	PROJECT		Standby SRU & Additional Tanks IOCL Paradip Refinery	
	CLIENT		INDIAN OIL CORPORATION LIMITED	
QCP-REINFORCED CONCRETE FOR FOUNDATION/ELEVATION STRUCTURES AND BASINS	Project No. 080557C001	Document No. 080557C-000-QCP-1710-001	Rev. No. A	Page 1 of 5

<p align="center">QUALITY CONTROL PLAN</p> <p align="center">CIVIL WORKS REINFORCED</p> <p align="center">CONCRETE FOR</p> <p align="center">FOUNDATION/ELEVATION STRUCTURES AND BASINS</p>

TYPE OF QUALITY CONTROL REPORT	CERTIFICATION EXTENT
W 12/A – CW 15A	SINGLE REPORT PER EACH MATERIAL – CONCRETE MIX
CW 35 – CW 17	SINGLE REPORT PER EACH ITEM
CW 01	SUMMARY
CW 33 – CW 38	SINGLE REPORT PER EACH ITEM
CW 100	SINGLE REPORT PER EACH RELEASED GROUP OF ITEMS

REFERENCE DOCUMENTS:

- 080557C-000-PP-805 SITE CO-ORDINATION & COMMUNICATION PROCEDURE
- 080557C-000-JSS-1700-001 SPECIFICATION FOR PLAIN & REINFORCED CEMENT CONCRETE
- Drawings



LEGENDA

H	=	HOLD (RFI required - Work stop for inspection)
W	=	WITNESS (RFI required)
WC	=	100 % SUPERVISION AND EXAMINATION BY CONTRACTOR.
P	=	PREPARATION.
S	=	SURVEILLANCE (No RFI)
R	=	REVIEW OF REPORTS
N.A.	=	NOT APPLICABLE
A	=	AUTHORIZATION / APPROVAL
IFA	=	ISSUED FOR AUTHORIZATION/APPROVAL
INFO	=	FOR INFORMATION
!	=	WARNING (control of document revision status)

A	19/10/2019	ISSUED FOR INFORMATION	SMP	PK	LA/ANJ	JMC
REV.	DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED	AUTHORIZED

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 	PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
	CLIENT	INDIAN OIL CORPORATION LIMITED		
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QUALITY CONTROL PLAN
CIVIL WORKS
REINFORCED CONCRETE FOR FOUNDATION /
ELEVATION STRUCTURES AND BASINS

QUALITY CONTROL ACTIVITIES

Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
A)	PRELIMINARY ACTIVITIES				
A.1	CONTRACTOR DRAWINGS CHECK REVISION STATUS	N.A.	!	!	
A.2	CONTRACTOR TECHNICAL SPECIFICATION AND PROCEDURE	N.A.	IFA	A	
A.3	CONTRACTOR METHOD STATEMENT	N.A.	IFA	A	(1)
B)	BEFORE CASTING				
B.1	MATERIALS APPROVAL	W 12/A	IFA	A	(1) (6)
B.2	MIXING FORMULA APPROVAL	CW 15A	IFA	A	(1)
B.3	MIXING FORMULA LIST	CW 01	IFA	A	(1) (2)
C)	EXCAVATION (IF ANY)	CW 61A / CW 33	WC	R	(5)
D)	CONSTRUCTION				
D.1	LEAN CONCRETE LEVEL	CW 33	WC	W/R	
D.2	COORDINATES CHECK	CW 33	WC	R	
D.3	FORMWORK - GEOMETRY AND POSITION - STABILITY AND PLUMBNESS - CLEANLINESS - OIL COATING	CW 33	WC	W/R	
D.4	REINFORCEMENT - SPACERS AND CONCRETE COVER - LAP SPLICE - BENDING AND TIE BAR - REBAR NUMBER, SIZE & SPACING - CLEANLINESS - WELDED WIRE FABRIC (IF ANY) - COATING TOUCH UP (IF REQUIRED)	CW 33	WC	W/R	
D.5	EMBEDDED ITEMS - ANCHOR BOLTS: NUMBER/SIZE & POSITION - STEEL INSERTS: POSITION & GEOMETRY - COATING TOUCH UP (IF REQUIRED)	CW 33	WC	R	

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 	PROJECT	Standby SRU & Additional Tanks		
	CLIENT	IOCL Paradip Refinery		
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QUALITY CONTROL PLAN
CIVIL WORKS
REINFORCED CONCRETE FOR FOUNDATION /
ELEVATION STRUCTURES AND BASINS

QUALITY CONTROL ACTIVITIES



Nr.	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	ACTION		NOTES
			CONTR.	TECHNIP	
D.6	WATER STOPS (IF ANY) - POSITION AND TYPE	CW 33	WC	R	(3)
D.7	AUTHORIZATION FOR CASTING	CW 33	WC	W/R	
D.8	CASTING:	CW 33	WC	W/R	
D.8.1	SLUMP TEST & AIR CONTENT TEST (IF REQUIRED)	CW 35 / CW 33	WC	W/R	
D.8.2	SAMPLE STRENGTH TEST	CW 17 / CW 33	WC	W/R	
D.9	CURING	CW 33	WC	R/S	
D.10	ANCHOR BOLTS: - POSITION AND ELEVATION	CW 33	WC	W/R	(4)
D.11	FORMWORK STRIPPING	CW 33	WC	S	
D.11.1	CONCRETE SURFACE REPAIRING (IF ANY)	CW 33	WC	W/R	
D.12	PROTECTIVE COATING (WHERE REQUIRED)	CW 33	WC	W/R	
D.13	LEAKAGE TEST (IF ANY)	CW 38 / CW 33	WC	W/R	(3)
D.14	AUTHORIZATION FOR BACKFILLING	CW 33	WC	A	
E)	BACKFILLING	CW 61B / CW 33	WC	W/R	(5)
F)	FOUNDATION RELEASE	CW 100 / CW33	WC	R	
G)	STRENGHT TEST RESULT & SAMPLE UNIT WEIGHT	CW 17 / CW33 LAB. TEST	WC	W/R	
H)	FINAL DOCUMENTATION REVIEW	CW 33	P	R	

NOTES:

- (1) A COPY OF THE DOCUMENT WILL BE DELIVERED TO OWNER FOR INFORMATION
- (2) THE FORM CW 01 (MIX DESIGN LIST) MUST BE FILLED AND UP-TO-DATE BY CONTRACTOR, BUT SCANNED AT THE END OF THE WORKS ONLY
- (3) FOR BASINS ONLY. SEWER PITS LEAKAGE TEST SHALL BE EXECUTED TOGETHER WITH RELEVANT SEWER LINE (Use QCP 1470.001)
- (4) CONTRACTOR WILL PREPARE A DETAILED SKETCH
- (5) FORMS, INSPECTIONS AND ATTENDANCE SHALL BE IN ACCORDANCE WITH REFERRED QCP
- (6) MATERIAL APPROVAL WILL BE EXECUTED ONLY FOR MATERIAL SUPPLIED BY CONTRACTOR

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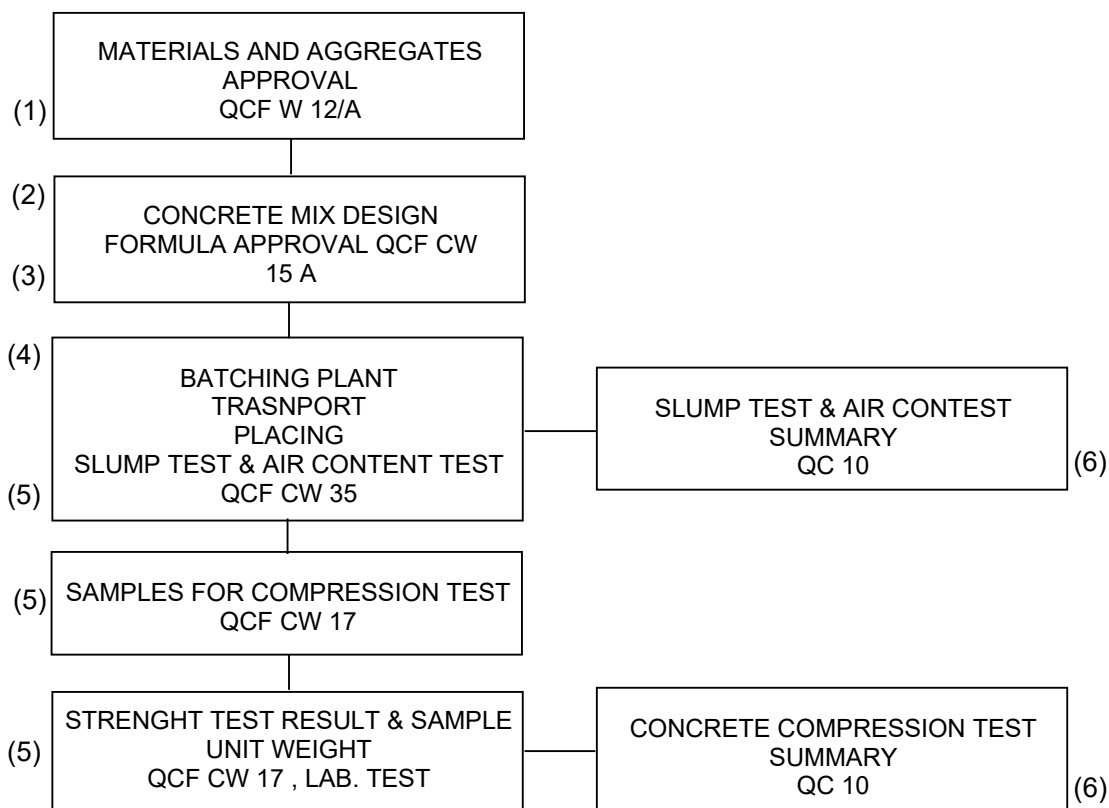
 	PROJECT	Standby SRU & Additional Tanks IOCL Paradip Refinery		
	CLIENT	INDIAN OIL CORPORATION LIMITED		
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QUALITY CONTROL PLAN

CIVIL WORKS



REINFORCED CONCRETE FOR FOUNDATION / ELEVATION STRUCTURES AND BASINS

CONCRETE CONTROL SEQUENCE





NOTES:

- (1) MATERIALS AND AGGREGATES MUST BE APPROVED PRIOR STARTING OF WORKS AND EVERY CHANGE OF SOURCE.
- (2) - GRANULOMETRY TEST EVERY WEEK AND EVERY CHANGE OF SOURCE OR WHENEVER REQUESTED BY CONTRACTOR
- WATER CHEMICAL ANALYSIS SHALL BE REPEATED EACH TWO MONTHS AND EVERY CHANGE OF SOURCE OR WHENEVER REQUESTED BY CONTRACTOR.
- (3) ADMIXTURES REQUIRE PRIOR APPROVAL FROM CONTRACTOR/ENGINEER.
- (4) EVERY CONCRETE MIXER TRUCK MUST BE ACCOMPANIED BY TICKET REPORT (QCF W 35) AND EVERY CASTING SITE MUST BE HAVING CONCRETE SLUMP TEST APPARATUS.
- (5) FOR SLUMP & COMPRESSION TESTS SEE 072849C-000-JSS-1700-001
- (6) **THE QC 10 WILL NOT BE PART OF THE QUALITY DOSSIER. IT IS ATTACHED AS AN EXAMPLE OF ELECTRONIC SHEET FOR CONCRETE MANAGEMENT ONLY.**

 	PROJECT		Standby SRU & Additional Tanks	
	CLIENT		IOCL Paradip Refinery	
QCP-REINFORCED CONCRETE FOR FOUNDATION/ELEVATION STRUCTURES AND BASINS	Project No. 080557C001	Document No. 080557C-000-QCP-1710-001	Rev. No. A	Page 5 of 5

GENERAL NOTES

- 1 THE ENCLOSED ITP'S ARE INDICATIVE AND SHALL BE FOLLOWED FOR DEVELOPING THE JOB SPECIFIC ITP'S FOR THE WORKS TO BE PERFORMED BY THE CONTRACTOR. THE PROVISIONS INDICATED FOR STAGE WISE INSPECTION BY TECHNIP AND OWNER (FOR SPECIFIC ACTIVITIES) ARE THE MINIMUM AND THE ENGINEER-IN- CHARGE MAY DECIDE TO INCREASE HOLD POINTS/ WITNESS POINTS, WHILE APPROVING THE JOB SPECIFIC ITP'S. ACTIVITIES FOR WHICH ITP'S ARE NOT PROVIDED IN THIS SPECIFICATION. CONTRACTOR TO DEVELOP AND GET THE SAME APPROVED BY TECHNIP/OWNER BEFORE START OF THE WORK. IN GENERAL ROLE OF TECHNIP HAS BEEN SPECIFIED IN THE DOCUMENT THE ROLE OF OWNER TO BE SPECIFIED DURING PREPARATION OF SITE SPECIFIC ITP'S.
- 2 CONTRACTOR TO SUBMIT JOB SPECIFIC REPORTING FORMATS AND JOB PROCEDURES FOR THE JOBS FOR EACH ACTIVITY LISTED IN THE ITP'S AND SUBMIT TO TECHNIP/OWNER FOR APPROVAL. BEFORE COMMENCEMENT OF THE ACTIVITY. IF THE CONTRACTOR HAS TO DEVIATE FROM THE GIVEN ITP FOR A VALID REASON, HE SHALL OBTAIN PRIOR WRITTEN APPROVAL OF TECHNIP/OWNER. CONTRACTOR TO CARRY OUT 100% EXAMINATION OF ALL ACTIVITIES.

 			PROJECT:		
			COMPANY:		
QUALITY CONTROL FORM CW 01			PROJ. No.:	QCF REV.	SH. 1 OF 1
MIX DESIGN LIST			CONTRACTOR:		CW 01 N° _____
ITEM	MIX DESIGN FORMULA		CONCRETE CLASS	CONCRETE APPLICATION	
	REFER. NR.	APPROVAL DATE	N/mm ²		
1	CW 15A N°				
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
REMARKS:					



COMPANY:

CW 100

SH. 1 OF 1

CW 100 N° _____

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[illegible]

CIVIL
CONTRACTOR

DATE _____

PMC

DATE _____



REMARKS:

MECHANICAL
CONTRACTOR

DATE _____

PMC

DATE _____

 		PROJECT:	
		COMPANY:	
QUALITY CONTROL FORM CW 15 A		PROJ. No.:	QCF REV.
			SH. 1 OF 1
CONCRETE MIX DESIGN APPROVAL		CONTRACTOR: CW 15 A N° _____	
1. MIX DESIGN N°		_____	
2. SPECIFIED CONCRETE STRENGTH (28 DAYS) (CONCRETE CLASS)		_____	
3. MIX DESIGN CONCRETE STRENGTH (28 DAYS)		_____	
4. MIX DESIGN CONCRETE SLUMP		_____	
5. CEMENT TYPE		_____	
6. ADMIXTURES		_____	
7. PURPOSE		_____	
8. BATCHING PLANT		_____	
9. ATTACHMENT DATA		_____	
REMARKS:			
RESULT: ACCEPTED <input type="checkbox"/> NOT ACCEPTED <input type="checkbox"/>			
INSPECTORS	CONTRACTOR	PMC	OWNER
NAME			
SIGNATURE			
DATE			



PROJECT:

COMPANY:

QUALITY CONTROL FORM

CW 17

PROJ. No.:

QCF REV.

SH. 1 OF 1

CONCRETE SAMPLE COMPRESSION TEST

CONTRACTOR:

CW 17 N° _____

SAMPLE DATA

SAMPLE NR	ITEM	AREA	CONCRETE		SAMPLE DATE	CASTING TEMPERATURE (C)	ADMIXTURE TYPE & DOSAGE	REMARKS
			CLASS	MIX DESIGN				

TEST RESULT

SAMPLE NR.	AGE AT TEST (DAYS)	RESULT			ATTACHED QUALIFIED LABORATORY TEST RECORD N° & DATE		REMARKS
		STRENGHT	ACC.	UNACC.			

INSPECTORS

CONTRACTOR

PMC

OWNER

NAME

SIGNATURE

DATE



PROJECT:

COMPANY:

QUALITY CONTROL FORM

CW 33

PROJ. No.:

QCF REV.

SH. 1 OF 2

**REINFORCED CONCRETE
SUMMARY REPORT**

CONTRACTOR:

CW 33 N° _____



ITEM _____
DESCRIPTION _____
DWG'S & REV _____
AREA _____

FOOTING ☐ COLUMN ☐
FOUNDATION BEAMS ☐ WALLS ☐
ELEVATED BEAMS ☐ PITS ☐
ELEVATED SLABS ☐ ☐

INSPECTIONS (REF. TO QCP 1710.01)		N.A.	ACC	REMARKS/ REFERENCES	INSPECTORS SIGNATURE & DATE		
					CONTRACTOR	TECHNIP	OWNER
C	EXCAVATION	<input type="checkbox"/>	<input type="checkbox"/>	CW 61A (*)			
D.1	LEAN CONCRETE TOP ELEV.	<input type="checkbox"/>	<input type="checkbox"/>				
D.2	COORDINATES CHECK	<input type="checkbox"/>	<input type="checkbox"/>				
D.3	FORMWORK - GEOMETRY & POSITION - STABILITY & PLUMBNESS - CLEANLINESS - OIL COATING	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				
D.4	REINFORCEMENT - SPACERS & CONCRETE COVER - LAP SPLICE - BENDING AND TIE BAR - REBAR NUMBER, SIZE & SPACING - CLEANLINESS - WELDED WIRE FABRIC - COATING TOUCH-UP (IF REQUIRED)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				
D.5	EMBEDDED ITEMS - ANCHOR BOLTS: NUMBER / SIZE & POSITION - STEEL INSERTS: POSITION & GEOMETRY - COATING TOUCH-UP	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				
D.6	WATER STOPS - POSITION & TYPE	<input type="checkbox"/>	<input type="checkbox"/>				
D.7	AUTHORIZATION FOR CASTING YES <input type="checkbox"/> NO <input type="checkbox"/>						
D.8	CASTING	<input type="checkbox"/>	<input type="checkbox"/>				
D.8.1	SLUMP TEST & AIR CONTENT TEST	<input type="checkbox"/>	<input type="checkbox"/>	CW 35 (*)			
D.8.2	SAMPLE STRENGTH TEST	<input type="checkbox"/>	<input type="checkbox"/>	CW 17 (*)			

QCE STANDARD REV.2

					PROJECT:				
					COMPANY:				
QUALITY CONTROL FORM CW 33					PROJ. No.:	QCF REV.	SH. 2 OF 2		
REINFORCED CONCRETE SUMMARY REPORT					CONTRACTOR:		CW 33 N° _____		
ITEM _____ DESCRIPTION _____ DWG'S _____ & _____ REV _____ AREA _____					FOOTING <input type="checkbox"/> COLUMN <input type="checkbox"/> FOUNDATION BEAMS <input type="checkbox"/> WALLS <input type="checkbox"/> ELEVATED BEAMS <input type="checkbox"/> PITS <input type="checkbox"/> ELEVATED SLABS <input type="checkbox"/> <input type="checkbox"/>				
INSPECTIONS (REF. TO QCP 1710.01)				N.A.	ACC	REMARKS/ REFERENCES		INSPECTORS SIGNATURE & DATE	
						CONTRACTOR	TECHNIP	OWNER	
D.9	CURING			<input type="checkbox"/>	<input type="checkbox"/>				
D.10	ANCHOR BOLTS - POSITION & ELEVATION			<input type="checkbox"/>	<input type="checkbox"/>	SEE ATTACHED SKETCH			
D.11	FORMWORK STRIPPING			<input type="checkbox"/>	<input type="checkbox"/>				
D.11.1	CONCRETE SURFACE REPAIRING			<input type="checkbox"/>	<input type="checkbox"/>				
D.12	PROTECTIVE COATING			<input type="checkbox"/>	<input type="checkbox"/>				
D.13	LEAKAGE TEST			<input type="checkbox"/>	<input type="checkbox"/>	CW 38 (*)			
D.14	AUTHORIZATION FOR BACKFILLING YES <input type="checkbox"/> NO <input type="checkbox"/>								
E	BACKFILLING			<input type="checkbox"/>	<input type="checkbox"/>	CW 61B (*)			
F	FOUNDATION RELEASE			<input type="checkbox"/>	<input type="checkbox"/>	CW 100 (*)			
G	STRENGTH TEST RESULT & SAMPLE UNIT WEIGHT			<input type="checkbox"/>	<input type="checkbox"/>	CW 17 (*)			
NOTES: (*) THE QC REPORTS N° SHALL BE INDICATED IN THE RELEVANT HERE BELOW SPACES : CW 17 N° _____ CW 35 N° _____ CW 38 N° _____ CW 100 N° _____ CW 61A N° _____ CW 61B N° _____									
N.A. = NOT APPLICABLE ACC. = ACCEPTED									
H) FINAL DOC. REVIEW	INSPECTORS			CONTRACTOR			PMC		OWNER
	NAME								
	SIGNATURE								
	DATE								

 		PROJECT:	
		COMPANY:	
QUALITY CONTROL FORM CW 38		PROJ. No.:	QCF REV.
HYDRAULIC TEST FOR RETENTION STRUCTURES		CONTRACTOR:	CW 38 N° _____
<p>STRUCTURE DESCRIPTION/ITEM: _____</p> <p>DRAWING No. & REV. _____</p> <p>_____</p> <p>_____ AREA _____</p>			
TEST RECORD			
1. WATER FILLING	START	_____	
	FILLING UNIFORM RATE	_____	
	STOP	_____	
2. STABILIZING PERIOD	START	_____	
	STOP	_____	
3. TEST PERIOD	START	_____	
	END	_____	
4. WATER LEVEL	START	_____m	
	END	_____m	
5. LEAKAGE CHECK	YES <input type="checkbox"/>	_____	
	NO <input type="checkbox"/>	_____	
REMARKS			
TEST RESULT: ACCEPTED <input type="checkbox"/>			
INSPECTORS	CONTRACTOR	PMC	OWNER
NAME			
SIGNATURE			
DATE			



PROJECT:

COMPANY:

QUALITY CONTROL FORM

QC 10

PROJ. No.:

SH. 1 OF 1

CONCRETE TEST SUMMARY FOR



CONTRACTOR:

QC 10 N° _____

PROGR	ITEM OR DESCRIPTION	AREA/ LOCATION	CASTING DATE	SITE CASTING TEMP. °C	Q.TY m³	CONCRETE		SLUMP TEST & AIR CONTENT TEST		STRENGTH TEST		REPORTS (1)	REMARKS
						CLASS	MIX DESIGN NUMBER	TICKET NR	CW 35 NR LAB. TEST	SAMPLE NR	CW 17 NR LAB. TEST		
1													
2													
3													
4													
5													
6													
7													
8													
10													
11													
12													
13													
14													

NOTE: THIS QCF SHALL BE DONE BY ELECTRONIC SHEET

(1) CW 33 FOR CONCRETE STRUCTURES – CW 32B FOR RIGID PAVING – CW 54 FOR CONCRETE PILES

 		PROJECT:	
		COMPANY:	
QUALITY CONTROL FORM W 12/A		PROJ. No.:	QCF REV.
CONSTRUCTION MATERIALS APPROVAL		CONTRACTOR:	W 12/A N° _____
CIVIL <input type="checkbox"/>	PIPING <input type="checkbox"/>	MACHINERY <input type="checkbox"/>	INSULATION <input type="checkbox"/>
BLDG. <input type="checkbox"/>	MECHANIC. <input type="checkbox"/>	ELECTRICAL <input type="checkbox"/>	STEEL STR. <input type="checkbox"/>
NDT <input type="checkbox"/>	SUPPORT PRF. <input type="checkbox"/>	_____ <input type="checkbox"/>	_____ <input type="checkbox"/>
1. MATERIALS			
2. SUPPLIER			
3. PURPOSE			
4. ATTACHMENT DATA			
5. TYPE OF TEST PERFORMED			
6. TEST STANDARD UTILIZED			
REMARKS:			
RESULT:		ACCEPTED <input type="checkbox"/>	NOT ACCEPTED <input type="checkbox"/>
INSPECTORS	CONTRACTOR	PMC	OWNER
NAME			
SIGNATURE			
DATE			