

## DIVISION 26 – ELECTRICAL

### SECTION 26 22 13 – LOW-VOLTAGE DISTRIBUTION TRANSFORMERS

#### PART 1: GENERAL

##### 1.01 Scope of Standard

- A. This standard provides general guidance concerning the specific preferences of Texas State University-San Marcos for Low-Voltage Distribution Transformers.
- B. Texas State University-San Marcos recognizes that project conditions and requirements vary, thus precluding the absolute adherence to the items identified herein in all cases. However, unless there is adequate written justification, it is expected that these guidelines will govern the design and specifications for Texas State University-San Marcos projects.

#### PART 2: PRODUCTS

- A. Up to 5 kVA: (1ph and 3ph) shall be totally enclosed, self-cooled dry-type with a 150 ° C insulation system that will not exceed a 80 ° C rise at a maximum ambient temperature of 40 ° C
- B. 5 kVA to 25 kVA: (1ph and 3ph) shall be totally enclosed, solid fill, self cooled with a 185 degree C insulation system that will not exceed a 115 ° C rise at maximum ambient temperature of 40 ° .
- C. 30 kVA and above: shall be open, self-cooled dry-type, designed for free convection of air through the windings with a 220 ° C insulation system that will not exceed a 150 ° rise at maximum ambient temperature of 40 ° C.
- D. Taps in the high voltage winding shall be four each 2-1/2% FCBN for the following ratings: 30 KVA and above, three phase; 5 KVA through 25 KVA, single phase. Taps shall be two each 5% FCBN for all other units except that units rated below 1.0 KVA do not require taps. Additional or smaller taps may be supplied (10% total BN required) if it is the manufacturer's standard.
- E. Larger transformers for facilities shall be designed for location on the ground floor. The electrical engineer is responsible for coordinating maximum transformer weights and anticipated floor loading with the project structural engineer.
- F. Transformers installed in electrical rooms shall be designed and sized in coordination with architect and door dimensions. All transformers sized above 225 kVA shall require double doors or doors in excess of standard 36" width.
- G. Transformers 15 kVA and above are to be floor mounted. Up to 15 kVA may be wall mounted or ceiling mounted if appropriate for the room layout.
- H. Electrical engineer shall provide detail layouts of electrical rooms indicating transformer locations drawn to scale with special mounting instructions as appropriate.
- I. All transformers are to be given an alphanumeric label that will relate the transformer on the room detail to the transformer on the single line diagram.

- J. The single line diagram shall indicate the alphanumeric identifier, the transformer size (kVA), and the primary and secondary voltages.
- K. Transformers for Non-Linear Loads (K-rated) shall be used in applications where required.
- L. Transformers shall be new (no re-builds), and have copper windings. Both High and Low voltage bushings shall be configured for lug terminations.
- M. The electrical engineer shall detail the designed location of the transformer(s) on enlarged room detail floor plans drawn to scale.

### **PART 3: EXECUTION (NOT USED)**

END OF SECTION 26 22 13