



**DESIGN QUALIFICATION
PROTOCOL CUM REPORT
FOR
DUST COLLECTOR**

DATE OF QUALIFICATION	
SUPERSEDES PROTOCOL No.	NIL



DESIGN QUALIFICATION PROTOCOL CUM REPORT FOR DUST COLLECTOR

PROTOCOL CONTENTS

S.No.	TITLE	PAGE No.
1.0	Pre-Approval	3
2.0	Objective	4
3.0	Scope	4
4.0	Responsibility	5
5.0	Project Requirement	5-6
6.0	Brief Equipment Description	6
7.0	Equipment Specification	6
8.0	Critical Variables to be Met	7
8.1	Process/Product Parameters	7
8.2	Utility Requirement/Location Suitability	7
8.3	Technical Specification/Key Design Features	7-8
8.4	Material of Construction	8
8.5	Safety	8
8.6	Vendor Selection	8
9.0	Document to be Attached	9
10.0	Review (Inclusive of Follow Up Action, If Any)	9
11.0	Any Change Made Against the Formally Agreed Parameter	9
12.0	Recommendation	9
13.0	Abbreviations	9
14.0	Reviewed by	10



DESIGN QUALIFICATION PROTOCOL CUM REPORT FOR DUST COLLECTOR

1.0 PROTOCOL PRE – APPROVAL:

PREPARED BY:

DESIGNATION	NAME	SIGNATURE	DATE
OFFICER/EXECUTIVE (QUALITY ASSURANCE)			

REVIEWED BY:

DESIGNATION	NAME	SIGNATURE	DATE
OPERATING MANAGER (QUALITY ASSURANCE)			
HEAD (PRODUCTION)			
HEAD (ENGINEERING)			

APPROVED BY:

DESIGNATION	NAME	SIGNATURE	DATE
HEAD (QUALITY ASSURANCE)			



DESIGN QUALIFICATION PROTOCOL CUM REPORT FOR DUST COLLECTOR

2.0 OBJECTIVE:

- To carry out the Design Qualification of Dust Collector used in Compression.
- To prepare the Design Qualification document for Dust Collector on basis of specifications this is taken by the approved Supplier.
- To ensure that all Critical Aspects of Process/Product Requirement, cGMP and Safety have been considered in designing the equipment and are properly documented.

3.0 SCOPE:

- The Scope of this Qualification Document is limited to the Design Qualification of Dust Collector.
- The equipment shall be operated as per the cGMP requirements.



DESIGN QUALIFICATION PROTOCOL CUM REPORT FOR DUST COLLECTOR

4.0 RESPONSIBILITY:

The Validation Group, comprising of a representative from each of the following departments, shall be responsible for the overall compliance of this Protocol cum Report:

DEPARTMENTS	RESPONSIBILITIES
Quality Assurance	<ul style="list-style-type: none">● Preparation & Review of the Protocol cum Report.● Assist in the verification of Critical Process Parameters, Drawings as per the Specification.● Review of Qualification Protocol cum Report after Execution.● Co-ordination with Production and Engineering to carryout Design Qualification.● Monitoring of Design Qualification Activity.
Production	<ul style="list-style-type: none">● Review of the Protocol cum Report.● Assist in the verification of Critical Process Parameters, Drawings as per the Specification.● Review of Qualification Protocol cum Report after Execution.
Engineering	<ul style="list-style-type: none">● Review of the Protocol cum Report.● Assist in the Preparation of the Protocol cum Report.● To co-ordinate and support the Activity.● To assist in Verification of Critical Process Parameter, Drawings, as per the Specification i.e.<ul style="list-style-type: none">➤ GA Drawing➤ Specification of the sub-components/ bought out items, their Make, Model, Quantity and backup records / brochures.➤ Details of utilities➤ Identification of components for calibration➤ Material of construction of all components➤ Brief Process Description➤ Safety Features and Alarms● Review of Qualification Protocol cum Report after Execution.



DESIGN QUALIFICATION PROTOCOL CUM REPORT FOR DUST COLLECTOR

5.0 PROJECT REQUIREMENTS:

To confirm the safe delivery of the equipment from the supplier Site. To ensure that no unauthorized and/or unrecorded design modification shall take place.

If at any point in time, any change is desired in the mutually agreed design, change control procedure shall be followed and documented. The purpose of machine shall be used to dust free area.

6.0 BRIEF PROCESS DESCRIPTION:

Capture the dust with proper capture velocity from process area and send the dust collector chamber with the help of trapping Canvas Cotton Bag Filter simultaneously dust free air will go by 10 micron filter and then send to the environment.

Bag filter dust collector is efficient pollution control equipment and filtration is carried out through woven or non-woven filter media in form of bags. The cleaning action is due to high pressure air passed in the reverse direction or by providing vibration to the bags through the vibratory motor which generates the shocks to dislodge the dust particles from the bags.

S.No.	Parameter	Description
1.	Dust Collector Details	It comprises of: <ul style="list-style-type: none">• Hose PVC Pipe for connecting with the process equipments• HDPE Pipe for connecting with the Equipment• Butter Fly Valve• AC Induction Motor• Canvas Cotton make Filter Bag• Reverse Rotating Fan• Electrical Starter Panel
2.	Environmental conditions: Temperature	Ambient (up to 30°C)
3.	Quantity of Air Suction	Air Suction Velocity: 400 FPM



DESIGN QUALIFICATION PROTOCOL CUM REPORT FOR DUST COLLECTOR

7.0 EQUIPMENT SPECIFICATION:

Equipment Specifications are based on User requirement Specifications.

8.0 CRITICAL VARIABLES TO BE MET:

8.1 PROCESS / PRODUCT PARAMETERS:

Critical Variables	Acceptance Criteria	Reference
Application: For collecting or receiving dust from various process equipment like Vibro Sifter.	During collecting the dust from sifter, it should not be release in the process area.	Process Requirement
Working: Working of Dust Collector	To maintain the cleanliness level during manufacturing.	Process Requirement
Electrical Control Panel	The system should have Electrical Control Switch.	Design Requirement

8.2 UTILITY REQUIREMENTS/LOCATION SUITABILITY:

Critical Variables	Acceptance Criteria	Reference
Utility connections should be available as per the manufacturer's specification.		
Electrical Supply	<ul style="list-style-type: none">• Voltage: 230 V (1 Phase) / 415 V Limit +/- 10 % (3 Phase)• Phases: 1 Phase & 3 phase• Frequency: 50 Hz (+ /- 3 %)	cGMP Requirement
Area Condition	Should be able to meet the requirement as per given by the manufacturer	Design Requirement

8.3 TECHNICAL SPECIFICATIONS/KEY DESIGN FEATURES:

S.No.	Parameters	Acceptance criteria
1.	Body	Over All Dimension in mm : 1700 x 600 x 600 MM MOC : MS painted sheet
2.	Accessories	Body : Made up of MS painted sheets AC Induction Motor: Qty.: 01 No. Reverse Rotating FAN: Qty.: 01 No. Butter Fly Valve at Dust Extraction Pipe: Qty.: 01 No. Control Panel for START / STOP: Qty.: 01 No. Canvas Cotton Filter Bag for Trapping the Dust: Qty.: 05 No.
3.	AC Induction	Make: - "Crompton"



DESIGN QUALIFICATION PROTOCOL CUM REPORT FOR DUST COLLECTOR

S.No.	Parameters	Acceptance criteria
	Motor	H.P: – 3.0 H.P. RPM: - 2830 Volt: - 415±10% AMP: – 5.03A Frame: - NA S. No.: – NTDF32

8.4 MATERIAL OF CONSTRUCTION:

S.No.	Parts Name	Material of Construction
1.	Dust Collector Body	MS painted sheet
2.	Base & stand	SS 304
3.	Contact Part	SS 316

8.5 SAFETY:

S.No.	Parameters	Safety / cGMP	Reference
1.	Triclover Clamp should be provided on Dust Extraction Pipe	Triclover Clamp should be provided on Dust Extraction Pipe so that entire pipe can be cleaned.	cGMP Requirement
2.	Butter Fly valve should be provided at Dust Extraction Pipe.	Butter Fly should be given for maintaining the air velocity in the pipe.	cGMP Requirement

8.6 VENDOR SELECTION:

Critical Variables	Acceptance Criteria	Reference
Selection of Vendor for supplying the Dust Collector System	Selection of Vendor is done on the basis of review of vendor. Criteria for review should include vendor background (general/financial), technical knowledge, quality standards, inspection of site, costing, feedback from market (customers already using the equipment)	Process Requirement

**Verified By
Sign & Date**



DESIGN QUALIFICATION PROTOCOL CUM REPORT FOR DUST COLLECTOR

9 DOCUMENTS TO BE ATTACHED:

- Any other relevant documents.

10 REVIEW (INCLUSIVE OF FOLLOW UP ACTION, IF ANY):

.....
.....
.....
.....
.....
.....
.....

11 ANY CHANGES MADE AGAINST FORMALLY AGREED PARAMETERS:

.....
.....

12 RECOMMENDATION:

.....
.....
.....
.....
.....



DESIGN QUALIFICATION PROTOCOL CUM REPORT FOR DUST COLLECTOR

13 ABBREVIATIONS:

URS	:	User Requirement Specification
cGMP	:	Current Good Manufacturing Practice
Pvt.	:	Privet
Ltd	:	Limited
GB	:	General Block
mm	:	Millimeter
DQ	:	Design Qualification
RPM	:	Revolution Per Minute
HP	:	Horse Power
AMP	:	Ampere
STD	:	Standard



DESIGN QUALIFICATION PROTOCOL CUM REPORT FOR DUST COLLECTOR

14 REVIEWED BY:

DESIGNATION	NAME	SIGNATURE	DATE
HEAD (ENGINEERING)			

DESIGNATION	NAME	SIGNATURE	DATE
HEAD (PRODUCTION)			

DESIGNATION	NAME	SIGNATURE	DATE
HEAD (QUALITY ASSURANCE)			