

BUREAU OF INDIAN STANDARDS

AGENDA

Name of the Committee	No. of Meeting	Date and Time	Day	Venue
Electric And Hybrid Vehicle Sectional Committee, TED 27	Fifteenth (15 th)	9 th December 2024 9:30 AM onwards	(MONDAY)	Hybrid Mode Physical — (ICAT, CENTRE 1 Manesar, Gurgaon) Webex — CLICK HERE TO JOIN

CHAIRMAN: Dr. Saurabh Dalela (Director ICAT) **VICE CHAIRMAN:** Sh. A A Deshpandey, ARAI

HEAD (TED): Shri APD Dwivedi

MEMBER SECRETARY: August Dubey

ITEM 0 WELCOME ADDRESS

0.1 Welcome by Head TED

0.2 Opening Remarks by the Chairman

ITEM 1 CONFIRMATION OF THE MINUTES OF LAST MEETING

The Minutes of the 14th Meeting of Electric and Hybrid Vehicles, Sectional Committee, TED 27 held in physical mode (Venue - ICAT, Manesar) on 17th May 2024 was circulated through BIS portal dated 27th June 2024. No comments have been received regarding the recording of the proceeding of the minutes.

The Committee may kindly confirm the Minutes.

ITEM 2 SCOPE & COMPOSITION OF THE SECTIONAL COMMITTEE

2.1 Directions received from the Competent Authority of the Bureau for reviewing the composition of the Sectional Committee, and policy is attached at **Annexure 1**. The committee may please note.

2.2 The present composition and scope of the Sectional Committee, TED 27 is attached at **Annexure 2**.

The list shows the attendance of the members in the last three consecutive meetings and also their status as manufacturer, consumer, R&D orgn., etc. The representation of members who have not attended the last 3 meetings of the Sectional Committee is to be reviewed as per guidelines. It may be noted that as a matter of policy of standard formulation, in the composition of all committees, efforts shall be made to keep the strength of committee at optimum. New members may be co-opted where necessary and minimum 2/3rd strength should be taken from non- industrial organizations. NGOs, where ever possible should also be co-opted. Based on these guidelines, and also considering the interest shown by member organizations in the Committee, the Committee may review its composition. Hence, the committee may decide co-option of any more organizations whose inclusion will be helpful in the committee's work and also propose for

withdrawal of organizations in view of above.

2.3 Co-option in TED 27

2.3.1 In 14th meeting, committee decided to co-opt, OLA, Chakra and Denso in the committee. Nominations received have been updated on portal.

Committee may please note.

2.3.2 Following Co-option requests have been received for membership in SC TED 27:

Sl. No.	Name	Organization	Remark
1)	Shri Seshadri Raghavan	Council on Energy, Environment and Water, New Delhi	Detail was circulated with committee members on 25-07-2024
2)	Shri Manoj Morampudi	National Institute of Technology, Jalandhar	Detail was circulated with committee members on 13-09-2024
3)	Shri Vikas Nimesh	Alliance for an Energy Efficient Economy (AEEE)	Detail was circulated with committee members on 07-10-2024

The committee may please deliberate and decide upon the membership of above-mentioned requests.

2.5 Panel under TED 27

Detail of panels, working under TED 27 is attached at **Annexure 3**. Committee **may review** the **composition** and **work done** by panels so far. It may **allocate** the work to the existing panel/ **dissolve** the panels not having further work and/or create need-based additional panels required for taking up further work.

ITEM 3 ISSUES ARISING OUT OF THE MINUTES OF THE LAST MEETING

The summary of actions taken along with the present status on the decisions taken during the last meeting is given below:

Sl. No.	Subject	Decision of the Committee in the last meeting	Present Status
1)	<p>IS 18590: 2024</p> <p>Electric Power Train of L Category Vehicles-Specific Requirements</p> <p>(Based on AIS 156)</p>	<p style="text-align: center;"><u>Status in 14th Meeting</u></p> <p>Draft documents have been published as Indian Standards and a copy of these standards have been circulated with committee members vide mail dated.</p> <p>It may also be noted that few queries were raised by Publication dept on draft document TED 27 (22985), for which input</p>	<p>Input received from Ms Mohanty was discussed in Panel 3 meeting dt 28.11.2024.</p> <p>For details, please refer Minutes of Panel 3 meeting attached at Annexure 4</p> <p>Committee may please deliberate.</p>

Sl. No.	Subject	Decision of the Committee in the last meeting	Present Status
	<p>IS 18606: 2024 Electric Power Train of M and N Category Vehicles -Specific Requirements</p> <p>(Based on AIS 38)</p>	<p>was sought from members vide mail dated 27.12.2024. Input received and action taken detail is attached at Annexure 4.</p> <p>Committee may please deliberate.</p> <p style="text-align: center;"><u>Decision of 14th Meeting</u></p> <p>Committee deliberated and decided as follows:</p> <p>1. It endorsed the then Chair TED 27 approval for Publication of document with corrections.</p> <p>2. Ms. Mohanty briefed the comment. Committee deliberated at length and mentioned that for some battery technology, Nail penetration test is important test and therefore it should be included in the standard. Further committee added that in the present form, it cannot be included in the standard as the issue of repeatability is associated with this test.</p> <p>Further, committee mentioned that if Ms. Mohanty can check and provide the solution of repeatability issue, it can be deliberated further and after due deliberation it would be included in the standard.</p> <p>Committee requested Panel 3 to deliberate on input received from Centre for Science and Environment and provide its recommendation.</p>	
2)	<p>Amendment IS 17191 Part 1 – (Electric Power Train Vehicles - Part 1: Measurement of Electrical Energy Consumption)</p>	<p style="text-align: center;"><u>Status in 14th Meeting</u></p> <p>Draft document TED 27 (18123) and TED 27 (18135) have been processed to publication.</p> <p>Further, ARAI may kindly update on the status of amendment in corresponding AIS standards.</p>	<p>Amendment 1 to IS 17191 Part 1 and IS 17191 Part 1 have been published.</p> <p>Further as decided in 14th meeting, draft documents for amendment 2 to IS 17191 Part 1 and Part 2 (based on latest amendments in AIS 39 and AIS 40) have been prepared and attached at</p>

Sl. No.	Subject	Decision of the Committee in the last meeting	Present Status
	<p>Amendment in IS 17191 Part 2</p> <p>Electric Power Train Vehicles Part 2 Method of Measuring the Range</p>	<p>Committee may deliberate.</p> <p style="text-align: center;"><u>Decision in 14th Meeting</u></p> <p>Committee noted the information.</p> <p>Shri Manoj from ARAI mentioned that amendment in AIS standards (AIS 39 and AIS 40) have been approved by CMVR-TSC.</p> <p>Committee deliberated and decided that once amendments to AIS standards (AIS 39 and AIS 40) are released (published), they would be incorporated in respective Indian Standards (IS 17191 Part 1 and part 2) through amendment. It requested BIS to circulate the draft amendment document, (based on latest amendment to AIS 39 and AIS 40), into WC of 30 days.</p>	<p>Annexure 5</p> <p>Committee may please deliberate.</p>
3)	<p>IS 18073: 2023</p> <p>TED 27 (13664) W - Electric Traction Motor —Performance and Functional Requirements:</p>	<p style="text-align: center;"><u>Status in 14th Meeting</u></p> <p>Panel 2 meeting was held on 5/3/2024 and 10/5/2024. Minutes of the Panel meeting is attached at Annexure-5. Committee may please deliberate.</p> <p style="text-align: center;"><u>Decision in 14th Meeting</u></p> <p>Shri Deepak Joshi from ICAT briefed the panel recommendation.</p> <p>Committee deliberated and accepted the panel recommendation. It decided to issue the draft amendment document into WC of 30 days.</p> <p>Ms. Buvaneswari from MSIL mentioned that they have checked the standards IEC 60349 Part 1 to 4 and they are in agreement with ICAI proposal.</p> <p>The committee deliberated and requested the sub-panel to verify all reference standards mentioned against the various tests/requirements in the standard. The sub-panel is to provide its recommendations regarding their</p>	<p>Recommendation from Sub-panel regarding reference of standards, is awaited.</p> <p>Sub-panel meeting is scheduled on 3.12.2024. Recommendation of the panel will be attached at Annexure 6 .</p> <p>Committee may please deliberate.</p>

Sl. No.	Subject	Decision of the Committee in the last meeting	Present Status
		correctness. Furthermore, committee decided that with the approval of the Chair, the sub-panel's recommendations would be included in the draft amendment document and circulated in Wide Circulation for a period of 30 days.	
4)	<p>TED 27 (16227): HYBRID ELECTRIC VEHICLES OF M & N CATEGORY WITH GVW > 3500 KG – TESTS FOR TYPEA PPROVAL</p> <p>(Modified/Technically Equivalent To: AIS - 102 (Part 2))</p> <p>TED 27 (18130): CMVR Type Approval for Hybrid Electric Vehicles</p> <p>(Modified/Technically Equivalent To: AIS - 102 (Part 1))</p>	<p style="text-align: center;"><u>Status in 14th Meeting</u></p> <p>Subject was discussed in 30th meeting of TEDC.</p> <p>Council constituted the following panel to review the AIS 102 (Part 1 and Part 2) and provide its recommendation (formulation of standard) to the council.</p> <p>Chairperson TED 27 (ICAT) Shri Vikram Tandon (ARAI) Shri Madhusudan Joshi (ICAT) Shri Gowri Shankar (TML)</p> <p>Meeting of above Panel will be held shortly.</p> <p style="text-align: center;"><u>Decision of 14th Meeting</u></p> <p>Committee noted the information given in the agenda.</p>	<p>Subject have not yet been discussed in the panel.</p> <p>Committee may please note the status.</p>
5)	<p>Review of IS 15886: 2010</p> <p>Road Vehicles: Battery Operated -Vehicles - Code of Practice” (Reaffirmed in 2017),</p>	<p style="text-align: center;"><u>Status in 14th Meeting</u></p> <p>Input from ARAI is awaited. Committee may please deliberate.</p> <p style="text-align: center;"><u>Decision in 14th Meeting</u></p> <p>ARAI mentioned that all the aspects have already been covered in various IS standards. Committee deliberated and recommended to WITHDRAW IS 15886.</p>	<p>Recommendation of TED 27 committee, will be taken up for further deliberation in next meeting of TEDC (Transport Engineering Division Council)</p>
6)	<p>(Guarantee for EV Batteries’ life)</p> <p>Input received from parliament Lok Sabha Secretariate regarding Observations / Recommendations</p>	<p style="text-align: center;"><u>14th meeting Status</u></p> <p>The Committee hold that in addition to the safety standards, there should be a minimum guarantee for batteries’ life. Longer battery life of EVs would instill confidence among potential EV buyers as</p>	<p>ARAI may please brief the status of AIS standard on the subject.</p> <p>Committee may please deliberate.</p>

Sl. No.	Subject	Decision of the Committee in the last meeting	Present Status
		<p>the price of the battery in the EVs constitutes major part of the cost of the vehicle.</p> <p>TED 27 Committee may please deliberate on above.</p> <p style="text-align: center;"><u>14th Meeting Decision</u></p> <p>Committee noted the information. Shri Manoj from ARAI mentioned that AIS is in the process of formulation of a Standard for M & N category vehicles based on GTR, on Battery durability which talks about the minimum distance supported during life cycle of vehicle, battery capacity and etc. He further added that presently the document is in draft stage.</p> <p>Committee deliberated at length and decided that once the AIS standard for M&N category vehicle is published, it can be taken as base document for formulation of Indian Standard. For L category, it decided that reference of M&N category standard may be taken to prepare the base draft and formulation of Indian Standard.</p>	
7)	<p>Input received from NITI AYOOG</p> <p>(Regarding Chemistry Agnostic Standard for E-Mobility)</p>	<p style="text-align: center;"><u>14th meeting Status</u></p> <p>NITI Ayog has constituted an Expert Committee for developing Chemistry Agnostic Standards for Energy Storage Technology. The Expert Committee mentioned that BIS need to modify the existing application standards AIS 038, AIS 040, AIS 041, AIS 048, AIS 049 and AIS 156 etc. to support the available and upcoming battery energy storage. Further modification and clarification may be appended as annexures with existing standards as discussed in the above para.</p> <p style="text-align: center;"><u>14th Meeting Decision</u></p> <p>Committee noted the information. It deliberated and mentioned that separate standards may be formulated based on inputs received from committee constituted</p>	<p>Please refer the mail sent on 22.7.2024 or Annexure 7.</p> <p>Further 1st meeting of Panel 8 was held on 2.8.2024.</p> <p>Minutes of 1st meeting of Panel 8 is attached at Annexure 7.</p> <p>Draft document prepared by Chakra was shared with Panel 8 members. Comments received from Panel 8 members are yet to be discussed in panel 8. (2nd meeting of Panel 8 is scheduled on 4/12/2024).</p> <p>Committee may please deliberate on constitution of Panel 8 and work done by it.</p>

Sl. No.	Subject	Decision of the Committee in the last meeting	Present Status
		<p>by NITI Ayog.</p> <p>It advised BIS to request Chakra Innovation to brief about Alumunium Air Battery in Panel 3 meeting. It requested panel 3 to deliberate further and provide its recommendation.</p>	
8)	<p>Comments on IS 18606: 2024 (Electric Power Train of M and N Category Vehicles - Specific Requirements)</p>	<p style="text-align: center;"><u>14th meeting Status</u></p> <p>Comments from MSIL attached at Annexure 7.</p> <p style="text-align: center;"><u>14th Meeting Decision</u></p> <p>Shri Sumit from MSIL and Shri Faustino from MSIL briefed the comments. Committee deliberated and accepted the comments and decided to issue the draft amendment document into WC of 60 days. It further decided that once the AIS 038 rev 3 is published, that can be taken for deliberation and agreed points can be addressed through separate amendment to Indian Standard.</p> <p>Ms Neha Gaba from Honda car briefed the comment, she mentioned that except thermal propagation tests, all comments are in line with AIS 038 rev 3 (draft document). Committee decided that once the AIS 038 rev 3 is published, it can be taken up for further deliberation. For Thermal propagation test, committee deliberated and in principal agreed. However it request ARAI and other stakeholders to provide their input. Based on input received, it may be deliberated in Panel/committee meeting.</p>	<p>Draft document, based on agreed comments, have been issued into WC for 60 days.</p> <p>Doc No: TED/27/26931</p> <p>WC Date: 14.11.2024</p> <p>Comments received on draft document (27.9.2024) is attached at Annexure 8.</p> <p>Committee may please deliberate.</p> <p>For thermal propagation test, input was sought from ARAI and other committee members vide mail dt 5.11.2024. Input was received from MSIL (vide mail dt. 27.11.2024). MSIL input was discussed in Panel 3 meeting.</p> <p>Please refer the minutes of Panel 3 meeting, attached at Annexure 4.</p> <p>Committee may please deliberate.</p>
9)	<p>Comments on IS 18590: 2024 (Electric Power Train of L Category Vehicles - Specific Requirements)</p>	<p style="text-align: center;"><u>14th Meeting Decision</u></p> <p>1. Item 5.4 of the minutes: (</p> <p>Comments on IS 18590: 2024 (Electric Power Train of L Category Vehicles – Specific Requirements)</p> <p>Shri Varun Sharma from Hero MotoCorp</p>	<p>Draft document (based on agreed comments) is attached at Annexure 4.</p> <p>For panel recommendation for inclusion of E-rickshaw in the standard, please refer minutes of panel 3 meeting, attached at Annexure 4.</p> <p>Committee may please deliberate.</p>

Sl. No.	Subject	Decision of the Committee in the last meeting	Present Status
		<p>briefed the comment. Committee deliberated and accepted the comment and decided to issue the draft amendment document into WC of 60 days.</p> <p>2. Item 6.4 of the minutes (Battery for E-Rickshaw)</p> <p>Committee deliberated at length and mentioned that presently requirement of E-Rickshaw is not covered in IS 18506 and IS 18590. for Type approval of E-Rickshaw, AIS 048 is being followed and for FAME, AIS 156 is mandatory. Committee deliberated and decided to cover E-Rickshaw battery (excluding open type battery) in the scope of IS 18590. It requested Panel 3 to deliberate in detail and formulate draft amendment document, for modification in scope. Draft amendment document shall be circulated into WC along with other agreed comments (please see item 5.4).</p>	
10)	DC to DC Voltage converters	<p><u>14th meeting Status</u></p> <p><i>DC to DC Voltage converters are widely being used in EV. BIS standard can be developed to frame the product requirements</i></p> <p>Remarks: M/s Roots may share a brief presentation elaborating the subjects, relevant stakeholders, necessity of standardization and other aspects, if any</p> <p>It may be noted that ISO TC 22 SC 37 (which is liaised with TED 27) has formulated standards ISO 21782-4:2021 and ISO 21782-7:2021(on DC/DC converter)</p> <p>Committee may please deliberate.</p> <p><u>14th Meeting Decision</u></p> <p>Committee deliberated at length and requested Roots Industry to present a</p>	<p>Panel 4 meeting was held on 11.9.2024 and 12.11.2024 .</p> <p>Minutes of the panel 4 meeting is attached at Annexure 9.</p> <p>Committee may please deliberate.</p>

Sl. No.	Subject	Decision of the Committee in the last meeting	Present Status
		presentation in the panel 4 meeting. Panel 4 to deliberate in detail and provide its recommendation.	
11)	Retro fitment in EVs – (Based on AIS 123)	<p align="center"><u>14th Meeting Decision</u></p> <p>BIS may prepare the draft or request the committee member to prepare draft based on AIS 123 and draft prepared as above shall be issued into WC for 60 days.</p>	Committee may please assign the task to suitable expert(s), for preparation of draft.
12)	<p>QRTV standard- Based on AIS 173</p> <p>TED 27 (26886) - Requirements of Quiet Road Transport Vehicles (QRTV) with Regard to their Reduced Audibility</p>	<p align="center"><u>14th Meeting Decision</u></p> <p>Based on AIS 173 – Renault to provide the draft document. Draft document received from Renault will be issued into WC for 60 days.</p>	<p>Draft document received from Renault has been issued into WC of 60 days.</p> <p>Doc No: TED/27/26886</p> <p>WC Date: 12.11.2024</p> <p>Comments received on draft document (till 27.11.2024) are attached at Annexure 10.</p> <p>Committee may please deliberate.</p>
13)	Proposal on Hybrid Kits	<p align="center"><u>14th Meeting Decision</u></p> <p>Member Secretary briefed the proposal received from Karishma Global Ventures on hybrid kits for bikes. Committee deliberated and mentioned that if detailed proposal is received, it would be discussed in next committee meeting.</p>	<p>M/s Karishma Global was informed to submit the proposal through BIS portal. However no input/ proposal has been received so for.</p> <p>Committee may please deliberate.</p>

ITEM 4 REVIEW OF PUBLISHED STANDARDS

4.1 The Sectional Committee may review all the standards formulated by it and identify the standards that are not required by the industry due to change in technology, obsolescence, etc, for withdrawal and the standards that need to be amalgamated or to be revised. During review, the committee may decide either to reaffirm, revise or to withdraw the standards based on latest technology available on the subject at the time of review

4.2 List of Indian Standards which are due for review, are as follows:

Sl. No.	IS No.	Title	14th Meeting Decision	Present Status
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1)	IS 17191 (Part 1): 2019	Electric Power Train Vehicles Part 1 Measurement Of Electrical Energy Consumption	It decided to reaffirm and amend the standard (pl refer SI no 2 of Item 3 also)	IS 17191 Part 1 has been reaffirmed. For amendment, please refer pl refer SI no 2 of Item 3.
2)	IS 17191 (Part 2): 2019	Electric Power Train Vehicles Part 2 Method of Measuring the Range	It decided to reaffirm and amend the standard (pl refer SI no 2 of Item 3 also)	IS 17191 Part 2 has been reaffirmed. For amendment, please refer pl refer SI no 2 of Item 3.
3)	IS 17191 (Part 3): 2019	Electric Power Train Vehicles Part 3 Measurement Of Net Power and The Maximum 30 Minute Power	It requested MSIL to review IS 17191 Part 3 and submit the review report to BIS for further circulation	Review report received from MSIL, has been circulated with committee members vide BIS portal dt. 29.11.2024 Committee may please deliberate.

NOTE- Policy of Archiving has been adopted to help the SCs priorities the review of standards. The standards, which cannot be withdrawn, but have lost relevance due to diminishing use in the wake of onset of new products, processes or test methods, can be archived, and a mention to this effect shall be made against that standard in the database of the Published standards. This will not only enable the SCs to focus on more important standards, but will also keep the window open for the stakeholders to point out if the review is required.

ITEM 5 NEW WORK ITEM PROPOSAL

- **Presentation from Dr Om Krishan (Sc. D, Meity),** PPT attached at Annexure 12.

ITEM 6 INTERNATIONAL ACTIVITIES

6.1 India is having membership on following ISO/ IEC committees related to TED 27:

ISO Committee/Sub Committee	TITLE	Type of membership
ISO/ TC 22/ SC 37	Electric Road Vehicle	P Member
IEC/ TC 69	Electric Road Vehicles and Electric Industrial Truck	P-member

6.2 The list of ISO standards published by ISO/ TC 22/ SC 37, IEC/TC 69 and its sub- committees can be accessed through following link:

- <https://www.iso.org/committee/5391154.html>
- https://www.iec.ch/dyn/www/f?p=103:7:402906030823457::::FSP_ORG_ID,FSP_LANG_ID:1255,25

The committee may review the ISO standards and categorize them as per the following broad categories.

- a) ISO Standards which can be directly adopted as Indian Standards without any change.
- b) ISO standards which can be modified technically as per our country’s needs and then adopted as Indian Standards.
- c) ISO Standards which are not at all suitable for our country needs and may not be adopted at all.

6.3 Adoption/Review of ISO Standards

Sl. No.	ISO No.	Title	14 th Meeting Decision	Present Status
1)	ISO 6469-1:2019	Electrically propelled road vehicles — Safety specifications — Part 1: Rechargeable energy storage system (RESS)	Committee accepted the ARAI recommendation vide mail dt. 8.7.18 and decided that these subjects have already been covered.	-
2)	ISO 6469-2:2022	Electrically propelled road vehicles — Safety specifications — Part 2: Vehicle operational safety		
3)	ISO 6469-3:2021	Electrically propelled road vehicles — Safety specifications — Part 3: Electrical safety		
4)	ISO 6469-4:2015	Electrically propelled road vehicles — Safety specifications — Part 4: Post crash electrical safety		
5)	ISO 18300:2016	Electrically propelled vehicles — Test specifications for lithium-ion battery systems combined with lead acid battery or capacitor	Committee requested Panel 3 to deliberate and provide its recommendation that whether to adopt (identical/modified) ISO 18300 or it is not at all suitable for our country needs and may not be adopted at all.	Please refer the minutes of Panel 3 meeting attached at Annexure 4.
6)	ISO 21782-1:2023	Electrically propelled road vehicles — Test specification for electric propulsion components — Part 1: General test conditions and definitions	Committee requested Panel 4 to deliberate on these standards and provide its recommendation that whether to adopt (identical/modified) these ISO standards or they are not at all suitable for our country needs and may not be adopted at all.	Subject was discussed in Panel 4 meeting. Minutes of Panel 4 is attached at Annexures 9.
7)	ISO 21782-2:2019	Electrically propelled road vehicles — Test specification for electric propulsion components — Part 2: Performance testing of the motor system		Committee may please deliberate.
8)	ISO 21782-3:2019	Electrically propelled road vehicles — Test specification for electric propulsion components — Part 3: Performance testing of the motor		

Sl. No.	ISO No.	Title	14 th Meeting Decision	Present Status
		and the inverter		
9)	ISO 21782-4:2021	Electrically propelled road vehicles — Test specification for electric propulsion components — Part 4: Performance testing of the DC/DC converter		
10)	ISO 21782-5:2021	Electrically propelled road vehicles — Test specification for electric propulsion components — Part 5: Operating load testing of the motor system		
11)	ISO 21782-6:2019	Electrically propelled road vehicles — Test specification for electric propulsion components — Part 6: Operating load testing of motor and inverter		
12)	ISO 20762:2018	Electrically propelled road vehicles — Determination of power for propulsion of hybrid electric vehicle		
13)	ISO 21782-7:2021	Electrically propelled road vehicles — Test specification for electric propulsion components — Part 7: Operating load testing of the DC/DC converter		
14)	ISO 21498-1:2021	Electrically propelled road vehicles — Electrical specifications and tests for voltage class B systems and components — Part 1: Voltage sub-classes and characteristics		
15)	ISO 21498-2:2021	Electrically propelled road vehicles — Electrical specifications and tests for voltage class B systems and components — Part 2: Electrical tests for components	Committee requested Panel 7 to deliberate and provide its recommendation that whether to adopt (identical/modified) ISO 20762 or it is not at all suitable for our country needs and may not be adopted at all.	Subject was discussed in Panel 4 meeting. Minutes of Panel 4 is attached at Annexures 9 . Committee may please deliberate.
16)	ISO 8715:2001	Electric road vehicles — Road operating characteristics	Committee deliberated and requested ICAT to explore after discussing with vehicle testing team and other members of the panel that whether to adopt (identical/modified) ISO	<u>Input from ICAT is awaited.</u> <u>Committee may please deliberate.</u>

Sl. No.	ISO No.	Title	14 th Meeting Decision	Present Status
			18300 or it is not at all suitable for our country needs and may not be adopted at all.	
17)	ISO 23274-1:2019	Hybrid-electric road vehicles — Exhaust emissions and fuel consumption measurements — Part 1: Non-externally chargeable vehicles	Committee deliberated and decided that these may be discussed once the TEDC direction is received on adoption of AIS 102 Part 1 and Part 2.	<u>TEDC direction is awaited for AIS 102 Part 1 and Part 2.</u>
18)	ISO 23274-2:2021	Hybrid-electric road vehicles — Exhaust emissions and fuel consumption measurements — Part 2: Externally chargeable vehicles		
19)	ISO 8714:2023	Electric road vehicles — Reference energy consumption and range — Test procedures for passenger cars and light commercial vehicles	Committee deliberated and mentioned that topic is already covered in IS 17191 Part 1 and Part 2 (AIS 39 & 40).	-.
20)	ISO/TR 8713:2019	Electrically propelled road vehicles — Vocabulary	Committee deliberated and accepted the sub-panel recommendation to not formulate Indian Standard based on ISO/TR 8713:2019. (please refer Sl. no 7 of Item 3)	-
21)	ISO 12405-4:2018	Electrically propelled road vehicles — Test specification for lithium-ion traction battery packs and systems — Part 4: Performance testing	Committee mentioned that ISO 12405-4 has already been adopted by TED 27.	-
22)	ISO/TS 5474-5:2024	Electrically propelled road vehicles — Functional Safety and	Committee deliberated	-

Sl. No.	ISO No.	Title	14th Meeting Decision	Present Status
		requirements for power transfer between vehicle and external electric circuit — Part 5: Automatic conductive power transfer	and mentioned that these subjects pertain to ETD 51. ETD 51 may take up suitably.	
23)	ISO 19363:2020	Electrically propelled road vehicles — Magnetic field wireless power transfer — Safety and interoperability requirements		
24)	ISO 17409:2020	Electrically propelled road vehicles — Conductive power transfer — Safety requirements		
25)	IEC 62752:2016	In-Cable Control and Protection Device for mode 2 charging of electric road vehicles (IC- CPD)		
26)	ISO/TR 11954:2024	Fuel cell road vehicles — Performance measurement — Vehicles fuelled with compressed hydrogen	Committee deliberated and mentioned that these subjects pertain to TED 26. TED 26 may take up suitably.	-
27)	ISO 23828:2022	Fuel cell road vehicles — Energy consumption measurement — Vehicles fuelled with compressed hydrogen		
28)	ISO/TR 17326:2023	Fuel cell road vehicles — Cold start performances under sub-zero temperature — Vehicles fuelled with compressed hydrogen		
29)	ISO 23273:2013	Fuel cell road vehicles — Safety specifications — Protection against hydrogen hazards for vehicles fuelled with compressed hydrogen		

6.4 The list of working groups/ panels with their titles under technical committee ISO/ TC 22/ SC 37 are:

Reference	Title
ISO/TC 22/SC 37/WG 1	Safety aspects and terminology
ISO/TC 22/SC 37/WG 2	Performance and energy consumption
ISO/TC 22/SC 37/WG 3	Rechargeable energy storage
ISO/TC 22/SC 37/WG 4	Systems and components connected to electric propulsion systems
ISO/TC 22/SC 37/WG 5	Requirements for energy transfer
ISO/TC 22/SC 37/WG 6	Charging performance

The committee may please note.

6.5 The list of Groups /working groups with their titles under under IEC TC 69 are:

IEC TC 69 Electrical power/energy transfer systems for electrically propelled road vehicles and industrial trucks	
Label	Title
WG 7	Electric vehicle wireless power transfer (WPT) systems
WG 9	Electric vehicle charging roaming service
WG 12	Electric Vehicles conductive power/energy transfer system
WG 13	Electric vehicle battery exchange infrastructure safety requirements
WG 14	EV supply equipment with automated connection of a vehicle coupler
WG 18	EV Supply Equipment Vocabulary
Project Team	
PT 61851-23-1	Electric vehicle conductive charging system - Part 23-1: DC Charging with an automatic connection system
PT 61851-23-3	DC electric vehicle supply equipment for Megawatt charging systems
PT 62576-2	Electrical characteristics test methods of EDLC Module for Electric road vehicles
PT 63380	Local Charging station management systems
Maintenance Teams	
MT 5	Maintenance of IEC 61851-23 and IEC 61851-24
MT 19	EMC requirements for off board electric vehicle charging systems
MT 62576	Electrically propelled vehicles, energy storage, electric double-layer capacitors and hybrid capacitors
Joint Working Groups	
JWG 1	Vehicle to Grid Communication Interface (V2G CI) linked to <u>ISO/TC 22</u>
JWG 11	Management of Electric Vehicles charging and discharging infrastructures linked to <u>TC 57</u>
JWG 15	Distributed energy storage systems based on Electrically Chargeable Vehicles linked to <u>TC 57, TC 120</u>
TC 21/JWG 69 Li	TC21/SC21A/TC69 - Lithium for automobile/automotive applications Managed by <u>TC 21</u>
TC 21/JWG 69 Pb-Ni	TC 21/SC 21A/TC 69 - Lead Acid and Nickel based systems for automobile/automotive applications Managed by <u>TC 21</u>
TC 85/JWG 26	Electrical Safety In Low Voltage Distribution Systems Up To 1 000 V Ac And 1 500 V Dc – Equipment For Testing, Measuring Or Monitoring Of Protective Measures – Part 18: Dc Ev Supply Equipment Monitoring Device Managed By <u>Tc 85</u>
Advisory Groups	
AG 16	Chair's Advisory Group
Ad-Hoc Groups	
ahG 17	Interoperability and safety issues of using charging adapters between different DC charging systems
Joint ad-Hoc Groups	
JAHG 17	Initial study into synergy and interplay between IEC TC 13 and IEC TC 69 Managed by <u>TC 13</u>
Joint Advisory Group	
JAG 47	Joint Advisory Group on Electric Vehicle energy transfer: functional and safety aspects Managed by <u>TC 64</u>

6.6 The Committee may deliberate on the status of standardization in the areas dealt by the committee at international level and give its suggestions for improving participation in the related committees of

ISO/IEC.

6.7 Participation in ISO Meetings

6.8 IR PORTAL- Brief by Member Secretary

6.9 Guideline received from PNC (Planning and Coordination Department) for adoption of ISO/IEC standards and designation of experts for ISO/IEC projects, are attached at **Annexure 11**. Committee may please note

ITEM 7 ROAD MAP OF STANDARDIZATION WORK OF TED 27

In 14th meeting of TED 27, committee deliberated and constituted the road map of standardization of TED 27 as follows:

- Formulation of Indian Standard for Retro-fitment (based on AIS 123)
- Formulation of Indian Standard for QRTV (based on AIS 173)
- Analysis of ISO standards and their adoption

Committee may please deliberate and add/ delete the required subjects

ITEM 8 PROGRAM OF WORK

PoW of TED 27 committee, can be accessed through following link:

https://www.services.bis.gov.in/php/BIS_2.0/bisconnect/pow_details

Committee may please note the status of documents in TED 27.

ITEM 9 ANALYTICAL REPORTS/ADVANCED DASHBOARD

Committee may note the features of advance dashboard.

ITEM 10 DATE AND PLACE FOR THE NEXT MEETING

In 14th meeting, committee decided to hold the 16th meetings as on 21 February 2024 (in virtual mode). Committee may please deliberate.

ITEM 11 ANY OTHER BUSINESS

