

CONTENTS

Chapter 1	Classification of Plastics Molding Materials	1-10
I.	SCOPE	1
II.	GRADE NUMBERS AND SUFFIX LETTERS	2
III.	EXPLANATION OF CHART COLUMNS	3
IV.	NEW DATA	10
Chapter 2	Molding and Forming Plastics Parts	11-108
I.	COMPRESSION MOLDING	11
II.	COLD-MOLDING	16
III.	INJECTION MOLDING	24
IV.	TRANSFER MOLDING	30
V.	JET MOLDING	40
VI.	EXTRUDING THERMOPLASTICS	42
VII.	LOW-PRESSURE MOLDING	46
VIII.	CASTING OF RESINS	58
IX.	FORMING, DRAWING AND POST-FORMING	63
Chapter 3	Design of Molded Articles	109-148
I.	SCOPE	109
II.	BASIC PRINCIPLES	109
III.	SHRINKAGE	110
IV.	RADII AND FILLETS	122
V.	UNDERCUTS	123
VI.	WALL THICKNESS	127
VII.	TAPER OR DRAFT	129
VIII.	RIBS	131
IX.	BOSSSES	134
X.	HOLES	134
XI.	FLASH LINES	137
XII.	SURFACE TREATMENT	141
XIII.	MOLDED LETTERING	141
XIV.	THREADS	144

Chapter 4	Design Standards for Inserts — Their Application in Plastics Parts	149-175
I.	SCOPE	149
II.	SCREW-MACHINE INSERTS	149
III.	DIMENSIONS AND TOLERANCES	149
IV.	ANCHORAGE	153
V.	TORQUE AND TENSION TESTING	154
VI.	WALL THICKNESS OF INSERTS	155
VII.	SELECTION OF METAL	155
VIII.	MINIMUM WALL THICKNESS OF MATERIAL AROUND INSERTS	155
IX.	PROBLEMS IN MOLDING USUAL TYPES OF INSERTS	157
X.	COLD-FORGED INSERTS	160
XI.	DESIGN OF SPECIAL INSERTS	164
XII.	SPECIAL ANCHORAGE OF INSERTS	164
XIII.	NON-METALLIC INSERTS	169
XIV.	LEAKPROOF INSERTS	171
XV.	SPECIAL INSERTS FOR REINFORCEMENT	171
XVI.	PREPARATION OF INSERTS BEFORE MOLDING	172
XVII.	SALVAGE OF INSERTS	173
XVIII.	RELIEVING MOLDING STRESSES AROUND INSERTS	173
XIX.	METHOD OF PRESSING IN INSERTS AFTER MOLDING	173
XX.	“DON'TS” IN INSERT DESIGN	174
XXI.	NOMENCLATURE	175
Chapter 5	Standards for Tolerances on Molded Plastics Parts	176-212
I.	SCOPE	176
II.	DEFINITIONS	176
III.	COST	177
IV.	DIMENSIONAL STABILITY	177
Chapter 6	Cementing and Assembly of Plastics	213-256
I.	SCOPE	213
II.	MECHANICAL ASSEMBLY	213
III.	GENERAL CONSIDERATIONS	218
IV.	CEMENTING THERMOPLASTICS	220
V.	CEMENTING THERMOSETTING PLASTICS	246
Chapter 7	Testing Plastics Parts	257-270
I.	FOREWORD	257
II.	GENERAL CONSIDERATIONS	258
III.	METHODS	258

Chapter 8	Mold Design and Recommended Steels	271-354
I.	HAND-OPERATED COMPRESSION MOLDS	271
II.	SEMI-AUTOMATIC COMPRESSION MOLDS	276
III.	TRANSFER MOLDS	291
IV.	HIGH-SPEED PLUNGER MOLDS	303
V.	EXTRUSION DIES	304
VI.	INJECTION MOLDS FOR THERMOPLASTICS	308
VII.	MOLDS FOR COLD-MOLDING MATERIALS	332
VIII.	STEELS RECOMMENDED FOR MOLDS FOR PLASTICS	335
IX.	CHROME-PLATING OF MOLDS FOR PLASTICS	343
X.	STANDARD MOLD BASES	343
XI.	SPI MOLD DESIGN NOMENCIATURE	348
Chapter 9	Machining and Finishing Plastics Parts	355-383
I.	SCOPE	355
II.	GENERAL	355
III.	FILING	355
IV.	DRILLING	357
V.	TAPPING	362
VI.	TURNING	365
VII.	SAWING	370
VIII.	PIERCING, TRIMMING AND ROUTING	373
IX.	TUMBLING	374
X.	GRINDING AND SANDING	378
XI.	ASHING, BUFFING AND POLISHING	380
XII.	DIP-POLISHING	383
Chapter 10	Laminated Products and Their Fabrication	384-429
	Foreword	384
Part I	Laminated Thermosetting Products Standards	385
	GENERAL SCOPE	385
	SIZES AND VARIATIONS	391
	PHYSICAL AND ELECTRICAL PROPERTIES OF GRADES OF LAMINATED SHEET TUBING AND ROD	402
	TEST METHODS FOR PHYSICAL AND ELECTRICAL PROPERTIES OF LAMINATED THERMOSETTING SHEET, TUBING ANS ROD	414

Part II	Recommended Practice for Fabricating Laminated Plastics	415
	INTRODUCTION	415
	SECTION I – Cutting Laminated Plastics	415
	SECTION II – Punching, Shaving and Broaching	417
	SECTION III – Drill-Press Operations	419
	SECTION IV – Screw Mechines and Turret Lathes	421
	SECTION V – Lathe Operations	422
	SECTION VI – Threading – Internal and External	422
	SECTION VII – Milling and Gear Cutting	423
	SECTION IVIII – Marking	424
	SECTION IX – Sanding and Grinding	426
	SECTION X – Finishing	427
	NAMA STANDARDIZATION	428
	Index	430
	Classification Table (Inside Back Cover)	