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MINISTRY OF SKILL DEVELOPMENT
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TEXTILE SECTOR SKILL COUNCIL
TSC
PERFECTING SKILLS

Participant Handbook

Sector
Textile Sector Skill Council

Sub-Sector
Processing

Occupation
Finishing

Reference ID: **TSC/Q 5401, Version 1.0**
NSQF Level 4

Stenter Machine Operator

Published by

First Edition, July 2017

Printed in India at

Textile Sector Skill Council

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"Skilling is building a better India. If we have to move India towards development then Skill Development should be our mission."

Shri Narendra Modi
Prime Minister of India

Certificate

COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

TEXTILE SECTOR SKILL COUNCIL

for

SKILLING CONTENT : PARTICIPANT HANDBOOK

Complying to National Occupational Standards of
Job Role/ Qualification Pack: '**Stenter Machine Operator**' QP No. **'TSC/Q 5401 ;NSQF Level 4**'

Date of Issuance: **July 7th , 2017**

Valid up to*: **April 1st , 2019**

**Valid up to the next review date of the Qualification Pack or the 'Valid up to' date mentioned above (whichever is earlier)*

Dr. J.V. Rao
CEO
(Textile Sector Skill Council)

Acknowledgement

Textile Sector Skill Council (TSC) wishes to appreciate the valuable technical inputs provided by the leading industry players such as Confederation of Indian Textile Industries (CITI), The Southern Indian Mills' Association (SIMA), The South Indian Textile Research Association (SITRA), The Bombay Textile Research Association' (BTRA), NIFT-TEA Knitwear Fashion Institute, and Indian Texpreneurs' Federation for their contribution in developing the content for the Trainee Handbook.

TSC also sincerely thanks Ministry of Skill Development & Entrepreneurship (MSDE) and National Skill Development Corporation (NSDC) in supporting us to prepare the Handbook.

Endorsements

We thank the following organizations for endorsing the contents of this Participant Handbook, thus contributing towards skilling based on the Qualification Pack (QP) and National Occupational Standards (NOSs)

About this book

This Participant Handbook is designed to enable training for the specific Qualification Pack (QP). Each National Occupational (NOS) is covered across Unit/s.

Textile industry is one of the few basic industries, which is characterized as a necessary component of human life as it provides with the basic requirement called clothes. Textile finishing refers to the processes that convert the woven or knitted cloth into a usable material. Stenter machine plays important role in textile finishing. Stenter machine is used in textile industry to impart dimensional stability, straightening, chemical finishing, and curing treatment on the fabric.

A Stenter Machine Operator is responsible to do the specified job of drying, heat setting and finishing of fabric with proper control of parameters to get the desired effect. This job requires the individual to have thorough knowledge of process flow and material flow in processing mill for fabric production and should know the important functions and operations of a Stenter machine. This handbook provides detailed knowledge of stenter machine operation to the trainee.

This book describes the importance of textile, and gives trainee an idea of process flow in textile processing industry. It also explains the role of stenter machine operator for different processes done on stenter machine along with good personal attributes required for operation. This Book enlists important parts of stenter machine along with their function which is very helpful for the knowledge of a stenter machine operator. Book also guides about operating procedure, preparation of finishing bath, fabric quality assessment and their corrective measure in detail.

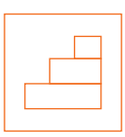
Typical fabric faults during processing on stenter machine with, their causes and how they might be remedied; Dos and don'ts on stenter machine are also discussed. Book covers general important information about taking and handing over of shift charge, material handling housekeeping and maintenance done on the stenter machine.

Needless to say that, this book will be of immense use to stenter machine operator to develop more skills for effective progress in textile industry.

Key Learning Objectives for the specific NOS mark the beginning of the Unit/s for that NOS. The symbols used in this book are described below.

Symbols Used


Key Learning Outcomes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1. Introduction

Unit 1.1 – General process flow in textile industry.

Unit 1.2 – Stenter, brief Job/role description and career progression.

Unit 1.3 – Objective of stenter m/c and various processes.

Key Learning Outcomes

At the end of this module, you will be able to:

1. Explain the importance of textile processing
2. Describe the General process flow in textile
3. Understand and explain role of stenter machine in the finishing
4. Describe the your role on stenter machine and personal attributes required for the job
5. What are the career progression opportunities for stenter operator
6. Explain the General objectives of stenter machine
7. Describe different processes carried out on stenter machine

UNIT 1.1: General process flow in textile industry

Unit Objectives

At the end of this unit, you will be able to:

1. Explain the importance of textile processing
2. Describe the General process flow in textile industry

Process flow in textile industry represents an algorithm, workflow or process, showing the steps which are necessary for any textile industry. Before moving to general process flow it is important for us to understand the needs of Textile Processing.

1.1.1 Why Textile processing?

Loom state grey fabric does not have

- Aesthetic look and appearance , Luster
- Required shade or design the way we want
- The hand-feel / softness
- wearing comfort / moisture absorbency
- Specific Functional properties(e.g. water repellent , anti-bacterial , Easy to iron)

Figure 1.1 Why textile processing

To Overcome The Grey Fabric Deficiencies And To Get Desired Effect As Per Market Demand, We Need To Process The Fabric.

1.1.2 General Process Flow

In General Following Process Flow Is Practiced In Textile Industry For The Production Of Finished Fabric As Per Customer Requirement

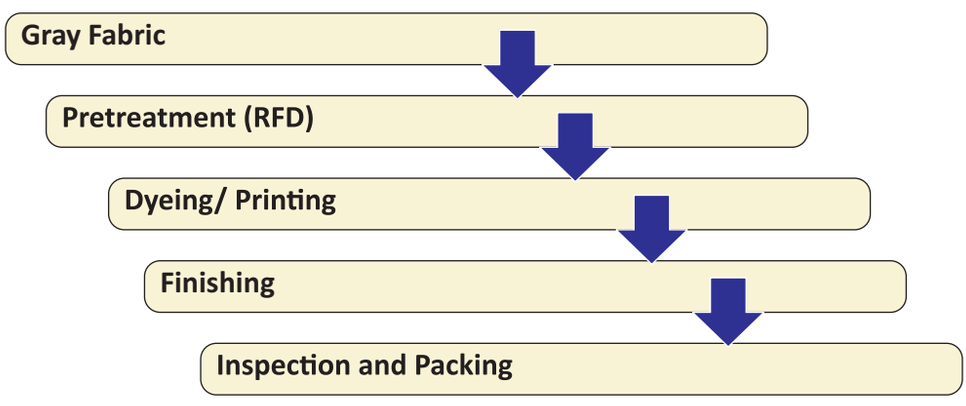

Figure: - 1.2 General Textile Process Flow Sequence

- Pre-treatment Process Contains Sub Processes Like,
  - Singeing
  - Shearing & Cropping
  - Desizing
  - Normal Washing
  - Degreasing
  - Scouring
  - Bleaching
  - Mercerization
  - Heat-setting Etc.

The Process Selection Depends Upon Type And Blend Of Fiber

Dyeing Process Contains Sub Processes Like

- Exhaust Coloration
- Padding
- Fixation
- Soaping
- Washing Etc.

Depending On Fabric Quality And Blend The Dyeing Process Is Selected.

- Printing Process Contains Sub Processes Like

  - Print Paste Preparation
  - Print Paste Application By Flat Bed / Rotary Screen/roller Printing,
  - Curing,
  - Ageing,
  - Soaping,
  - Washing Etc.

- Finishing Process Contains Sub Processes Like

  - Stenter Drying And Width Stretching
  - Stenter Heat Setting
  - Stenter Finishing
  - Sanforization,
  - Calendaring,
  - Decatisation
  - Kier Decatisation
  - Paper Press
  - Peaching/raising/brushing Etc.

Depending On Customer Requirement Type Of Finishing Process Is Selected

- At Each Stage Quality Control Checks Are Required To Check The Fabric Suitability To Next Process And Are As Per Customer Quality Requirement.

Tips

Why Textile Processing Is Done And What Is General Process Flow?
Think About This.

It Is To Overcome The Grey Fabric Deficiencies Like Hand Feel, Absorbency, Luster Etc. And To Give Fabric Aesthetic Look, Desire Shade And Specialty Finishes. Major Processing Steps Are Pretreatments, Dyeing, Printing And Finishing

Notes