - Specification (First Revision)	-	-	Indigenous
15	IS 14782 : 2000 Reviewed In : 2020	Code of practice for maintenance and testing of large lead acid batteries for generating stations and substations	May, 2020	-	Indigenous
16	IS 15549 : 2005 Reviewed In : 2020 a) IEC 60896-2 ( 1995 ) Stationary lead acid batteries - General requirements and test methods - Par	Stationary valve regulated lead acid batteries - Specification	June, 2020	3	Modified/Technically Equivalent
17	IS 15767 : 2008 IEE 62259 : 2003 Reviewed In : 2018 IEC 62259 : 2003	Secondary cells and batteries containing alkaline or other non - Acid electrolytes - Nickel - Cadmium prismatic secondary single cells with partial gas recombination	June, 2018	-	Identical under dual numbering
18	IS 16046 (Part 1) : 2018 IEC 62133-1 : 2017 IEC 62133-1 : 2017	Secondary Cells and Batteries Containing Alkaline or Other Non-Acid Electrolytes - Safety Requirements for Portable Sealed		1	Identical under dual numbering

		Secondary Cells and for Batteries Made from Them for Use in Portable Applications Part 1 Nickel Systems ( Second Revision )			
19	IS 16046 (Part 2) : 2018 IEC 62133-2 : 2017 IEC 62133-2 : 2017	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 Part 2 Lithium Systems ( Second Revision )		1	Identical under dual numbering
20	IS 16047 (Part 3) : 2018 IEC 61960-3:2017	Secondary Cells and Batteries Containing Alkaline or Other Non-Acid Electrolytes - Secondary Lithium Cells and Batteries for Portable Applications Part 3 Prismatic and Cylindrical Lithium Secondary Cells, and Batteries Made From Them ( First Revision )		-	Identical under dual numbering
21	IS 16048 (Part 1) : 2021 61951-1 61951-1	SECONDARY CELLS AND BATTERIES CONTAINING ALKALINE OR OTHER NON-ACID ELECTROLYTES SECONDARY SEALED CELLS AND BATTERIES FOR PORTABLE APPLICATIONS PART 1: NICKEL-CADMIUM		-	Identical under dual numbering
22	IS 16048 (Part 2) : 2021 61951-2 : 2017 61951-2 : 2017	SECONDARY CELLS AND BATTERIES CONTAINING ALKALINE OR OTHER NON-ACID ELECTROLYTES SECONDARY SEALED CELLS AND BATTERIES FOR PORTABLE APPLICATIONS PART 2: NICKEL-METAL HYDRIDE		-	Identical under dual numbering
23	IS 16049 : 2013 IEC 60622 : 2002 Reviewed In : 2023 IEC 60622 : 2002	Secondary cells and batteries containing alkaline or other non - Acid electrolytes - Sealed nickel - Cadmium prismatic rechargeable single cells	May, 2023	-	Identical under dual numbering
24	IS 16220 (Part 1) : 2015 IEC 61056-1 : 2012 Reviewed In : 2020 IEC 61056-1 : 2012	General purpose lead - Acid batteries (Valve - Regulated Types): Part 1 general requirements, functional characteristics - Methods of test	August, 2020	-	Identical under dual numbering
25	IS 16220 (Part 2) : 2017 IEC 61056-2 : 2012 IEC 61056-2 : 2012	General Purpose Lead-Acid Batteries (Valve-Regulated Types) Part 2 Dimensions, Terminals and Marking		-	Identical under dual numbering
26	IS 16270 : 2014 Reviewed In : 2019	Secondary cells and batteries for solar photovoltaic application - General requirements and methods of test		-	Indigenous
27	IS 16270 : 2023	Secondary cells and batteries for		-	Indigenous

		solar photovoltaic application - General requirements and methods of test			
28	IS 16284 : 2018 IEC 62675 : 2014 IEC 62675 : 2014	Secondary Cells and Batteries Containing Alkaline or Other Non - Acid Electrolytes - Sealed Nickel - Metal Hydride Prismatic Rechargeable Single Cells		-	Identical under dual numbering
29	IS 16373 : 2015 Reviewed In : 2020 IEC 60095-1 (2006)	Lead acid storage batteries for motor vehicles - Valve regulated type	August, 2020	1	Modified/Technically Equivalent
30	IS 1651 : 2013 Reviewed In : 2018	Stationary cells and batteries, lead - Acid type (With Tubular Positive Plates) - Specification (Fourth Revision)		-	Indigenous
31	IS 1652 : 2013 Reviewed In : 2019	Stationary cells and batteries, lead - Acid type with plante positive plates - Specification (Fourth Revision)	January, 2019	-	Indigenous
32	IS 16805 : 2018 IEC 62619 : 2017 IEC 62619 : 2017	Secondary Cells and Batteries Containing Alkaline or Other Non- Acid Electrolytes - Safety Requirements for Secondary Lithium Cells and Batteries, for Use in Industrial Applications		-	Identical under dual numbering
33	IS 16822 : 2019 IEC 62620 : 2014 IEC 62620:2014	Secondary cells and batteries containing alkaline or other non - Acid electrolytes - Secondary lithium cells and batteries for use in industrial applications		-	Identical under dual numbering
34	IS 16823 : 2019 IEC 61959 : 2004 IEC 61959 : 2004	Secondary cells and batteries containing alkaline or other non - acid electrolytes - Mechanical tests for sealed portable secondary cells and batteries		-	Identical under dual numbering
35	IS 16825 : 2018 IEC TR 62060 IEC TR 62060:2001	Secondary Cells and Batteries - Monitoring of Lead Acid Stationary Batteries - User Guide		-	Identical under dual numbering
36	IS 16827 : 2018 ISO/IEC PAS 16898 : 2012 ISO/IEC 16898 : 201	Electrically propelled road vehicles - Dimensions and designation of secondary lithium - Ion cells		-	Identical under dual numbering
37	IS 16893 (Part 1) : 2018 IEC 62660-1 : 2010 IEC 62660-1: 2010	Secondary lithium - Ion cells for the propulsion of electric road vehicles: Part 1 performance testing		-	Identical under dual numbering
38	IS 16893 (Part 2) : 2018 IEC 62660-2 : 2010 IEC 62660-2: 2010	Secondary lithium - Ion cells for the propulsion of electric road vehicles: Part 2 reliability and abuse testing		-	Identical under dual numbering
39	IS 16893 (Part 3) : 2018 IEC 62660-3 : 2016 IEC 62660-3 : 2016	Secondary Lithium - Ion Cells For the Propulsion of Electric Road Vehicles Part 3 Safety Requirements		-	Identical under dual numbering
40	IS 16894 (Part 1) : 2018 IEC 62485-1 : 2015	Safety requirements for secondary batteries and battery installations: Part 1 general safety information		-	Identical under dual numbering

	IEC 62485-1:2015				
41	IS 16894 (Part 2) : 2018 IEC 62485-2 : 2010 IEC 62485-2:2010	Safety requirements for secondary batteries and battery installations: Part 2 stationary batteries		-	Identical under dual numbering
42	IS 16894 (Part 3) : 2018 IEC 62485-3 : 2014 IEC 62485-3:2014	Safety requirements for secondary batteries and battery installations: Part 3 traction batteries		-	Identical under dual numbering
43	IS 16894 (Part 4) : 2018 IEC 62485-4 : 2015 IEC 62485-4:2015	Safety Requirements for Secondary Batteries and Battery Installations Part 4 Valve - Regulated Lead - Acid Batteries for use in Portable Appliances		-	Identical under dual numbering
44	IS 17882 : 2022	Methods of test for measurement of Energy density and Cycle life of Advanced Chemistry Cells ACCs		-	Indigenous
45	IS 2512 : 1978 Reviewed In : 2018 Reaffirmed but not taken up for revision BS 4945 : 1973	Specification for miners cap - Lamp batteries (Lead - Acid Type) (First Revision)	December, 2018	4	Modified/Technically Equivalent
46	IS 5154 (Part 1) : 2013 IEC 60254-1 : 2005 Reviewed In : 2018 IEC 60254-1 : 2005	Lead - Acid traction batteries: Part 1 general requirements and methods of test (Second Revision)	June, 2018	-	Identical under dual numbering
47	IS 5154 (Part 2) : 2013 IEC 60254-2 : 2008 Reviewed In : 2018 IEC 60254-2 : 2008	Lead - Acid traction batteries: Part 2 dimensions of cells and terminals and marking of polarity on cells (Second Revision)	June, 2018	-	Identical under dual numbering
48	IS 6071 : 1986 Reviewed In : 2017	Specification for synthetic separators for lead - Acid batteries (First Revision)	September, 2017	2	Indigenous
49	IS 6304 : 1992 Reviewed In : 2017	Stationary batteries - Lead - Acid type - With pasted positive plates - Specification (Second Revision)	September, 2017	1	Indigenous
50	IS 6848 : 1979 Reviewed In : 2018 Reaffirmed but not taken up for revision IEC Publication : 77 * ( 1968 )	Specification for lead - Acid batteries for train lighting and airconditioning services (First Revision)	December, 2018	3	Identical under dual numbering
51	IS 7624 : 1990 Reviewed In : 2018 Reaffirmed but not taken up for revision	Lead - Acid starter batteries for diesel - locomotives and rail cars - Specification (First Revision)	December, 2018	-	Indigenous
52	IS 7660 : 1988 Reviewed In : 2018 Reaffirmed but not taken up for revision	Specification for lead - Acid batteries for electric locomotives and electrical multiple units (First Revision)	December, 2018	-	Indigenous
53	IS 8320 : 2000 Reviewed In : 2020	General requirements and methods of tests for lead - Acid storage batteries (Second Revision)	July, 2020	-	Indigenous
54	IS 9814 : 1981 Reviewed In : 2018	Specification for lead - Acid storage batteries for marine use	December, 2018	-	Indigenous

Standards under Development

Projects Approved		
Sl. No.	Doc No.	Title
No Records Found		

Preliminary Draft Standards		
Sl. No.	Doc No.	Title
No Records Found		

Drafts Standards in WC Stage		
Sl. No.	Doc No.	Title
1	ETD 11 (25991)	Stationary cells and batteries lead - Acid type with plante positive plates - Specification Fourth Revision Amendment - 1

Draft Standards Completed WC Stage		
Sl. No.	Doc No.	Title
No Records Found		

Finalized Draft Indian Standard		
Sl. No.	Doc No.	Title
No Records Found		

Finalized Draft Indian Standards under Print		
Sl. No.	Doc No.	Title
1	ETD 11 (21547) Revision of: IS 13369:1992	STATIONARY LEAD-ACID BATTERIES WITH TUBULAR POSITIVE PLATES IN MONOBLOC CONTAINER SPECIFICATION First Revision
2	ETD 11 (21558) Revision of: IS 6304:1992	Stationary Batteries Lead-Acid Type With Pasted Positive Plates Specification Third Revision
3	ETD 11 (22944)	Fuel Cell Technologies Part 3 Stationary Fuel Cell Power Systems Section 100 Safety

Total Published Standards:53 Total Standards Under development:4
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Aspect Wise Report

Product : 39  
Code of Practices : 2  
Methods of Test : 5  
Terminology : 1  
Dimensions : 3  
System Standard : 0  
Safety Standard : 0  
Others : 3  
Service Specification : 0  
Process Specification : 0  
Unclassified : 0

Annexure-I :List of Indian Standards Withdrawn/Superseded		
Sl. No.	IS No. & Year	Title

1	IS 1145 : 1980 Reviewed In : 2014	Lead-acid storage batteries for motor cycles auto-rickshaws and similar vehicles
2	IS 12956 : 1990 Reviewed In : 2002	Sealed cylindrical type rechargeable nickel cadmium cells Regular standard being prepared
3	IS 16046 : 2015 IEC 62133 : 2012 IEC 62133 : 2012	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 First Revision
4	IS 16047 : 2012 IEC 61960 : 2011 Reviewed In : 2017 IEC 61960 : 2011	Secondary Cells and Batteries containing Alkaline or other non-acid Electrolytes - Secondary Lithium Cells and Batteries for Portable Applications
5	IS 1846 : 1992	Lead-acid aircraft batteries aerobatic and non-aerobatic
6	IS 395 : 1962	Lead-acid storage battery for motor vehicles
7	IS 5154 : 1980 IEC 254 Reviewed In : 2008	Lead-acid Traction Batteries
8	IS 541 : 1954	Stationary accumulators lead-acid type
9	IS 7372 : 1995 Reviewed In : 2017	Lead - Acid storage batteries for motor vehicles - Specification First Revision
10	IS 985 : 1962	Lead-acid storage batteries for motor vehicles special

#### Annexure-II :List of Indian Product Standards

Sl. No.	IS No. & Year	Title
1	IS 10893 : 1984 Reviewed In : 2018	Specification for sealed nickel cadmium button type rechargeable single cells
2	IS 10918 : 1984 Reviewed In : 2018 Open nickel cadmium prismatic rechargeable cells. International Electrotechnical Commission. Specifi	Specification for vented type nickel cadmium batteries
3	IS 1146 : 1981 Reviewed In : 2018	Specification for rubber and plastics containers for lead - Acid storage batteries Second Revision
4	IS 12013 : 1987 Reviewed In : 2017 Reaffirmed but not taken up for revision	Specification for lead acid batteries for 110 volts train lighting system with monobloc containers
5	IS 13300 : 1992 Reviewed In : 2017 BS3G 205 : 1983 Specification for lead-acid and nickel-cadmium rechargeable batteries. British Stand	Nickel cadmium aircraft batteries Aerobatic Andnon - Aerobatic - Specification
6	IS 13315 : 1992 Reviewed In : 2017 IEC Pub 623 : 1983 Open nickel-cadmium prismatic rechargeable cells - Part 1: General requirements a	Nickel cadmium batteries for electric locomotives - Specification
7	IS 13369 : 1992 Reviewed In : 2017	Stationary lead - Acid batteries With Tubular Positive Plates in monobloc container - Specification
8	IS 13514 : 2015 IEC 61982 : 2012	Secondary batteries Except Lithium for the propulsion of electric road vehicles - Performance and endurance tests First Revision



	Reviewed In : 2017 IEC 61982 : 2012	
9	IS 13514 (Part 4) : 2018 IEC 61982-4 : 2015 IEC 61982-4 : 2015	Secondary Batteries Except Lithium for the Propulsion of Electric Road Vehicles Part 4 Safety Requirements of Nickel-Metal Hydride Cells and Modules
10	IS 13568 : 1992 Reviewed In : 2017	Lead acid light weight storage batteries for motor cycles and similar vehicles fitted with ac circuitry - Specification
11	IS 13595 : 1992 Reviewed In : 2017 HAL Nasik Specification TS/IND/72 117 A/C Storage battery 15- STS-45B and 15-SSTS-45B b) JSS 55555 E	Silver oxide zinc batteries for aircraft - Specification
12	IS 14217 : 1994 Reviewed In : 2018 Reaffirmed but not taken up for revision BS 4945 : 1973	Miners cap lamp batteries Alkaline Type - Specification
13	IS 14218 : 1994 Reviewed In : 2018	Sealed cylindrical type rechargeable nickel cadmium cells - Specification
14	IS 14257 : 2019 NULL	Lead - Acid storage batteries for motor vehicles with light weight and high cranking performance - Specification First Revision
15	IS 15549 : 2005 Reviewed In : 2020 a) IEC 60896-2 ( 1995 ) Stationary lead acid batteries - General requirements and test methods - Par	Stationary valve regulated lead acid batteries - Specification
16	IS 15767 : 2008 IEe 62259 : 2003 Reviewed In : 2018 IEC 62259 : 2003	Secondary cells and batteries containing alkaline or other non - Acid electrolytes - Nickel - Cadmium prismatic secondary single cells with partial gas recombination
17	IS 16046 (Part 1) : 2018 IEC 62133-1 : 2017 IEC 62133-1 : 2017	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 Part 1 Nickel Systems Second Revision
18	IS 16046 (Part 2) : 2018 IEC 62133-2 : 2017 IEC 62133-2 : 2017	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 Part 2 Lithium Systems Second Revision
19	IS 16047 (Part 3) : 2018 IEC 61960-3:2017	Secondary Cells and Batteries Containing Alkaline or Other Non-Acid Electrolytes - Secondary Lithium Cells and Batteries for Portable Applications Part 3 Prismatic and Cylindrical Lithium Secondary Cells and Batteries Made From Them First Revision
20	IS 16048 (Part 1) : 2021 61951-1 ISO 12647-9: 2021	SECONDARY CELLS AND BATTERIES CONTAINING ALKALINE OR OTHER NON-ACID ELECTROLYTES SECONDARY SEALED CELLS AND BATTERIES FOR PORTABLE APPLICATIONS PART 1 NICKEL-CADMIUM
21	IS 16048 (Part 2) : 2021 61951-2 : 2017 ISO 25539:2020	SECONDARY CELLS AND BATTERIES CONTAINING ALKALINE OR OTHER NON-ACID ELECTROLYTES SECONDARY SEALED CELLS AND BATTERIES FOR PORTABLE APPLICATIONS PART 2 NICKEL-METAL HYDRIDE
22	IS 16049 : 2013 IEC 60622 : 2002 Reviewed In : 2023 IEC 60622 : 2002	Secondary cells and batteries containing alkaline or other non - Acid electrolytes - Sealed nickel - Cadmium prismatic rechargeable single cells
23	IS 16270 : 2023	Secondary cells and batteries for solar photovoltaic application - General requirements and methods of test
24	IS 16284 : 2018 IEC 62675 : 2014 IEC 62675 : 2014	Secondary Cells and Batteries Containing Alkaline or Other Non - Acid Electrolytes - Sealed Nickel - Metal Hydride Prismatic Rechargeable Single Cells
25	IS 16373 : 2015 Reviewed In : 2020 IEC	Lead acid storage batteries for motor vehicles - Valve regulated type



	60095-1 (2006)	
26	IS 1651 : 2013 Reviewed In : 2018	Stationary cells and batteries lead - Acid type With Tubular Positive Plates - Specification Fourth Revision
27	IS 1652 : 2013 Reviewed In : 2019	Stationary cells and batteries lead - Acid type with plante positive plates - Specification Fourth Revision
28	IS 16805 : 2018 IEC 62619 : 2017 IEC 62619 : 2017	Secondary Cells and Batteries Containing Alkaline or Other Non-Acid Electrolytes - Safety Requirements for Secondary Lithium Cells and Batteries for Use in Industrial Applications
29	IS 16822 : 2019 IEC 62620 : 2014 IEC 62620:2014	Secondary cells and batteries containing alkaline or other non - Acid electrolytes - Secondary lithium cells and batteries for use in industrial applications
30	IS 16893 (Part 3) : 2018 IEC 62660-3 : 2016 IEC 62660-3 : 2016	Secondary Lithium - Ion Cells For the Propulsion of Electric Road Vehicles Part 3 Safety Requirements
31	IS 16894 (Part 2) : 2018 IEC 62485-2 : 2010 IEC 62485-2:2010	Safety requirements for secondary batteries and battery installations Part 2 stationary batteries
32	IS 16894 (Part 3) : 2018 IEC 62485-3 : 2014 IEC 62485-3:2014	Safety requirements for secondary batteries and battery installations Part 3 traction batteries
33	IS 16894 (Part 4) : 2018 IEC 62485-4 : 2015 IEC 62485-4:2015	Safety Requirements for Secondary Batteries and Battery Installations Part 4 Valve - Regulated Lead - Acid Batteries for use in Portable Appliances
34	IS 5154 (Part 1) : 2013 IEC 60254-1 : 2005 Reviewed In : 2018 IEC 60254-1 : 2005	Lead - Acid traction batteries Part 1 general requirements and methods of test Second Revision
35	IS 6304 : 1992 Reviewed In : 2017	Stationary batteries - Lead - Acid type - With pasted positive plates - Specification Second Revision
36	IS 6848 : 1979 Reviewed In : 2018 Reaffirmed but not taken up for revision IEC Publication : 77 * ( 1968 )	Specification for lead - Acid batteries for train lighting and airconditioning services First Revision
37	IS 7624 : 1990 Reviewed In : 2018 Reaffirmed but not taken up for revision	Lead - Acid starter batteries for diesel - locomotives and rail cars - Specification First Revision
38	IS 7660 : 1988 Reviewed In : 2018 Reaffirmed but not taken up for revision	Specification for lead - Acid batteries for electric locomotives and electrical multiple units First Revision
39	IS 9814 : 1981 Reviewed In : 2018	Specification for lead - Acid storage batteries for marine use