

4. WINDBORNE-DEBRIS-IMPACT-RESISTANCE PERFORMANCE: PASS MISSILE-IMPACT AND CYCLIC-PRESSURE TESTS WHEN TESTED ACCORDING TO ASTM E 1886 AND TESTING INFORMATION IN ASTM E 1886 FOR WIND ZONE CRITERIA FOR SPECIFIC PROJECT LOCATION.

A. LARGE-MISSILE TEST: FOR GLAZED OPENINGS LOCATED WITHIN 30 FEET OF GRADE.

B. SMALL MISSILE TEST: FOR GLAZED OPENINGS LOCATED MORE THAN 30 FEET ABOVE GRADE.

5. AIR INFILTRATION: TESTED IN ACCORDANCE WITH ASTM E 995. AIR INFILTRATION RATE SHALL NOT EXCEED 0.06 CFM/SQ. FT. AT A STATIC AIR PRESSURE DIFFERENTIAL OF 6.24 PSF.

6. WATER RESISTANCE: TESTED IN ACCORDANCE WITH ASTM E 331. THERE SHALL BE NO LEAKAGE AT A MINIMUM STATIC AIR PRESSURE DIFFERENTIAL OF 12 PSF AS DEFINED IN AAMA 501.

7. SEE STRUCTURAL DRAWINGS FOR DESIGN WIND LOAD CRITERIA FOR STOREFRONT CURTAIN WALLS.

8. PROVIDE COMPONENTS THAT HAVE BEEN PREVIOUSLY TESTED BY AN INDEPENDENT TESTING LABORATORY CERTIFIED BY MIAMI-DADE COUNTY BUILDING CODE COMPLIANCE OFFICE (BCCO), FLORIDA BUILDING CODE (FBC), AND ASTM.

9. COMPLY WITH IMPACT RESISTANCE AND CYCLIC PRESSURE DIFFERENTIALS PER ASTM E1886 AND ASTM E1886, SBC01 S95D 12, FBC PROTOCOLS T5A 201, 202, AND 203, OR MIAMI-DADE COUNTY BCCO PROTOCOLS 201, 202, AND 203.

10. SAFETY REQUIREMENTS OF STOREFRONT CURTAIN WALL SHALL BE COMPLIANT WITH CPSC 16 CFR 1201 CATEGORY II AND ANSI Z97.1 CLASS A.

11. STRUCTURAL SILICONE SEALANT: PROVIDE STRUCTURAL SILICONE SEALANT PER STOREFRONT MANUFACTURER WRITTEN INSTRUCTIONS AND RECOMMENDATIONS.

12. MAXIMUM CALCULATED DEFLECTION OF ANY FRAMING MEMBER IN DIRECTION NORMAL TO THE PLANE OF THE WALL WHEN SUBJECTED TO SPECIFIED PRESSURES SHALL BE LIMITED TO 1/175 OF THE SPAN BUT NO MORE THAN 3/4".

#### SECTION 084126 - ALL-GLASS ENTRANCES AND STOREFRONTS

- A. GENERAL: SECTION INCLUDES: PROVIDE SPECIAL FRAMELESS ALL-GLASS ENTRANCES AND STOREFRONTS, INCLUDING GLAZING DOORS, RELATED HARDWARE, ADJACENT GLAZING AND ACCESSORIES AS REQUIRED FOR COMPLETE OPERATIONAL INSTALLATION.
1. RELATED WORK: SECTION 08700: CYLINDERS FOR DOOR LOCKS.
- B. REFERENCES
1. GLASS ASSOCIATION OF NORTH AMERICA (GANA): GLAZING MANUAL.
2. BUILDERS HARDWARE MANUFACTURERS ASSOCIATION (BHMA): BHMA 1301/ ANSI A156-18, STANDARDS FOR MATERIALS AND FINISHES.
- C. SYSTEM DESCRIPTION
1. PERFORMANCE REQUIREMENTS: PROVIDE ASSEMBLIES CAPABLE OF WITHSTANDING MINIMUM UNIFORM TEST PRESSURE OF 20 PSF INWARD AND OUTWARD PRESSURE WHEN TESTED IN ACCORDANCE WITH ASTM E330.
- D. SUBMITTALS
1. PRODUCT DATA: FURNISH MANUFACTURER'S LITERATURE.
2. SHOP DRAWINGS: INDICATE COMPONENT DETAILS, MATERIALS, FINISHES, DIMENSIONS, HARDWARE AND FITTINGS, AND METHOD OF ANCHORAGE.
3. SAMPLES: FURNISH SAMPLES OF METAL FINISH.
- E. QUALITY ASSURANCE
1. INSTALLER QUALIFICATIONS: FIRM WITH MINIMUM FIVE YEARS SUCCESSFUL EXPERIENCE IN INSTALLATION OF ENTRANCES SIMILAR TO THOSE SPECIFIED, APPROVED BY SYSTEM MANUFACTURER.
2. REGULATORY REQUIREMENTS: COMPLY WITH REQUIREMENTS OF APPLICABLE BUILDING CODES AND AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) TO ENSURE ACCESS TO PERSONS WITH DISABILITIES.
- F. PROJECT CONDITIONS
1. CHECK OPENINGS BY FIELD MEASUREMENTS BEFORE FABRICATION TO ENSURE PROPER FITTING AND TIGHT JOINTS; COORDINATE FABRICATION WITH SHOP DRAWINGS OF ADJACENT CONSTRUCTION WHERE NECESSARY TO AVOID DELAYS.
- G. MANUFACTURERS
1. SEE ARCHITECTURAL DRAWINGS
2. SUBSTITUTIONS: REFER TO SECTION 016200
- H. MATERIALS:
1. ALL-GLASS ENTRANCE SYSTEMS: PROVIDE COMPLETE SYSTEM.
- a. GLASS: NOT LESS THAN NOMINAL 1/2" THICK, LOW-IRON, SELECT GLAZING QUALITY CLEAR TEMPERED GLASS COMPLYING WITH ASTM C1048, KIND FT.
1. SAFETY GLASS: CONFORM TO ANSI Z97.1 AND APPLICABLE CODES AND REGULATIONS.
2. PROVIDE HORIZONTALLY TEMPERED GLASS WITHOUT TONG MARKS; VERTICAL TEMPERING PERMITTED ONLY WHERE TONG MARKS CAN BE TOTALLY CONCEALED IN FINISHED INSTALLATION.
3. POLISH SIDE EDGES TO BE EXPOSED OR TO RECEIVE SEALANT; CUT GLASS TO TOLERANCES NECESSARY TO PROVIDE EVEN, 1/8" JOINTS WITHIN PLUS OR MINUS 1/16".
- b. DOOR FITTINGS: PROVIDE CUSTOM "PATCH" TYPE FITTINGS AS INDICATED ON DRAWINGS AND AS REQUIRED TO SUPPORT DORMA DOOR CONTROLS/BTS 80 FLOOR PIVOT CLOSER.
1. FINISH: BHMA 630 (US32D), SATIN STAINLESS STEEL FINISHED WITH 320 GRIT SANDER TO MATCH ARCHITECT'S SAMPLE.
- c. FRAMELESS GLASS DOOR HARDWARE: MANUFACTURER'S STANDARD METAL AND FINISH TO MATCH DOOR RAILS, UNLESS OTHERWISE INDICATED. REFER TO ARCHITECTURAL DRAWINGS.
- d. ANCHORAGES AND FASTENINGS: MANUFACTURER'S STANDARD TYPES, CONCEALED EXCEPT AS OTHERWISE REQUIRED; FINISH EXPOSED FASTENERS TO MATCH ADJACENT METAL SURFACES.
- e. SEALANT: HIGH MODULUS STRUCTURAL SILICONE DESIGNED FOR STRUCTURAL GLAZING.
1. SEALANT COLOR: CLEAR
2. MANUFACTURERS:
- A. DOW CORNING/SILICONE RUBBER SEALANT 999.
- B. GENERAL ELECTRIC/SILICONE CONSTRUCTION SCS 1200 SEALANT.
- C. PEGOR/669 GLAZING SILICONE.
- D. TREMCO/PROGLAZE SILICONE.
- E. SUBSTITUTIONS: REFER TO SECTION 01630
- f. Sidelight GLAZING CHANNELS: SATIN STAINLESS STEEL TO MATCH DOOR PATCHES; SIZED AS REQUIRED TO SUPPORT GLASS.
1. EXPOSED FINISH: MATCH SATIN FINISH FOR DOOR SYSTEM.
- J. FABRICATION
1. LOCATE AND PROVIDE HOLES AND CUTOUTS TO RECEIVE HARDWARE BEFORE TEMPERING GLASS; DO NOT PERMIT CUTTING, DRILLING OR OTHER GLASS ALTERATIONS AFTER TEMPERING.
- a. POLISH EXPOSED ENDS OF GLASS; ROUND EDGES SLIGHTLY.
2. FABRICATE ALL-GLASS ENTRANCE SYSTEM TO ACCOMMODATE REQUIRED HARDWARE AND ACCESSORY ITEMS.
3. INSTALL HARDWARE AT FABRICATION PLANT; REMOVE ONLY AS REQUIRED FOR FINAL FINISHING OPERATIONS, AND FOR DELIVERY AND INSTALLATION OF WORK AT PROJECT SITE.
- K. EXAMINATION
1. EXAMINE AREAS AND CONDITIONS UNDER WHICH WORK IS TO BE INSTALLED.
2. BEGINNING INSTALLATION SIGNIFIES ACCEPTANCE OF CONDITIONS.
- L. INSTALLATION
1. COMPLY WITH MANUFACTURER'S RECOMMENDATIONS AND INSTALLATION INSTRUCTIONS.
- a. INSTALL GLAZING IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND GANA GLAZING MANUAL.
2. SET UNITS PLUMB, LEVEL AND TRUE TO LINE, WITHOUT WARP OR RACK; ANCHOR SECURELY IN PLACE.
3. SEPARATE ALUMINUM AND OTHER CORRODIBLE METAL SURFACES FROM SOURCES OF CORROSION OR ELECTROLYTIC ACTION AT POINTS OF CONTACT WITH OTHER MATERIALS.
- M. ADJUSTING: ADJUST OPERATING HARDWARE TO ENSURE PROPER OPERATION.
- N. CLEANING: CLEAN SURFACES USING MANUFACTURER'S RECOMMENDED CLEANING METHODS.

#### SECTION 08700 - DOOR HARDWARE

- A. GENERAL: PROVIDE DOOR HARDWARE FOR HOLLOW METAL DOORS AND FOR WOOD DOORS, AND PROVIDE CYLINDERS FOR DOORS PROVIDED WITH HARDWARE, WITH ACCESSORIES AS REQUIRED FOR COMPLETE OPERATIONAL DOOR INSTALLATION.
- B. STANDARDS: COMPLY WITH BUILDERS HARDWARE MANUFACTURERS ASSOCIATION (BHMA) ANSI/BHMA 156 SERIES STANDARDS.
- C. CODES AND REGULATIONS: COMPLY WITH STATE AND FEDERAL REQUIREMENTS FOR ENSURING ACCESS FOR PERSONS WITH DISABILITIES.
1. FIRE RATED DOORS: COMPLY WITH REQUIREMENTS OF NFPA 80 AND APPLICABLE CODES FOR FIRE RATED DOOR HARDWARE; PROVIDE HARDWARE BEARING UNDERWRITERS LABORATORY (UL) LABELS.
- D. SUBMITTALS: FURNISH SHOP DRAWINGS, PRODUCT DATA INCLUDING KEYING SCHEDULE, AND SAMPLES OF EACH REQUIRED STYLE AND FINISH.
1. SUPPLY TEMPLATES TO DOOR AND FRAME MANUFACTURERS FOR PROPER AND ACCURATE SIZING AND LOCATIONS OF CUT-OUTS FOR HARDWARE.
- E. GENERAL MATERIALS: PROVIDE COMPLETE HARDWARE WITH ACCESSORIES AS REQUIRED FOR DOORS AND APPLICATIONS INDICATED AND NOT PROVIDED UNDER OTHER SECTIONS.
- F. HINGES: HAGES, LAWRENCE, MCKINNEY, OR STANLEY; FULL MORTISED HINGES; SIZE AND NUMBER AS RECOMMENDED BY MANUFACTURER; NON REMOVABLE PINS AT EXTERIOR OUT SWINGING DOORS; BLABBERING HINGES AT FIRE RATED DOORS AND DOORS WITH CLOSURES.
- G. LOCKSET/LATCHSETS: SCHLAGE, SARGENT, YALE, OR U-CHANGE; FULL MORTISE LOCKSETS TYPICAL AT DOORS TO PUBLIC AREAS, CYLINDRICAL LOCKSETS AND LATCHSETS AT OTHER LOCATIONS; SQUID LEVER TYPE WITH ROSE, KEYING AS DIRECTED BY OWNER; PROVIDE CYLINDERS FOR DOORS FURNISHED WITH LOCKS. (U CHANGE CUSTOMER SERVICE 1-800-253-5625).
- H. OVERHEAD CLOSURES: LCN/4000 SERIES OR NORTON/7500 FULLY ADJUSTABLE. MODERN TYPE WITH COVER.

1. ACCESSORIES: PROVIDE DOOR STOPS, THRESHOLDS, WEATHER-STRIPPING, TRIM, COORDINATORS AND ACCESSORIES AS REQUIRED FOR COMPLETE OPERATIONAL DOOR INSTALLATION.
1. THRESHOLDS, STOPS, TRIMS AND MISCELLANEOUS HARDWARE. PROVIDE AS INDICATED, AS SPECIFIED, AS INCLUDED IN HARDWARE SCHEDULE, AND AS REQUIRED FOR COMPLETE INSTALLATION.
2. WEATHER-STRIPPING: PROVIDE CONTINUOUS WEATHER-STRIPPING AT TOP AND SIDES OF EXTERIOR DOORS.
3. FIRE RATED GASKETS: PROVIDE CONTINUOUS FIRE RATED GASKETS AT TOP AND SIDE OF FIRE RATED DOORS.
4. THROUGH BOLTS: THROUGH BOLTS AND GROMMET NUTS SHALL BE AVOIDED ON DOOR FACES IN HIGHLY VISIBLE AREAS, UNLESS NO ALTERNATIVE IS POSSIBLE, AS DIRECTED AND APPROVED, AND SHALL NOT BE USED FOR SOLID WOOD CORE DOORS.
- J. FINISH: BHMA 626 (US26D), SATIN FINISHED CHROMIUM PLATED UNLESS OTHERWISE INDICATED.
- K. INSTALLATION: COMPLY WITH MANUFACTURER RECOMMENDATIONS, BHMA, AND APPLICABLE REQUIREMENTS FOR ACCESS AND FOR FIRE RATINGS.
1. FIT HARDWARE PRIOR TO PAINTING, THEN REMOVE FOR PAINTING OF DOORS AND FRAMES BEFORE FINAL INSTALLATION OF HARDWARE.
2. HEIGHT TO COMPLY WITH APPLICABLE CODES AND BHMA RECOMMENDATIONS.
3. HARDWARE GROUPS: REFER TO DRAWINGS.

#### SECTION 089100 - GLASS GLAZING

- A. GENERAL: PROVIDE FULLY TEMPERED GLASS AND G.C. FURNISHED FILM ON GLASS (AS REQUIRED). GLASS THICKNESS SHALL BE PER ARCHITECTURAL DRAWINGS. PROVIDE GLAZING ACCESSORIES AS REQUIRED FOR COMPLETE INSTALLATION.
- B. STANDARDS: COMPLY WITH GLASS ASSOCIATION OF NORTH AMERICA (GANA) "GLAZING MANUAL".
- C. CODES: SAFETY GLAZING SHALL COMPLY WITH CONSUMER PRODUCT STANDARD 16 CFR 1201, CATEGORY II, AND SHALL HAVE PASSED ANSI Z97.1, CLASS A.
- D. MANUFACTURERS: PILKINGTON LOF, GUARDIAN, OR PPG.
- E. GLAZING SEALANT: ONE COMPONENT SILICONE GLAZING SEALANT; PROVIDE AS RECOMMENDED BY SEALANT MANUFACTURER FOR APPLICATIONS INDICATED, HIGH MODULUS TYPE AT STRUCTURAL SILICONE BUTT GLAZING.
1. MANUFACTURERS: DOW OR GE.
- F. SETTING BLOCKS AND SPACERS: NEOPRENE OR EPDM, SILICONE COMPATIBLE WHERE IN CONTACT WITH SILICONE SEALANT.
- G. PREPARATION: CLEAN GLAZING CHANNELS AND FRAMING MEMBERS TO RECEIVE GLASS IMMEDIATELY BEFORE GLAZING; REMOVE COATINGS NOT FIRMLY BONDED TO SUBSTRATE.
- H. INSTALLATION: COMPLY WITH GANA GLAZING MANUAL AND SEALANT MANUAL AND GLAZING MANUFACTURER INSTRUCTIONS.
1. DO NOT ALLOW GLASS TO TOUCH METAL SURFACES
2. COMPLY WITH NFPA 80 FOR GLASS IN FIRE RATED OPENINGS
3. PLACE SETTING BLOCKS AT QUARTER POINTS IN THIN COURSE OF SEALANT
4. INSTALL REMOVABLE STOPS WITH GLASS CENTERED IN SPACE WITH SPACER SHIMS AT 2'-0" INTERVALS ON BOTH SIDES OF GLASS, 1/4" BELOW SIGHTLINE.
5. SEALANT GLAZING: FILL GAP BETWEEN GLASS AND STOPS WITH SEALANT TO DEPTH EQUAL TO BITE OF FRAME ON GLASS BUT NOT MORE THAN 3/8" BELOW SIGHTLINE.

#### SECTION 088300 - MIRRORS

SUMMARY: THIS SECTION INCLUDES NEW WALL MOUNTED GLASS MIRRORS.

- A. QUALITY ASSURANCE
1. INSTALLER QUALIFICATIONS: AN EXPERIENCED INSTALLER WHO HAS COMPLETED MIRROR GLAZING SIMILAR IN MATERIAL, DESIGN, AND EXTENT TO THAT INDICATED; WHOSE WORK HAS RESULTED IN MIRROR INSTALLATIONS WITH A RECORD OF NOT LESS THAN 5 YEARS OF SUCCESSFUL IN-SERVICE PERFORMANCE.
2. SOURCE LIMITATIONS FOR MIRRORS: OBTAIN MIRRORS FROM ONE SUPPLIER/MANUFACTURER FOR EACH TYPE OF MIRROR INDICATED.
3. SOURCE LIMITATIONS FOR GLAZING ACCESSORIES: OBTAIN GLAZING ACCESSORIES FROM ONE SOURCE FOR EACH TYPE OF ACCESSORY INDICATED.
4. GLAZING PUBLICATIONS: COMPLY WITH THE APPLICABLE RECOMMENDATIONS OF THE FOLLOWING: WHERE RECOMMENDATIONS CONFLICT THE MORE STRINGENT SHALL APPLY.
- a. GLASS ASSOCIATION OF NORTH AMERICA (GANA): "GLAZING MANUAL" AND THE MIRROR DIVISIONS' "MIRRORS, HANDLE WITH EXTREME CARE: TIPS FOR THE PROFESSIONAL ON THE CARE AND HANDLING OF MIRRORS"
- b. NATIONAL GLASS ASSOCIATION (NGA): "CUSTOM MIRRORS, FABRICATION AND INSTALLATION.
- B. DELIVERY, STORAGE, AND HANDLING.
1. PROTECT MIRRORS ACCORDING TO MIRROR MANUFACTURER'S WRITTEN INSTRUCTIONS AND AS NEEDED TO PREVENT DAMAGE TO MIRRORS FROM CONDENSATION, TEMPERATURE CHANGES DUE TO EXPOSURE TO SUN, OR OTHER CAUSES.
2. COMPLY WITH MIRROR MANUFACTURER'S WRITTEN INSTRUCTIONS FOR SHIPPING, STORING, AND HANDLING MIRRORS AS NEEDED TO PREVENT DETERIORATION OF SILVERING, DAMAGE TO EDGES, AND ABRASION OF GLASS SURFACES AND APPLIED COATINGS. STORE INDOORS, PROTECTED FROM MOISTURE INCLUDING CONDENSATION.
- C. PROTECTION CONDITIONS: ENVIRONMENTAL LIMITATIONS - DO NOT INSTALL MIRRORRED GLASS UNTIL AMBIENT TEMPERATURE AND HUMIDITY CONDITIONS ARE MAINTAINED AT LEVELS INDICATED FOR FINAL OCCUPANCY.
- D. SILVERED FLAT GLASS MIRROR MATERIAL: 6.0 MM THICK AND COMPLYING WITH ASTM C 1503, MIRROR SELECT QUALITY FOR USE IN VISUALLY DEMANDING APPLICATIONS REQUIRING MINIMAL DISTORTIONS AND BLEMISHES.
- E. FABRICATION
1. CUTOUTS: FABRICATE CUTOUTS FOR NOTCHES AND HOLES IN MIRRORS WITHOUT MARRING VISIBLE SURFACES. LOCATE AND SIZE CUTOUTS SO THEY FIT CLOSELY AROUND PENETRATIONS IN MIRRORS.
2. MIRROR EDGE TREATMENT: CUTTING AND POLISHING
- a. TYPICAL MIRRORS: FLAT EDGES WHERE THE CLEAN CUT "SQUARE" EDGE OF THE GLASS IS FLAT AND SURFACES EDGES ARE SLIGHTLY ARRISSED; AFTER GRINDING THE ARRISSES, EDGES SHALL BE POLISHED TO A HIGH GLOSS SURFACE WHERE THE SURFACE REFLECTIVITY IS SIMILAR IN APPEARANCE TO THE MAJOR SURFACE OF THE GLASS.
- b. BEVELED EDGED MIRRORS: PROVIDE BEVELED EDGED MIRRORS WHERE THE SURFACE EDGE OF THE GLASS IS BEVELED TO WIDTH INDICATED ON THE OWNER FURNISHED DRAWINGS; THE ANGLE FORMED BY THE INTERSECTION OF THE PLANCE OF THE BEVEL WITH THE MAJOR SURFACE FACE OF THE GLASS SHALL BE BETWEEN 3 TO 10 DEGREES; THE BEVELED SURFACE AND THE NOSE OF THE BEVEL SHALL BE POLISHED TO A HIGH GLOSS SURFACE WHERE THE SURFACE REFLECTIVITY IS SIMILAR IN APPEARANCE TO THE MAJOR SURFACE OF THE GLASS.
- c. EDGE SEALING: IMMEDIATELY AFTER CUTTING THE FINAL SIZES, AND APPLYING EDGE TREATMENT, FACTORY SEAL EDGES OF MIRRORS WITH EDGE SEALER TO PREVENT CHEMICAL OR ATMOSPHERIC PENETRATION OF GLASS COATING.
- F. MISCELLANEOUS MATERIALS
1. SETTING BLOCK: NON-RUBBER OR NON-NEOPRENE BASED ELASTONICER MATERIAL MANUFACTURED FOR SETTING SILVERED FLAT GLASS MIRRORS, COMPATIBLE WITH ADHESIVE USED FOR PLACEMENT; WITH A TYPE A SHORE DURETOMETER HARDNESS OF 85, PLUS OR MINUS 5. 1/8" WIDE X 1/4" HIGH X 4" LONG.
2. EDGE SEALER: COATING COMPATIBLE WITH GLASS COATING AND APPROVED BY MIRROR MANUFACTURER FOR USE IN PROTECTING AGAINST SILVER DETERIORATION AT MIRROR EDGES.
3. MIRROR MASTIC: PALMER PRODUCTS CORP., "ONIKSET MIRRO-MASTIC", (502) 893-3668, (800) 431-6151, FAX (502) 895-9253.
4. DRYWALL AND PLYWOOD PAINT (POROUS SUBSTRATE PRIMER): MASTERCHEM INDUSTRIES INC., "KILLZ ORIGINAL", (866) 744-6571
5. TOP AND BOTTOM ALUMINUM J CHANNELS: ALUMINUM EXTRUSIONS WITH A RETURN DEEP ENOUGH TO PRODUCE A GLAZING CHANNEL TO ACCOMMODATE 6 MM THICK MIRRORS AND HEAVY BODIED MIRROR MASTIC SPREADING TO THE ENDS OF THE BACK LIPS OF THE BACK LIPS OF ALL CHANNELS SHALL BE FACTORY SHIPPED AND FILED SO THAT THEY WILL NOT BE SEEN AFTER INSTALLATION.
- a. BOTTOM TRIM: C.R. LAURENCE CO. INC., 1/4" STANDARD "J" CHANNEL (CATALOG NUMBER D636P POLISHED FINISH), (800) 421-6144, FAX (800) 262-3294.
- J-CHANNELS FORMED WITH FRONT LEG AND BACK LEG NOT LESS THAN 3/8" AND 7/8" IN HEIGHT, RESPECTIVELY.

- b. TOP TRIM: C.R. LAURENCE CO. INC., 1/4" DEEP NOSE "J" CHANNEL (CATALOG NUMBER D646P POLISHED FINISH), (800) 421-6144, FAX (800) 262-3294.
- J-CHANNELS FORMED WITH FRONT LEG AND BACK LEG NOT LESS THAN 5/8" AND 1-3/16" IN HEIGHT, RESPECTIVELY.

6. STUD FASTENERS: PROVIDE #6 GAGE DIAMETER, 1-5/8" LONG, PHILLIPS BUGLE HEAD, SLEF-DRILLING TYPE, FINE THREADED STEEL SCREW FASTENERS IN QUANTITY AS REQUIRED FOR SUPPORT AND FASTENING OF WOOD TRIMS AND MIRRORS CHANNELS TO DRYWALL STUD FRAMING AND SHEET METAL BACKER PLATES. HILTI KWI-PRO SELF DRILL DRYWALL SCREWS, ORDERING NAME: 6" X 1-5/8" PBM SD, ITEM #: 00986216; HILTI CORPORATION (800) 879-8000.
7. PLASTIC WOOD FILLER: COMMERCIAL QUALITY WOOD FILLER SPECIFICALLY MANUFACTURED TO ADVANCE THE FINAL BUILD AND SMOOTHNESS OF THE INSTALLED WOOD TRIM SURFACE BY FILLING DENTS, SCRATCHES, MITER JOINTS, AND VOIDS ABOVE COUNTERSUNK FASTENER HEADS. THE SELECTED FILLER SHALL BE EITHER NEUTRAL OR TINTED TO MATCH THE COLOR OF THE WOOD TRIM.
8. PLYWOOD FASTENERS: PROVIDE MINIMUM #6 GAGE DIAMETER, PHILLIPS FLAT HEAD, SHARP POINTED, COARSE THREADED, STEEL WOOD SCREW FASTENERS IN QUANTITY AS REQUIRED, FURNISH PLYWOOD FASTENERS IN LENGTH AS REQUIRED TO SPAN THROUGH WOOD MIRROR TRIM, AND MIRROR CHANNELS, PLUS 3/4".
9. WOOD MIRROR TRIM.
- G. EXAMINATION
1. EXAMINE SUBSTRATES, OVER WHICH MIRRORS ARE TO BE MOUNTED, WITH INSTALLER PRESENT FOR COMPLIANCE WITH INSTALLATION TOLERANCES, SUBSTRATE PREPARATION, AND OTHER CONDITIONS AFFECTING PERFORMANCE.
- a. VERIFY COMPATIBILITY AND SUITABILITY OF SUBSTRATES, INCLUDING COMPATIBILITY OF MIRROR MASTIC WITH EXISTING FINISHES OR PRIMERS. PROCEED WITH MIRRORRED GLASS INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED AND SURFACES ARE DRY.
- H. PREPARATION
1. COMPLY WITH MASTIC MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS FOR PREPARATION OF SUBSTRATES.
- a. MIRROR, DRYWALL AND PLYWOOD SUBSTRATES SHALL BE FREE OF DUST, BE CLEAN, AND DRY PRIOR TO APPLICATION OF MIRROR MASTIC AND DRYWALL AND PLYWOOD PAINT. IF PLYWOOD OR DRYWALL SURFACES HAVE BEEN PAINTED PRIOR TO APPLICATION OF THE SPECIFIED DRYWALL AND PLYWOOD PAINT, THE EXISTING PAINT SHALL BE SANDED THROUGH THE ORIGINAL SURFACE AND THE SUBSTRATE CLEANED PRIOR TO THE APPLICATION OF DRYWALL AND PLYWOOD PAINT.

#### 1. GLAZING

1. GENERAL: INSTALL MIRRORS WITH MIRROR GLAZING CHANNELS TO COMPLY WITH WRITTEN INSTRUCTION OF MIRROR AND MIRROR GLAZING CHANNEL MANUFACTURERS, WITH REFERENCED GANA AND NGA PUBLICATIONS, OWNER FURNISHED DRAWINGS, AND AS SPECIFIED. MOUNT "MIRRORS PLUMB", IN LINE AND IN A MANNER THAT AVOIDS DISTORTING REFLECTED IMAGES.
2. COMPLY WITH MASTIC MANUFACTURER'S PRINTED DIRECTIONS FOR PREPARATION AND SEALING OF MOUNT SURFACES BY SEALING DRYWALL, AND PLYWOOD, SUBSTRATES WITH DRYWALL AND PLYWOOD PAINT. ALLOW PAINT TO DRY BEFORE APPLYING MIRROR MASTIC.
3. MIRROR CHANNEL INSTALLATION:
- a. TO NOT DIMPLE, BACK LIP OF CHANNEL TO RECEIVE FASTENERS WITH HOLES PROPERLY SIZED AND SPACED TO RECEIVE FASTENERS. ATTACH MIRROR CHANNELS BY SCREW ATTACHING MIRROR CHANNEL THROUGH THE BACK LIP OF THE CHANNEL TO PLYWOOD SUBSTRATE IN ACCORDANCE WITH THE FASTENER MANUFACTURERS WRITTEN INSTRUCTIONS. INSTALL THE WEB OF THE TOP CHANNEL 1/4" HIGHER THAN THE HEIGHT OF THE MIRROR TO ALLOW THE RAISING OF THE MIRROR IN TO THE TOP CHANNEL AND ITS SUBSEQUENT LOWERING INTO THE BOTTOM CHANNEL. AFTER INSTALLING FASTENERS PLACE MASKING TAPE OVER THE ENTIRE LENGTH OF THE BACK LIP OF THE CHANNEL COMPLETELY COVERING THE FASTENER HEADS TO PROTECT THE MIRROR FROM BEING CHIPPED IN SETTING. ADHERE SETTING BLOCKS AT QUARTER POINTS FOR BOTTOM MIRROR CHANNELS USING ONLY 2 SETTING BLOCKS PER MIRROR PANEL.
- b. TO DRYWALL: MARK THE LOCATIONS FOR THE STUD FASTENERS ON THE BACK LIP OF EACH MIRROR CHANNEL AT EQUAL INTERVALS NOT OVER 8" ON CENTER, AND NOT MORE THAN 3" FROM ENDS PRIOR TO DRILLING THE CHANNEL. DRILL AND COUNTERSINK, DO NOT DIMPLE BACK LIP OF CHANNEL TO RECEIVE STUD FASTENERS AT MARKED LOCATIONS WITH HOLES PROPERLY SIZED TO RECEIVE STUD FASTENERS. ATTACH MIRROR CHANNELS BY SCREW ATTACHING MIRROR CHANNEL THROUGH THE BACK LIP OF THE CHANNEL THROUGH DRYWALL, STUD FRAMING AND SHEET METAL BACKER PLATE SUBSTRATES IN ACCORDANCE WITH THE FASTENERS MANUFACTURERS WRITTEN INSTRUCTIONS.

- INSTALL THE WEB OF THE TOP CHANNEL 1/4" HIGHER THAN THE HEIGHT OF THE MIRROR TO ALLOW THE RAISING OF THE MIRROR INTO THE TOP CHANNEL AND ITS SUBSEQUENT LOWERING INTO THE WEB OF THE BOTTOM CHANNEL. AFTER INSTALLING FASTENERS PLACE MASKING TAPE OVER THE ENTIRE LENGTH OF THE BACK LIP OF THE CHANNEL COMPLETELY COVERING THE FASTENER HEADS TO PROTECT THE MIRROR FROM BEING CHIPPED IN SETTING. ADHERE SETTING BLOCKS TO THE WEB OF THE BOTTOM MIRROR CHANNELS, LOCATED AT QUARTER POINTS, USING 2 SETTING BLOCKS PER MIRROR PANEL.

#### 4. WOOD TRIM & INSTALLATION

- a. BEFORE INSTALLING MIRROR WOOD TRIM, EXAMINE SHOP-FABRICATED WORK FOR COMPLETION AND COMPLETE WORK AS REQUIRED: PRIME TO ALL EXPOSED SURFACES OF THE MIRROR WOOD TRIM WHICH WILL BE IN CONTACT WITH THE MIRROR BACKING TO ELIMINATE INTERACTIONS BETWEEN THE RESINS IN THE WOOD AND THE MIRROR BACKING.
- b. INSTALL MIRROR WOOD TRIM PLUMB, LEVEL, TRUE AND STRAIGHT WITH NO DISTORTIONS. SCRIBE OUT MIRROR WOOD TRIM TO FIT ADJOINING WORK, AND REFINISH CUT SURFACES AND REPAIR DAMAGED FINISH AT CUTS. INSTALL WITH MINIMUM NUMBER OF JOINTS POSSIBLE, USING FULL-LENGTH PIECES (FROM MAXIMUM LENGTH OF WOOD TRIM AVAILABLE) TO GREATEST EXTENT POSSIBLE. DO NOT USE PIECES LESS THAN 16" LONG, EXCEPT WHERE SHORTER SINGLE-LENGTH PIECES ARE NECESSARY. SCARF RUNNING JOINTS. MITERS OVER 4" LONG SHALL BE SPLINED AND GLUED.

#### J. PROTECTION AND CLEANING

1. PROTECT MIRRORS FROM BREAKAGE AND CONTAMINATING SUBSTANCES RESULTING FROM CONSTRUCTION OPERATIONS. USING CLEAN WARM WATER, CLEAN MIRRORS BY METHODS RECOMMENDED IN REFERENCED GLAZING STANDARDS.

#### DIVISION 09 - FINISHES

##### SECTION 09215 - GYPSUM BOARD ASSEMBLIES

- A. GENERAL: PROVIDE GYPSUM BOARD SYSTEMS INCLUDING METAL FRAMING ACCESSORIES, GYPSUM BOARD, JOINT TREATMENT, ACOUSTICAL INSULATION, ACOUSTICAL SEALANT, AND ACCESSORIES AS REQUIRED FOR COMPLETE INSTALLATION.
- B. STANDARDS: COMPLY WITH ASTM C754 AND ASTM C840, AND REQUIREMENTS FOR FIRE RATINGS.
1. DEFLECTIONS: MAXIMUM L/240 TYPICAL, L/260 AT LOCATIONS INDICATED TO RECEIVE TILE.
- C. FIRE-RATED ASSEMBLIES: LISTED BY UNDERWRITER'S LABORATORY, GYPSUM ASSOCIATION (GA) FILE NO'S IN GA-600 FIRE RESISTANCE DESIGN MANUAL, OR OTHER LISTING APPROVED BY APPLICABLE AUTHORITIES.
- D. SYSTEMS RESPONSIBILITY: PROVIDE PRODUCTS MANUFACTURED BY OR RECOMMENDED BY MANUFACTURER OF GYPSUM BOARD TO MAINTAIN SINGLE-SOURCE RESPONSIBILITY FOR SYSTEM.
- E. MANUFACTURERS: USG, GEORGIA PACIFIC, OR NATIONAL GYPSUM.
- F. METAL FRAMING: CONFORM TO ASTM C754; COMPLETE 16 GAGE AND LIGHTER STEEL FRAMING AND SUSPENSION SYSTEM FOR GYPSUM BOARD SYSTEMS; PROVIDE ACCESSORIES REQUIRED FOR COMPLETE INSTALLATION.
1. MANUFACTURED SUSPENSION SYSTEM SUCH AS CHICAGO METALLIC/DRYWALL SYSTEM IS ACCEPTABLE.
- G. GYPSUM BOARD: CONFORM TO C840; UL LISTED FIRE RESISTANT GYPSUM BOARD THROUGHOUT.
1. STANDARD: ASTM C36, 5/8" THICK.
2. CORE BOARD: ASTM C442, 1" THICK.
- H. GYPSUM BOARD ACCESSORIES: COMPLY WITH ASTM C840.
1. PROVIDE PROTECTIVE COATED STEEL CORNER BEADS AND EDGE TRIM; TYPE DESIGNED TO BE CONCEALED IN FINISHED CONSTRUCTION BY TAPE AND JOINT COMPOUND.
2. CORNER BEADS: MANUFACTURER'S STANDARD METAL BEADS.
3. REINFORCING TAPE: JOINT COMPOUND, ADHESIVE, WATER, FASTENERS: TYPES RECOMMENDED BY SYSTEM MANUFACTURER AND CONFORMING WITH ASTM C475.
4. AIR INFILTRATION: AIR INFILTRATION RATE SHALL NOT EXCEED 0.06 CFM/FT2 AT A STATIC AIR PRESSURE DIFFERENTIAL OF 6.24 PSF AS TESTED IN ACCORDANCE WITH ASTM E283.
5. WATER RESISTANCE: THERE SHALL BE NO LEAKAGE AT A MINIMUM STATIC AIR PRESSURE DIFFERENTIAL OF 12 PSF AS TESTED PER ASTM E331.
6. MAXIMUM CALCULATED DEFLECTION OF ANY FRAMING MEMBER IN DIRECTION NORMAL TO THE PLANE OF THE WALL WHEN SUBJECTED TO SPECIFIED PRESSURES SHALL BE LIMITED TO 1/175 OF THE SPAN BUT NO MORE THAN 3/4".
- I. FIRE RATED CONSTRUCTION: COMPLY WITH UNDERWRITER'S LABORATORIES CERTIFIED FIRE TESTS AND APPLICABLE CODE REQUIREMENTS.
1. SHAFT WALL SYSTEM: PROVIDE AT SHAFTS AND WHERE INDICATED.
- J. ACOUSTICAL ACCESSORIES: PROVIDE ASTM C665, TYPE I ACOUSTICAL INSULATION AND ASTM C919 PAINTABLE ACOUSTICAL SEALANTS WHERE ACOUSTICAL SYSTEMS ARE INDICATED.
- K. INSTALLATION: COMPLY WITH MANUFACTURER RECOMMENDATIONS, REFERENCED AND APPLICABLE REQUIREMENTS FOR FIRE RATINGS AND ACOUSTICAL RATINGS.
1. SPECIAL METAL STUD AND GYPSUM DOOR. PROVIDE SPECIAL CONFIGURATION AS INDICATED ON DRAWINGS.
- L. METAL FRAMING ERECTION: ERECT METAL FRAMING IN ACCORDANCE WITH ASTM C754 AND MANUFACTURER'S RECOMMENDATIONS.
1. INSTALL METAL FRAMING TO LINES AND LEVELS TO PROVIDE SURFACE FLATNESS WITH MAXIMUM VARIATION OF 1/8" IN 10'-0" IN ANY DIRECTION.
2. DOOR OPENING FRAMING: INSTALL DOUBLE STUDS AT DOOR FRAME JAMBS; INSTALL RUNNERS ON EACH SIDE OF OPENING AT FRAME HEAD HEIGHT BETWEEN JAMB STUDS AND ADJACENT STUDS.
3. INSTALL METAL FRAMING BACKING WHERE REQUIRED FOR SUPPORT OF FIXTURES, CABINETS, ACCESSORIES AND HARDWARE.
4. COORDINATE INSTALLATION OF BUCKS, ANCHORS, BLOCKING, ELECTRICAL AND MECHANICAL WORK WHICH IS TO BE PLACED IN OR BEHIND PARTITION FRAMING; ALLOW ITEMS TO BE INSTALLED AFTER FRAMING IS COMPLETE.
- M. CEILING FRAMING INSTALLATION: ERECT IN ACCORDANCE WITH ASTM C754 AND MANUFACTURER'S RECOMMENDATIONS. REINFORCE OPENINGS IN CEILING SUSPENSION SYSTEM. LATERALLY BRACE ENTIRE SUSPENSION SYSTEM.
- N. GYPSUM BOARD INSTALLATION: INSTALL IN ACCORDANCE WITH ASTM C840 AND MANUFACTURER'S RECOMMENDATIONS. USE SCREENS WHEN FASTENING GYPSUM BOARD TO FURRING AND TO FRAMING.
1. FOR FIRE RATED SYSTEMS COMPLY WITH REQUIREMENTS FOR FIRE RATINGS.
2. PLACE CORNER BEADS AT EXTERNAL CORNERS; USE LONGEST PRACTICAL LENGTHS.
3. PLACE EDGE TRIM WHERE GYPSUM BOARD ABUTS DISSIMILAR MATERIALS.
4. TAPE, FILL, AND SAND EXPOSED JOINTS, EDGES, CORNERS AND OPENINGS TO PRODUCES SURFACE READY TO RECEIVE FINISHES; FEATHER COATS ONTO ADJOINING SURFACES.
5. FINISHING: COMPLY WITH GYPSUM ASSOCIATION (GA) "LEVELS OF GYPSUM BOARD FINISH" GA LEVEL 4; THREE COAT FINISHING AND SANDING IS REQUIRED FOR SURFACES INDICATED TO BE PAINTED; PROVIDE FLUSH, SMOOTH JOINTS AND SURFACES READY FOR APPLIED PAINT FINISHES.
6. REMOVE AND REPLACE DEFECTIVE WORK.

- O. ACOUSTICAL ACCESSORIES INSTALLATION.
1. PLACE ACOUSTICAL INSULATION TIGHT WITHIN SPACES, AROUND CUT OPENINGS, BEHIND AND AROUND ELECTRICAL AND MECHANICAL ITEMS WITHIN PARTITIONS, AND TIGHT TO ITEMS PASSING THROUGH PARTITIONS.
2. PLACE ACOUSTICAL SEALANT WITHIN PARTITIONS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS; INSTALL ACOUSTICAL SEALANT AT GYPSUM BOARD PERIMETER, AT BASE LAYER AND FACE LAYER OF GYPSUM BOARD, AND PENETRATIONS OF PARTITIONS.
3. TOLERANCE: MAXIMUM 1/4" SPACE BETWEEN GYPSUM BOARD AT FLOOR, CEILING, AND PENETRATIONS.
4. INSTALL ELECTRICAL BOX PADS WITH PADS MOLDED AND PRESSED ON BACK SIDE OF BOX, CLOSING OPENINGS, IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, FOR COMPLETE ACOUSTICAL BARRIER.
- P. RECESSED WALL STUD INSTALLATION SEQUENCE
1. REMOVE RUBBER FILLER FROM STANDARD BEFORE RECESSED STUD IS PUT IN PLACE.
2. MASK TAPE STANDARD PORTION OF RECESSED STUD FOR ALL WALLS RECEIVING PAINT OR WALL COVERING.
3. SET RECESSED STUDS IN WALL.
4. USE LASER TO SET CONSISTENT HEIGHT OF STANDARD PORTION OF RECESSED STUDS - SCREW CLIP IN TOPS AND BOTTOMS. (SET INSERT 7'-0" A.F.F.)
5. INSTALL DRYWALL ON RECESSED STUDS - AVOID DRYWALL FACTORY EDGE AGAINST STANDARD (REQUIRES EXCESSIVE MUD BUILD UP).
6. FLAT TAPE DRYWALL AGAINST STANDARD.
7. SAND MUD DOWN TO STANDARD TO AVOID EXCESS BUILD UP.
8. APPLY ALL FINISH MATERIALS TO WALL PRIOR TO CUTTING OUT STANDARD SLOTS.
9. USE RAZOR BLADES TO CUT OUT STANDARD SLOTS - TOPS AND BOTTOMS OF ALL SLOTS MUST ALIGN. CUTS TO BE MADE INSIDE OF STANDARD SLOTS.
10. WHEN COMPLETE - INSTALL BRACKETS ON EACH STANDARD AND INSTALL ROD TO VERIFY ALIGNMENT.

1. FLOOR TILE: PROVIDE NON-SLIP UNITS WITH MINIMUM WET AND DRY VALUE OF 0.60 COEFFICIENT OF FRICTION WHEN TESTED IN ACCORDANCE WITH ASTM C1028.
2. LATEX THIN SET: THINSET BOND COAT, LATEX-CEMENTITIOUS MORTAR CONFORMING TO ANSI A118.4.

1. FINISHED CEILINGS: TRUE TO LINES AND LEVELS AND FREE FROM WARPED, SOILED OR DAMAGED GRID OR ACOUSTICAL UNITS.
2. INSTALL CEILING SYSTEMS IN A MANNER CAPABLE OF SUPPORTING SUPERIMPOSED LOADS, WITH MAXIMUM PERMISSIBLE DEFLECTION OF 1/8"IN 10'-0".
3. ENSURE SUSPENSION SYSTEM IS LOCATED TO ACCOMMODATE FITTINGS AND UNITS OF EQUIPMENT WHICH IS TO BE PLACED AFTER INSTALLATION OF CEILING GRID.
4. WHERE DUCTS OR OTHER EQUIPMENT PREVENT REGULAR SPACING OF HANGERS, REINFORCE WORK WHICH IS TO BE PLACED IN OR BEHIND PARTITION FRAMING; ALLOW ITEMS TO BE INSTALLED AFTER FRAMING IS COMPLETE.

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