Reasoned Document for Item Specific Guidelines & Schedule of Technical Requirements for Vendor Approval for manufacture and supply of Cast Manganese Steel (CMS) Crossings / Weldable Cast Manganese Steel (WCMS) Crossings:

<table>
<tr><th>SN</th><th>Provisions of Existing Document</th><th>Provisions of Document uploaded on RDSO's website for comments of stakeholders</th><th>Comments of stakeholders</th><th>RDSO's remark</th></tr>
<tr><td>1.</td><td>Document No.: TDG 0021</td><td>Document No.: TDG 0021</td><td>Comments/ Suggestions during 30 days of uploading:

No comments received.</td><td>--</td></tr>
<tr><td>2.</td><td>Document Title:
Item Specific Guidelines & Schedule of Technical Requirements for Vendor Approval for manufacture and supply of Cast Manganese Steel (CMS) Crossings / Weldable Cast Manganese Steel (WCMS) Crossings.</td><td>Document Title:
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<tr><td>3.</td><td>1.0 Amendment History:
<table>
<tr><th>S. No.</th><th>Amend-ment Date</th><th>Ver-sion</th><th>Reasons for Amendment</th></tr>
<tr><td>1.</td><td>26.11.2011</td><td>1.0</td><td>First issue under new Documentation System.</td></tr>
<tr><td>2.</td><td>25.04.2023</td><td>2.0</td><td>STR Document No. QC-G-7.1-21 Ver.1.0, effective from 26.11.2011 (OLD DOC. TDG 0021, Rev.1 effective from 26.11.2002) & STR Document No. TDG 0036, Rev.1 (effective from 24.04.2012) has been merged in a single Document No. TDG 0021, Version 2.0 with Title: 'Item Specific Guidelines & Schedule of Technical Requirement for Vendor</td></tr>
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</table></td><td>Comments/ Suggestions during 30 days of uploading:

No comments received.</td><td>In light of suggestions given by Track Dte. (Inspection Unit) in subsequent Paras, Amendment History at SN 3 of is modified as under:

"The Minimum Facilities & Machineries Required has been modified to include the "Electronic dimensional measurements with auto recording facility". Para 2.0 is also modified accordingly.

Section-A Clause (iv) & (vii) modified for better</td></tr>
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				Approval for manufacture and supply of Cast Manganese Steel (CMS) Crossings / Weldable Cast Manganese Steel (WCMS) Crossings.' Following replacements have been made: 1. Initial Capability Assessment by Fresh Vendor Registration. 2. General Guidelines for Vendor Approval by relevant ISO Apex Documents of RDSO-Latest Version. 3. Re-assessment by Quality audit. 4. Part-II by Developmental Vendors; 5. Part-I by Approved Vendor; 6. Renewal by Quality Audit; Para (vii) of TDG 0036, Rev.1 modified to add that status of vendor available in Item Master uploaded on RDSO/ IREPS/ UVAM Portal & on RDSO Vendor Registration IREPS Portal-http://www.rdso.indianrailways.gov.in Assessment Proforma Clause No. 3, revised for adding Mobile no. & WhatsApp no. and Clause No. 5 is added for GST				Approval for manufacture and supply of Cast Manganese Steel (CMS) Crossings / Weldable Cast Manganese Steel (WCMS) Crossings.' Following replacements have been made: 1. Initial Capability Assessment by Fresh Vendor Registration. 2. General Guidelines for Vendor Approval by relevant ISO Apex Documents of RDSO-Latest Version. 3. Re-assessment by Quality audit. 4. Part-II by Developmental Vendors; 5. Part-I by Approved Vendor; 6. Renewal by Quality Audit; Para (vii) of TDG 0036, Rev.1 modified to add that status of vendor available in Item Master uploaded on RDSO/ IREPS/ UVAM Portal & on RDSO Vendor Registration IREPS Portal-http://www.rdso.indianrailways.gov.in Assessment Proforma Clause No. 3, revised for adding Mobile no. & WhatsApp no. and Clause No. 5 is added for GST		clarity. Section-B modified to incorporate minimum capacity of some machinery, also, some machinery added. Quality Assurance Plan Clause 9 modified."

				No. Document formatted for as per ISO Norms in Page No. 2. Inclusion of drawings no. RDSO/T-6412 for 1:12/60kg & RDSO/T-6441 for 1:8.5/60kg Weldable CMS Crossings under heading (A) (i). Flash Butt Welding Plant (FBWP) with all facilities required for WCMS crossings added in Plant & Machineries and Assessment Proforma. UVAM Portal on IREPS is added in clause vii) of Part (A). Clause 5. & 6. of Declaration has been modified.				No. Document formatted for as per ISO Norms in Page No. 2. Inclusion of drawings no. RDSO/T-6412 for 1:12/60kg & RDSO/T-6441 for 1:8.5/60kg Weldable CMS Crossings under heading (A) (i). Flash Butt Welding Plant (FBWP) with all facilities required for WCMS crossings added in Plant & Machineries and Assessment Proforma. UVAM Portal on IREPS is added in clause vii) of Part (A). Clause 5. & 6. of Declaration has been modified.		
					3.	00.00.2023	3.0	The Minimum Facilities & Machineries Required has been modified to include the "Electronic dimensional measurements with auto recording facility". Para 2.0 is also modified accordingly.		
4.	**2.0 Purpose:** This Item Specific Guidelines covers all technical requirements for manufacture and supply of Cast Manganese Steel (CMS) Crossings / Weldable Cast Manganese Steel (WCMS) Crossings used for Fresh Vendor Registration/ Quality Audit of Vendors. These Guidelines replaces the provisions of earlier guidelines issued on the similar subject title i.e. QC-G-7.1-21 Ver. 1.0, effective from 26.11.2011 (Old Document				**2.0 Purpose:** This Item Specific Guidelines covers all technical requirements for manufacture and supply of Cast Manganese Steel (CMS) Crossings / Weldable Cast Manganese Steel (WCMS) Crossings used for Fresh Vendor Registration/ Quality Audit of Vendors. ~~These Guidelines replaces the provisions of earlier guidelines issued on the similar subject title i.e. QC-G-7.1-21 Ver. 1.0, effective from 26.11.2011 (Old Document~~			**Comments/ Suggestions during 30 days of uploading:** No comments received.	--

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<tr><td>5.</td><td>3.0 Scope of Application:
This shall be applicable for Fresh vendor registration, Quality Audit, up-gradation of Vendors and maintaining their approved list of vendors. In case of any variation between the procedure /provision given in the work instructions and that in this ‘Item-Specific Guidelines’, the later shall prevail. The competent authority wherever referred to in this document shall mean Executive Director Track-II / Principal Executive Director, Infra-1.</td><td>3.0 Scope of Application:
This shall be applicable for Fresh vendor registration, Quality Audit, up-gradation of Vendors and maintaining their approved list of vendors. In case of any variation between the procedure /provision given in the work instructions and that in this ‘Item-Specific Guidelines’, the later shall prevail. The competent authority wherever referred to in this document shall mean Executive Director Track-II / Principal Executive Director, Infra-1.</td><td>Comments/ Suggestions during 30 days of uploading:

No comments received.</td><td>--</td></tr>
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No comments received.</td><td>--</td></tr>
<tr><td>7.</td><td>5.0 Referred Document:<table><tr><th>Document Name</th><th>Document No.</th></tr><tr><td>Indian Railway Standard Specification for Cast Manganese Steel (CMS) Crossings and Weldable Cast Manganese Steel (WCMS) Crossings</td><td>IRS: T–29 (latest revision)</td></tr></table></td><td>5.0 Referred Document:<table><tr><th>Document Name</th><th>Document No.</th></tr><tr><td>Indian Railway Standard Specification for Cast Manganese Steel (CMS) Crossings and Weldable Cast Manganese Steel (WCMS) Crossings</td><td>IRS: T–29 (latest revision)</td></tr></table></td><td>Comments/ Suggestions during 30 days of uploading:

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None</td><td>5.0 Referred Documents of External Origin:
None</td><td>Comments/ Suggestions during 30 days of uploading:

No comments received.</td><td>--</td></tr>
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<td>10.</td>
<td>8.0 Responsibility and Authority:
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<tr><td>Compliance of directives contained in this document</td><td>DD/AIE/ADE</td><td>Director/Track Design-III</td><td>----</td><td>----</td><td>----</td></tr>
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<td>11.</td>
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	ED/Track Design-II	Executive Director/ Track Design-II	ED/Track Design-II	Executive Director/ Track Design-II		
	RDSO	Research Designs & Standards Organization	RDSO	Research Designs & Standards Organization		
	DD	Deputy Director	DD	Deputy Director		
	AIE	Assistant Inspecting Engineer	AIE	Assistant Inspecting Engineer		
	ADE	Assistant Design Engineer	ADE	Assistant Design Engineer		
	M&C Dte.	Metallurgical & Chemical Directorate	M&C Dte.	Metallurgical & Chemical Directorate		
12.	**A. ITEM SPECIFIC GUIDELINES FOR FRESH VENDOR REGISTRATION / QUALITY AUDIT OF FIRMS FOR MANUFACTURING OF CMS / WELDABLE CMS CROSSINGS:** In addition to the "ISO Apex Documents of RDSO (Latest version)" the following shall also be applicable for fresh Vendor Registration/Quality Audit of the firms for manufacturing CMS/WCMS Crossings. **CMS/WCMS CROSSINGS:** i) The list shall be common for CMS Crossings with variants of Acute CMS crossings viz. RDSO/T-4867 (1:8.5/52kg), RDSO/T-4967 (1:8.5/60kg), RDSO/T-4734 (1:12/52kg), RDSO/T-4220 (1:12/60kg), RDSO/T-5693 (1:16/60kg), RDSO/T-6093 (1:8.5 LH/60kg), RDSO/T-6096 (1:8.5 RH/60kg), RDSO/T-6099 (1:4.25/60kg), RDSO/T-8113 (1:12 LH/60kg), RDSO/T-8110 (1:12 RH/60kg) & RDSO/T-8116 (1:6/60kg)	**A. ITEM SPECIFIC GUIDELINES FOR FRESH VENDOR REGISTRATION / QUALITY AUDIT OF FIRMS FOR MANUFACTURING OF CMS / WELDABLE CMS CROSSINGS:** In addition to the "ISO Apex Documents of RDSO (Latest version)" the following shall also be applicable for fresh Vendor Registration/Quality Audit of the firms for manufacturing CMS/WCMS Crossings. **CMS/WCMS CROSSINGS:** i) The list shall be common for CMS Crossings with variants of Acute CMS crossings viz. RDSO/T-4867 (1:8.5/52kg), RDSO/T-4967 (1:8.5/60kg), RDSO/T-4734 (1:12/52kg), RDSO/T-4220 (1:12/60kg), RDSO/T-5693 (1:16/60kg), RDSO/T-6093 (1:8.5 LH/60kg), RDSO/T-6096 (1:8.5 RH/60kg), RDSO/T-6099 (1:4.25/60kg), RDSO/T-8113 (1:12 LH/60kg), RDSO/T-8110 (1:12 RH/60kg) & RDSO/T-8116 (1:6/60kg)		

	and Obtuse CMS crossings viz. RDSO/T-5265 (1:8.5/52kg), RDSO/T-6495 (1:8.5/60kg), RDSO/T-6102 (1:4.25/60kg) & RDSO/T-8119 (1:6/60kg) and the list shall be separate for WCMS Crossings with variants e.g. RDSO/T-6412 (1:12/60kg), RDSO/T-6441 (1:8.5/60kg). The firm should be in possession of all the requisites of Class 'A' foundry, as per Bureau of Indian Standards at the time of initial approval. ii) The firm shall be required to manufacture two sets of each design of CMS/WCMS Crossings for Internal Development (including one set for solidity test) and both should pass the tests. During Internal Development, all types of tests as mentioned in the relevant specifications shall be carried out by the firm. Seven stage inspections shall be required to be carried out during internal development /Prototype inspection. iii) After successful completion and approval of Internal Development (ID), the firm shall be asked to produce Eleven sets of Prototypes of the design under consideration (including one set of each design for solidity test). The initial approval as developmental vendor shall be given to the firm by the competent authority after the approval of all the above offered Prototypes and fulfilling other requirements as per ISO Apex Documents of RDSO-Latest Version.	and Obtuse CMS crossings viz. RDSO/T-5265 (1:8.5/52kg), RDSO/T-6495 (1:8.5/60kg), RDSO/T-6102 (1:4.25/60kg) & RDSO/T-8119 (1:6/60kg) and the list shall be separate for WCMS Crossings with variants e.g. RDSO/T-6412 (1:12/60kg), RDSO/T-6441 (1:8.5/60kg). The firm should be in possession of all the requisites of Class 'A' foundry, as per Bureau of Indian Standards at the time of initial approval. ii) The firm shall be required to manufacture two sets of each design of CMS/WCMS Crossings for Internal Development (including one set for solidity test) and both should pass the tests. During Internal Development, all types of tests as mentioned in the relevant specifications shall be carried out by the firm. Seven stage inspections shall be required to be carried out during internal development /Prototype inspection. iii) After successful completion and approval of Internal Development (ID), the firm shall be asked to produce Eleven sets of Prototypes of the design under consideration (including one set of each design for solidity test). The initial approval as developmental vendor shall be given to the firm by the competent authority after the approval of all the above offered Prototypes and fulfilling other requirements as per ISO Apex Documents of RDSO-Latest Version.	**Comments/ Suggestions during 30 days of uploading:** **Track Design Dte. (Inspection Unit) of RDSO, suggested following modification in the existing clause:** iv) For the purpose of Quality Audit the firm shall be required to produce two samples of CMS/WCMS Crossings of	Agreed to.

	iv) For the purpose of Quality Audit the firm shall be required to produce two samples of CMS/WCMS Crossings for inspection by RDSO officials (including one sample for solidity test) and both should pass the tests. v) The gauges shall be approved/ revalidated at the time of inspection of infrastructural facilities during fresh Vendor Registration/Quality Audit of the firm. vi) The inspection gauges, internal development (ID) and Prototypes shall be approved by RDSO for each design of CMS/WCMS Crossings on order before start of regular production. vii) Up-gradation of Vendors from Developmental Vendors to Approved Vendors shall be done as per "ISO Apex Document of RDSO (Latest Version) and status of the Vendor in Item Master shall be uploaded on IREPS /UVAM Portal. Vendor should have supplied minimum 100 CMS/WCMS Crossings of that particular design for being eligible for up-gradation. In addition, desired consistent quality in the finished product should have been achieved, measured in terms of rejection rate which should be less than 5% (combining internal and external inspection) before consideration for up gradation. The rejection rate shall be measured with respect to the last 100 CMS/WCMS crossings of that particular design manufactured and supplied by the vendor.	iv) For the purpose of Quality Audit the firm shall be required to produce two samples of CMS/WCMS Crossings for inspection by RDSO officials (including one sample for solidity test) and both should pass the tests. v) The gauges shall be approved/ revalidated at the time of inspection of infrastructural facilities during fresh Vendor Registration/Quality Audit of the firm. vi) The inspection gauges, internal development (ID) and Prototypes shall be approved by RDSO for each design of CMS/WCMS Crossings on order before start of regular production. vii) Up-gradation of Vendors from Developmental Vendors to Approved Vendors shall be done as per "ISO Apex Document of RDSO (Latest Version) and status of the Vendor in Item Master shall be uploaded on IREPS /UVAM Portal. Vendor should have supplied minimum 100 CMS/WCMS Crossings of that particular design for being eligible for up-gradation. In addition, desired consistent quality in the finished product should have been achieved, measured in terms of rejection rate which should be less than 5% (combining internal and external inspection) before consideration for up gradation. The rejection rate shall be measured with respect to the last 100 CMS/WCMS crossings of that particular design manufactured and supplied by the vendor.	each drawing for inspection by RDSO officials (including one sample for solidity test) and both should pass the tests. vii) Up-gradation of Vendors from Developmental Vendors to Approved Vendors shall be done for sub item CMS/Sub item WCMS separately and provisions of ~~as per~~ "ISO Apex Document of RDSO (Latest Version) and status of the Vendor ~~in Item Master~~ shall be ~~uploaded~~ updated in vendor directory on ~~IREPS /~~UVAM Portal. Vendor should have supplied minimum 100 CMS/WCMS Crossings ~~of that particular design~~ combining all variants of sub item CMS/Sub-item WCMS (as the case may be) for being eligible for up-gradation. In addition, desired consistent quality in the finished product should have been achieved, measured in terms of rejection rate which should be less than 5% (combining internal and external inspection) before consideration for up gradation. The rejection rate shall be measured with respect to the last 100 CMS/WCMS crossings of that particular design manufactured and	Agreed to.

supplied by the vendor.

13.

B. MINIMUM FACILITIES & MACHINERIES REQUIRED FOR MANUFACTURING OF CMS/WCMS CROSSING:

S. No.	Description	Minimum Capacity	Minimum Quantity
1.	Covered Area: i) For CMS crossings ii) For WCMS crossings manufacturers only	 -- --	 2000 sq. m 3200 sq. m
2.	Sand Mullers	500 kg. 300 kg.	One No. One No.
3.	Sand Testing laboratory (With standard Equipment's)	--	One Complete Set
4.	Patterns/Core making facilities	As required	One set.
5.	Mould/Core Drying facilities & mould boxes	As required	One set
6.	Electric Arc Furnace (with other refining & alloying facilities) and temperature measuring equipment	5T (approx.)	One No.
7.	Ladle for molten metal	5 T	One No.
8.	Heat treatment furnace: For 1:4.25/60kg, 1:6/60kg, 1:8.5/52kg,	6m long with matching width x	One No.

B. MINIMUM FACILITIES & MACHINERIES REQUIRED FOR MANUFACTURING OF CMS/WCMS CROSSING:

S. No.	Description	Minimum Capacity	Minimum Quantity
1.	Covered Area: i) For CMS crossings ii) For WCMS crossings manufacturers only	 -- --	 2000 sq. m 3200 sq. m
2.	Sand Mullers	500 kg. 300 kg.	One No. One No.
3.	Sand Testing laboratory (With standard Equipment's)	--	One Complete Set
4.	Patterns/Core making facilities	As required	One set.
5.	Mould/Core Drying facilities & mould boxes	As required	One set
6.	Electric Arc Furnace (with other refining & alloying facilities) and temperature measuring equipment	5T (approx.)	One No.
7.	Ladle for molten metal	5 T	One No.
8.	Heat treatment furnace: For 1:4.25/60kg, 1:6/60kg, 1:8.5/52kg,	6m long with matching width x	One No.

Comments/ Suggestions during 30 days of uploading:

Track Design Dte. (Inspection Unit) of RDSO, suggested following modification in the existing clause:

S. No.	Description	Minimum Capacity	Minimum Quantity
1.	Covered Area: i) For CMS crossings ii) For WCMS crossings manufacturers only	 -- --	 2000 sq. m 3200 sq. m
2.	Sand Mullers	500 kg. 300 kg.	One No. One No.
3.	Sand Testing laboratory (With standard Equipment's)	--	One Complete Set
4.	Patterns/Core making facilities	As required	One set.
5.	Mould/Core Drying facilities & mould boxes	As required	One set
6.	Electric Arc Furnace (with other refining & alloying facilities) and temperature measuring equipment	5T (approx.)	One No.
7.	Ladle for	5 T	One No.

Agreed to.

S. No.	Description	Minimum Capacity	Minimum Quantity
	1:8.5/60kg, 1:12/52kg, 1:12/60kg & 1:16/60kg CMS crossings	Height	
9.	Shot Blasting Arrangement (complete)	--	One No.
10.	Quenching tank (with water circulating & agitating facility with digital temperature measuring equipment): For 1:4.25/60kg, 1:6/60kg, 1:8.5/52kg, 1:8.5/60kg, 1:12/52kg, 1:12/60kg & 1:16/60kg CMS crossings	6m x 2.5m x 2.5m	One No.
11.	Fettling Equipment a) Oxy-cut b) Grinders	As required As required	One No. Five Nos.
12.	Hydraulic Press	400 T	One No.
13.	Welding facility for Austenitic manganese steel with proper cooling arrangements	--	One set

S. No.	Description	Minimum Capacity	Minimum Quantity
	1:8.5/60kg, 1:12/52kg, 1:12/60kg & 1:16/60kg CMS crossings	Height	
9.	Shot Blasting Arrangement (complete)	--	One No.
10.	Quenching tank (with water circulating & agitating facility with digital temperature measuring equipment): For 1:4.25/60kg, 1:6/60kg, 1:8.5/52kg, 1:8.5/60kg, 1:12/52kg, 1:12/60kg & 1:16/60kg CMS crossings	6m x 2.5m x 2.5m	One No.
11.	Fettling Equipment c) Oxy-cut d) Grinders	As required As required	One No. Five Nos.
12.	Hydraulic Press	400 T	One No.
13.	Welding facility for Austenitic manganese steel with proper cooling arrangements	--	One set

S. No.	Description	Minimum Capacity	Minimum Quantity
14.	Finishing Equipment	--	Five Nos.
	a) Pneumatic or rotary grinder		
	b) Fettle Arc machine/ Gouging machine	--	One No.
	c) Heavy duty planers or Plano millers: For 1:4.25/60kg, 1:6/60kg, 1:8.5/52kg, 1:8.5/60kg, 1:12/52kg, 1:12/60kg & 1:16/60kg CMS crossings	6 m stroke	One No.
	d) Marking Table (with measuring instruments): For 1:4.25/60kg, 1:6/60kg, 1:8.5/52kg, 1:8.5/60kg, 1:12/52kg, 1:12/60kg & 1:16/60kg CMS crossings	6 m x 1m	One No
15.	Testing		

S. No.	Description	Minimum Capacity	Minimum Quantity
14.	Finishing Equipment	--	Five Nos.
	a) Pneumatic or rotary grinder		
	b) Fettle Arc machine/ Gouging machine	--	One No.
	c) Heavy duty planers or Plano millers: For 1:4.25/60kg, 1:6/60kg, 1:8.5/52kg, 1:8.5/60kg, 1:12/52kg, 1:12/60kg & 1:16/60kg CMS crossings	6 m stroke	One No.
	d) Marking Table (with measuring instruments): For 1:4.25/60kg, 1:6/60kg, 1:8.5/52kg, 1:8.5/60kg, 1:12/52kg, 1:12/60kg & 1:16/60kg CMS crossings	6 m x 1m	One No
15.	Testing		

S. No.	Description	Minimum Capacity	Minimum Quantity
	Machines/Facilities:		
	a) Vacuum Spectrometer	--	One No.
	b) Universal Testing Machine	40 T	One No.
	c) Brinell Hardness Testing Machine	--	One No.
	d) Poldi Hardness Testing Kit	--	One No.
	e) DP Testing Equipment	--	One No.
	f) Polishing Machine	--	One No.
	g) Metallurgical Microscope	--	One No.
	h) Radiograph Check-up Arrangement	--	One No.
	i) *USFD Machine (For WCMSC manufacturers only)	--	One No.
16.	Handling Equipment	5 T	One No.
17.	EOT Cranes	10 T	Two Nos. in each bay
18.	Inspection Bay	--	Separate leveled area should be dedicated for

S. No.	Description	Minimum Capacity	Minimum Quantity
	Machines/Facilities:		
	a) Vacuum Spectrometer	--	One No.
	b) Universal Testing Machine	40 T	One No.
	c) Brinell Hardness Testing Machine	--	One No.
	d) Poldi Hardness Testing Kit	--	One No.
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	f) Polishing Machine	--	One No.
	g) Metallurgical Microscope	--	One No.
	h) Radiograph Check-up Arrangement	--	One No.
	i) *USFD Machine (For WCMSC manufacturers only)	--	One No.
16.	Handling Equipment	5 T	One No.
17.	EOT Cranes	10 T	Two Nos. in each bay
18.	Inspection Bay	--	Separate leveled area should be dedicated for

S. No.	Description	Minimum Capacity	Minimum Quantity
			proper inspection of finished crossings with Suitable Nos. of Stands and their End Fittings.
19.	Dedicated area with all above machineries installed in a proper flow line. i) For CMS crossings manufacturers ii) For WCMS crossings manufacturers only	1800 sq.m. 3000 sq.m	approx. (In case of FBW Plant for WCMS crossings manufacturers only)
20.	Flash-Butt Welding Plant with all facilities. (For WCMS Crossings only)	One Unit	(Complete) With tri-metallic welding facilities.
21.	Straight Edge. (For WCMS Crossings only).	1.0 m 10 cm	

* For Rails used for manufacturing WCMS Crossings: - The head, web and foot of

S. No.	Description	Minimum Capacity	Minimum Quantity
			proper inspection of finished crossings with Suitable Nos. of Stands and their End Fittings.
19.	Dedicated area with all above machineries installed in a proper flow line. i) For CMS crossings manufacturers ii) For WCMS crossings manufacturers only	1800 sq.m. 3000 sq.m	approx. (In case of FBW Plant for WCMS crossings manufacturers only)
20.	Flash-Butt Welding Plant with all facilities. (For WCMS Crossings only)	One Unit	(Complete) With tri-metallic welding facilities.
21.	Straight Edge. (For WCMS Crossings only).	1.0 m 10 cm	
22.	Electronic dimensional	Adequate to measure	

each rail shall be ultrasonically tested by the manufacturers deploying a competent person before using the rails for manufacturing WCMS Crossing. A person possessing a competency certificate issued by Director General (M&C) RDSO shall be deemed to be a competent person.

Note: - It is preferable to have all the manufacturing and testing facilities covered under STR located at one premises. However, firm can be permitted to have facilities spread in more than one place provided they are under the same ownership with same name. The activities including testing and inspection carried out at these premises shall be clearly spelt out in the Quality Assurance Programme (QAP). These locations shall be termed as Ancillary units. The place where the material shall be offered for final inspection shall also be indicated in the QAP.

S. No.	Description	Minimum Capacity	Minimum Quantity
	measurements with auto recording facility	complete CMS/WCMS Crossing at critical locations as per relevant drawings	

* For Rails used for manufacturing WCMS Crossings: - The head, web and foot of each rail shall be ultrasonically tested by the manufacturers deploying a competent person before using the rails for manufacturing WCMS Crossing. A person possessing a competency certificate issued by Director General (M&C) RDSO shall be deemed to be a competent person.

Note: - It is preferable to have all the manufacturing and testing facilities covered under STR located at one premises. However, firm can be permitted to have facilities spread in more than one place provided they are under the same ownership with same name. The activities including testing and inspection carried out at these premises shall be clearly spelt out in the Quality Assurance Programme (QAP). These locations shall be termed as Ancillary units. The

		place where the material shall be offered for final inspection shall also be indicated in the QAP.		

S. No.	Description	Minimum Capacity	Minimum Quantity
	molten metal		
8.	Heat treatment furnace: For 1:4.25/60kg, 1:6/60kg, 1:8.5/52kg, 1:8.5/60kg, 1:12/52kg, 1:12/60kg & 1:16/60kg CMS crossings	6m long with matching width x Height	One No.
9.	Shot Blasting Arrangement (complete)	--	One No.
10.	Quenching tank (with water circulating & agitating facility with digital temperature measuring equipment): For 1:4.25/60kg, 1:6/60kg, 1:8.5/52kg, 1:8.5/60kg, 1:12/52kg, 1:12/60kg & 1:16/60kg CMS crossings	6m x 2.5m x 2.5m	One No.
11.	Fettling Equipment a) Oxy-cut b) Grinders	As required As required	One No. Five Nos.
12.	Hydraulic Press	400 T	One No.

14.	**C.** ASSESSMENT PROFORMA FOR APPROVAL OF MANUFACTURER FOR FRESH VENDOR REGISTRATION / QUALITY AUDIT OF CMS / WCMS CROSSINGS (To be prepared by the firm in duplicate – Attach extra sheets wherever necessary) **SECTION - I GENERAL INFORMATION (FOR RECORD PURPOSE ONLY)** 1. Name of the firm: 2. Postal Address of – 2.1 Head Office: 2.2 Works: 3. Telephone No. (with STD Code)/ Mobile No. cum WhatsApp number – 3.1 Head office: 3.2 Works: 4. Fax & E-mail Address of – 4.1 Head Office: 4.2 Works: 5. GST Identification Number of Firm: 6. Description of Works 6.1 Total Land area (in sq. meters) 6.2 Total Covered area (in sq. meters) 6.3 Different sub-units 6.4 A fully dimensioned plan of the works showing covered area and different shops shall be enclosed: 6.5 Special features, if any 7. Number of personnel employed (category-wise) 7.1 Managerial 7.2 Supervisory (Enclose list of	**C.** ASSESSMENT PROFORMA FOR APPROVAL OF MANUFACTURER FOR FRESH VENDOR REGISTRATION / QUALITY AUDIT OF CMS / WCMS CROSSINGS (To be prepared by the firm in duplicate – Attach extra sheets wherever necessary) **SECTION - I GENERAL INFORMATION (FOR RECORD PURPOSE ONLY)** 11. Name of the firm: 12. Postal Address of – 2.1 Head Office: 2.2 Works: 13. Telephone No. (with STD Code)/ Mobile No. cum WhatsApp number – 3.1 Head office: 3.2 Works: 14. Fax & E-mail Address of – 4.1 Head Office: 4.2 Works: 15. GST Identification Number of Firm: 16. Description of Works 6.1 Total Land area (in sq. meters) 6.2 Total Covered area (in sq. meters) 6.3 Different sub-units 6.4 A fully dimensioned plan of the works showing covered area and different shops shall be enclosed: 6.5 Special features, if any 17. Number of personnel employed (category-wise) 7.1 Managerial 7.2 Supervisory (Enclose list of	**Comments/ Suggestions during 30 days of uploading:** No comments received.	--

	Managers/Technical Supervisors) 7.3 Skilled/Artisans 7.4 Unskilled 8. Hours of working 9. State whether the firm is already in the Approved list of Vendors with RDSO for supply of CMS/ WCMSC Crossings. If so, please give details of last approval: 9.1 Letter date and issued by - 9.2 Date of expiry of validity of approval - 10. If this application is an application for Quality Audit, have inclusion of any additional items in the approved list also been requested?	Managers/Technical Supervisors) 7.3 Skilled/Artisans 7.4 Unskilled 18. Hours of working 19. State whether the firm is already in the Approved list of Vendors with RDSO for supply of CMS/ WCMSC Crossings. If so, please give details of last approval: 9.1 Letter date and issued by - 9.2 Date of expiry of validity of approval - 20. If this application is an application for Quality Audit, have inclusion of any additional items in the approved list also been requested?		
15.	**SECTION-II** **TECHNICAL INFORMATION** 1. Production Capacity 1.1 Per month 1.2 Per year 2. Type of Stores / Items which the firm is capable of manufacturing. 3. Details of Stores / Items / Parts / Components for which Fresh Vendor Registration / Quality Audit is sought (please indicate complete description and drawing nos.) 4. Total Power availability (In kVA/kW)	**SECTION-II** **TECHNICAL INFORMATION** 7. Production Capacity 1.1 Per month 1.2 Per year 8. Type of Stores / Items which the firm is capable of manufacturing. 9. Details of Stores / Items / Parts / Components for which Fresh Vendor Registration / Quality Audit is sought (please indicate complete description and drawing nos.) 10. Total Power availability (In kVA/kW)	**Comments/ Suggestions during 30 days of uploading:** No comments received.	--

	4.1 From State Electricity Board or other regular source (Enclose a copy of current Electricity Bill) 4.2 From own stand-by Power Generating sets (also give make, capacity & other details of each generating set). 5. Crane facility No. of Cranes Make Capacity 5.1 EOT Crane 5.2 Mobile Crane 5.3 Jib Crane 6. Manufacturing facilities **6.1 Steel making** 6.1.1 Type of furnace 6.1.2 Capacity 6.1.3 Stages of checking bath samples 6.1.4 Bath homogenization arrangement 6.1.5 Carbon boil to be maintained 6.1.6 Steel killing practice. If Aluminum killing is followed please specify maintaining of the residual Aluminum content of the product 6.1.7 Whether facilities for secondary refining of molten steel exist? If so, please give details. **6.2 Proposed Raw Material to be used:** 6.2.1 Proposed charge mix for CMS Crossing 6.2.2 Preventive measures taken to reduce tramp elements in the product.	4.1 From State Electricity Board or other regular source (Enclose a copy of current Electricity Bill) 4.2 From own stand-by Power Generating sets (also give make, capacity & other details of each generating set). 11. Crane facility No. of Cranes Make Capacity 5.1 EOT Crane 5.2 Mobile Crane 5.3 Jib Crane 12. Manufacturing facilities **6.1 Steel making** 6.1.4 Type of furnace 6.1.5 Capacity 6.1.6 Stages of checking bath samples 6.1.8 Bath homogenization arrangement 6.1.9 Carbon boil to be maintained 6.1.10 Steel killing practice. If Aluminum killing is followed please specify maintaining of the residual Aluminum content of the product 6.1.11 Whether facilities for secondary refining of molten steel exist? If so, please give details. **6.2 Proposed Raw Material to be used:** 6.2.1 Proposed charge mix for CMS Crossing 6.2.2 Preventive measures taken to reduce tramp elements in the product.		

	Please specify. 6.2.3 Weighing facilities for ingredients and additives charged into the furnace and ladle. 6.2.4 Overhead Crane facility & capacity. **6.3 Pattern making** **6.4 Foundry (Sand Control System)** 6.4.1 Moulding {Hand /Machine (s) and Mix Testing facilities} 6.4.2 Core making 6.4.3 Mould and Core drying 6.4.4 Decoring and shake-out **6.5 Dressing facilities (Mainly before and after heat treatment)** **6.6 Shot Blasting facilities (Travel type/Discrete loading type).** **6.7 Heat treatment** 6.7.1 Size of the furnace 6.7.2 Type of furnace 6.7.3 Size of Quenching tank (L x B x H): 6.7.4 Cooling water system of the quenching tank & digital temperature measuring devices 6.7.5 Distance of quenching tank from the furnace 6.7.6 Handling facility of crossing from furnace to quenching tank 6.7.7 Digital temperature indicating and	Please specify. 6.2.3 Weighing facilities for ingredients and additives charged into the furnace and ladle. 6.2.4 Overhead Crane facility & capacity. **6.3 Pattern making** **6.4 Foundry (Sand Control System)** 6.4.1 Moulding {Hand /Machine (s) and Mix Testing facilities} 6.4.2 Core making 6.4.3 Mould and Core drying 6.4.4 Decoring and shake-out **6.5 Dressing facilities (Mainly before and after heat treatment)** **6.6 Shot Blasting facilities (Travel type/Discrete loading type).** **6.7 Heat treatment** 6.7.1 Size of the furnace 6.7.2 Type of furnace 6.7.3 Size of Quenching tank (L x B x H): 6.7.4 Cooling water system of the quenching tank & digital temperature measuring devices 6.7.5 Distance of quenching tank from the furnace 6.7.6 Handling facility of crossing from furnace to quenching tank 6.7.7 Digital temperature indicating and		

	recording facility of furnace (Pyrometric control device). 6.7.8 Heavy duty hydraulic press for straightening CMS/WCMS Crossings (indicating type and capacity) **6.8 Finishing facilities** 6.8.1 Welding repair & grinding facilities 6.8.2 "Fettle Arc" Gouging machine 6.8.3 Plano milling machine with vertical cutter 6.8.4 Milling/Boring machine with horizontal cutters and rotating table 6.8.5 Other machines / facility for finishing fishing plane of fish plated area, flange way, wheel tread, bottom surface etc. 6.8.6 Facilities for checking welding defects on the crossings. **6.9 Inspection bay facilities** (Inspection table with lighting arrangement handling facilities etc.) General working conditions i.e. proper lighting, ventilation and cleanliness. **6.10** A fully dimensioned plan of the works showing locations of various equipment and facilities for manufacture of CMS crossings/WCMSC, flow line indicating locations of various	recording facility of furnace (Pyrometric control device). 6.7.8 Heavy duty hydraulic press for straightening CMS/WCMS Crossings (indicating type and capacity) **6.8 Finishing facilities** 6.8.1 Welding repair & grinding facilities 6.8.2 "Fettle Arc" Gouging machine 6.8.3 Plano milling machine with vertical cutter 6.8.4 Milling/Boring machine with horizontal cutters and rotating table 6.8.5 Other machines / facility for finishing fishing plane of fish plated area, flange way, wheel tread, bottom surface etc. 6.8.6 Facilities for checking welding defects on the crossings. **6.9 Inspection bay facilities** (Inspection table with lighting arrangement handling facilities etc.) General working conditions i.e. proper lighting, ventilation and cleanliness. **6.10** A fully dimensioned plan of the works showing locations of various equipment and facilities for manufacture of CMS crossings/WCMSC, flow line indicating locations of various		

	operations during manufacture in proper sequence and storage facilities for finished products may please be enclosed. **6.11** Flash Butt Welding Plant for WCMS crossings: **6.11.1** Flash Butt Welding Plant with all facilities required for WCMS crossings (indicating Make) [For tri-metallic welding with CMS, INOX & 60E1-880 grade/ R-260 grade rails]	operations during manufacture in proper sequence and storage facilities for finished products may please be enclosed. **6.11** Flash Butt Welding Plant for WCMS crossings: **6.11.1** Flash Butt Welding Plant with all facilities required for WCMS crossings (indicating Make) [For tri-metallic welding with CMS, INOX & 60E1-880 grade/ R-260 grade rails]		
16.	**PAST PERFORMANCE** 1. List of important customers of the firm (as relevant to the works for which requisition is sought) 2. Details of important orders executed in past, in reference to the supplies made. 2.1 To other important firms/companies/undertakings etc. 2.2 Directly to the Railways **3. Important Orders in hand:**	**PAST PERFORMANCE** 1. List of important customers of the firm (as relevant to the works for which requisition is sought) 2. Details of important orders executed in past, in reference to the supplies made. 2.1 To other important firms/companies/undertakings etc. 2.2 Directly to the Railways **3. Important Orders in hand:**	**Comments/ Suggestions during 30 days of uploading:** No comments received.	--
17.	**QUALITY ASSURANCE PROGRAMME** 1. Does the factory have any established Quality Assurance Programme as per ISO:9001 series? If yes, please enclose a copy of the write-up in sequential order. **2.** Details of Quality Assurance Organization. Name of key personnel, their qualification, designation sand positions in overall management structure (Explain with organizational	**QUALITY ASSURANCE PROGRAMME** 12. Does the factory have any established Quality Assurance Programme as per ISO:9001 series? If yes, please enclose a copy of the write-up in sequential order. **13.** Details of Quality Assurance Organization. Name of key personnel, their qualification, designation sand positions in overall management structure (Explain with organizational		

	chart, if necessary). 3. Quality Control testing facilities laboratory equipment available to be listed along with the make, year of procurement and commissioning. **4.** Calibration of Laboratory Test Equipment / Gauges, as indicated in Para 3 above (Enclose copy of Calibration Certificates): 4.1 How the calibration is done: 4.2 Frequency of calibration of each instrument: 5. Source of procurement of raw materials / bought out items and steps taken to ensure their quality. **6.** Brief details of manufacturing process as relevant to the items for which registration is sought. 7. Details of inspection / checks done on material during various stages of the above manufacturing process (Enclose copy of QAP of CMS /WCMS Crossing). Has the acceptable value for the parameters inspected during above stage checks been laid down? If yes, the action taken against values of the parameters inspected does not meet the desired laid-down value. 8. System for documentation of the results of the above stage check. Maintenance of Records: Records in respect of manufacture of CMS/WCMS Crossings should be maintained in proper registers. **9.** Whether facilities for carrying out the following tests are available, also	chart, if necessary). 14. Quality Control testing facilities laboratory equipment available to be listed along with the make, year of procurement and commissioning. **15.** Calibration of Laboratory Test Equipment / Gauges, as indicated in Para 3 above (Enclose copy of Calibration Certificates): 4.1 How the calibration is done: 4.2 Frequency of calibration of each instrument: 16. Source of procurement of raw materials / bought out items and steps taken to ensure their quality. **17.** Brief details of manufacturing process as relevant to the items for which registration is sought. 18. Details of inspection / checks done on material during various stages of the above manufacturing process (Enclose copy of QAP of CMS /WCMS Crossing). Has the acceptable value for the parameters inspected during above stage checks been laid down? If yes, the action taken against values of the parameters inspected does not meet the desired laid-down value. 19. System for documentation of the results of the above stage check. Maintenance of Records: Records in respect of manufacture of CMS/WCMS Crossings should be maintained in proper registers. **20.** Whether facilities for carrying out the following tests are available, also		

	indicate the capacity of each equipment maker's name and calibration details etc. 9.1 Chemical Analysis 9.2 Spectrometric/Instrumental Analysis 9.3 Hardness test 9.4 Tensile Bend Test 9.5 Impact Bend Test 9.6 Izod / Charpy Impact Test 9.7 Macroscopic test 9.8 Dye-penetrant test 9.9 Portable tester for checking residual magnetism 9.10 Microscopic test (if microscope with photographic attachment available) 9.11 X-Ray 9.12 Gamma Ray 9.13 Any other test **10.** Whether two sample set of CMS/ WCMS Crossings of any one design are ready for inspection during Quality Audit (Report to be submitted by Inspecting Officials)? **11.** Whether the firm is possessing officially issued prints of relevant Drawings and Specifications?	indicate the capacity of each equipment maker's name and calibration details etc. 9.1 Chemical Analysis 9.2 Spectrometric/Instrumental Analysis 9.3 Hardness test 9.4 Tensile Bend Test 9.5 Impact Bend Test 9.6 Izod / Charpy Impact Test 9.7 Macroscopic test 9.8 Dye-penetrant test 9.9 Portable tester for checking residual magnetism 9.10 Microscopic test (if microscope with photographic attachment available) 9.11 X-Ray 9.12 Gamma Ray 9.13 Any other test **21.** Whether two sample set of CMS/ WCMS Crossings of any one design are ready for inspection during Quality Audit (Report to be submitted by Inspecting Officials)? **22.** Whether the firm is possessing officially issued prints of relevant Drawings and Specifications?		Agreed to. Agreed to.

			Comments/ Suggestions during 30 days of uploading: **Track Design Dte. (Inspection Unit) of RDSO, suggested following modification in the existing clause:** 9.10 Microscopic test – Using microscope of magnification up to 500X with digital recording & printing facilities. 9.14 Static Bend Test – (200T min. capacity)	
18.	**DECLARATION:** 1. We do hereby declare that the above particulars are correct and no discrepancy shall be found during actual investigation before and during execution of order on our firm. 2. Any change in the Plant & Machinery, change of place of office and of works site shall be brought to the notice of RDSO for clearance and approval. 3. We also declare that our concern has not been black listed by Railway,	**DECLARATION:** 1. We do hereby declare that the above particulars are correct and no discrepancy shall be found during actual investigation before and during execution of order on our firm. 2. Any change in the Plant & Machinery, change of place of office and of works site shall be brought to the notice of RDSO for clearance and approval. 3. We also declare that our concern has not been black listed by Railway,	**Comments/ Suggestions during 30 days of uploading:** No comments received.	--

	Railway Board/RDSO for business with the Railways. 4. We hereby undertake that all our equipment for manufacturing and testing as listed above shall be maintained in good working order at all times. 5. We hereby declare that the contents and instructions of ISO Apex Documents of RDSO have been read by us and our firm shall agree to abide by all the stipulations laid therein. 6. We hereby undertake to maintain the record of the procurement of raw material for production of CMS crossings/WCMSC, supply of CMS crossings/WCMSC & disposal of scrap of CMS crossings/WCMSC in the proper format. Place: Signature of Manufacturer Office Seal Date:	Railway Board/RDSO for business with the Railways. 4. We hereby undertake that all our equipment for manufacturing and testing as listed above shall be maintained in good working order at all times. 5. We hereby declare that the contents and instructions of ISO Apex Documents of RDSO have been read by us and our firm shall agree to abide by all the stipulations laid therein. 6. We hereby undertake to maintain the record of the procurement of raw material for production of CMS crossings/WCMSC, supply of CMS crossings/WCMSC & disposal of scrap of CMS crossings/WCMSC in the proper format. Place: Signature of Manufacturer Office Seal Date:		