

ISO9001:2008 Document	No: QC-G-7.1-2	Version No: 1.0	Date Effective: 15.11.2013
Document Title: Item Specific guideline for ASSESSMENT/ REASSESSMENT OF FIRMS FOR MANUFACTURE AND SUPPLY OF SGCI INSERTS			



RESEARCH DESIGNS & STANDARDS ORGANIZATION

Manaknagar, Lucknow – 226011

Document No: QC-G-7.1-2

Document Title: Item specific guideline for assessment/re-assessment of Firms for manufacture and supply of SGCI Inserts

1.0 Amendment History:

S. N.	Amendment Date	Version	Reasons for Amendment
1	05/11/2013	1.0	First issue under new documentation system for ISO 9001:2008

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2.0 PURPOSE:

This guideline covers all technical requirement for manufacture and supply of SGCI Inserts used for vendor Development /vendor registration/reassessment of vendor.

3.0 SCOPE OF APPLICATION

This shall be applicable for initial capability assessment, periodic reassessment for extension of approval, up-gradation of vendors and maintaining their approved list. In case of any variation between the procedure/provision given in work instruction and in the 'Item-specific guidelines', the latter shall prevail. The competent authority wherever referred to in this document shall mean Executive Director, Quality Assurance Civil Directorate.

4.0 PROCEDURE / DETAILS

4.1 ITEM SPECIFIC GUIDELINES FOR ASSESSMENT / REASSESSMENT OF FIRMS FOR MANUFACTURING SGCI INSERTS

In addition to the "General Guidelines for Vendor Development", the following shall also be applicable for assessment/reassessment of firms for manufacturing SGCI inserts:

i) The fresh approval of firms for manufacturing of SGCI Inserts will be undertaken as per extant instructions. The firms being developed will have to submit the information on proforma (Annexure-II) along with other document as per General Guidelines for Vendor Development (document number QC-G-7.1-1). After the information is found satisfactory, Infrastructure facilities shall be verified as per list mentioned in the documents (Annexure-I).

ii) Two sets of gauges to the relevant drawings shall be submitted for approval by RDSO after successful infrastructure verification for assessment of the firm. After approval of inspection gauges, the firm will undertake internal development and submit internal test report for scrutiny by RDSO. The samples will be drawn from firm's works after satisfactory ITR and deposition of requisite charge.

iii) For the purpose of assessment of SGCI inserts the firm shall be required to cast at least one heat of SGCI inserts for picking samples. Trial product shall be cast in the presence of the RDSO's representative. The samples will be collected out of above production and will be tested at RDSO as per relevant specification.

iv) Implementation of approved QAP shall be verified during visit.

v) After satisfactory results of sample testing, the firm will be considered for approval in Part-II category in accordance with provisions of "General Guidelines for Vendor Development (document number QC-G-7.1-1)".

vi) The firm will be considered for upgradation to part-I after fulfilling the requirements laid down in "General Guidelines for Vendor Development (document number QC-G-7.1-1)". The minimum stipulated quantity for consideration of upgradation for SGCI Inserts concerned design shall be as per annexure-V of General Guidelines for Vendor Development (document number QC-G-7.1-1) for use on Indian Railways.

vii) The inspection gauges and samples shall be required to be approved by RDSO for each drawing of SGCI inserts on order before start of regular production.

viii) Firms intending to make product of similar nature which require similar infrastructure can apply for the same and will be approved after satisfactory development and developmental inspection by RDSO of minimum specified Quantity as per annexure-V of General Guidelines for Vendor Development (document number QC-G-7.1-1) for stabilization of the product.

ix) Developmental Inspection shall be carried out at least in two installments.

x) During Re-assessment, Trial product shall be cast in the presence of the RDSO's representative and tested in the work's premises. In case of reassessment, the inspection gauges shall be approved / revalidated before reassessment visit.

xi) Separate record shall be maintained for Rejected SGCI inserts / Heats.

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xii) All testing equipment shall be with valid calibration from the Govt. laboratory / NABL accredited laboratory.

4.2 SCHEDULE OF TECHNICAL REQUIREMENT:

The firms seeking approval or already approved must have the Minimum facilities & machines required for manufacture of SGCI INSERTS as stipulated in Annexure-I.

4.3 PROFORMA FOR CAPABILITY/CAPACITY ASSESSMENT OF FIRMS FOR MANUFACTURE OF SGCI INSERTS:

The firms applying for assessment/ Reassessment must submit the information on proforma given in Annexure-II along with other documents as per General Guidelines for Vendor Development(document number QC-G-7.1-1) in duplicate for scrutiny and further processing by RDSO. The firms applying for assessment/ Reassessment must also be submit the information of actual facilities / equipments available in the firm on proforma given in Annexure-I in duplicate for scrutiny and further processing by RDSO

5.0 REFERENCED DOCUMENTS

S.N.	Document Name	Document No.
1.	IRS Specification for SGCI INSERTS	IRS: T-46 (1996)
2.	General Guidelines for Vendor Development	QC-G-7.1-1

6.0 REFERENCED DOCUMENTS OF EXTERNAL ORIGIN

None.

7.0 ASSOCIATED RECORDS

None.

8.0 RESPONSIBILITY AND AUTHORITY

Activity	Responsible	Approver	Supporting	Consulted	Informed
Creation, maintenance of this document	Director/QAC	ED/QAC	DD/XEN/AIE/ARO	Track Design Dte. & M&C Dte.	All vendors/ concerned through website
Compliance of directives contained in this document	DD/XEN/AIE/ARO	Director/QAC	Respective staff	-	-
Requirement of deviation from this directive	Director/QAC	ED/QAC	DD/XEN/AIE/ARO	Track Design Dte. & M&C Dte.	All vendors/ concerned through website

9.0 ABBREVIATIONS

QA	Quality Assurance.
QAC	Quality Assurance Civil.
ED/QA	Executive Director/Quality Assurance Civil
RDSO	Research Designs & Standards Organisation
DD	Dy. Director
XEN	Executive Engineer
AIE	Assistant Inspecting Engineer.
ARO	Assistant Research Officer

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Annexure-I

SCHEDULE OF TECHNICAL REQUIREMENTS FOR MANUFACTURE AND SUPPLY OF SGCI INSERTS

Name of the firm:-.....

Work's Address :-.....

S.N.	Description	Min. facilities / Equipment considered essential		Actual facilities/ Equipments available		Remarks
		3	4	5	6	
1	2	3	4	5	6	7
1.	Melting Facilities:					
a)	Electric melting furnace with control panel	Medium Frequency Induction Furnace	1 No.			
b)	Temperature measuring device		1 No.			
c)	Treatment ladle with tundish cover or GF ladle	1000 to 1500 kg	1 No.			
d)	Weighing scale / machine		1 No.			
2.	Pattern Shop:					
a)	Surface Plate	60cmx 60cm	1 No.			
b)	Height Gauge	60cmx 60cm	1 No.			
c)	Vernier Caliper	30cm	1 No.			
d)	Clamp		1 No.			
e)	Slip Gauge, etc.		1 No.			
3.	Sand Plant:	Intensive sand mixing plant				
a)	Moulding machine with air compressor		1 Set			
b)	Iron Separator		1 No.			
c)	Sieves		1 No.			
d)	Mould Boxes		20 pairs			
e)	Mould hardness Tester		1 No.			
f)	Sand Mixer	250 kg	2 No			
4.	Core making facilities:					
a)	Core Sand Muller/ Core shooter	100kg	1 No.			
b)	Core Drying Oven/furnace (For Core Sand Muller only)		1 No.			
c)	Core hardness Tester		1 No.			
5.	Sand Testing Facilities:					
a)	Sieve Set		1 set			
b)	Sieve Shaking machine		1 No.			
c)	Rapid Moisture Tester		1 No.			
d)	Permeability Meter		1 No.			
e)	Sand Weighing Balance		1 No.			
f)	Sand Rammer		1 No.			
g)	Sand Rammer Base Block		1 No.			
h)	Drying oven		1 No.			
i)	Compressive Strength Testing Machine		1 No.			
j)	Shatter Index Testing machine.		1 No.			

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6	Vibrator/Knocking		1 No.			
S.N.	Description	Min. facilities / Equipment considered essential	Actual facilities / Equipments available	Remarks		
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
7.	Tumblasting Machine:	300 kg	1 No.			
8.	Fettling / Dressing Facilities:					
a)	Bench Grinder		4 No.			
b)	Swing Frame Grinder		1 No.			
c)	Pencil Grinder		1 No.			
d)	Chipping Hammer		1 No.			
9.	Turning / Machine Shop Facilities:					
a)	Lathe Machine		1 No.			
b)	Drilling Machine		1 No.			
c)	Shaping Machine		1 No.			
d)	Milling Machine (optional)		1 No.			
e)	Welding Set		1 No.			
f)	Hacksaw		1 No.			
10.	Chemical Laboratory:					
a)	Carbon Sulphur Determination Apparatus with Accessories		1 No.			
b)	Chemical Balance		1 No.			
c)	Muffle Furnace with Automatic Temperature Control		1 No.			
d)	Hot Plate		1No.			
e)	Electric Oven		1 No.			
f)	Barometer		1 No.			
g)	Hydrometer		1 No.			
h)	Water Distillation Plant		1 No.			
i)	Reagents & Glass Wares for analyzing C, Si, Mn, S, P, Cr, V, Ni etc.		1 Set			
j)	Spectrometer(Optional)		1No.			
11.	Physical Laboratory:					
a)	Universal Testing Machine	20 Tonne	1 No.			
b)	Brinell Hardness Test Machine with Standard Testing Block	Micro-processor based	1 No			
c)	Metallurgical Microscope with Minimum Magnification of 100X	Microprocessor based microscope along with image analyzer	1 No.			
d)	Polishing Machine		1 No.			
e)	Charts and Tables for Nodule Count, Nodularity and hardness Conversion		1 Set			
f)	Inspection Gauges & Jigs	Chromium / Nickel coated	3 Sets			
12.	Documents:					
a)	Drawing Nos. RDSO/T-381 & RDSO/T-454 (Latest Alteration)		1 Set			
b)	IRS/T-46 (1996)		1 No.			
c)	Specifications as listed in IRS/T-46 (1996)		1Set			

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ANNEXURE-II

GOVERNEMENT OF INDIA-MINISTRY OF RAILWAYS
RESEARCH DESIGNS & STANDARDS ORGANISATION
MANAK NAGAR, LUCKNOW – 226011

PROFORMA FOR ASSESSMENT / REASSESSMENT OF FIRMS FOR SGCI INSERTS TO IRS: T- 46 (1996)

SECTION –I: GENERAL INFORMATION

1	Contract No.	
2	Name of the firm :	
3	Address:	
a	Head office :	
	Telephone No : (with STD code)	
	Fax No :	
	Email :	
b	Factory / Works :	
	Telephone No : (with STD code)	
	Fax No :	
c	Location	
i	Head Office :	About .....Km from..... Rly. Stn.
ii	Factory /Works.	About .....Km from..... Rly. Stn.
4	Brief description of Factory / Works :	
	Total land area (in sq. m) :	
	Total Covered area (in sq. m) :	
	Different sub-units, if any :	
	Special Features, if any	

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5. Organization:

5.1 Administrative / Managerial (Proprietor, Partner, Managing Director, Directors & Managers):

S. N.	Name	Designation	Qualification	Experience

5.2 Technical: (Production Manager, Supervisors & Chemists etc)

S.N.	Name	Designation	Qualification	Experience

Note:-Minimum qualification for Chemist / Quality Control Manager shall be B. Sc. With Chemistry as one of the subjects and that of production In-charge shall be diploma in engineering or experience more than 15 years.

5.3	Artisan/Skilled	.....Number
5.4	Unskilled	.....Number

6 a)	No. of shifts / per day	
6 b)	No. of hours / shift	
6 c)	No. of working days / week	
6 d)	Weekly closed day	

7	Name of sister concern, if any, which is already approved by RDSO for production of SGCI Inserts	
8	Stores / Items for which RDSO approval is sought.	
9	Production capability & capacity	
a)	Type of stores / items which the Firm is capable of manufacturing	
b)	Total production capacity	
i)	Per month	
ii)	Per year	
c)	Plans for future expansions, if any	

**SECTION – II : TECHNICAL INFORMATION
INFRASTRUCTURE FOR PRODUCTION & QUALITY CONTROL**

1	Description of different Departments in the factory / Works	
2	Function of each department Emphasizing production & Quality Control	
3	Brief details of Manufacturing Process(s) of SGCI inserts	
3.1	MELTING	
(i)	Nos. of furnace	
(ii)	Type	
(iii)	Capacity of the furnace	
(iv)	Frequency (Medium)	
(v)	Electrical Controls	
(vi)	Charge for Melting	
(vii)	Bath Composition	
(viii)	Treatment followed for production of SGCI inserts	
a)	Type of ladle	
b)	Capacity (1000 to1500)	
c)	Pre- inoculation, process	
d)	Tapping & pouring Temperature	
e)	Pouring time (Max. 10 Min)	
f)	Measuring & recording facility	
3.2	CASTING	
3.2.1	Pattern Shop facilities	
3.2.2	Moulding Sand Practice	
(a)	Unit Sand or	
(b)	Backing Sand & Facing Sand	

3.2.3 Ingredients of Sand Mix Batch Size _____ Kg.

Capacity of Moulding Sand Mixer

<i>Unit Sand</i>	<i>Backing Sand</i>	<i>Facing Sand</i>
a. Return Sand..... Kg	.....Kg	.....Kg.
b. New Sand .....Kg	.....Kg	.....Kg
c. Coconut Shell /.....Kg Petroleum Cock	.....Kg	.....Kg
d. Bentonite Kg	.....Kg	.....Kg
e. Dextrin Kg	.....Kg	.....Kg
f. Moisture Kg	.....Kg	.....Kg

3.2.4 CORE SAND PRACTICE:

3.2.4.1	Ingredients:	
(a)	Silica Sand	
(b)	Dextrin	
(c)	Core Oil	
(d)	Bentonite	
3.2.4.2	Drying Oven Details	
(a)	Capacity	
(b)	Electrical / Oil fired	
(c)	Drying time	
(d)	Drying Temperature	
3.2.4.3	Core Sand Properties	
(a)	Permeability	
(b)	Dry Compression Strength	
(c)	Hardness	
3.2.5	Stand Testing Facilities	
(i)	Sieve Set	
(ii)	Sieve Shaking Machine	
(iii)	Rapid Moisture tester/moisture testing	
(iv)	Permeability meter	
(v)	Sand Weighing balance	
(vi)	Sand rammer	
(vii)	Sand rammer base block	
(viii)	Drying Oven	
(ix)	Compressive strength machine	
(x)	Shatter Index	
(xi)	Hydrometer	
3.3	Knock out System :	
3.4	Fettling / Tumbling facilities	
3.5	Dressing & grinding facilities	
4	MACHINE SHOP FACILITIES	
(i)	Lathe	
(ii)	Drilling Machine	
(iii)	Hacksaw	
(iv)	Shaping Machine	
(v)	Welding set	
(vi)	Milling Machine	

5	Brief details of Quality Control Facility: (Please submit a write up on QAP Indicating source of raw materials, steps taken to ensure their quality, on line inspection, routine statistical inspection documentation and record keeping etc. (Rejection route of the inserts found unsatisfactory should be clearly indicated.)			
5.1	Chemical Testing			
<i>S.N.</i>	<i>Apparatus</i>	<i>Quantity Available</i>		
(i)	Carbon-Sulphur determination apparatus with transformer, furnace, Oxygen Cylinder and other accessories.			
(ii)	Chemical balance			
(iii)	Muffle furnace with automatic temperature control (Min. 800° C)			
(iv)	Hot plates			
(v)	Electric Oven			
(vi)	Barometer			
(vii)	Hydrometer			
(viii)	Water distillation Plant			
(ix)	Burettes, Desiccators, Measuring Cylinder, Washing bottles, Funnels, Beakers, Filter papers, Silica crucibles and other glass wares and chemicals of analytical reagents quality sufficient to analyze the elements relevant to the Production range.			
(x)	Spectrometer (optional)			
(xi)	Any other relevant facilities			
5.2	Mechanical Testing:			
<i>S.N.</i>	<i>Name of Machine</i>	<i>Capacity & No. available</i>		
(i)	Universal Testing Machine			
(ii)	Microprocessor based Hardness Tester			
(iii)	Microprocessor based Microscope along with image analyzer			
(iv)	Polishing Machine			
(v)	Chart and tables for nodule Count, Nodularity			
(vi)	Calibration of laboratory test equipment (Attach Xerox copies of Certification)			
All the testing equipment should be calibrated at least once in a year:				
<i>S.N.</i>	<i>Name of the Machine</i>	<i>Calibrating Authority</i>	<i>Date of Calibration</i>	<i>Valid Upto</i>
<i>S.N.</i>	<i>Name of Machine</i>	<i>Capacity & No. available</i>		
vii)	Chromium/Nickel coated Inspection Gauges & Jigs.			
viii)	Electronic weighing Balance with least count			

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SECTION -III: COMMERCIAL DOCUMENTS

(The copy of the documents should be submitted along with an affidavit on suitable non-judicial stamp paper undertaking correctness of the documents enclosed and willingness to accept the suitable action against the firm including delisting of firm without assigning any further opportunity)

1. Photocopy of the following documents is to be attached		
(i)	Proof of Ownership of works	
(ii)	Latest Electricity Bill	
(iii)	Valid Factory License	
(iv)	Constitution of Firm	
2	Registration under Indian Factories / Companies Act / Or Small Industries Act (Photocopy of Certificates /Registration to be enclosed)	
3	Registration under the scope of Industries (Development & Regulations) Act 1951 (Photocopy of Certificate / License to be attached), if applicable	
4	Income Tax Clearance of last financial year (Copy to be attached)	
5	Major items at present produced:	
6	Give names of concerns to whom material supplied in the past :	

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UNDERTAKING :

i) 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.

ii) Any change in the plant and machinery, constitution of firm and change of place of office and of works site shall be brought to the notice of RDSO for clearance and approval.

iii) We also declare that our concern has not been black listed by Railway, Railway Board/RDSO for business with the Railways.

iv) We hereby undertake that all our equipment for manufacturing and testing as listed above shall be maintained in good working order at all times.

v) We hereby declare that the contents and the instruction of latest " General Guidelines for Vendors Development(document number QC-G-7.1-1)" effective from----- have been read and understand by us and our firm shall agree to abide by all the stipulations laid therein. We also undertake to keep ourselves apprised of changes in the same carried out by RDSO in future.

	Sig. of authorized signatory
Place:	
	Name in full of Signing Authority
Date:	
	Status in the firm
	Stamp of the firm

Note:-

1. Please read "INDIAN RAILWAY STANDARD SPECIFICATION FOR SPHEROIDAL GRAPHITE CAST IRON INSERTS-46-1996" before filling up the application form.
2. Where the space provided against any item is insufficient, the information should be furnished on separate sheet of paper duly signed, which should be appended to this form and marked in appropriate place.

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