

Work Specifications

LABORATORY SHIELDING FOR ELECTRICAL AND RADIO FREQUENCY (RF) INTERFACE

The Naval Research Laboratory (NRL) has a requirement to design, fabricate, and install electrical shielding in Building 210, Room 1460. The shielding is required to prevent electrical and RF interference within the laboratory spaces and leakage to neighboring spaces within the building. Work specifications are as follows:

1. The contractor shall design and build a new electrical and RF shielded enclosure completely contained within Room 1460. The enclosure shall possess its own floor resting on the existing room floor with 4 walls and a ceiling inside but not in contact with the existing room structure. All six surfaces shall be properly shielded to meet NSA 65-6 and MIL-STD-285 specifications.
2. The dimensions of the shielded enclosure shall be a minimum of 8' and a maximum of 9' in height, approximately 28' in length, and approximately 16 - 18' in width. Actual dimensions shall be consistent with manufacturer panel sizes so as to eliminate custom panel fabrication.
3. The contractor shall install a brass ground stud (1/2" x 5") to ensure proper grounding of all installed shielding in accordance with NSA 65-6 and MIL-STD-285 specifications.
4. Power requirements inside the shielded compartment are 8-10 evenly spaced RF-filtered receptacles of 110V/20 Amp, an RF-filtered receptacle of 440V/50Amp, and an RF-filtered receptacle of 220V/30Amp.
5. RF-filtered overhead fluorescent lighting fixtures shall be installed within the enclosure to meet the guidelines contained in ANSI / IESNA RP-7-01, Lighting Industrial Facilities.
6. Install two new manually operated, low profile sill, double leaf, swing type, RF-shielded doors which are approximately 7' in height, total a minimum of 6' in width, and meets NSA 65-6 and MIL-STD-285 specifications. NRL shall determine the exact location of the doors during installation.
7. Install door maintenance kits in order to sustain operational RF isolation integrity and proper lubrication for the RF type doors which inherently possess components susceptible to structural failure.
8. A ramp shall be installed outside the entrance to the RF-shielded doors.
9. Install a bulkhead connector panel (12" x 18") in a shielded wall to the data acquisition room. NRL shall determine the exact location of the bulkhead connector panel from existing data acquisition locations during installation.
10. The contractor shall measure the RF isolation between the shielded compartment and the adjacent walls in the room outside the shielded compartment. The RF isolation over the frequency band 200 MHz to 10 GHz must be at least 60 dB. The RF isolation over the frequency band 10 GHz to 94 GHz may be lower than the goal but should be as high as is reasonable achievable.