

PART 1 - GENERAL

1.1 REFERENCE  
STANDARDS

- .1 CSA International
  - .1 CAN/CSA-C22.2 No.47-13(R2012) Air-Cooled Transformers (Dry Type).
  - .2 CSA C9-02(R2016), Dry-Type Transformers.
  - .3 CAN/CSA-C802.2-18 Minimum Efficiency Values for Dry Type Transformers.
- .2 National Electrical Manufacturers Association (NEMA)
- .3 Natural Resources Canada Energy Efficiency Regulations for Dry Type Transformers.

1.2 ACTION AND  
INFORMATIONAL  
SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's instructions, printed product literature and data sheets for dry type transformers and include product characteristics, performance criteria, physical size, finish and limitations.

1.3 CLOSEOUT  
SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for dry type transformers for incorporation into manual.

1.4 DELIVERY,  
STORAGE AND  
HANDLING

- .1 Deliver, store and handle materials in accordance with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
  - .1 Store materials indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .2 Store and protect dry type transformers from

nicks, scratches, and blemishes.

- .3 Replace defective or damaged materials with new.

## PART 2 - PRODUCTS

### 2.1 DESIGN DESCRIPTION

- .1 Design:
  - .1 Type: ANN.
  - .2 Single or 3 phase, size, primary and secondary voltage as indicated
  - .3 Voltage taps: standard to 2½% above and 2½% below.
  - .4 Efficiency: to Natural Resources Canada Energy Efficiency Regulations for Dry Type Transformers.
  - .5 Insulation: 150 degrees C temperature rise.
  - .6 Basic Impulse Level (BIL): standard.
  - .7 Hipot: standard.
  - .8 Average sound level: standard
  - .9 Impedance at 170 degrees C: standard
  - .10 Enclosure: CSA Type 2, removable metal front panel.
  - .11 Mounting: floor or wall as indicated.
  - .12 Finish: in accordance with Section 26 05 00 - Common Work Results for Electrical.
  - .13 Copper windings.
  - .14 Voltage Regulation to be 4% or better.

### 2.2 EQUIPMENT IDENTIFICATION

- .1 Provide equipment identification in accordance with Section 26 05 00 - Common Work Results for Electrical.
- .2 Label size: 7.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- .1 Mount dry type transformers up to 75 kVA as indicated.
- .2 Mount dry type transformers above 75 kVA on floor.
- .3 Ensure adequate clearance around transformer for ventilation.

- .4 Install transformers in level upright position.
- .5 Remove shipping supports only after transformer is installed and just before putting into service.
- .6 Loosen isolation pad bolts until no compression is visible.
- .7 Make primary and secondary connections in accordance with wiring diagram.
- .8 Energize transformers after installation is complete.
- .9 Make conduit entry into bottom 1/3 of transformer enclosure.

### 3.2 CLEANING

- .1 Progress Cleaning: Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment.
- .3 Waste Management: separate waste materials for reuse and recycling.
  - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

### 3.3 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by dry type transformers installation.

END OF SECTION