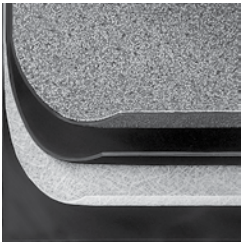
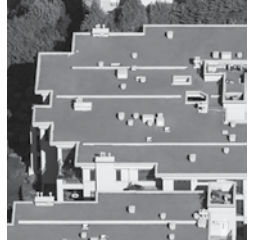
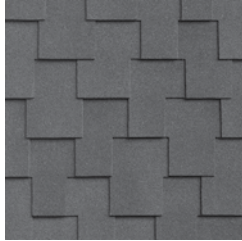




Malarkey

Roofing Products®

Defining Excellence.™



SPECIFICATIONS MANUAL

B.U.R., MODIFIED, & SHINGLE ROOFING SYSTEMS

TABLE OF CONTENTS

CHAPTER 1

GENERAL REQUIREMENTS.....9

1.1 RESPONSIBILITIES.....10

1.1.1 MANUFACTURER.....10

1.1.2 ROOFING CONTRACTOR.....10

1.1.3 ARCHITECTS, SPECIFIERS, CONSULTANTS,
DESIGN PROFESSIONALS.....10

1.1.4 GENERAL CONTRACTOR.....10

**1.2 GENERAL SPECIFICATION REQUIREMENTS
.....10**

1.3 GENERAL DESIGN CONSIDERATIONS.....10

1.3.1 OCCUPANCY AND INTENDED USES OF THE
BUILDING.....10

1.4 ROOF DECK REQUIREMENTS.....10

1.4.1 SLOPE AND DRAINAGE: NEW CONSTRUCTION
OF LOW SLOPE ROOFS.....10

1.4.2 LOW SLOPE MEMBRANE INSTALLATIONS WITH
SLOPES 1" (25 MM) OR GREATER.....11

1.4.2.1 ALTERNATE FASTENING METHOD FOR LOW
SLOPE MEMBRANE INSTALLATIONS WITH
SLOPES 1" (25 MM) OR GREATER.....11

1.4.3 ALL OTHER BUILDINGS.....11

1.5 ROOF DECKS.....11

1.5.1 PLYWOOD/OSB (ORIENTED STRAND BOARD).....11

1.5.2 WOOD BOARD DECKS.....12

1.5.3 CONCRETE/PRE-CAST CONCRETE DECKS.....12

1.5.4 LIGHTWEIGHT STRUCTURAL CONCRETE DECKS
.....13

1.5.5 POURED GYPSUM DECKS.....13

1.5.6 INSULATING LIGHTWEIGHT CONCRETE DECKS
.....13

1.5.7 STEEL DECKS.....14

1.5.8 STRUCTURAL WOOD FIBER DECKS.....14

1.6 RE-COVER / OVERLAY ROOF SYSTEMS...14

1.7 EXPANSION JOINTS15

1.8 AREA DIVIDERS.....15

1.9 METAL FLASHINGS.....15

1.10 GRAVEL AND AGGREGATE SURFACING...15

1.11 REFLECTIVE ROOF COATINGS.....15

1.11.1 ACRYLIC COATINGS.....16

1.11.2 ALUMINUM COATINGS.....16

1.11.3 SILICONE COATINGS.....16

1.12 FLASHING ASSEMBLIES / BASE FLASHING..16

1.13 ADHESIVES.....16

1.13.1 ASPHALT (TYPE III AND IV).....16

1.13.2 SEBS ASPHALT.....17

1.14 COLD ADHESIVES (MODIFIED).....17

1.14.1 PARAGON® LOW ODOR ADHESIVE.....17

1.14.2 PARAGON® LOW ODOR ADHESIVE FLASHING
GRADE.....17

1.15 PARAPET AND WALL COVERINGS.....17

1.16 CRICKETS AND SADDLES.....17

1.17 ROOFING INSULATION TAPE.....17

1.18 SHEET METAL FLANGES.....18

1.19 PITCH PANS.....18

1.20 VAPOR RETARDERS / BARRIERS.....18

1.20.2 NON-NAILABLE DECKS.....18

1.20.3 AIR BARRIERS.....18

1.21 COLD WEATHER PRECAUTIONS.....19

CHAPTER 2A

**LOW SLOPE ROOFING
INSTALLATION INSTRUCTIONS.....21**

2A.1 STORAGE & HANDLING.....22

2A.2 SAFETY.....22

2A.3 INSULATION.....22

2A.3.1 POLYISOCYANURATE.....22

2A.3.2 EXPANDED POLYSTYRENE (EPS).....23

2A.3.3	PERLITE.....	23	2A.7.9	CAP SHEET HOT/COLD ADHESIVE ATTACHMENT	29
2A.3.4	WOOD FIBER.....	23	2A.8	LOW SLOPE MEMBRANE INSTALLATION WITH SLOPES 1" (25 MM) OR GREATER.	29
2A.3.5	GYPSUM ROOF BOARDS.....	23	2A.9	PHASING.....	30
2A.3.6	RIGID INSULATION WITH FACTORY-LAMINATED NAILABLE SUBSTRATE.....	23	2A.10	COLD WEATHER INSTALLATIONS.....	30
2A.4	INSULATION ATTACHMENT REQUIREMENTS FOR SPECIFIC DECK TYPES.....	23	2A.11	ROOF ADHESIVES APPLICATION INSTRUCTIONS.....	30
2A.4.1	STRUCTURAL CONCRETE DECKS.....	23	2A.11.1	PARAGON® LOW ODOR ADHESIVE PARAGON® LOW ODOR ADHESIVE FLASHING GRADE.....	30
2A.4.2	PRE-CAST CONCRETE DECKS.....	23	CHAPTER 2B	LOW SLOPE ROOFING DETAILS.....	33
2A.4.3	WOOD DECKS.....	23	2B.1	LOW CONCRETE / CMU WALL BASE FLASHING.....	34
2A.4.4	POURED GYPSUM DECKS.....	24	2B.2	HIGH WOOD WALL BASE FLASHING.....	35
2A.4.5	LIGHTWEIGHT CONCRETE DECKS.....	24	2B.3	HIGH CONCRETE / CMU WALL BASE FLASHING.....	36
2A.4.6	STEEL DECKS.....	24	2B.4	BASE FLASHING SURFACE MOUNT COUNTER-FLASHING.....	37
2A.4.7	STRUCTURAL WOOD FIBER DECKS.....	24	2B.5	CURB MOUNTED AREA DIVIDER / EXPANSION JOINT.....	38
2A.5	INSULATION FASTENING PATTERNS.....	24	2B.6	BASE FLASHING FOR GYPSUM WALL ON METALS STUDS.....	39
2A.5.1	MECHANICAL ATTACHMENT.....	24	2B.7	MECHANICAL CURB DETAIL.....	40
2A.5.2	STAGGERING OF 4' X 8' INSULATION BOARD..	24	2B.8	RAISED PERIMETER EDGE WITH METAL CAP-FASCIA FLASHING.....	41
2A.5.3	ASPHALT ATTACHMENT OF A SINGLE LAYER OF ROOF INSULATION.....	24	2B.9	MEMBRANE WALL COVERING.....	42
2A.5.4	ADHESIVE ATTACHMENT.....	25	2B.10	SHINGLE MANSARD COVERINGS.....	43
2A.5.5	ADDITIONAL INSULATION REQUIREMENTS....	25	2B.11	SHEET METAL HOOD FLASHING.....	44
2A.6	MEMBRANE INSTALLATION.....	25	2B.12	INSIDE & OUTSIDE CORNERS.....	45
2A.6.1	GENERAL RULES.....	25	2B.13	ROOFED-IN SLEEPER / DIVIDER.....	46
2A.7	BASE SHEET FASTENING PATTERN.....	26	2B.14	NON-PENETRATING SUPPORT.....	47
2A.7.1	BASE SHEET FASTENING: HAND NAILING WITH 1" (25 MM) DIAMETER METAL CAP NAILS... .	26	2B.15	LEAD PIPE FLASHING.....	48
2A.7.2	BASE SHEET FASTENING PATTERN USING PLATES & SCREWS.....	27	2B.16	PITCH-PAN FLASHING.....	49
2A.7.4	BASE SHEET ATTACHMENT USING HOT ASPHALT AND COLD ADHESIVE.....	27	2B.17	SCUPPER.....	50
2A.7.5	THERMALLY-ADHERED BASE SHEETS.....	27	2B.18	HOT PIPE FLASHING.....	51
2A.7.6	INTER-PLY HOT/COLD ADHESIVE ATTACHMENT	28			
2A.7.7	INTER-PLY TORCH INSTALLATION.....	28			
2A.7.8	CAP SHEET TORCH INSTALLATION.....	28			

2B.19 CLAMPING DRAIN & OVERFLOW.....52

CHAPTER 2C

OMNISEAL™
INSTALLATION INSTRUCTIONS.....53

CHAPTER 3

LOW SLOPE ROOFING
SYSTEM SPECIFICATIONS.....63

3.1 ROOFING SYSTEM SPECIFICATIONS.....64

3.2 MALARKEY'S WARRANTIED SYSTEMS....65

3.3 TWO-PLY SYSTEMS.....69

TWO-PLY MODIFIED 601 CAP
(M2-BXB, M2-CXB, M2-DXB, M2-VXB).....69

TWO-PLY MODIFIED 625 CAP
(M2-BXC, M2-CXC, M2-DXC, M2-VXC).....70

TWO-PLY MODIFIED 660 CAP
(M2-BXV, M2-CXV, M2-DXV, M2-VXV).....71

TWO-PLY TORCH DOWN 161 CAP
(M2-AXJ, M2-BXJ, M2-FXJ).....72

TWO-PLY COATED TORCH DOWN 160 CAP
(S2-AXI, S2-BXI, S2-FXI).....73

3.4 THREE-PLY SYSTEMS.....74

THREE-PLY HYBRID 524G RCAP™ PLUS CAP
(R3-XHS, R3-XIS).....74

THREE-PLY HYBRID 624 RCAP™ CAP
(R3-XHN, R3-XIN).....75

THREE-PLY MODIFIED 524G RCAP™ PLUS CAP
(R3-BBS, R3-BDS, R3-DDS, R3-DHS).....76

THREE-PLY MODIFIED 624 RCAP™ CAP
(R3-BBN, R3-BDN, R3-DDN, R3-DHN).....77

THREE-PLY CONVENTIONAL 502 CAP
(M3-XHA, M3-XIA).....78

THREE-PLY HYBRID 350 CAP
(M3-XHH, M3-XIH).....79

THREE-PLY CONVENTIONAL 502 CAP
(M3-AHA, M3-AIA, M3-BHA, M3-BIA).....80

THREE-PLY HYBRID 350 CAP
(M3-AHH, M3-AIH, M3-BHH, M3-BIH).....81

THREE-PLY HYBRID 601 CAP
(M3-AHB, M3-AIB, M3-BHB, M3-BIB).....82

THREE-PLY HYBRID 625 CAP
(M3-AHC, M3-AIC, M3-BHC, M3-BIC).....83

THREE-PLY HYBRID 660 CAP
(M3-AHV, M3-AIV, M3-BHV, M3-BIV).....84

THREE-PLY HYBRID 625 CAP
(M3-BBC, M3-DBC, M3-BDC, M3-DHC, M3-HDC,
M3-VVC).....85

THREE-PLY MODIFIED 350 CAP
(M3-BBH, M3-DBH, M3-BDH, M3-VBH).....86

THREE-PLY MODIFIED 601 CAP
(M3-BBB, M3-BDB, M3-DBB, M3-VBB).....87

THREE-PLY CONVENTIONAL GRAVEL
(G3-XHX, G3-XIX).....88

THREE-PLY MODIFIED COLD-APPLIED GRAVEL
(G3-XBX).....89

3.5 FOUR-PLY SYSTEMS.....90

FOUR-PLY HYBRID 524G RCAP™ PLUS CAP
(R4-AHS, R4-AIS, R4-BHS, R4-BIS).....90

FOUR-PLY MODIFIED 524G RCAP™ PLUS CAP
(R4-BBS).....91

FOUR-PLY MODIFIED 624 RCAP™ CAP
(R4-BBN).....92

FOUR-PLY HYBRID 624 RCAP™ CAP
(4-AHN, 4-AIN, 4-BHN, 4-BIN).....93

FOUR-PLY CONVENTIONAL 502 CAP
(M4-XHA, M4-XIA).....94

FOUR-PLY HYBRID 502 CAP
(M4-AHA, M4-AIA, M4-BHA, M4-BIA).....95

FOUR-PLY HYBRID 350 CAP
(M4-XHH, M4-XIH).....96

FOUR-PLY HYBRID 350 CAP
(M4-AHH, M4-AIH, M4-BHH, M4-BIH).....97

FOUR-PLY HYBRID 601 CAP
(M4-AHB, M4-AIB, M4-BHB, M4-BIB).....98

FOUR-PLY HYBRID 625 CAP
(M4-AHC, M4-AIC, M4-BHC, M4-BIC).....99

FOUR-PLY HYBRID 660 CAP
(M4-AHV, M4-AIV, M4-BHV, M4-BIV).....100

FOUR-PLY MODIFIED 601 CAP
(M4-BBB, M4-BCB, M4-BDB).....101

FOUR-PLY CONVENTIONAL GRAVEL
(G4-XHX, G4-XIX).....102

FOUR-PLY CONVENTIONAL EMULSION
(S4-AHX, S4-BHX, S4-AIX, S4-BIX).....103

3.6 FIVE-PLY SYSTEMS.....104	4A.13.3 INSTALLATION IN NON-ICE DAM REGIONS: ROOF SLOPES 2:12 UP TO 4:12.....117
FIVE-PLY HYBRID 524G RCAP™ PLUS CAP (R5-AHS, R5-AIS, R5-BHS, R5-BIS).....104	4A.13.4 INSTALLATION IN ICE DAM REGIONS: ROOF SLOPES 2:12 UP TO 4:12.....117
FIVE-PLY HYBRID 624 RCAP™ CAP (R5-AHN, R5-AIN, R5-BHN, R5-BIN).....105	4A.14 SHINGLE FASTENING.....117
FIVE-PLY HYBRID 502 CAP (M5-AHA, M5-AIA, M5-BHA, M5-BIA).....106	4A.14.1 ATTACHMENT OF TRADITIONAL 3-TAB SHINGLES.....118
FIVE-PLY HYBRID 350 CAP (M5-AHH, M5-AIH, M5-BHH, M5-BIH).....107	4A.14.2 ATTACHMENT OF LAMINATE SHINGLES.....118
FIVE-PLY HYBRID GRAVEL (G5-AHX, G5-AIX, G5-BHX, G5-BIX).....108	4A.14.3 ATTACHMENT OF WINDSOR® DESIGNER, OPEN TAB LAMINATE SHINGLES.....119
FIVE-PLY HYBRID EMULSION (S5-AHX, S5-AIX, S5-BHX, S5-BIX).....109	4A.14.4 WIND RESISTANCE AND HAND-SEALING.....120
CHAPTER 4A	4A.15 SHINGLE PATTERN LAYOUTS AND APPLICATION.....120
STEEP SLOPE ROOFING INSTALLATION INSTRUCTIONS.....111	4A.15.1 TRADITIONAL 3-TAB SHINGLE PATTERN LAYOUT (5⅝" [143 MM] OFFSET, SEVEN COURSE DIAGONAL METHOD).....120
4A.1 CODE COMPLIANCE FOR BEST INSTALLATION.....112	4A.15.2 LAMINATE SHINGLE PATTERN LAYOUT (5⅝" [143 MM] OFFSET, SEVEN COURSE DIAGONAL METHOD).....121
4A.2 HANDLING AND STORAGE REQUIREMENTS.....112	4A.15.3 WINDSOR® DESIGNER SHINGLE PATTERN LAYOUT (6⅞" [162 MM] OFFSET, FOUR COURSE DIAGONAL METHOD).....122
4A.3 SAFETY.....112	4A.16 VALLEYS.....123
4A.4 GENERAL REQUIREMENTS.....112	4A.16.1 VALLEY UNDERLAYMENT.....123
4A.5 WARRANTIES.....113	4A.16.2 WOVEN VALLEY (3-TAB ONLY).....123
4A.6 ROOF DECK REQUIREMENTS.....113	4A.16.3 CLOSED-CUT VALLEY (3-TAB, LAMINATES, AND WINDSOR® SHINGLES).....124
4A.6.1 PLYWOOD/ORIENTED STRAND BOARD (OSB).....113	4A.16.4 OPEN METAL VALLEY (3-TAB, LAMINATES, AND WINDSOR® SHINGLES).....124
4A.6.2 WOOD BOARD DECKS.....114	4A.16.5 OPEN MEMBRANE VALLEY (3-TAB AND LAMINATES).....125
4A.7 SLOPE REQUIREMENTS.....114	4A.17 FLASHINGS.....125
4A.8 VENTILATION.....114	4A.17.1 INTERSECTIONS OF ROOF AND VERTICAL SIDEWALL.....125
4A.9 RIGID INSULATION AND VENTING.....114	4A.17.2 VENT PIPE (AND OTHER FLANGED PENETRATION) FLASHING.....126
4A.10 RADIANT BARRIERS.....114	4A.17.3 CAP (COUNTER) AND CHIMNEY FLASHINGS.....126
4A.11 SPRAY FOAM AND SIPS PANELS.....114	4A.17.4 CHIMNEY SADDLES AND CRICKETS.....127
4A.12 EAVE AND RAKE DRIP EDGE FLASHING.....115	
4A.13 UNDERLAYMENTS.....115	
4A.13.1 INSTALLATION IN NON-ICE DAM REGIONS: ROOF SLOPES 4:12 AND GREATER.....116	
4A.13.2 INSTALLATION IN ICE DAM REGIONS: ROOF SLOPES 4:12 AND GREATER.....116	

4A.18 HIP AND RIDGE SHINGLES.....127	4B.19 LAMINATE METAL “W” VALLEY.....150
4A.18.1 LOW-PROFILE INSTALLATION (10" AND 12" RIDGEFLEX™ HIP AND RIDGE SHINGLES)...127	4B.20 WINDSOR METAL “W” VALLEY.....151
4A.18.2 USING 3-TAB SHINGLES AS HIP AND RIDGE SHINGLES.....128	4B.21 KICKOUT AND STEEP FLASHING (3-TAB SHINGLE ROOF).....152
4A.18.3 HIGH-PROFILE INSTALLATION (EZ-RIDGE™ AND EZ-RIDGE™ XT HIP AND RIDGE SHINGLES)...128	4B.22 KICKOUT AND STEEP FLASHING (LAMINATE SHINGLE ROOF).....153
4A.19 RE-ROOFING OVER EXISTING ASPHALT SHINGLES.....130	4B.23 KICKOUT AND STEEP FLASHING (WINDSOR SHINGLE ROOF).....154
4A.20 ADDITIONAL INSTALLATION REQUIREMENTS FOR COMMERCIAL APPROVED APPLICATORS RELATIVE TO STEEP SLOPE NDL SHINGLE-WARRANTIED PROJECTS.....130	4B.24 PIPE FLASHING (3-TAB SHINGLE ROOF)...155
CHAPTER 4B	4B.25 PIPE FLASHING (LAMINATE SHINGLE ROOF).....156
STEEP SLOPE ROOFING DETAILS....133	4B.26 PIPE FLASHING (WINDSOR SHINGLE ROOF).....157
4B.1 4"+ SLOPE LAYOUT NO ICE DAM PROTECTION.....134	4B.27 CHIMNEY STEP AND APRON FLASHING (3-TAB SHINGLE ROOF).....158
4B.2 4"+ SLOPE UNDERLAYMENT WITH ICE DAM PROTECTION.....135	4B.28 CHIMNEY STEP AND APRON FLASHING (LAMINATE SHINGLE ROOF).....159
4B.3 2"-4" SLOPE UNDERLAYMENT NO ICE DAM PROTECTION.....136	4B.29 CHIMNEY STEP AND APRON FLASHING (WINDSOR SHINGLE ROOF).....160
4B.4 2"-4" SLOPE UNDERLAYMENT WITH ICE DAM PROTECTION.....137	4B.30 CHIMNEY BACKER AND CRICKET FLASHING.....161
4B.5 3 TAB NAIL PATTERN.....138	4B.31 RIDGEFLEX HIP & RIDGE SHINGLES (3-TAB SHINGLE ROOF).....162
4B.6 LAMINATE NAIL PATTERN.....139	4B.32 RIDGEFLEX HIP & RIDGE SHINGLES (LAMINATE SHINGLE ROOF).....163
4B.7 WINDSOR NAILING PATTERN & HAND TAB LOCATIONS.....140	4B.33 RIDGEFLEX HIP & RIDGE SHINGLES (WINDSOR SHINGLE ROOF).....164
4B.8 WINDSOR NAILING PATTERN & HAND TAB ALTERNATIVE LOCATION.....141	4B.34 EZ-RIDGE HIP & RIDGE SHINGLES (3-TAB SHINGLE ROOF).....165
4B.9 3-TAB LAYOUT PATTERN.....142	4B.35 EZ-RIDGE HIP & RIDGE SHINGLES (LAMINATE SHINGLE ROOF).....166
4B.10 LAMINATE LAYOUT PATTERN.....143	4B.36 EZ-RIDGE HIP & RIDGE SHINGLES (WINDSOR SHINGLE ROOF).....167
4B.11 WINDSOR LAYOUT COURSES 1-4.....144	4B.37 DOUBLE LAYER UNDERLAYMENT WITH SELF-ADHERING AND MECHANICALLY ATTACHED LAYERS.....168
4B.12 3-TAB WOVEN VALLEY.....145	CHAPTER 4C
4B.14 3-TAB CLOSED CUT VALLEY.....146	PARAGON® CHROMA CAP
4B.15 LAMINATE CLOSED CUT VALLEY.....147	INSTALLATION INSTRUCTIONS.....169
4B.17 WINDSOR CLOSED CUT VALLEY.....148	
4B.18 3-TAB METAL “W” VALLEY.....149	

CHAPTER 5		5.17A EZ SEAL 6A: TYPICAL "H" AND "I" BEAM PENETRATION FLASHING.....194
	EZ SEAL™ LIQUID MEMBRANE APPLICATION INSTRUCTIONS & DETAILS.....175	5.18 EZ SEAL 7: ANGLED PENETRATION FLASHING.....195
5.2	EZ SEAL™ PRODUCTS.....176	5.18A EZ SEAL 7A: ANGLED PENETRATION FLASHING.....196
5.3	RECOMMENDED TOOLS AND EQUIPMENT.....177	
5.4	PERSONAL PROTECTION.....177	CHAPTER 6
5.5	STORAGE AND HANDLING.....177	WARRANTIES, FORMS, AND APPLICATIONS.....197
5.6	SUBSTRATE AND PENETRATION PREPARATION.....178	6 WARRANTIES, FORMS, & APPLICATIONS.198
5.7	EZ SEAL™ CATALYST MIXING.....179	6.1 WARRANTY INFORMATION.....198
5.8	SUBSTRATE REPAIRS WITH EZ SEAL™ PASTE.....179	6.1.1 LIMITED MATERIAL ONLY WARRANTY.....198
5.9	PRIMING GUIDELINES.....179	6.1.2 LIMITED SUM WARRANTY.....198
5.10	EZ SEAL™ NON-FIBERED PMMA RESIN..180	6.1.3 NO DOLLAR LIMIT (NDL) ROOF SYSTEM WARRANTY.....198
5.11	EZ SEAL™ FIBERED PMMA RESIN.....180	6.2 MALARKEY STEEP AND LOW SLOPE WARRANTY PROGRAM.....198
FINAL NOTE.....181		6.3 MALARKEY COMMERCIAL APPROVED APPLICATORS.....198
5.10	COVERAGE RATES & REACTION TIMES...182	6.4 WARRANTY CHARGES.....198
5.11	EZ SEAL 1: INSIDE CORNER REINFORCEMENT FLASHING.....183	6.5 THE WARRANTY PROCESS.....198
5.11A	EZ SEAL 1A: OUTSIDE CORNER REINFORCEMENT FLASHING.....184	6.6 INSPECTIONS.....199
5.12	EZ SEAL 2: PIPE PENETRATION FLASHING.....185	
5.12A	EZ SEAL 2A: PIPE PENETRATION FLASHING.....186	
5.13	EZ SEAL 3: SQUARE POST PENETRATION FLASHING.....187	
5.13A	EZ SEAL 3A: SQUARE POST PENETRATION FLASHING.....188	
5.14	EZ SEAL 4: ROOF DRAIN FLASHING.....189	
5.15	EZ SEAL 4A: ROOF DRAIN FLASHING....190	
5.16	EZ SEAL 5: VERTICAL TRANSITION FLASHING.....191	
5.16A	EZ SEAL 5A: VERTICAL TRANSITION FLASHING.....192	
5.17	EZ SEAL 6: TYPICAL "H" AND "I" BEAM PENETRATION FLASHING.....193	