

26 22 00 Low Voltage Transformers

Revision 01/04/2019

Purpose:

The Architect and/or Engineer shall incorporate the Rice specific requirements indicated in this standard's section into their design. The Architect and/or Engineer shall further produce project specifications in line with industry standards that are updated to reflect these Rice specific requirements.

1. Dry-type Transformers

- a. Core windings: copper.
- b. Insulation system and average winding temperature rise as follows:
 - i. Class 220 with 115(max) degrees C rise above 30 degrees C average ambient (24 hour period), 40 degrees C maximum ambient.
 - ii. Enclosure temperature: Do not exceed 50 degrees C rise above 40 degrees C maximum ambient at warmest point at full load.
- c. Energy Efficiency: Comply with DOE 2016 and NEMA TP1
- d. Winding Taps:
 - i. Transformers 15 kVA and Larger: NEMA ST 20.
 - ii. Sound Levels: NEMA ST 20.
 - iii. Basic Impulse Level: 10 kV.
 - iv. Ground core and coil assembly to enclosure by means of a visible flexible copper grounding strap.
- e. Coil Conductors: Continuous windings with terminations brazed or welded, impregnated with non-hygroscopic thermosetting varnish.
- f. Cores: Constructed with low hysteresis and eddy current losses. Magnetic flux densities shall be kept well below the saturation point to prevent core overheating. Isolate core and coil from enclosure using vibration absorbing mounts.
- g. Enclosure: NEMA ST 20, Type 1, ventilated. Provide lifting eyes or brackets.
- h. Floor mount transformers on housekeeping pads in mechanical and electrical rooms.
 - i. Wall or suspended mounting is acceptable for smaller (45kVA and less) transformers, but not preferred. Provide vibration isolation pads to reduce noise transmission.
 - ii. Stacked transformers (mounted above another transformer) are not allowed to avoid heat transfer from lower transformer to upper.
- i. Use flexible conduit, 2 feet minimum length, for connections to transformer case to reduce transmission of vibrations. Make conduit connections to side panel of enclosure.
- j. Route grounding electrode conductor, sized in accordance with the NEC, from transformer neutral lug to grounding electrode system.