

Reasoned documents of Comments received from Firms for STR (Rev-2)
DRAFT STR NO.RDSO/PE/STR/TL/0014-2010 (REV-2) UPLOADED ON WEBSITE FOR 30 DAYS

Amended Clause No.	As per Draft STR no. RDSO/PE/STR/TL/0014-2010 (Rev-2) uploaded on website	Comment received	Reason offered by Firm	RDSO's comments / Modified clause
Annex. I	List of Machineries and Plants for Manufacture of Low maintenance Lead acid storage batteries	HBL:- This Annexure may be deleted	HBL:- Both Production Units and Zonal Railways have discontinued procuring of Low maintenance lead acid batteries used in Train lighting and AC coach applications and hence this section may be deleted	Not Accepted Annex. It is applicable for registration of LMLA batteries and manufacturers are approved and appearing in RDSO's vendor directory.
Annex. I (B)18	Distilled water manufacturing plant	Bharat:- Distilled/DM water manufacturing plant		Accepted, as basically Demineralized (DM) water is used for topping up of batteries.
Annex. I- (A) 18	Automatic Shear testing machine to check the welding strength-Preferably with auto segregation of defective/ failed cell.	Bharat:- Automatic inter cell welding Shear testing to check the welding strength preferably with auto segregation of defective/failed cell.		Accepted, as sentence more technically clear.
Annex. I B-13	Automatic Absorption spectrophotometer or ICP (Inductively coupled plasma) to monitor the quality of acid, water etc.	Bharat:- Automatic Absorption spectrophotometer or ICP (Inductively coupled plasma) for quantitative analysis of metal and metallic impurities in raw material.		Accepted,modified as sentence is more technically correct :- Atomic Absorption spectrophotometer or ICP for quantitative analysis of metal and metallic impurities of water, acid and other raw material
Annex. I B-14	Bitumen compound sealing testing facility	Bharat:- -Delete this clause as Bitumen sealing is not allowed in PP battery.		Not Accepted Still battery are approved in Hard Rubber container

Annex. I B-26	Shore hardness Tester	Sr. No. Missing		It is there
Annex. II-(A) 2	Automatic Gravity die-casting machines for Positive and Negative grids. (Hand moulding process not permitted)	Exide:- Positive platePressure die casting Negative Plate Gravity die casting.		Accepted:- Additional requirement for GEL battery is given
Annex. II-(A) 3	Pressure die-casting machines for positive Spine for GEL type batteries (Hand molding process not permitted)	Coslight:- It is not required for VRLA Manufactures, i.e. applicable only for GEL Manufactures.		Additional requirement for GEL battery is given
Annex. II-(A) 4	Automatic Gravity die-casting machines for terminal post, inter unit connector, poles etc. (Hand moulding process not permitted)	Exide:- Hand Molding Coslight:- Semi automated processes also used for terminal post, inter unit connector, poles etc.in VRLA battery Manufactures.		Accepted :- “semi” may be added in sentencesincemachine is not completely automatic “Semi autometic/Autometic... ..
Annex. II-(A) 6	Vibration plant for filling of positive tubular plates for GEL batteries	HBL:- Vibration plant / Slurry filling station for filling of positive tubular plates for GEL batteries	HBL:- Positive plate's active material is filled both in the form of powder and slurry and hence provision may be given for both types of manufacturing processes	Accepted with both option , as slurry filling is a process which reduced the pollution due to suspended particles of lead oxide powder during vibration for filling.
Annex. II-(A) 8	Automatic heat sealing machine for PE Separator bag, if P.E. separator bag is manufactured internally	Microtex:- Not Applicable as we use PVC Separators for GEL battery. Coslight:- It is not required for VRLA battery Manufactures. Exide:- PE separator bag not used (Leaf type PVC separator)		Accepted :- Clause modified as “PVC Separator manufacturing plant or outsourced with ISO certified firm”
Annex. II-(A)	-	Microtex:- Gel Mixing Equipment. Labco:- Gel Mixing Machine.	Microtex:- To be included	Accepted:-incorporated in requirement for GEL batteries.
Annex. II-	-	Microtex:- Tubular Bags	Microtex:- To be included	Not Accepted. This item is also

(A)		manufacturing Equipment		used for LMLA batteries but is not mandatory there, hence not accepted for Gel VRLA .
Annex. II- (A)	-	Microtex :-PVC Separators manufacturing Equipment	Microtex :-To be included	Accepted. Included for GEL batterieswith outsourced option
Annex.II (A)	-	Labco :- Gel Filling Machine	To be included	Accepted, included for GEL batteries.
Annex.II(A)	-	Labco :-Acid Dumping Machine	To be included	Accepted, included for GEL.
Annex.II (A)9	Manufacturers may have their own manufacturing of Container and Lid plant. However, they may outsource the Container and Lid to other ISO certified firms, having Automatic Injection Moulding Machine (For PPCP type), but the manufacturers should have their own moulds for Container and Lid and MOU with the outsourced firm for manufacturing of container & lid.	Coslight ;-Injection Moulding is the state of the art facility for manufacturing of Container and cover.It is required for battery Manufactures.		Accepted. As this requirement is already given for out source supplier. Hence Injection moulding word may be incorporated as below "Manufacturers may have their own injection moulding plant of Container and Lid..... of container& lid:"
Annex. II- (A) 10	Plate/Jar formation plant with power back up and automatic recording facility for power interruption	Coslight ;-Jar formation plant with continuous water recirculation facility for temp control - shall be incorporated and water treatment plant should be deployed for VRLA battery mfrs.		Accepted for better clarity
1 Annex. II- (A) 13	Automatic Inter cell connector welding machine for monoblock batteries.	Coslight ;- It is not required for VRLA battery Manufactures,		Not accepted It is required for 6V and 120 Ah and 12V, 70 Ah monoblock
Annex.II (A)16	Distilled water manufacturing plant	Exide :- We have DM water plant	-	Accepted, as basically Demineralized (DM) water is used for topping up of batteries.
Annex.II	Formation Rectifier	Coslight: -The chargers are of high		Not accepted

(A) 21		quality "Regenerative Charger" where it is used as charge/discharge circuit and the power during discharge is fed back to the mains power.It is required for VRLA battery Manufactures.		Extra infrastructure need to be developed.
Annex.II (A) 22	Manometer	Exide:- Automatic Air leak testing machine	-	Not Accepted. This is required for Gas recombination efficiency
Annex. II – (A) 27	Lead re-cycling plant as per MOEF or MOU with authorized recycler approved by MOEF. The authorized recycler capacity shall be at least 50 % of lead used by battery manufacture.	HBL:- Lead re-cycling plant as per MOEF / State Pollution Control Board or MOU with authorized recycler approved by MOEF / State Pollution Control Board. The authorized recycler capacity shall be at least 50 % of lead used by battery manufacture.	HBL:- MOEF has authorized Pollution Control Boards of respective states vide attached Gazette to approve Recyclers and hence provision for the same may be incorporated	Accepted. M/s HBL have submitted supporting documents.
Annex. II – (B)3	Temperature controlled AC test room with UPS for testing equipment.	HBL:-Temperature controlled AC test room with UPS for testing equipment PC's.	HBL:-Power back up (DG Set) arrangement is available and hence need of UPS may be limited to PCs alone.	Not accepted. Test purpose UPS is more reliable.
Annex. II – (B) 17	Weighing balance (digital) up to 150 Kg with least count of 10 gm. for cell weight	HBL:- Weighing balance (digital) up to 150 Kg with an accuracy of 0.05 % of full scale or least count of 50 gm for cell weight	HBL:- Change proposed is to align the requirement given in RDSO Spec (Rev-3), 2014 in Cl. No. 8.8	Accepted. "Weighing balance (digital) up to 150 kg with least count of 50gm. and up to 50kg with leastcount of 20 for cell weight"
Annex. II – (B) 24	Test equipment for Fire retardant testing as per UL94 specification or latest.	Exide:- Do not comply	-	Not accepted:- This facility is already existing in STR
Annex. II – (A) 10	Plate/Jar formation plant with power back up and automatic recording facility for powerinterruption.	Labco:- Cell Charging and Discharging rectifier.		Not accepted.Formaton plant consisting Charging and Discharging rectifier.

Annex. III-6 (iii)	The supplier shall carryout all final inspections and test in accordance with the Quality Assurance Plan or documented procedures evolved on the basis of RDSO specification and specified standard. Any change in Quality Assurance Plan (QAP) or documented procedures shall be promptly communicated to RDSO.	Bharat:- Lead & Lead alloy may be procured in case of exigencies from other than enlisted supplier in QAP after ensuring that purchased raw material shall confirm to the specified requirements and are procured only on the basis of well prepared technical specification.		Not accepted. All anticipated supplier/source may be initially included in QAP for approval.
Annex. III-8	Design and Development: The firm shall have Design and Development organizational structure for the designing of batteries of required capacity and also to implement the input given by R&D for trouble free long life services. In organizational structure, there shall be minimum two Engineers having Degree/Diploma in Electro Chemical / Chemical Engineering with minimum five years' experience.	HBL:- Design and Development: The firm shall have Design and Development organizational structure for the designing of batteries of required capacity and also to implement the input given by R&D for trouble free long life services. In organizational structure, there shall be minimum two Engineers having Degree/Diploma in Electro Chemical / Chemical / Mechanical / Electrical / Electrical & Electronics / Any relevant Engineering stream with adequate experience. Microtex:- The firm shall have Design and Development organizational structure for the designing of batteries of required capacity and also to implement the input given by R&D for trouble-free long-life services. In	HBL:- Change proposed is to have flexibility for manufacturers. In today's era, personnel having Diploma / Degree in any of the Engg. stream can handle the subject activity as long they have adequate knowledge and experience.	Accepted. Clause is modified as follows:- Design and Development & R&D: The firm shall have Design and Development and R&D organizational structure for the designing of batteries of required capacity and also to work on quality/performance related issue received from field for trouble free long life services. In organizational structure, there shall be minimum two Engineers having Degree in Electro Chemical / Chemical Engineering with minimum five years' experience

		<p>organizational structure, there shall be minimum two Engineers having Degree/Diploma in Electro Chemical / Chemical Engineering/Electrical or Mechanical Engineering with minimum 10years' experience.</p> <p>Coslight:-The firm shall have design and development organizational structure for the designing of battery required capacity and also to implement the input given by R&D for trouble free long life services. In organization structure there shall be minimum two Degree /Diploma Engineers anydiscipline)with 5 years experience in Lead acid Battery filed experience.</p> <p>Bharat:- The firm shall have design and development organizational structure for the designing of battery of required capacity and also to implement the input given by R&D for trouble free long life services. In organization structure there shall be minimum two technical personal having Degree /Diploma in electrochemical /Chemical/ Chemical or BSC/MSC with minimum 10 years experience.</p>		
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Annexure III. 9	<p>"The firm shall indicate the organizational structure of R&D Organization along with qualification of the personnel. Firm should have at least one Graduate (B.E/Chemical) Design engineer with experience of more than 5 yers in the field of lead acid batteries or BSc/MSc/Diploma with 10 years of experience in battery field.</p>	<p>HBL:-The firm shall indicate the organizational structure of R&D Organization along with qualification of the personnel. Firm should have at least one Degree / Diploma (Electro chemical / Mechanical / Electrical / Electrical & Electronics / Any relevant Engineering stream)Design Engineer with adequate experience OR personnel possessing B.Sc / M.Sc with adequate experience in battery field. This clause may be merged with the Clause given at Annexure III (Sl. No. 8) Microtex:- The firm shall indicate the organizational structure of R&D Organization along with qualification of the personnel. Firm should have at least one Graduate (B.E/Chemical) Design Engineer with experience of more than 5 years in the field of lead acid batteries or B.Sc / M.Sc / Diploma in Electrical or Mechanical Engineering with 10 years of experience in battery field. ULOP:-R&D and Design Development are to be conducted</p>	<p>HBL:-Reason is as mentioned against Annexure III (Sl. No. 8) above. In most of the organizations, both D & D and R & D functions operate together and hence same may be merged.</p> <p>ULOP:-Amend this requirement to one Single R & D and Design</p>	<p>Accepted. Clause merged with clause no. 8 for Design&Development</p>
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		<p>in synergy as a team work) and headed by minimum one Degree Engineer holder having minimum 5 years' experience in the field of battery industry or M.Sc Degree holder having minimum 10 years experience in the battery industry.</p> <p>Coslight:- The firm shall indicate the organizational structure of R&D Organization along with qualification of the personnel. Firm should have at least one graduate (B.E/B.Tech) design engineer with experience of more than 5 years in the field of lead acid batteries or B.Sc/M.Sc/ Diploma with 10 years experience in Lead acid battery field.</p>	Development Department instead of two different departments	
Annex. IV 2	<p>For registration, only those Firms which have manufactured and supplied LMLA/VRLA/GEL Batteries (Separately for LMLA/VRLA/GEL) in the past for Rolling stock application/traction application/ Automobile organization for minimum five years with satisfactory performance shall be accepted. However, any suppliers who are having minimum five year experience in manufacturing and supply of LMLA batteries for Railway's Rolling Stock application shall also be considered for</p>	<p>Coslight:-For registration, only those Firms which have manufactured and supplied LMLA/VRLA/GEL Batteries (Separately for LMLA/VRLA/GEL) in the past for any application for minimum five years with satisfactory performance shall be accepted. However, any suppliers who are having minimum five year experience in manufacturing and supply of LMLA batteries for Railway's Rolling Stock application shall also be considered for</p>		Not Accepted

	registration for VRLA/ VRLA (GEL) Batteries.	registration for VRLA/ VRLA (GEL) Batteries.		
Annex. IV 3	If the firm is already approved for any of the VRLA / GEL Batteries, its performance should be satisfactory i.e. there shall be no major complaints from the Railways. Its FRPCPY should be less than average FRPCPY for two years of approved vendors for that VRLA Battery. Else, the firm will not be considered for the development of new type of VRLA / GEL Battery	STAR: -If the firm is already approved for any of the VRLA / GEL Batteries, its performance should be satisfactory i.e. there shall be no major complaints from the Railways. Its FRPCPY should not be more than average FRPCPY of approved vendors for that VRLA Battery.		Accepted, modified as below: If the firm is already approved for any of the VRLA/ GEL Batteries, its performance should be satisfactory i.e. there shall be no major complaints from the Railways. Its FRPCPY for two years should not be more than average FRPCPY of approved vendors for that VRLA battery. Else, the firm will not be considered for the development of new type of VRLA/ GEL Battery.
Annex. IV 4	If firm is found capable to manufacture VRLA batteries in assessment, initial approval for registration shall be given only for 120 Ah train lighting batteries after successful prototype testing.	STAR:- This clause may be deleted		Not accepted. However Clause modified and 70 Ah is also included.
Annex. IV 5	Firm's offer for developing VRLA air conditioned coach battery shall not be accepted till its performance for 120Ah VRLA train-lighting batteries is satisfactory not only during first two years but also during the next two years.	Coslight:- Firm's offer for developing VRLA air conditioned coach battery shall be accepted without linking its satisfactory performance for 120Ah VRLA train-lighting batteries. New vendor can be allowed for development, if		Accepted with modification as follows: Firm's offer for developing VRLA air conditioned <u>conventional (Non LHB)</u> coach battery shall not be accepted till its performance for 120Ah/70Ah batteries is satisfactory for the

		battery performance is satisfactory during Type test they can be allowed for field trial for 6 months and during this period if performance is satisfactory they can be allowed for development orders for 2 years. At the end of 2 Years if performance proved satisfactory they should be allowed as approved vendors.		last two year.
Annex. IV 6	Firm approved for LMLA batteries if wants to develop the VRLA batteries, shall have to develop manufacturing facility for VRLA batteries. However Oxide Mill, automatic Paste Mixing, Pollution Control System, D.M. water Plant and test equipment may be common if both the plants (LMLA & VRLA/GEL (VRLA) are in same premises.	STAR:- This clause may be deleted		Not Accepted. However it is modified as below: Firm approved for LMLA batteries if wants to develop the VRLA/GEL batteries, shall have to develop manufacturing facility separately for VRLA (AGM/Gel) batteries. However Oxide Mill, automatic Paste Mixing, Pollution Control System, D.M. water Plant and test equipment may be common if both the plants (LMLA & VRLA/ GEL(VRLA) are in same premises.