5.0 PROCEDURE FOR DESIGN &NDEVELOPMENT OF PRODUCT

5.1 Scope

This section of the manual describes procedure of designing of new formulations and products which is a continuous activity of the company either to develop the existing products or completely a new product.

5.2 RESPONSIBILITY

The General Manager (Research and Development) is overall responsible. All works connected with Design & Development is done by Design & Development Committee approved by General Manager (R&D).

5.3 PROCEDURE FOR DESIGN

Flow	Activity	Responsibility	Ref
	1. Receive new product concept.	AGM(R&D)/SE/ADE/MM	DC-FORM-01
	2. Project registration.	AGM(R&D)/SDE/ADE	WI-023 DC-FORM-04
	3. Determine the schedule for each design & development activity.		WI-023
DESIGN INPUTS	4. Determine the following design inputs. i. Functional & performance requirements. ii. Information derived from previous similar design & development activities. iii. Statutory & regulatory requirements. iv. Standards or codes of practice that the organization has committed to implement. v. Potential consequences of failure due to the nature of the products. vi. Requirements not stated, but necessary for product use.	SM-IM/MM GM (R&D)/AGM(R&D) AGM(R&D) / SDE/ADE	SRI-QPM-028 DC-FORM-02
	5. Appoint design development committee.	GM (R&D)/AGM(R&D)	DC-FORM-05
	6. Held 1st DDC meeting.	AGM(R&D)/SDE/ADE	
	1. Suggest formulation & design new formulation, if necessary.	GM(R&D)/AC/ AGM(R&D)// SDE/AD	DC-FORM-02
	2. Determine the required resources & subsequent processes for the provision of product.	SDE/SADE/ADE	DC-FORM-06
DESIGN OUTPUT	3. Determine monitoring & measuring equipment & requirements, as appropriate, and acceptance criteria.	”	Test Method-TM Docs
	4. Specify the characteristics of the product that are essential for the intended use and safety and proper provision of the product.	”	QC-010
	5. Develop 3D prototype according to the input requirements & send to the relevant marketing departments.	”	E-MAIL
	6. Carryout costing.	”	TSF-14-1/E-MAIL

Flow	Activity	Responsibility	Ref
DESIGN VERIFICATION	1. Verify and ensure that the design development outputs meet the input requirements.	GM/(R&D)/ AGM(R&D)// SDE/ADE	QC-010
	2. Take necessary actions, if found any gaps at verification.	AGM(R&D)//SDE/ADE	,,
MOULD DESIGN	1. Receive the approval of new design proposal.	AGM(R&D)//SDE/ADE	CR-FORM-01 Mould Drawings/ E-MAIL
	2. Design mould/s drawings.	,,	,,
	3. Verify & ensure that the mould drawings meet output requirements.	GM(R&D/ AGM(R&D)/ /SDE/ADE	,,
	4. Submit mould drawings to IS department for quotations.	AGM(R&D)/SDE/ /ADE	,,
	5. Receive counter drawings after quotation approval.	,,	,,
	6. Confirm counter drawings.	,,	,,
	7. Do changes in the counter drawings, if necessary.	,,	
FORMULATION DESIGN	1. Examine the input requirements.	AGM(R&D)/AE(R&D)	DC-FORM-02
	2. Design new formulation, if not available.	,,	IT- FORMULATION-01
	3. Order new materials, if necessary.	,,	E-MAIL
	4. Do sample compound mixing & carryout testing of new compound formulation.	,,	IT-REC-062 ,,
	5. Verify & ensure that the test results meet input requirements.	GM/(R&D)/M(R&D) /AE(R&D	,,
	6. Do changes if necessary.	M(R&D)/AE(R&D)	
SAMPLE PROCUCTION	1. Receive the mold/s and check for the compliance according to the approved drawings.	AGM(R&D)//SDE/ADE	DD-CL-01
	2. Verify the mold/s & inform to the IS dept.	,,	,,
	3. Prepare sample production specifications according to the design output requirements.	,,	E-MAIL TSF-14 -1
	4. Inform to the planning dept. and *COP dep*, to do the necessary arrangements for the sample production.	AGM(R&D)//SDE/ADE COP	E-MAIL/Customer Order
	5. Produce the samples according to the sample specifications with *COP* monitoring.	AGM(R&D)//SDE/ADE /PRODUCTION/COP	TSF-14-1
	6. Do changes, if necessary.	,,	,,

Flow	Activity	Responsibility	Ref
PRODUCTION VALIDATION	1. *Identify the samples accurately with COP for collection of samples produced.*	AGM(R&D)//SADE/ADE/STM COP	SP-FORM-02
	2. Hand over product samples to the laboratory for testing and field tests.	,,	IT-REC-13 A
	3. Hand over product samples to the relevant marketing dept with SP-FORM -02:	,,	SP-FORM-02/ IT-REC-13A
	4. Get the test results of internal/external/field tests.	GM/(R&D)/	
	5. Ensure that the product meets the requirements established for the specified application or intended use.	AGM(R&D)//SDE/ADE	SRI/RRB/16/01/Test Reports
TRAIL PRODUCTION	1. Prepare trial production specification according to the sample production.	SDE/SADE/ADE	,, TSF-14-1s
	2. Inform to the planning dept: to do the necessary arrangements for the trial production.	SDE/SADE/ADE/ COP/Production	E-MAIL/ Customer Order
	3. Do the trial production according to the trail production specifications.	,,	TSF-14-1/ Grading Reports
	4. Do changes, if necessary.	,,	TSF- 14-1
PILOT PRODUCTION	1. Prepare pilot production specification according to the trial production.	SDE/SADE/ADE	TSF-14-1
	2. Handover to COP dept: to do pilot production.	COP/Production	,,
	3. Do changes, if necessary.	,,	,,
COMMERCIAL PRODUCTION	1. Issue monitoring specification based on the approval of the pilot production.	AGM(R&D)//SDE/ADE	TSF -14-1
	2. Handover to COP dept: to do monitoring production.	COP/Production	,,
	3. Issue permanent specification.	GM/(R&D)/ AGM(R&D)// SDE/ADE	,,
DESIGN CHNGERS	1. Receive requisition for the design change/s.	,,	DC-FORM-01/ E-MAIL/ MEETING MINUTES
	2. Identify & review the requested change & the requirements to the relevant product.	,,	DC-FORM-02
	3. Do the requested change/s or any other change/s to meet the requirement of the above change	,,	
	4. Review the results after the change/s & validate the results.	GM(R&D)/ AGM(R&D)// SDE/ADE	IT-REC-13A SRI/RRB/16/1