

A. GENERAL CONDITION

COMPACT substation is a substation that has the features like conventional substation as well as some other advantages, such as reduction of dimension and prefabricated manufacturing.

Geography

It could be located at site, which has some conditions as follows:

- Tropical climate.
- Ambient temperature: 28^o - 35^o C.
- Humidity 80% - 100%.
- The altitude shall be below 1000 meters above sea level.
- Outdoor.

Advantage of GRC Compact Substation

- Better internal arc withstand capability
- Corrosion resistant
- Maintenance free
- Fire resistant
- Good integration to the environment
- High mechanical strength
- Insensitive to variation in temperature
- Weather proof
- Extended product live
- Undeniable sound properties
- High resistant to chemical agents

B. SUBSTATION ENCLOSURE

The roof of substation shall be design to support loads up to 250 kg/m², waterproof, weather proof, well painted at the outer and inner. The basement of substation has to strong enough with a minimum thickness of 100 mm, permissible overload 500 kg/m². The housing is fully weather proof to IP 54 standard (IEC standard) and shall be sufficiently provided with holes for incoming-outgoing cable and could be sealed in order to avoid water entering the substation. The doors shall be made of *Steel Sheet* with a minimum thickness of 2 mm, protected with *Powder Coating system*. Door closings will be done by means of locked-bolt controlled by handle with integral locking key. Hasp is also to be fitted in order that doors can be locked-out by means of padlocks. Grounding circuit is sufficiently made with copper bar or BC wires.

Ventilation apertures are located in such manner in order that losses of the transformer can be naturally flown. It is necessary to consider of ventilation, the center point of ventilation of enclosure and the transformer, the temperature rise caused by the outer (except for the transformer's losses) that the operating temperature of transformer do not exceed the permissible temperature in IEC standard.

The temperature rise of transformer shall be maximum 20^o C in comparison the operating temperature inside the enclosure with outside one.

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C. CONSTRUCTION OF THE ENCLOSURE

Dimension and weights

- Maximum Length : 2350 mm
- Maximum Width : 1500 mm
- Total Height : 2250 mm

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