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INDIAN RAILWAYS

SPECIFICATION

FOR

Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) used on Container Flat wagons on IR

SPECIFICATION NO. WD-CONTR-ATL-2024 (Rev.0)

(Supersedes Guidelines for Multi-Sourcing of Automatic Twist Lock (ATL) devices used on container flat wagons on IR document no. CONTR-01-ATL-MSG-2011 of November 2011)

December-2024

ISSUED BY

WAGON DIRECTORATE

RESEARCH DESIGNS AND STANDARDS ORGANISATION

MINISTRY OF RAILWAYS

LUCKNOW-226011

INDIA

Price:

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1.0 PREAMBLE:

1.1 The history of Container Locking devices on Indian Railways dates back to pre-1980s wherein BFKI Wagons were fitted with Retractable Anchor Locks to secure the Containers. Consequent to a 1994 World Bank loan, CONCOR, in its draft Technical Specifications for a Global Tender indicated amongst others a requirement of locking devices to accommodate various combinations of ISO Containers. In the year 1996, a decision was taken by CONCOR to evaluate both Semiautomatic and Automatic Twist Lock devices for suitability of use in their proposed Container Flats. This was a significant departure for the then-current Retractable anchor locks that were used in BFKI Wagon. During the course of evaluation and development of this product, AAR M 952 – 88 Specifications were consulted and an AAR approved product was chosen for fitment on the Low Platform Container flat Wagons,. In the prototyping stage of the Wagons both the options-Automatic Twist Lock and Semi-Automatic Twist Lock, were tested in accordance with a Test scheme evolved by RDSO derived on the lines of AAR M - 952. In Sep, 1997, CONCOR chose the provision of Automatic Twist Locks over the Semi-Automatic Twist Locks in its new Container Flat Wagons. The Drawing CONTR- 9405 – S/21, finalized in the year 1999, showed the Fitment details of the Automatic Twist Lock. Since then, Automatic Twist Lock (ATL) devices are being used on Container Flat wagons of IR.

1.2 Under the aegis of MOUs between RDSO and RITES on the BLC Wagons, Ms RITES was carrying out the Vendor Approval for the Automatic Twist Locks for Application on Container Wagons. RDSO has been developing drawings for fitment of ATL's based on manufacturers whose ATL's have been tried. Trials with other AAR manufacturers like M/s Portec& M/s Celtec have also been done in past. Trials with M/s Celtec coordinated by M/s RITES have been unsuccessful. In the year 2007, RITES accorded approval to one licensee of an OEM for supply of the Automatic Twist Locks.

1.3 Based on the approvals from RITES, RDSO Wagon Dte.has also advised the Zonal Railways about the approved Sources. Railway Board Vide Letter No 2006/M(N)/951/3 Dated 22/04/2010 advised all Zonal Railways to purchase the Twist Locks from Approved sources advised by RDSO, the same being a safety item. Subsequently, the item was taken by RDSO from RITES for multi-sourcing.

1.4 Container flat wagons on Indian Railway (IR) transport containers to the International ISO standards. The lashing/securing ATL devices for these containers have to be in line with International Railroad container transport norms. As such, the application of the ATL Devices on the Container flat Wagons derive their basis from the relevant Wagon Drawing, AAR Standards as also the ISO Container Standards.

1.5 With increased adoption & critical application of these Automatic Twist Lock (ATL) devices, there is an imperative need to examine the evaluation of new sources of this critical/safety component. Multiple sourcing of Automatic Twist Lock (ATL) devices is imperative to ensure ease of availability & cost effectiveness. However, it is important to underline that the Automatic Twist Lock (ATL) devices are used at defined location on the wagons for holding containers with car body involving safety aspects from various points & hence a well-defined guidelines/Specification for multi-sourcing is essential. Since the location of these devices and

dimensional aspects are controlled by various other factors (i.e. size of ISO containers, corner casting, location dimensions of the wagon etc.), it is equally important that product interchangeability is ensured (in a rake/unit of wagons), to avoid duplication of resources & avoidable inventory costs. Also, the ATL devices to be utilized on the Container Flat Wagons should be such that they can be fitted on the Wagons without involving any modification in the existing Wagons – which is again a cost.

1.6 In more than 13 years of inception of the Container Flat Wagons, only one Source of ATL could be developed. Thus, there is an urgent requirement to develop more sources.

1.7 Therefore, RDSO has prepared this Specification to develop more sources for the Automatic Container Support and Securement System/Automatic Locking devices/Automatic Twist locks (ATL) and at the same time ensure that the product quality meets the requisite Safety and interchangeability requirements.

2.0 SCOPE:

2.1 This specification covers the supply and acceptance requirement for "Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL)" for use on container flat wagons of IR. The scope also includes requirement of after sales support i.e maintenance upto guarantee/warranty period, supply of spares etc.

2.2 AAR (American Association of Railroads), RoA (Railways of Australia) and UIC (International Union of Railways) are three reputed governing bodies in the world for Railways. Necessary reference has been drawn from existing international and national standards in developing this document.

2.3 This document lists the functional requirements of "Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL)" for support and securing of containers on container flat wagons over Indian Railways.

2.4 Applying firm shall generally follow the system, technology, standards, testing protocols and quality requirements mentioned in this specification. However, the firm can also offer alternate proven system, technology, standards, testing protocols, quality requirements, etc. equivalent or better than the given in this specification. Firm shall submit the detailed test report, documentary evidence and the justification/evidence to establish that the offered solution can provide consistent output to the desired level of accuracy/performance as specified in this document. However, prior written approval of DG (Wagon), RDSO shall be obtained before use of the alternate solution.

3.0 FUNCTIONAL REQUIREMENTS:

3.1 For securing of containers on container flat wagons type BLC/BLCS/BLSS etc. 'Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) shall be used Over Indian Railway System.

3.2 In general, Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) used for securing containers should be automatic type i.e operation of locking/unlocking should be without human interference and meeting the following functional requirements:

4.0 PROVEN SUITABILTY & RELIABILITY:

4.1 Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) should properly lock with corner fittings of containers. Corner casting fittings of containers is as per standard ISO 1161-1984 (E). The dimensions of the container corner fittings must comply with the latest edition of the International Standard ISO 1161.

4.2 Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL)used for securing containers should be automatic type. Thus locking and unlocking of these devices with container corner fitting shall not require any manual intervention.

4.3 Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) used for securing containers shall be tested as per Para 3.0 of AAR Manual of Standards and Recommended Practices Intermodal Equipment Manual M-952 and test reports with compliance to AAR M-952 Specification from any of the IACS or EMSA registered classification societies or from any Internationally/National (including RDSO) accepted Railroad testing facility for clauses of AAR M-952.

4.4 Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) used for securing of containers should be suitable for use on all wagons currently in use/development for transport of various containers.

4.5 Different type of container wagons such as BLC/BLCM/BLL/BLCS in single/double stacked condition are permitted to run upto maximum permissible speed of 100 kmph in empty and loaded condition over Indian Railways and Dedicated Freight Corridor routes. Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL)used for securing containers should have sufficient strength to bear the forces developed during operation of container wagons.

4.6 The side force due to cross winds acting normal to the lateral side of rolling stock can cause its overturning. Double Stack Container (DSC) trains offers considerable side wall resistance and are prone to overturning in excessive cross winds. To obliviate risk of overturning, especially in double stack empty containers, requisites studies have been done by RDSO with IIT Kanpur and M/s Cades.

(i) **Study by RDSO and IIT/Kanpur**

The following Table gives a summary of results obtained for the B car-B car-A car rake formation of BLC wagons for MBD simulation with aero loads for straight track and. This table gives the summary of critical wind speed for a given forward speed of the the BBA rake and it also provides the corresponding wind flow angle. Critical wind speed is the simulated wind speed at which overturning may occur.

S.No	TRAIN SPEED KMPH	Cross wind speed (KMPH) Train with Empty Double Stack containers		Cross wind speed (KMPH) Train with Loaded Double Stack containers	
		Angle of attack on container	Critical speed in KMPH	Angle of attack on container	Critical speed in KMPH
1	0	80	96	80	168
2	50	65	82	74	160
3	60	59	72	75	157
4	70	64	67	45	152
5	80	69	63	48	146
6	90	61	60	50	139
7	100	64	55	56	134
8	110	71	51	58	127
9	120	76	48	62	123

(ii) Study by M/s CADES

The following Table gives a summary of results obtained for the A car-B car-A car rake formation of BLC wagons for MBD simulation with aero loads for straight track and. This table gives the summary of critical wind speed for a given forward speed of the ABA rake and it also provides the corresponding wind flow angle.

S.No.	TRAIN SPEED KMPH	Cross Wind Speed (KMPH) and Flow Direction			
		Train with Empty Double Stack containers		Train with Loaded Double Stack containers	
		Angle of attack on container	Critical speed in KMPH	Angle of attack on container	Critical speed in KMPH
1	20	78.7	100	80.5*	120*
2	40	67.6	97	71.4	119
3	50	61.7	93	67	118
4	60	55.4	87	62.4	115
5	70	49.1	81	57.5	110
6	80	43.1	75	52.43	104
7	90	37.8	70	47.1	97
8	100	33.4	66	42.6	92
9	110	29.8	63	37.36	84

4.6.1 Current instructions w.r.t. operation of container trains during high wind Forces found during these studies, are as under:

(a) When Containers are empty and wind speed increases more than 50 kmph measured at 10 m height from ground level, train to be moved at speed of 30 kmph and stabled at nearest possible station /Yard.

(b) When Containers are loaded and wind speed increases more than 80 kmph measured at 10 m height from ground level, the train speed to be reduced to 40 kmph. Train to be stabled at nearest Station/Yard if wind speed is increased more than 100 kmph.

4.6.2 Instructions on loading and securing of container trains:

(a) While loading, care shall be taken that gross load of bottom containers (20') shall be equal to each other to the maximum possible extent. However variation between wt. of bottom containers should not be more than 5 ton.

(b) In no case, load of top container should be more than the load of bottom container/containers for all series.

(c) Payload for container wagon implies tare weight of containers + weight of goods in containers. This should be strictly followed to prevent overloading of wagon. In any case, gross wt. of a container should not exceed rated capacity.

(d) Stuffing of goods in containers shall be done as per ISO/ IMO/standard guidelines

4.6.3 Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL)used for securing containers should be able to meet above requirement for safe operation at specified wind speed and loading stipulations.

4.7 Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) shall be suitable for automatic locking with corner fitting to ISO 1161:1984 of ISO containers over BLC/BLCM/BLCS/BLSS/BLL type container wagons.

4.8 Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) shall be designed so that fitment can be done as per drawing No. CONTR-9405-S/21 on BLC/BLCM type container flat wagons (A-Car & B-Car), drawing No. CONTR-15011-S/22 on BLCS type container flat wagons (A-Car & B-Car), drawing No. CONTR-22061-S/24 & CONTR-22061-S/24 on BLSS type container flat wagons (A-Car) & (B-Car) respectively, RITES Index Drg.No. 45-A-2001-S/1(latest Alterartion) for BLLA wagon & Drg.No. -45-B-2001-S/1(Latest alteration) for BLLB wagon.

4.9 Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) shall be:

a) Accessible for checking locked condition after locking with containers on wagon.
b) Easily maintainable in field during operation.
c) Locking/Unlocking forces should be as per Para 2.3.3.1 and Para 2.3.3.2 of AAR Manual M- 952

5 WARRANTY:

5.1 Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) should be robust and must ensure minimum warranty of 54 months from the date of manufacture.

5.2 The Firm will be fully responsible for maintaining/replacing the Automatic Twist Lock (ATL)/ Automatic locking devices /Container Support and Securement System throughout its warranty period.

5.3 In the event of a defective or malfunctioning device during the warranty period, the supplier is obligated to replace the device at his own cost.

5.4 Firm shall also be responsible to provide requisite training materials, installation / maintenance manuals, mobile based training app, workshop training sessions etc. to Indian Railways' personnel.

5.5 The supplier shall ensure availability of spares throughout the warranty period at his own cost.

5.6 The Firm shall also undertake to ensure availability of all requisite spare parts for a minimum period of 15 years from the date of approval of Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) proposed by firm. In case any specific spare part is not available at a later date for whatever reason, an equivalent or superior spare part that performs all the functions of the original spare part can be accepted subject to prior approval of the same by DG(Wagon)/RDSO. In making such substitution of spares, which should have minimum impact on the existing architecture/operation etc.

5.7 The Firm shall give an undertaking that should there be any need for modification arising out of feedback or during the warranty, it will be carried out by the firm without any additional cost to the Indian Railways.

6 TECHNICAL QUALIFICATIONS CRITERIA:

6.1 Vendor proposing Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) should meet the following general and technical capabilities:

S.No.	Details of Requirement	Document to be submitted
1	The manufacturer (Indian or Foreign), in his proposal, should detail its Manufacturing plants, where the Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) detailed in references shall be manufactured. Indian subsidiary/ Indian company, if any. Appointed authorized Indian agent, if any. Any company/ concern (Indian/ Foreign) to whom the manufacturer has outsourced manufacturing/ supply of Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL)	Details of the proposer (Manufacturer/ Indian company/ Authorised Agent/ Outsourcing etc.) be elaborated. Relevant Product Pamphlet covering the Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) detailed in references. Authorization from OEM of Indian agent (if any) with validity date. Details/ Authorization of the outsourcing (if any) & the source to whom outsourcing has been done.

2	The Manufacturer (Indian or Foreign) should meet ALL of the following qualifying conditions:	
2.1	Should be manufacturing & willing to supply Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) to AAR M-952 specification and in environment of other specifications detailed in Annexure-I.	Declaration in this respect & a copy of the Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) product catalogue of the manufacturer, as detailed in Annexure-I. In addition to the above, the proposer shall submit a certificate/ undertaking that "Indian Railways shall not be responsible for infringement of Patent Rights arising due to similarity in design, manufacturing process, use of similar components in the design and development of this item and any other factor not mentioned herein which may cause such a dispute. The entire responsibility to settle any such disputes/ matters lies with the manufacturer / supplier. Details/ Design/ Documents given by them are not infringing any IPR and they are responsible in absolute and full measure instead of Railways for any such violations. Data, Specifications and other IP as generated out of interaction with the Railways shall not be unilaterally used without the consent of RDSO and the rights of Railways/ RDSO on such IP is acceptable to them"
2.2	The Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) (as in Annexure-I) should ideally be manufactured using in-house facilities (in one or more installations) by the manufacturer, to be elaborated by the applicant, as per point 1, above. However, the manufacturer could have tie-ups with other manufacturing set-ups for out-sourcing. In such a case, the quality	Clear details with complete address, contact details & contact person details of the facility/ facilities where the Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) shall be manufactured should be detailed. If the above details include a manufacturer from whom the Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock

	control of the products has to be supervised by the manufacturer, proposing to supply Automatic Twist Lock (ATL)/ Automatic locking devices /Automatic Container Support and Securement System. Any outsourcing should be clearly detailed including all relevant details of the outsourcing contract & the outsourcing partner. The instituted mechanism to ensure quality control should also be elaborately detailed.	(ATL) or any of its subassemblies are to be out-sourced, complete details including details of the management/ ownership details with the source, identified for out sourcing, should be detailed. The mechanism, instituted to ensure quality control of the outsourced products, be elaborately detailed.
2.3	The manufacturer and outsourcing partner (if any) should have valid ISO-9001 certification Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) production.	Copy of the ISO certificates, including that of the outsourcing partner, should be enclosed.
2.4	Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) should conform to or exceed technical requirements detailed in Annexure-I.	Specific conformance to technical requirements detailed in Annexure-I should be forwarded by giving specific product values rather than a simple "Complies" or "Agreed to" remarks.
2.5	Certificate from AAR in compliance of M-952 for the proposed Automatic Twist Lock (ATL)/ Automatic locking devices /Automatic Container Support and Securement System. (Unconditional Approval by AAR for the offered product) OR Test Reports of proposed ATL/Locking device for compliance with AAR M-952 specification from any of the IACS or EMSA registered classification societies or from any Internationally/Nationally accepted Railroad Testing agency (including RDSO) for clauses 3.2, 3.3, 3.4 & 3.5 of AAR M -952.	The Test reports should be submitted with the application along with the results of: (i)Static tests. (ii)Environment tests. (iii)Exit & Entrance Force Testing (iv)Impact Test In case of Test reports from any of the IACS or EMSA registered classification societies or from any Internationally/Nationally accepted Railroad Testing agency(including RDSO): • Test reports of the Static tests, Environment tests and Production tests as per clauses 3.2, 3.3 and 3.5 of AAR M-952, issued by any of the IACS or EMSA registered classification societies or from any Internationally/Nationally accepted

		Railroad Testing agency (including RDSO) shall be submitted by the applicant along with the application. • Impact test as per clause 3.4 of AAR M-952 manual shall be conducted by Railways. The test shall be witnessed and report be submitted by the IACS or EMSA registered classification societies or from any Internationally/Nationally accepted Railroad Testing agency (including RDSO). In case of AAR approval, the following shall be submitted along with the above: • AAR Observer Certification of Test Results, if applicable • Letter of Approval by AAR, if applicable.
2.6	It should be clearly indicated whether the installation & dismantling of the Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) is possible using any standard/special type/make of installation equipment. If it involves any special tools, will they be provided free with given lot size or have to be procured separately? The manufacturer will supply the detailed procedure for installation & dismantling of Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) on wagon and use of any sealant, oil, packing item etc.	A write up in this respect shall be furnished by the Applicant covering all the aspects outlined. Any particular fastener torqueing values and special equipment used for the same should be detailed.
3	The Manufacturer proposing for product development should forward a undertaking that they agree to follow & abide by the product development process detailed in Para 7 of this specification.	An undertaking in this respect should be included.
4	The Manufacturer proposing for product	An undertaking in this respect should be

	development should forward a undertaking that they agree to follow & abide by the standard conditions of IRS contract for proposed Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL).	included.
5	Product Samples: As a proof of product realization by the proposer, the application for product development should be accompanied by samples of Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) manufactured by the applicant with a due marking/stamping of the manufacturer's name, Model No. & Month/Year of manufacture.	Min 1 sample of assembled Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) and One quarter cut model should be included along with the application. Each sample should be individually sealed, with the top cover identifying the component.
6	Product Warranty	The applicant should confirm a warranty/guarantee of a minimum 54 months from the date of manufacture

7 THE PROCESS OF VENDOR REGISTRATION FOR AUTOMATIC CONTAINER SUPPORT AND SECUREMENT SYSTEM /AUTOMATIC LOCKING DEVICES/ AUTOMATIC TWIST LOCK (ATL)

7.1 All manufactures seeking approval for supply of AUTOMATIC CONTAINER SUPPORT AND SECUREMENT SYSTEM /AUTOMATIC LOCKING DEVICES/ AUTOMATIC TWIST LOCK (ATL) covered under this specification, to Indian Railways shall follow the procedure outlined below:

7.1.1 The firm shall refer the ISO Apex document No. QO-F-8.1-1 Ver. 2.3 (or latest) and No. QO-F-8.1-7 Ver. 1.8 (or latest) for Vendor registration form, list of documents to be sought from Vendor and format for Undertaking & QAP. For Capability assessment the firm shall refer the ISO document No. ISO QO-F-8.1-8 Ver 1.3.

7.1.2 Vide Apex document No. QO-D-8.1-5 Ver. 2.4 (or latest), the application for Vendor registration shall be applied On-Line through the IREPS Portal, UVAM Module along with all documents/ details, test reports enumerated in Para 6.1(2.5). The application for Vendor registration shall be considered complete, only after, product sample as mentioned in Para 6.1(5) have been received in RDSO along with all documents received on UVAM. All details of Para 6.1 should be satisfactorily complied by the applicant, before the process is taken forward. The onus of complying with the complete documentation shall lie with the applicant.

7.1.3 RDSO Apex document 'Vendor application processing' Document No. QO-D-8.1-6 Ver. 5.7 (or latest) shall be followed for the registration and approval of the firm. As per this document Vendor application shall be processed in following stages :

(i) Vendor application screening& clarifications

(ii) Acceptance of application

(iii) Rejection of application

(iv) Visit to the firm's premises

(v) Capacity cum Capability Assessment (CCA) Report

(vi) Test Samples/Prototype

(vii) Field Trial

(viii) Approval

7.1.4 Under stage Vendor application screening& clarifications, RDSO will check the suitability of the concept design with respect to IR standards including Quality Control, dimensional clearance and acceptance from ISO Containers etc. point of view.

7.1.5 In case of any deficiencies, the firm shall be intimated on UVAM to make good the deficiencies within one month as per Para 4.4 of RDSO Apex document No. QO-D-8.1-6 Ver. 5.7 (latest). If the proposer fails to give satisfactory explanation of the deficiencies, then the proposed application shall be rejected as per Para 4.5 of RDSO ISO Apex Document No. QO-D-8.1-6 Ver. 5.7 (latest).

7.1.6 After Technical screening as per Para 4.3.3 of Document No. QO-D-8.1-6 Ver. 5.7 (latest),if the design is found to be suitable and application is found complete in all respects, the proposal shall be forwarded to DG (Wagon) RDSO for approval for acceptance of application and nominate the official to visit the firm premises for Capacity Cum Capability Assessment (CCA) of the firm as per Para 4.6 and 4.7 of Document No. QO-D-8.1-6 Ver. 5.7 (latest). The applicant shall be informed accordingly.

7.1.7 After successful verification of document and CCA of the firm, the nominated officials shall submit the report to DG (Wagon) RDSO for further approval of sample testing and initiating the field trials of the product.

7.1.8 After satisfactory prototype testing, approval of DG (Wagon) RDSO shall be granted for field trials. For field trials, the applicant shall be advised to supply two rake sets (one rake consisting of 45/48 BLC/BLL/BLCS/BLSS type wagons) of Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL), to Wagon manufacturers/Zonal Railways for limited field trials. The order processing & contract formalities for these Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) shall rest with the Wagon manufacturer(s)/Wagon purchaser/ Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) purchaser & the Applicant.

7.1.9 Proposer of Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL)will submit the detailed "Maintenance instructions" for

field/repair depot staffs and RDSO. The repair procedure should include the items to be retained/ replaced during routine/periodic maintenance.

7.1.10 The installation of these Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) shall be supervised by a representative of the applicant at the Wagon Manufacturer's works/Zonal Railways. The applicant & the Purchaser shall co-ordinate this installation. The applicant & the Purchaser shall jointly certify satisfactory fitment of Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) & forward details of the wagons, fitted with the supplied Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) to RDSO .

7.1.11 One unit of wagons (05 BLC/BLCM wagon or equivalent) fitted with proposed Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) will be subjected to satisfactory loading & unloading of containers at any nominated container depot. Proper locking & unlocking of proposed securement system shall be checked for approx. 50 cycles of loading/unloading.

7.1.12 Field Trial of two rakes of BLC/BLL/BLCS/BLSS type wagon (each of 45/48 wagons) fitted with Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) shall be conducted for a period of 6 months. Date of start of field trial shall be reckoned from date of completion of fitment in both rakes. In every 2 months, Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) performance shall be monitored by Zonal Railway. After completion of 6 months of field trial, any 05 wagons (out of each rake of 45/48 wagons), on which Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) installation has been confirmed shall be randomly chosen & shall be inspected jointly by representative of Vendor, ZR and RDSO for any failure of the Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL).A joint report shall be prepared on the Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL)in the inspected 10 wagons by Zonal Railway Wagon depot personnel, Wagon Owner CTO'S representative & RDSO'S representative as nominated by DG (Wagon) RDSO.

7.1.13 NO failures of any of the applied Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) should have taken place in these randomly chosen 10 wagons. Since the installation has been done to the satisfaction of the applicant, failures (if any) cannot be attributed to in-correct fitment.

7.1.14 If the condition of the Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) is found satisfactory approval of DG (Wagon) RDSO shall be granted as per Para 4.8 of RDSO Apex Document No. QO-D-8.1-6 Ver. 5.7 (or latest).RDSO shall register the vendor as a "Developmental Source" and communicate status to the firm, ZR/Wagon manufacturers.

7.1.15 Other issues pertaining to the purchase contract- purchase description/part nos, cost, production capacities, conditions of contract, warranty/guarantee, supply period & others shall be looked-into by the respective purchaser directly.

7.1.16 Up-gradation case of a Developmental Source to Approved Source shall be dealt as per RDSO ISO Apex document "Vendor-Changes in approved status" document No. QO-D-8.1-11 Ver. 3.0 (or latest).

7.1.17 In case of a subsequent failure report from the field, or for any other pertinent reason, RDSO reserves the right to initiate fresh development process/ initiate any corrective action/Penal actions as per Apex document No. QO-D-8.1-11 Ver 3.0(or latest) as deemed fit to ensure product performance.

7.1.18 In case, a manufacturer (approved or under development) alters/changes the place of manufacturing of Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL), the manufacturer shall submit a request and case shall be processed as per RDSO ISO Apex document "Vendor-Changes in vendor entity" document No. QO-D-8.1-12 Ver. 1.6 (latest)..

7.2 Zonal Railways, CTOs and Wagon Builders shall, from time to time, advice or direct any new sources of Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) to RDSO for ratification with/without their own scrutiny under this Specification.

8.0. QUALITY CONTROL REQUIREMENTS:

8.1 There shall be adequate number of suitably qualified and experienced personnel in the relevant field in all the areas of design and manufacturing.

8.2 Details of the available human resource with specific details of their qualifications/ experience shall need to be enclosed with the application.

8.3 The vendor will submit a Quality Assurance Plan (QAP) as per Annexure-A-7 of RDSO ISO Apex document No. QO-F-8.1-7 Version 1.7 (or latest), covering all points, to ensure end product quality of Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL).

8.3.1 Following items should be included in the QAP:-

(i) Organisation Chart indicating quality control set up, role and responsibility of key personal.
(ii) Details of qualification /experience of the quality personnel and other key personnel deployed in Quality control cell.
(iii) Details of manpower requirement other than Quality control section.
(iv) Process flow chart/description of manufacturing process.
(v) Details of sub-assemblies/components manufactured in house and outsourced.
(vi) Details of incoming Raw material.
(vii) Details of in-process/final inspection.
(viii) Calibration of Testing and measuring equipment's.
(ix) System of maintaining the data of customer complaints/warranty failures.
(x) List of M&P with make, capacity, quantity and year of commissioning.

8.4 The QAP shall be approved by RDSO, at the time of Vendor registration.

8.5 The QAP will be got re-approved whenever there is process change in manufacturing of Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) or any other change affecting the approved QAP. The onus of informing RDSO about the process change shall lie with the registered vendor.

8.6 Raw material, in-process material and finished products should be kept in well demarcated areas.

8.7 Guidelines regarding storage, handling, cutting, forming, machining and welding of the specified material of Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL).

8.8 All relevant standards, specifications, drawings etc. should be available at appropriate activity level and the personnel employed should be fully conversant with the provisions of the customer requirements.

9.0 DOCUMENTATION:

There shall be an effective system for documenting the following:-

(i) Incoming raw material details and their records
(ii) Record of testing done on raw material
(iii) Stage inspection controls exercised and records thereof
(iv) Calibration records
(v) Identification of finished products
(vi) Finished product characteristics
(vii) Internal acceptance tests
(viii) Internal rejections
(ix) Customer complaints
(x) Dispatch details

10.0 MARKING:

Logo of the Vendor, approved by RDSO (as mentioned in QAP), month and year of manufacturing shall be punched on the Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) and all its internal parts at a location so that marking may not deface before warranty period and traceability of the item could be done.

Marking scheme shall be approved by RDSO before commencement of series production.

11.0 PACKING:

The packing should be done in such a manner so as to prevent any damage during transit to the consignee's works. Method of packing shall be mentioned in the QAP.

12.0 REGULAR PURCHASE INSPECTION:

12.1 Regular Purchase Inspection of Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) shall be done as per the extant & applicable policy guidelines.

12.2 The Inspection agency shall define the inspection procedure & inspection methodology to be followed, in order to ensure end-product quality, as defined in the relevant drawings.

13.0 RECORD OF INTERNAL ACCEPTANCE TESTS:-

13.1 The manufacturer will maintain a list of all internal acceptance tests being carried out by him at various stages of manufacturing of the product. Proper record of such internal acceptance tests shall advisably be maintained and also included in the QAP. At the time of inspection of the product, if requested by the inspecting official and/or guided by the inspection policy/ methodology, these records shall be put up to the Inspecting Authority for necessary action.

14.0 REFERENCE TO VARIOUS SPECIFICATIONS:

14.1 The fitment scheme on wagon, technical requirements, application details & performance parameters of the Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) used on container flat wagons of Indian Railways shall be as per the drawings & specifications referred below.

(i) Drawing No. CONTR-9405-S/21 for fitment of Automatic Twist Lock (ATL) on BLC/BLCM type container flat wagons (A-Car & B-Car), Drawing No. CONTR-15011-S/22 for fitment of Automatic Twist Lock (ATL) on BLCS type container flat wagons (A-Car & B-Car), Drawing No. CONTR-22061-S/24 & CONTR-22061-S/24 for fitment of Automatic Twist Lock (ATL) on BLSS type container flat wagons (A-Car) & (B-Car) respectively, RITES Index Drg.No. -45-A-2001-S/1(latest Alterartion) for BLLA wagon & Drg.No. -45-B-2001-S/1(Latest alteration) for BLLB wagon.

(ii) Mechanical characteristics, structural adequacy, and testing requirements for Automatic Container Support and Securement System /Automatic Locking devices/ Automatic Twist Lock (ATL) for intermodal containers on freight cars should be as per AAR Manual of Standards and Recommended Practices Intermodal Equipment Manual -M-952- Intermodal Container Support and securement system for freight cars"

(iii) AAR Manual of Standards and Recommended Practices Intermodal Equipment Manual - M-1001

(iv) Systems approved under this specification will be compatible with containers as per following Specifications:
   a) ISO 668:1995 (with ammendment-2) Series 1 freight containers — Classification, dimensions and ratings.
   b) ISO 1161:1984(with ammendment-1) Series 1 freight containers — Corner fittings — Specification.