

FOREWORD	iii
RESIDENTIAL SHEET METAL TASK FORCE	iv
NOTICE TO USERS OF THIS PUBLICATION	v
TYPICAL RESIDENTIAL SHEET METAL FEATURES	vii
TABLE OF CONTENTS	ix
CHAPTER 1	ROOF DRAINAGE SYSTEMS
1.1	DESIGN OF ROOF DRAINAGE SYSTEMS 1.1
1.2	RECTANGULAR GUTTER DESIGN 1.11
1.3	GUTTER EXPANSION ALLOWANCES 1.13
1.4	GUTTER EXPANSION JOINT 1.15
1.5	WATER DIVERTER DESIGN AND INSTALLATION 1.17
1.6	HANGING GUTTER INSTALLATIONS 1.19
1.7	ROLL-FORMED GUTTERS 1.22
1.8	GUTTER CLEARANCE 1.24
1.9	GUTTER ACCESSORIES (BAFFLES, SCREENS AND OUTLETS) 1.26
1.10	DOWNSPOUTS – MANUFACTURED 1.28
1.11	OPEN VALLEY FLASHING 1.31
1.12	CLOSED VALLEY FLASHING 1.33
1.13	SNOW GUARDS 1.35
CHAPTER 2	DECKS
2.1	DECK PERIMETERS 2.1
2.2	COATED DECKS 2.3
2.3	OPEN PLANK DECK 2.5
2.4	SCUPPERS AND OVERFLOW COLLECTORS 2.7
CHAPTER 3	CHIMNEYS
3.1	CHIMNEY FLASHING (MASONRY) 3.1
3.2	CHIMNEY FLASHING (STUCCO) 3.3
3.3	CHIMNEY CHASE CAP 3.5
CHAPTER 4	WINDOWS
4.1	WINDOW (BAY) AND ORNAMENTAL ROOFS 4.1
4.2	DORMER-HEAD-SILL FLASHING 4.3
4.3	DOOR FLASHINGS 4.5
4.4	LEDGE FLASHINGS 4.7
4.5	HORIZONTAL PROTRUSIONS 4.9



CHAPTER 5 DOORS AND LEDGES

5.1 BEAMS AND PENETRATIONS 5.1
5.2 BEAM ENDS 5.3
5.3 PIPE PENETRATIONS 5.4
5.4 BUILDING EXPANSION JOINTS 5.6

APPENDIX A SNOW AND ICE CONDITIONS

A.1 ICE DAMS AND THEIR CAUSES A.1
A.2 INSTALLATION CONSIDERATIONS A.1
A.3 SNOW BELTS AND GUARDS A.1

APPENDIX B MAINTENANCE

B.1 GENERAL PRACTICE B.1
B.2 GUTTER MAINTENANCE B.1
B.3 ROOF VALLEY MAINTENANCE B.1
B.4 CEDAR SHINGLE CONSIDERATIONS B.1
B.5 ARTIFICIAL PATINA ON COPPER B.1
B.6 FORMULAS B.2

APPENDIX C METAL REFERENCES

C.1 THICKNESS AND WEIGHT OF SHEET METALS C.1
C.2 METALS APPLICATION AND SPECIFICATIONS REFERENCES C.8
C.3 GALVANIC CORROSION C.13
C.4 MOISTURE IN THE CONSTRUCTION OF BUILDING ENVELOPES C.14

GLOSSARY

INDEX



CHARTS

1-1	Width of Rectangular Gutters for Given Roof Areas and Rainfall Intensities . .	1.6
1-2	Half Round Gutter Selection Width Required for Given Roof Areas and Rainfall Intensities	1.7

FIGURES

1-1	Common Roof Styles	1.1
1-2	Rectangular Gutter Design	1.12
1-3	Allowances for Gutter Expansion	1.14
1-4	Gutter Expansion Joint	1.16
1-5	Water Diverter	1.18
1-6	Hanging Gutter Installations	1.20
1-7	Hanging Gutter Installation - Alternate Support	1.21
1-8	Rolled - Formed Gutters	1.23
1-9	Gutter Clearance	1.25
1-10	Gutter Accessories - Screens and Outlets	1.27
1-11	Downspouts - Manufactured	1.30
1-12	Open Valley Flashing	1.32
1-13	Valley Flashings - Installation	1.34
1-14	Snow Guards	1.36
2-1	Deck Perimeters	2.2
2-2	Coated Decks	2.4
2-3	Open Plank Deck	2.6
2-4	Scupper Design and Installation	2.8
3-1	Chimney Flashing (Masonry)	3.2
3-2	Chimney Flashing (Stucco)	3.4
3-3	Chimney Chase Cap	3.6
4-1	Window (Bay) and Ornamental Roofs	4.2
4-2	Dormer-Head-Sill Flashing For Frame Construction	4.4
4-3	Door Flashings	4.6
4-4	Ledge Flashings	4.8
4-5	Horizontal Protrusions	4.10
5-1	Beams and Penetrations	5.2
5-2	Beam Ends	5.3
5-3	Pipe Penetrations	5.5
5-4	Building Expansion Joints	5.7
A-1	Snow Belts and Guards	A.2



TABLES

1-1	Design Areas for Pitched Roofs	1.1
1-2	Dimensions of Standard Downspouts	1.3
1-3	Sloped Roof Gutters Maximum Roof Area for Gutters	1.5
1-4	Rainfall Data and Drainage Factors	1.9
1-5	Recommended Minimum Gages for Gutters	1.12
1-6	Installation Values for "E" from Figure 1-3	1.13
1-7	Recommended Sizes—Gutter Brackets or Straps	1.19
1-8	Dimensions and Minimum Gages of Standard Downspouts	1.29
C-1	Thickness and Weight Per Square Foot of Sheet Metals Galvanized and Black Iron	C.1
C-2	Thickness and Weight Per Square Foot of Sheet Metals Copper	C.2
C-3	Nominal Weight of Lead-Coated Copper Sheet	C.2
C-4	Thickness and Weight Per Square Foot of Sheet Metals Stainless Steel	C.3
C-5	Thickness and Weight Per Square Foot of Sheet Metals Aluminum	C.4
C-6	Thickness and Weight Per Square Foot of Sheet Metals Terne Metal	C.4
C-7	Thickness and Weight Per Square Foot of Sheet Metals Sheet Lead	C.5
C-8	Expansion of Building Materials	C.6
C-9	Metric Conversion Charts Inches into Millimeters and Feet to Meters	C.7

