SECTION 08 34 40 , RADIATION PROTECTION DOORS, WOOD AND PLASTIC DOORS

PART 1 – GENERAL

1.01 SUMMARY

A. Doors must be manufactured to national wood work standards, constructed with the finest core, edging and face veneers available. Door veneer as specified for project.

B. Doors must be fabricated of solid core construction with one or more continuous layers of unpierced lead sheet(s) equivalent to same lead thickness as in surrounding partition that door occurs in.

C. Lead thickness as specified by a qualified health radiation physicist familiar with local standards and regulations.

1. Must Comply with requirements of National Council on Radiation Protection and Measurement (NCRP) Report No. 49"Structural Shielding Design and Evaluation for Medical Use of X-Rays and Gamma Rays of Energies up to 10 MeV", and NCRP Report No. 147 "Structural Shielding Design for Medical X-Ray Imaging Facilities".
2. Must Comply with requirements of local regulatory agencies where standards and criteria exceed NCRP Reports 49 and 147.
3. Lead thickness is to be labeled on door, and of same or greater value as partition in which door opening occurs.

1.02 REFERENCES

A. **Standards:** Comply with requirements of the National Council on Radiation Protection and Measurements (NCRP), Report No. 147 "Structural Shielding Design or Medical X-Ray Imaging Facilities".

B. Comply with lead shielding equivalents as specified by the qualified health radiation physicist report for this particular project.

Lead Lined Wood Doors meet or exceed the following specifications or standards:

NWMA – National Woodwork Manufacturers Association (Industry standard for wood flush doors)
ANSI 208.1, LD-2 – American National Standards Insitute (Particle Board)
CS 236-66 – Commercial Standards, Type I, Grade C, Class I (Cores)
AWI 1300-Premium or "AA" – Architectural Woodwork Quality Standards
N.E.M.A. (High Pressure Plastic Laminate) * Where Applicable

1.03 RELATED DOCUMENTS

Related Sections are 13 4900 X-Ray Protection, 08 1420 Steel Frames, 08 1400 Flush Wood Doors and 08 1426 Plastic Faced Flush Wood Doors

1.04 SBMITTALS

A. Shop Drawings: Provide for all doors and other related materials specified for this Section.

1.05 PRODUCT HANDLING

A. Follow special storage and handling requirements to prevent warpage. Keep flat until ready to use. Never store in sun or areas where moisture is present.

PART 2 – PRODUCTS

2.01 APPROVED MANUFACTURERS / SUPPLIERS

Ray-Bar Engineering Corporation, Toll Free (800) 444-XRAY (9729) ·Phone 626-969-1818 24 Hour Fax (800) 333-XRAY(9729), www.raybar.com, e-mail sales@raybar.com, a recognized domestic manufacturer regularly engaged in the successful production of the products specified herein.

2.02 MATERIALS

A. Doors are fabricated of solid core construction with one or more continuous layers of unpierced lead sheet(s) equivalent to same lead thickness as in surrounding partition that door occurs in and clearly labeled on door. Reference radiation shielding report by project physicist of record for thickness of lead required.

B. **Thickness**: 1-3/4", width and height as indicated on door schedule. Thicker lead may increase overall thickness of door.

C. **Core**: Dense particle board meeting CS 236-66, TYPE 1 DENSITY C, CLASS 1 or better.

D. **Lead Sheet:** 99.9% pure meeting Federal Specification QQ-L-201f, Grade C.

E. **Vertical Edges:** Minimum 1-1/4" wide 2-ply edge strips adhered to core.

F**. Top and Bottom Rails**: Minimum 2-1/2" wide 3-ply edge strips adhered to core.

G**. Faces**: As specified on door schedule.

2.03 QUALITY ASSURANCE

A. Doors manufactured by Ray-Bar Engineering Corporation will comply with requirements of National Council on Radiation Protection and Measurement (NCRP) Report No. 49 "Structural Shielding Design and Evaluation for Medical Use of X-Rays and Gamma Rays of Energies up to 10 MeV", and NCRP Report No. 147 "Structural Shielding Design for Medical X-Ray Imaging Facilities".

1. These doors must comply with requirements of local regulatory agencies where standards and criteria exceed NCRP Reports 49 and 147.
2. Lead thickness will be of same or greater value as in partition door opening occurs in.

B. Fabricator Qualifications: Fabricator / Manufacturer shall be experienced in, equipped for and insured for fabrication equal to standards specified herein. The fabricator shall furnish evidence of Manufacturer having not less than ten (10) years experience in successful fabrication of radiation protection materials similar to products specified herein.

1. Fabricator shall furnish proof of insurance certifying Fabricator is specifically insured in the fabrication of X-Ray Protection / Radiation Shielding Materials.

Single source responsibility: Provide X-Ray Protection Materials and accessories produced as standard products of Ray-Bar Engineering Corporation, Toll Free (800) 444-XRAY · Phone (626) 969-1818 · Fax (800) 333-XRAY, www.raybar.com, Email:sales@raybar.com, a recognized manufacturer regularly engaged in the successful production of X-ray Protection and Radiation Shielding Materials for over 70 years.

PART 3 – EXECUTION

3.01 INSTALLATION

A. Installation shall be by the contractor with proper tolerances and fit, free of binding or excessive gaps.

B. Lead Lined hardware or door sweeps to be installed where required to provide continuous radiation protection.

3.02 CERTIFICATION

Upon completion of material, manufacturer shall supply a certificate of compliance stating that all materials are in accordance with this specification and the radiation shielding report.

3.03 TESTING

After the X-Ray equipment has been installed and placed in operating condition but prior to occupancy and use, the radiation shielding shall be tested by the original calculating project health radiation physicist of record at Owners expense

END OF SECTION 08 34 40 RADIATION PROTECTION DOORS, WOOD AND PLASTIC DOORS