

QUALITY MANAGEMENT

23 ✓

CFFP, BHEL, HARIDWAR

Ref : CFF/QM/2015-16/PQC/Sand testing Equipment

Date : 22/09/2015

Sub: PQC for sand testing equipment's against Indent No. 20150390

PQC :

Vendor to submit at least one copy of purchase order against each purchase specification. The purchase order shall be within past 4 years (on the date of opening the tender).

Vendor shall be furnish below table for same & provide copy of Purchase order.

SL NO.	MATERIAL CODE	EQUIPMENT	SPECIFICATIO N	PO REF & DATE	CUSTOMER
1	FF7388000070	CORE HARDNESS TESTER	CFF/SFQC/11		
2	FF7388081011	CALIBRATION UNIT FOR CORE AND MOULD HARDNESS TESTER	R00		
3	FF7394300226	SHIEVE SHAKER WHICH SHALL ABLE TO HOLD AT LEAST 10 SIEVES OF OD 200MM & HT 35 MM.	CFF/SFQC/14		
4	FF7398000022	SET OF SEIVES GROUP "A" (1700,850,600,425,300,212,150,106, 75,53 SIZES IN MICRONES) WITH LID & PAN	CFF/SFQC/13		
5	FF7398000219	SET OF SEIVES GROUP "B " (2000,1400,1180,212,180,45 SIZES IN MICRONES) WITHOUT LID & PAN	R00		
6	FF7168000012	CLAY WASHER	CFF/SFQC/12		
7	FF7398000200	RAPID DRYER	R00		
8	FF7398000197	UNIVERSAL STRENGTH MACHINE ALONGWITH ACCESERIES (HIGH STRENGHT ARRANGEMENT & CALIBRATION KIT)	CFF/SFQC/15		
			R00		

Vendor

- Prepared by [Signature] 28/09/15
 - Checked By [Signature] 28/09/15
 - Approved By [Signature] 28/09/15

वी. जे. अग्रवाल (वी. जे. अग्रवाल)
 Addl. General Manager (QA/QC)
 सी.एफ.एफ.पी., बी.एल. हरिद्वार
 CFFP, BHEL, HARIDWAR



**SPECIFICATION
FOR
UNIVERSAL STRENGTH MACHINE**

No: CFF/SFQC-10
Rev No.: 00
Date: 15.06.2015
Page 1 of 2

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1.0 OBJECTIVE :

This technical specification covers the supply of Universal Strength Machine (Hydraulic) to determine compressive & tensile strength of foundry sand mix .

2.0 TECHNICAL REQUIREMENTS:

2.1 Compressive Strength :

Equipment should be capable to measure compressive strength of 0-200 kg/cm².

Provision for High dry strength arrangement may be used for testing higher dry compressive strength.

2.2 Tensile Strength :

Equipment should also have provision to measure tensile strength of 0-50 kg/cm².

Equipment should be capable to hold specimen of standard size for both type of strength arrangement.

Manufacturer shall provide calibration certificate of equipment from a recognized laboratory.

Manufacturer shall also provide calibration procedure & supply essential calibration kit for calibration along with equipment, if required.

Supplier shall specify probable source of calibration with offer.

If some specific oil used for operation, supplier shall specify the same with source and supply 1L of oil with equipment.

Supplier shall provide spares and consumables for trouble free operation for at least 2 years. These spares and consumables will be quoted along with offer separately.

3.0 GENERAL REQUIREMENTS:

Instrument shall be guaranteed for minimum one year after supply for trouble free service.

The equipment shall be tropicalized for operating temperatures from 4 °C to 50 °C, Humidity 20-95 % (RH) & dusty atmosphere.

Instrument shall be as per applicable National/International standard.

Supplier shall demonstrate the satisfactory performance of the equipment, if required.

Supplier shall provide three sets of operation and maintenance manual.

Supplier shall submit Annex-A for technical suitability.

	PREPARED BY	CHECKED BY	APPROVED BY
SIGNATURE			
	SUSHANT PANDEY	ARUN K AGARWAL	V K AGARWAL



**SPECIFICATION
FOR
UNIVERSAL STRENGTH MACHINE**

No: CFF/SFQC-10
Rev No.: 00
Date: 15.06.2015
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Annexure- A

TECHNICAL DATA SHEET FOR UNIVERSAL STRENGTH MACHINE

Vendor:

The vendor should fill the "Offered" Column in compliance to specified requirement and deviation if any

Sl. NO.	CL. NO.	Properties/particulars*	Specified	Offered
1	1.0	Objective	To offer	
2	2.1	Compressive Strength	(a)Range : 0-200 Kg/cm ² (b)High Strength arrangement Yes/No If yes specify the measuring range of both part.	
3	2.2	Tensile Strength	Range : 0-50 Kg/cm ²	
4	2.3	Holding of Specimen	Standard size/ To confirm	
5	2.4	Calibration certificate	(a) To confirm (b) Calibration period, specify	
6	2.5	(a)Calibration procedure (b)If additional equipment required for calibration (c) supply of calibration kit	(a) To confirm (b) To confirm, specify (c) To confirm	
	2.6	Source of calibration	Specify	
	2.7	(a)Essential for operation (b) supply of oil ,if required	(a)Specify (b) To confirm	
9	2.8	Spares for 2 year operation	To confirm & provide list with offer, if any.	
10	3.1	Guarantee period	1 year, To confirm	
11	3.2	Operating Condition	To confirm	
12	3.3	National Standard	Specify/ To confirm	
	3.4	Demonstration	To confirm	
	3.5	Operation & maintenance manual	To confirm	
		Confirmation of Spec. If any deviation specify	-	

These are indicative, for more details refer Spec Clause as mentioned. Vendor may use additional pages for Annex-A.

Sl. NO. AND DATE	PREPARED BY	CHECKED BY	APPROVED BY
	SUSHANT PANDEY	ARUN K AGARWAL	V K AGARWAL



**SPECIFICATION
FOR
CORE HARDNESS TESTER**

No: CFF/SFQC-11
Rev No.: 00
Date: 15.06.2015
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1.0. OBJECTIVE :

This technical specification covers the supply of core hardness tester of backed or dried cores made of resin silica sand and CO₂-silicate sand etc.

2.0. TECHNICAL REQUIREMENTS:

- 2.1 Equipment should be portable with a special gauge to read the scratch hardness number directly (0-100) on the core / mould surface.
- 2.2 The tip of the instrument should be made of tungsten carbide.
- 2.3 Equipment should be calibrated from a recognized laboratory. Supplier should furnish calibration certificate with equipment.
- 2.4 Manufacturer should provide calibration procedure & supply essential calibration kit for calibration along with equipment.
- 2.5 Supplier shall specify source of calibration with offer.
- 2.6 Supplier shall provide spares and consumables for trouble free operation for at least 2 years. These spares and consumables will be quoted along with offer separately.

3.0. GENERAL REQUIREMENTS:

- 3.1 Instrument shall be guaranteed for minimum one year after supply for trouble free service.
- 3.2 The equipment shall be tropicalized for operating temperatures from 4 °C to 50 °C, Humidity 20-95 % (RH) & dusty atmosphere.
- 3.3 Instrument shall be as per applicable National/International standard. Vendor shall mention nearest national/international standard for operation/ calibration, if any.
- 3.4 Supplier shall demonstrate the satisfactory performance of the equipment, if required.
- 3.5 Supplier shall provide three sets of operation and maintenance manual.
- 3.6 Supplier shall submit Annex-A for technical suitability.

SIGN AND DATE	PREPARED BY	CHECKED BY	APPROVED BY
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**SPECIFICATION
FOR
CORE HARDNESS TESTER**

No: CFF/SFQC-11
Rev No.: 00
Date: 15.06.2015
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Annexure- A

TECHNICAL DATA SHEET FOR CORE HARDNESS TESTER

Ref:

The vendor should filled the "Offered" Column in compliance to specified requirement and deviation if any

Vendor:

Sl. No.	Cl. NO.	Properties/particulars*	Specified	Offered
1	2.0	Objective	To offer	
2	2.1	Usability	(a)Handy: To confirm (b)Range : 0-100, To confirm	
3	2.2	Tungsten Carbide Tip	To confirm	
4	2.3	Calibration certificate	(a) To confirm (b) Calibration period, specify	
5	2.4	(a)Calibration procedure (b)If additional kit required for calibration (c) supply of calibration kit	(a) To confirm (b) To confirm, specify (c) To confirm	
6	2.5	Source of calibration	Specify	
7	2.6	Spare	To confirm & provide list with offer, if any.	
8	3.1	Guarantee period	1 year, To confirm	
9	3.2	Operating Condition	To confirm	
10	3.3	National Standard	Specify/ To confirm	
11	3.4	Demonstration	To confirm	
12	3.5	Operation & maintenance manual	To confirm	
13		Confirmation of Spec, If any deviation specify	-	

* These are indicative, for more details refer Spec Clause as mentioned. Vendor may use additional pages for Annexure.

SIGN AND DATE	PREPARED BY	CHECKED BY	APPROVED BY
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**SPECIFICATION
FOR
CLAY WASHER**

No: CFF/SFQC-12
Rev No.: 00
Date: 15.06.2015
Page 1 of 2

1.0 OBJECTIVE :


This technical specification covers the supply of Clay Washer to determine total clay content in the silica / chromite sand.

2.0 TECHNICAL REQUIREMENTS:

- 2.1 Equipment should be capable to measure clay content for a range 0- 1% through motorized stirrer mechanism along with timer.
- 2.2 Equipment should have adjustable jar holder.
- 2.3 Jar holder should be capable to hold standard beaker.
- 2.4 Equipment should be supplied with 53 micron sieve pan, wash bottle & syphon.
- 2.5 Equipment should be able to work at 230v AC , 50Hz.
- 2.6 Supplier shall provide spares and consumables for trouble free operation for at least 2 years. These spares and consumables will be quoted along with offer separately.

3.0 GENERAL REQUIREMENTS:

- 3.1 Instrument shall be guaranteed for minimum one year after supply for trouble free service.
- 3.2 The equipment shall be tropicalized for operating temperatures from 4 °C to 50 °C, Humidity 20-95 % (RH) & dusty atmosphere.
- 3.3 Instrument shall be as per applicable national/international standard.
- 3.4 Supplier shall specify calibration requirement , if any.
- 3.5 Supplier shall demonstrate the satisfactory performance of the equipment, if required.
- 3.6 Supplier shall provide three sets of operation and maintenance manual.
- 3.6 Supplier shall submit Annex-A for technical suitability.

SIGN AND DATE	PREPARED BY	CHECKED BY	APPROVED BY
			
	SUSHANT PANDEY	ARUN K AGARWAL	V K AGARWAL

**SPECIFICATION
FOR
CLAY WASHER**

No: CFF/SFQC-12
Rev No.: 00
Date: 15.06.2015
Page 2 of 2

Annexure- A

TECHNICAL DATA SHEET FOR CLAY WASHER

Vendor:

Ref:

The vendor should fill the "Offered" Column in compliance to specified requirement and deviation if any

Sl. No.	Cl. NO.	Properties/particulars*	Specified	Offered
1	1.0	Objective	To offer	
2	2.1	Measurement of clay content & motorized stirrer & timer	To confirm	
3	2.2	Adjustable Jar holder	To confirm	
4	2.3	Holding of standard beaker	To confirm	
5	2.4	Supply of supplementary kit	To confirm	
6	2.5	Suitability to power source	230V AC , 50Hz.	
7	2.6	Spare	To confirm & provide list with offer, if any.	
8	3.1	Guarantee period	1 year, To confirm	
9	3.2	Operating Condition	To confirm	
10	3.3	National Standard	Specify/ To confirm	
11	3.4	Calibration requirement	To confirm & specify	
12	3.4	Demonstration	To confirm	
	3.5	Operation & maintenance manual	To confirm	
		Confirmation of Spec, If any deviation specify	-	

Please be indicative, for more details refer Spec Clause as mentioned. Vendor may use additional pages for

SIGN AND DATE	PREPARED BY	CHECKED BY	APPROVED BY
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**SPECIFICATION
FOR
SIEVES FOR GFN ANALYSIS**

No: CFF/SFQC-13
Rev No.: 00
Date: 14.09.2015
Page 1 of 2

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1.0. SCOPE :

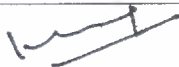

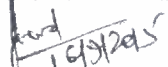
This technical specification covers the requirement of sieves to determine GFN of sand sample (Group "A"), steel shots & metallic powders (Group "B"),).

2.0. TECHNICAL REQUIREMENTS:

- 2.1 Sieves shall be as per IS:460 :1985.
- 2.2 Sieve sizes
 - (a) Sand testing : Group "A"
1700, 850, 600, 425, 300, 212, 150, 106, 75, 53 (sizes in microns)
 - (b) Other testing : Group "B"
2000, 1400, 1180, 212, 180, 45 (sizes in microns)
- 2.3 Diameter of sieve shall be 200 mm & height 35 mm.
- 2.4 Height of assembly of 10 Nos of sieve, lid & pan shall be not more than 220 mm to accommodate assembly for testing in sieve shaker.
- 2.5 Equipment shall work at 230v AC, 50Hz.
- 2.6 Supplier shall provide 1 set of one lid & one receiving pan with group "A" sieves.

3.0. GENERAL REQUIREMENTS:

- 3.1 Vendor shall provide TC along with equipment.
- 3.2 Supplier shall provide calibration certificate with equipment.
- 3.3 Identification shall be maintained in each sieve as per IS.
- 3.4 Supplier shall submit Annex-A for technical suitability.

	PREPARED BY	CHECKED BY	APPROVED BY
SIGN AND DATE			
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**SPECIFICATION
FOR
SIEVES FOR GFN ANALYSIS**

No: CFF/SFQC-13
Rev No.: 00
Date: 14.09.2015
Page 2 of 2

Annexure- A

TECHNICAL DATA SHEET FOR SIEVES

Ref: ,

Vendor:

The vendor should filled the "Offered " Column in compliance to specified requirement and deviation if any

SL NO.	CL. NO.	Properties/particulars*	Specified	Offered
1	1.0	Scope	To offer	
2	2.1	IS 460 :1985	To confirm	
3	2.2	Sieve size Group-A Group-B	To confirm	
4	2.3	Diameter & height of sieves	To confirm	
5	2.4	Height of assembly	To confirm	
6	2.5	Suitability to power source	230V AC , 50Hz.	
7	2.6	Supply of lid & pan	To confirm	
8	3.1	TC along with equipment	To confirm	
9	3.2	Calibration Certificate	To confirm	
10	3.3	Identification	To confirm	
11	-	Confirmation of Spec & IS, If any deviation specify	-	

* These are indicative, for more details refer Spec Clause as mentioned. Vendor may use additional pages for Annex-A.

For Vendor



SPECIFICATION
FOR
SIEVES SHAKER

No: CFF/SFQC-14
Rev No.: 00
Date: 14.09.2015
Page 1 of 2

1.0. SCOPE :



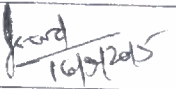
This technical specification covers the supply of sieves shaker to determine GFN of foundry sand.

2.0. TECHNICAL REQUIREMENTS:

- 2.1 The equipment shall be as compatible for testing of foundry sand as per IS 1918-1966.
- 2.2 The equipment shall be able to hold 10 Nos of sieves, lid & receiving pan of dia 200 mm & Height 35 mm.
- 2.3 The equipment shall have timer of 15 minutes minimum.
- 2.4 Equipment shall work at 230v AC , 50Hz.

3.0. GENERAL REQUIREMENTS:

- 3.1 Instrument shall be guaranteed for minimum one year after supply for trouble free service.
- 3.2 The equipment shall be tropicalized for operating temperatures from 4 °C to 50 °C, humidity 20-95 % (RH) & dusty atmosphere.
- 3.3 Supplier shall demonstrate the satisfactory performance of the equipment, if required.
- 3.4 Supplier shall provide three sets of operation and maintenance manual.
- 3.5 Supplier shall provide list of spares for trouble free operation, if any. Price of each shall be quoted separately.
- 3.6 Supplier shall submit Annex-A for technical suitability.

SIGN AND DATE	PREPARED BY	CHECKED BY	APPROVED BY
			 14/09/2015
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SPECIFICATION
FOR
SIEVES SHAKER

No: CFF/SFQC-14
Rev No.: 00
Date: 14.09.2015
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Annexure- A

TECHNICAL DATA SHEET FOR SIEVE SHAKER

Ref:

Vendor:

The vendor should filled the "Offered " Column in compliance to specified requirement and deviation if any

SL NO.	CL. NO.	Properties/particulars*	Specified	Offered
1	1.0	Scope	To offer	
2	2.1	Equipment compatibility with IS 1918:1966	To confirm	
3	2.2	Holding of 10 Nos of sieve, pan& lid	To confirm	
4	2.3	Provision of timer	To confirm	
5	2.4	Suitability to power source	230V AC , 50Hz.	
6	3.1	Guarantee period	1 year, To confirm	
7	3.2	Operating Condition	To confirm	
8	3.3	Demonstration	To confirm	
9	3.4	Operation & maintenance manual	To confirm	
10	3.5	List of Spares , Budgetary offer	To confirm & provide list with offer, if any.	
11	-	Confirmation of Spec, If any deviation specify	-	

* These are indicative, for more details refer Spec Clause as mentioned. Vendor may use additional pages for Annex-A.

For Vendor



**SPECIFICATION
FOR
RAPID DRYER**

No: CFF/SFQC-15
Rev No.: 00
Date: 14.09.2015
Page 1 of 2

1.0. SCOPE :




This technical specification covers the supply of infra-red rapid dryer to determine moisture content of sand.

2.0. TECHNICAL REQUIREMENTS:

- 2.1 The equipment shall be as compatible for testing of foundry sand as per IS 1918-1966.
- 2.2 The equipment shall be able to dry 100g sand at temp 105-110 °C.
- 2.3 The equipment shall consist of infrared lamp & drying pan.
- 2.4 Equipment shall have timer.
- 2.5 Equipment s work at 230v AC , 50Hz.

3.0. GENERAL REQUIREMENTS:

- 3.1 Instrument shall be guaranteed for minimum one year after supply for trouble free service.
- 3.2 The equipment shall be tropicalized for operating temperatures from 4 °C to 50 °C, Humidity 20-95 % (RH) & dusty atmosphere.
- 3.3 Vendor shall provide calibration certificate along with equipment.
- 3.4 Supplier shall demonstrate the satisfactory performance of the equipment, if required.
- 3.5 Supplier shall provide three sets of operation and maintenance manual.
- 3.6 Supplier shall provide list of spares for trouble free operation, if any. Price of each shall be quoted separately.
- 3.6. Supplier shall submit Annex-A for technical suitability.

	PREPARED BY	CHECKED BY	APPROVED BY
SIGN AND DATE			
	SUSHANT PANDEY	ARUN K AGARWAL	V K AGARWAL



SPECIFICATION
FOR
RAPID DRYER

No: CFF/SFQC-15
Rev No.: 00
Date: 14.09.2015
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Annexure- A
TECHNICAL DATA SHEET FOR RAPID DRYER

Ref:

Vendor:

The vendor should filled the "Offered" Column in compliance to specified requirement and deviation if any

SL NO.	CL. NO.	Properties/particulars*	Specified	Offered
1	1.0	Scope	To offer	
2	2.1	Equipment compatibility with IS 1918:1966	To confirm	
3	2.2	Weight & temp	To confirm	
4	2.3	Lamp & drying pan	To confirm	
5	2.4	Availability of timer	To confirm	
6	2.5	Suitability to power source	230V AC , 50Hz.	
7	3.1	Guarantee period	1 year, To confirm	
8	3.2	Operating Condition	To confirm	
9	3.3	Calibration certificate	To confirm	
10	3.4	Demonstration	To confirm	
11	3.5	Operation & maintenance manual	To confirm	
12	3.6	List of Spares , Budgetary offer	To confirm & provide list with offer, if any.	
13	-	Confirmation of Spec, If any deviation specify	-	

* These are indicative, for more details refer Spec Clause as mentioned. Vendor may use additional pages for Annex-A.

For Vendor