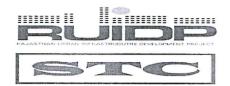
## Annexure-II

# <u>List of Wate Water Items for Standardised QAP's</u>

SI. No.		Description	QAP Reference
1	Waste Water Items	RCC Pipe	Std QAP/ 23-24/ WW-01
2		Inspection chamber	Std QAP/ 23-24/ WW-02
3		Manhhole cover	Std QAP/ 23-24/ WW-03
4		Vent Shaft	Std QAP/ 23-24/ WW-04

### STANDARD QUALITY ASSURANCE PLAN



Manufacturer Logo & Adddress

Item Description : RCC Pipe NP2/NP3/NP4 ( Vertical Cast)	Project :
QAP NO: Std QAP/ 23-24/ WW-01	Client: RAJASTHAN URBAN INFRASTRUCTURE DEVELOPMENT PROJECT
REV.NO: 00	Consultant: SHAH TECHNICAL CONSULTANT (STC)
DATE:	Contractor:

Sr.	Component &	Characteristics	Type of Check	Quatum of check	Deference Desumers	Accentages Norma	Inspection		ction	n - i
Vo.	Operation				Reference Document	Acceptance Norms	Manu	Client	TPI/Client/	Remarks
1	2	3	4	5	6	7	Manu	Chem	Consultant	
Kaw I	Material	Figures	MTC		10 10222010 155			T =		
		Fineness Standard Consistency	MTC MTC	One per each consignment	IS 12330&IS: 4031	Saecific surface shall not be less 225 M2/KG	R	R	R	
				One per each consignment	IS 12330&IS: 4031	Initial setting time shall be not less than 30 min. Final setting	R	R	R	
1	Cement SRC	Setting time ( Initial& Final)	MTC	One per each consignment	IS 12330&IS: 4031	time shall be not more than 600 max	R	R	R	
	*	Compressive Strength	MTC	One per each consignment	IS 12330&IS: 4031	3 days (72+/-1 hr)= min 10n/mm2 , days(168+/-2hr)=min 16N/mm2 , days (672+/-4 hr )=min 33 N/mm2	R	R	R	MTC showing 28 days under testing shall be accepted only if it is passed in 7 days
_		Soundness	MTC	One per each consignment	IS 12330&IS: 4031	Cement shall not have expansion more than 10mm & 0.82	R	R	R	
	v	Sieve Analysis	Lab test	Once per source per year or for every 500 cum, whichever is earlier	IS: 383-2016	Table 7 ( IS:383-2016)	P	R	R	
2	Coarse Aggregates	Specific gravity	Lab test	Once per source per year or for every 500 cum, whichever is earlier	IS: 383-2016	2.1 to 3.2(Table 3,IS :383-2016)	Р	R	R	
		Water absorption	Lab test	Once per source per year or for every 500 cum, whichever is earlier	IS: 383-2016	less than 5%(Table 3,IS :383-2016)	Р	R	R	
		Sieve Analysis	Lab test	Once per source per year or for every 500 cum, whichever is earlier	IS: 383-2016	Table 9(IS:383-2016)	Р	R	R	
		Specific gravity	Lab test .	Once per source per year or for every 500	IS : 2386-1963(Part-III)	. 2.1 to 3.2(Table 3,IS :383-2016)	P,	R	R .	
3	Fine Aggregates	Bulk density	Lab test	Once per source per year or for every 500	IS : 2386-1963(Part-III)		p	R	R	
				cum, whichever is earlier Once per source per year or for every 500		(T) 11 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2				
		Deleterious Material	Lab test	cum, whichever is earlier Once per source per year or for every 500	IS : 383-2016	(Table 2,IS :383-2016)	P	R	R	
_		Silt and clay	Lab test	cum, whichever is earlier	IS : 458-2003	not more than 3%	P	R	R	
1	Rubber Ring	Dimensions	Measurement	Once per Batch	IS: 5382-2018	CL. 3.6(1S:5382-2018) & ISI mark "SEWER" it should be mentioned	R	R	R	*
		Physical Test	MTC	Once per Batch	IS: 5382-2018	CL. 3.7(1S:5382-2018)	R	R	R	
einfo	orcement				10 122 1002/P . HV 6 10					
		Dimensions	MTC	Once per Batch	IS:432-1982(Part-II)& IS: 1786	Clause 5&6	R	R	R	
		Ultimate tensile stress	MTC	Once per Batch	IS:432-1982(Part-II)& IS: 1786	More than 570 N/SQMM	R	R	R	
1	Physical & Mechanical property	0.2% proof stress	МТС	Once per Batch	IS:432-1982(Part-II)& IS: 1786	More than 480 N/SQMM	R	R	R	
		Elongation	МТС	Once per Batch	IS:432-1982(Part-II)& IS: 1786	More than 7.5%	R	R	R	
		Reverse bend test	МТС	Once per Batch	IS:432-1982(Part-II)& IS: 1786	CL.8.3 (IS :432-1982 Part-II)	R	R	R	
$\top$	Water	Physical and mechanical properties	Lab test report	Once per source	IS : 3025	CL.5.4(IS:456-2000)	P	R	R	
	Admistures if used	Physical and mechanical properties	MTC	Once per source	IS: 9103-1999	Table 1&2( IS:9103-1999)	R	R	R	
ROC	ESS CONTROL									
		Design (Mix Aggregate Size 20mm)	Visual	Once per source/per year	IS: 458-2021 Table 8	Min. Compressive strength 35N/SQMM	P	R	R	
	Concrete Mix	Design (Mix Aggregate Size 20mm)	Visual	Once per source/per year	IS: 458-2021 Table 8	Min. Compressive strength 35N/SQMM	Р	R	R	
		Compressive Strength	Compressive Strength of cube	6 cube per day	IS : 458-2021 Table 8	35N/SQMM at 28 days	P	RW	RW	
	Reinforcement	Weight	Measurement	Each cage before casting	IS: 458-2021 Table 8	CL. 6.2 IS : 458-2021	P	R	R	
	Dimensions	Pipe Dia & Thickness	Measurement	one pipe per day	IS: 458-2021 Table 8	Table 15B	P	RW	RW	
	Curing	Proper Curing	Visual	each pipe	IS: 458-2021 Table 8	CL. 7.4 IS: 458-2021	P	RW	RW	
[NA]	L INSPECTON & TE	STING:								
		Workmanship & Finish	Visual	100%	IS: 458-2021	CL.9 IS: 458-2021	P	W	W	
		Dimension test	Measurement	IS: 458-2021 Table 23	. IS: 458-2021	Table 15B	P	W	W	
	Į.	Three edge bearing test	Strenth Test	IS: 458-2021 Table 23	IS: 458-2021	Table 8	P	W	W	
	Final Cured pipe	Hydrostatic Test	Pressure Test	IS: 458-2021 Table 23	IS: 458-2021	As per latest IS code	P	W	W	
	Jares pripe	Permeability Test	Cup & Tube	IS: 458-2021 Table 23	IS: 458-2021	As per latest IS code	P	R	R	
		Ultimate Load Test	Strenth Test	IS: 458-2021 Table 23	IS: 458-2021	Table 8	P	W	W	
		Marking	Visual	IS : 458-2021 Table 23	IS: 458-2021	CL.12 IS: 458-2021	P	W	W	
1	I DIC 6 CEALDIC									
AMF	LING & SEALING:	Tarabilation Comme	100	1 1000		vois i				
0		Legilibility Stamp	Visual	100%		ISI Mark	P	W	W	
٠ ا	Stellening Stamp	Marking	Visual	100%	Employer's Spec./IS:458	Project Town CL.12 of IS: 458-2021 Identification mak of Client (RUIDP)	P	w	W	9

M-MANUFACTURER

C-CONTRACTOR

TPI- THIRD PARTY INSPECTION

P-PERFORM

R-REVIEW

W- WITNESS

R/W-RANDOM WITNESS

\*Refer latest revisions of IS code for above

PAUL DE PROJECT PROJECT PROJECT PROJECT		EE <5/3
RAJASTNAN UHBAN INFRASTBUGUTHE DEVELOPMENE PROJECT		II IIIIIII
TALIAS MAN DIBAN INFASTROCOTHE DEVELOPMENT PROJECT	FRL	JIDP
	KAJAS DIAN URBAN IN	FRASTRUCUTHE DEVELOPMENT PROJECT

### STANDARD QUALITY ASSURANCE PLAN

Item Description : RCC Pipe NP2/NP3/NP4 ( Vertical Cast)	Project :			
QAP NO: Std QAP/ 23-24/ WW-01	Client: RAJASTHAN URBAN INFRASTRUCTURE DEVELOPMENT PROJECT			
REV.NO: 00	Consultant: SHAH TECHNICAL CONSULTANT (STC)			
DATE: .	Contractor:			

Sr.	Component &	Chamataristics	Tunn of Cheek	Ountum of shoot	Peference Desument	Acceptones Norms	Inspection	Domanic
No.	Operation	Characteristics	Type of Check	Quatum of check	Reference Document	Acceptance Norms	Many Client/	Remarks

2. All measuring INSTRUMENTS AND TESTING EQUIEPEMTS. Calibrated periodically shall be submitted to IA on inspection time.

Manufacturer Logo & Adddress

- 3. We hereby deciare that we abide by this quality assurance pan and follow the same in all stages of production.

  4. Before despatch of items at casting yard same can be checked at random to confirm all QAP Requirements.
- 5. Manufacture shall provide all test certificates & internal & external test veports with supply as per QAP,

Manufacturer / Vendor	Contractor	CONSULTANT / CLIENT / TPI						
Signature:	Signature:	Signature:						
Name:	Name:	Name:						

#### STANDARD QUALITY ASSURANCE PLAN Item Description: SRFC (MD-10) RCC PRECAST CIRCULAR INSPECTION CHAMBER & COVERS 1. 300 (ID) X 450 (OD) 2. 450 (ID) X 600 (OD) 3. 450 (ID) X 900 (OD) QAP NO: Std QAP/ 23-24/ WW-02 Client: RAJASTHAN URBAN INFRASTRUCTURE DEVELOPMENT PROJECT Manufacturer Logo & Adddress REV.NO: 00 Consultant: SHAH TECHNICAL CONSULTANT (STC) DATE: Contractor Inspection Format of Record Sr. No. Component & Operation Characteristics Type of Check Quatum of check Reference Document Acceptance Norms Remarks TPI/Client/ Manu Client Consultant Raw Material IS 12330 : 1988 & Note 2 of Physical & Chemical IS 12592 : 2002 (Cause 4.1) MTC R R 1 Cement SRC As per IS 12330 : 1988 Every batch/ week no RIDP Dwg Properties internal test register for 100cum & One test for every 100 IS 12592 : 2002 (Cause 4.2) & IS 12386: 1963 R 2 Fine Aggregates Physical Properties As per IS 383 : 2016 cu.mts,or else every change External lab test for one year/source 383 : 2016 of source change internal test register for 100cum & Coarse Aggregate (Max. size One test for every 100 IS 12592 : 2002 (Cause 4.2) & IS 12386 : 1963 3 of aggregate shall not exceed Physical Properties As per IS 383 : 2016 cu.mts,or else every change External lab test for one year/source R 383:2016 of source change 20 mm) Physical, Chemical & IS 1786:2008 & IS: One for each batch of 1S 12592 : 2002 (Cause 4.4 & IS 1786 : 2008 & IS : 2062 Manugacturer test Certificate R Reinforcement R 4 Mechanical Properties 2062 4.5) & IS: 2062 supply Physical & Mechanical Manufacturer TC IS 12592 : 2002 (Cause 4.5) IS 2592 : 2002 (Clause 4.5) R Steel Fibre Every batch Manufacturer TC R 5 Properties Once in a year/ Change in Suitability of concrete External lab test Report Every Batch IS 456-2000) (Clause 5.4) External lab test Report R R 6 Water Manufacturing Process Min cement ciontent-360kg/m3 IS 456 & IS :12592 : 2002 Cube Strength Compressive Strength of Every batch IS:516 max,w/c Rato-0.40 Table 5-IS lab test report R R Conrete (M40 Grade) (Clause 4.3) IS:516 456:2000 & IS:516 Cubes IS 456, 2000 Mix Design One Mix Design As per 456:2000 Design Mix Report P R R 07-14 days water curing as IS 12592:2002 (Clause 7.3)& mentioned in the IS Code . IS:456-R R 8 Visual / Register Check | Every batch Curing Registre Curing Curing IS 456 2000 IS 12592:2002(Clause Reinforcement Quality & IS 12592:2002 (Clause Design Considerations 6,7,8&9)& as per design IS 456-W W Visual & Measurement Random IS: 456 Internal Test Reports 6.7.8&9)& IS 456 Arrangement 12mm dia steel rod protect anti 10 Lifting Hooks Dimensions Visual 100 % / Randam IS 12592:2002(Clause B) corrosive paint or hot dip Manufacture TC R/W R/W galvanlsed 1. Top outer edgr shall be protected by 25 mmx3mm mild steel elat as apart of the frame.2. Enough steel be welded to the inner surface of mild steel flat to connect in to the frame 100 % / Randam IS 12592:2002(Clause 7.4.1) reinforcement & these shall be Internal Test Reports W W 11 Visual Frame embedded in the concrete during casting 3. Exposed surface of mild steel flat shall be given suitable treatment with Edge Protection & Finishing anticorrosive paint.

IS 12592:2002(Clause 7.4.2)

Cover

Final Inspection - Inspection Chember Covers & Frames.

Visual

100 % / Randam

 edges of the cover shall be cst with aprotective mild steel sheet of min. 2mm thickness. Around

the periphery of covers. Width of

flat 90mm. ,2. The ring made out of mild steel flat shall be given anti corrosive treatment.

Internal Test Reports

W

W

12		Dimensions & visual defects if any	Measurement	IS 12592:2002 Table-3	IS 12592:2002	IS 12592:2002 (Clause 5,9,1.9,2 Table 1 & Annex B)	Joint Inspection Reports	Р	W	W	100
13	Load test on covers	Breaking load	Applying load	IIS 17597-7007 Table-3	1S 12592:2002 (Clause 9,3,Table 2 & Annex C)	Breaking load shall not be less than 200KN cover shall not show cracks in the course of the test and on top and bottom surface of cover after the test IS :12592(clause C-1,2,1-Annexure C	Joint Inspection Reports	Р	W	W	
14	Markino	Identificaton of class, size & source of Manufacture	Visual	100%	1S 12592:2002 Clause 14	Marking on cover 1. Manufacture name, month & year 2. Designation as HD-20-SFRC. 3. Identification Mark of client (RUIDP) Marking on manhole & ring & town name.		Р	W	W	

LEGENDS:

M-MANUFACTURER

C- CONTRACTOR

TPI- THIRD PARTY INSPECTION

P-PERFORM

\*Refer latest revisions of IS code for above activities

- Note: 1. Copies of material report shall be given to inspection authority (IA) for scrutiny be fore commencement of inspection.

  2. All measuring INSTRUMENTS AND TESTING EQUIEPEMTS. Calibrated periodically shall be submitted to IA on inspection time.

  - All measuring instructions and feeting shall be submitted to
     We hereby deciare that we abide by this quality assurance pan and follow the same in all stages of production.
     Before despatch of items at casting yard same can be checked at random to confirm all QAP Requirements.
     Manufacture shall provide all test certificates & internal & external test veports with supply as per QAP,

Manufacturer / Vendor		Contractor	CONSULTANT /CLIENT / TPI					
Signature:		Signaturę:		Signature:				÷
Name:		Name:		Name:				

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Sr. No.	Component &	Characteristics	Type of Check	Quatum of	Reference Document	Acceptance Norms	Format of Record		Inspecti		Remarks
1	Operation 2	3	4	check 5	6	7	8	Manu	Client	TP1/Client/ Consultant	Kemarks
Raw Mate	rial					,				Consum	
. 1	Cement SRC	Physical & Chemical Properties	As per IS 12330 : 1988	Every batch/ week no	IS 12592 : 2002 (Cause 4.1)	IS 269-2015 Table-2	MTC	P	.R	R	
2	Fine Aggregates	Physical Properties	As per IS 383 : 2016	One test for every 100 cu.mts,or else every change of source	IS 12592 : 2002 (Cause 4.2) & 383 : 2016	IS 12386 : 1963	internal test register for 100cum & External lab test for one year/source change	P	R	R	
3	Coarse Aggregate (Max. size of aggregate shall not exceed 20 mm)	Physical Properties	As per IS 383 : 2016	One test for every 100 cu.mts,or else every change of source	IS 12592 : 2002 (Cause 4.2) & 383 : 2016	IS 12386 : 1963	internal test register for 100cum & External lab test for one year/source change	Р	R	R	~
4	Reinforcement	Physical, Chemical & Mechanical Properties	IS 1786:2008 & IS : 2062	One for each batch of supply	IS 12592 : 2002 (Cause 4.4 & 4.5) & IS : 2062	IS 1786 : 2008 & IS 2062	Manugacturer test Certificate	P	R	R	
5	Steel Fibre	Physical & Mechanical Properties	Manufacturer TC	Every batch	IS 12592 : 2002 (Cause 4.5)	IS 2592 : 2002 (Clause 4.5)	Manufacturer TC	P	R	R	
6	Water	Suitability of concrete	External lab test Report	Once in a year/ Change in source	Every Batch	IS 456-2000) (Clause 5.4)	External lab test Report	P	R	R	
lanufact	uring Process										
7	Conrete (M40 Grade)	Cube Strength	Compressive Strength of	Every batch IS:516	IS 456 & IS :12592 : 2002 (Clause 4.3) IS :516	Min cement ciontent-360kg/m3 max,w/c Rato-0.40 Table 5-IS 456:2000 & IS:516	lab test report	P	R	R	
		Mix Design	Cubes	One Mix Design	IS 456, 2000	As per 456:2000	Design Mix Report	P	R	R	
8	Curing	Curing	Visual / Register Check	Every batch	IS 12592:2002 (Clause 7.3)& IS 456	07-14 days water curing as mentioned in the IS Code . 1S:456-2000	Curing Registre	P	R	R	
9	Reinforcement Quality & Arrangement	Design Considerations	Visual & Measurement	Random IS: 456	IS 12592:2002 (Clause 6,7,8&9)& IS 456	IS 12592:2002(Clause 6,7,8&9)& as per design IS 456-2000	Internal Test Reports	P	W	W	
10	Lifting Hooks	Dimensions	Visual	100 % / Randam	IS 12592:2002(Clause B)	16mm dia steel rod protect anti corrosive paint or hot dip galvanlsed	Manufacture TC	P	R/W	R/W	
11	Edge Protection & Finishing	Frame	Visual	100 % / Randam	IS 12592:2002(Clause 7.4.1)	1. Top outer edgr shall be protected by 25 mmx3mm mild steel elat as apart of the frame.2. Enough steel be welded to the inner surface of mild steel flat to connect in to the frame reinforcement & these shall be embedded in the concrete during casting 3. Exposed surface of mild steel flat shall be given suitable treatment with anticorrosive paint.	Internal Test Reports	Р	W	W	
		Cover	Visual	100 % / Randam	IS 12592:2002(Clause 7.4.2)	1. edges of the cover shall be cst with aprotective mild steel sheet of min. 2mm thickness. Around the periphery of covers. Width of flat 90mm. ,2. The ring made out of mild steel flat shall be given anti corrosive treatment.	Internal Test Reports	Р	w	W	

Final Insp	pection - Inspection Cher	mber Covers & Frames.									
12	Icheck on manhole &	Dimensions & visual defects if any	Measurement	IS 12592:2002 Table-3	IS 12592:2002	IS 12592:2002 (Clause 5,9,1,9,2 Table 1 & Annex B)	Joint Inspection Reports	Р	W	W	
13	Load test on covers	Breaking load	Applying load	IS 12592:2002 Table-3	IS 12592:2002 (Clause 9,3,Table 2 & Annex C)	Breaking load shall not be less than 200KN cover shall not show cracks in the course of the test and on top and bottom surface of cover after the test IS:12592(clause C-1,2,1 -Annexure C	Joint Inspection Reports	Р	W	W	
14	Reinforcement Cage	Weight	Measurement	Randam	Not 14 of RUIDP Dwg	As per approved RUIDP Dwg.	Joint Inspection Reports	P	W	W	
15	Dimension of footrest	Dimensions & visual defects if any	Measurement	IS 12592 : 2002 Table-3	Not 9.10 of RUIDP Dwg	Not 9,10 of RUIDP Dwg	Joint Inspection Reports	P	W	W	
16	Marking	Identificaton of class, size & source of Manufacture	Visual	100%	IS 12592:2002 Clause 14	Marking on cover 1. Manufacture name, month & year 2. Designation as HD-20-SFRC. 3. Identification Mark of client (RUIDP) Marking on manhole & ring & town name.		P	W	W	

LEGENDS:

M-MANUFACTURER

C- CONTRACTOR

TPI- THIRD PARTY INSPECTION

P-PERFORM \*Refer latest revisions of IS code for above activities

- Note: 1. Copies of material report shall be given to inspection authority (IA) for scrutiny be fore commencement of inspection.
  - 2. All measuring INSTRUMENTS AND TESTING EQUIEPEMTS. Calibrated periodically shall be submitted to IA on inspection time.
  - 3. We hereby deciare that we abide by this quality assurance pan and follow the same in all stages of production.
  - 4. Before despatch of items at casting yard same can be checked at random to confirm all QAP Requirements.
  - 5. Manufacture shall provide all test certificates & internal & external test veports with supply as per QAP,

Manufacturer / Vendor	Contractor	CONSULTANT /CLIENT / TPI				
Signature:	Signature:	Signature:				
Name:	Name:	Name:				

#### STANDARD QUALITY ASSURANCE PLAN Item Description : Vent Shaft Project : QAP NO: Std QAP/ 23-24/ WW-04 Client: RAJASTHAN URBAN INFRASTRUCTURE DEVELOPMENT PROJECT Manufacturer Logo & Adddress REV.NO: 00 Consultant: SHAH TECHNICAL CONSULTANT (STC) Contractor: DATE: Control Test / Inspection Sr. No. **Application Specification** Remarks Inspection Type of Tosts Frequency Material grade Reviewed (R)/Witnessed(W) by Description Performed by 3 5 4 Manufacturing IS 456:2003 Manufacturer Process Raw Materials Client / Third Party (R) Manufacturer a) Cement OPC (43 Review of Mfr's Grade) with sulphide IS:8112/IS:12269 Once each batch Manufacturer Certificate resisting paint inside Client / Third Party (R) Review of Mfr's b) Reinforcement Bar IS: 432 Manufacturer Client / Third Party (R) 2 Certificate Client / Third Party (R) IS: 383 Sieve Analysis c) Fine Aggregate Once each batch Manufacturer d) Coarse Aggregate IS: 383 Sieve Analysis Once each batch Manufacturer Client / Third Party (R) PH chlorides, sulphates, aciidity/Alkanility e) Water IS: 456 Once each batch Manufacturer Client / Third Party (R) Test of concrete 3 Compressive Strength Manufacturer Client / Third Party (R) cubes Factory Test on 4 Manufacturer Ventshaft Client / Third Party (R) Client / Third Party (R) a) Visual Inspection Visual Manufacturer b) Dimensional Test Client / Third Party (R) As per approved drawing As per IS: 458 Manufacturer 1) Internal Diameter of As per IS: 458 As per approved drawing By Gauge Manufacturer Client / Third Party (R) Ventshaft 2) Outer Diameter of By Gauge As per IS: 458 As per approved drawing Manufacturer Ventshaft Client / Third Party (R) Marking-Visual-Manufacturer's Name, As per specification Manufacturer Each Client, Project Town & Package Name Client / Third Party (R) Client / Third Party (R) Final Document Manufacturer Client / Third Party (R) Test Certificate As per specification Manufacturer 1. All raw material and finish material test reports should be submitted to client with supply and to TPI. Note: 2. Visual inspection to be done following IS: 456. 3. All equipments calibration certification shall be submitted to TPI. Manufacturer / Vendor CONSULTANT /CLIENT / TPI Contractor Signature: Signature: Signature: Name: Name: Name: