

1. DESIGN STANDARD:

- 1.1 The design professional shall include a requirement in the Contract Documents to include a dimensioned drawing of all conduits buried on the Site. Conduits to be recorded include conduits in use, future conduit runs (spare conduits), conduit ductbanks and conduit stub-outs. Conduit stub-outs shall also include a dimensioned drawing indicating the end of the conduit run.
- 1.2 Use of conduits in the tunnels shall be coordinated with the Rice University's Project Manager.

2. PRODUCT STANDARD:

- 2.1 Wireways in wet or damp locations shall be provided with gasketting.
- 2.2 In general, warning tape will not be required for buried conduits.
- 2.3 Outlet Box: Wall mounted, minimum size of square 4" x 4" x 2 1/8". Ceiling mounted, minimum size of octagonal 4" x 2 1/8".
- 2.4 In general, non-metallic multi-cell type conduit is not a product that is used for multi-raceway communications.
- 2.5 Listed raceway support blocks are used to mount conduits routed across roofing. 2 x 2 wooden blocks are not acceptable.
- 2.6 Underground ductbank (less than 600 volts) may be rigid steel conduit, or schedule 40 PVC or EB type (for concrete encasement). At turns, conduit shall transition to rigid conduit. Where conduit exits the ductbank, conduit shall transition to rigid steel conduit. All underground ductbanks (feeders) shall be concrete encased (except where installed by boring. For voltages above 600V, the ductbank shall be red concrete. Underground branch circuits may be direct buried without concrete encasement, provided the minimum distance below grade required per the National Electrical Code is observed.
- 2.7 Any conduits used in tunnels to be Rigid Aluminum.

3. PERFORMANCE STANDARD:

- 3.1 Damp and wet locations above grade generally require rigid conduit. EMT and PVC are not acceptable in these locations.
- 3.2 Minimum Size: Conduit home runs (to panelboard) shall be 3/4" conduit, minimum. Conduit runs at building exterior and below grade shall be 3/4", minimum. Power conduit runs inside of building to be 1/2", minimum. Pullboxes shall be installed in conduit runs such that no conduit run is longer than 100' and no run has greater than 270 degrees of bends.

- 3.3 Pull cords shall be provided in all empty conduits for future use. Pull cord to be 270# test, minimum.
- 3.4 Install raceway runs that exceed 100 feet with a maximum of 270-degrees of bends.
- 3.5 PVC coated rigid steel conduit: Proper means, methods and materials shall be specified for the installation of PVC coated rigid steel conduit. Installation shall conform to manufacturer's recommendations. Repair of damaged conduit shall be with manufacturer's recommended repair compound, applied per manufacturer's instructions.
- 3.6 Spare conduits shall be provided at the corners of all new buildings as a means to route future power and signal conductors from inside of the building to outside of the building.
- 3.7 Location of conduits in the tunnels shall be coordinated with new and existing mechanical and plumbing. Conduits are not to be placed in close proximity of new or existing mechanical or plumbing lines, discuss with Rice University's Project Manger minimum distance that conduits can be located from mechanical and/or plumbing lines.
- 3.8 Raceway System Color Code: Emergency power distribution systems shall be RED.
- 3.9 Raceway System Color Code: Fire alarm systems shall be YELLOW.