
Rule 2-400, Table 65 Enclosures, type designations, and use

Background:

Type 3R or 3RX ventilated enclosures are frequently used for outdoor installations. When the conditions are blowing snow and rain, we are witnessing snow and rain entering the enclosure leading to failures. Equipment such as transformers and generators built with 3R or 3RX enclosures are particularly susceptible.

Question:

Are type 3R and 3RX ventilated enclosures suitable for use in environments that have blowing snow and rain?

Answer:

No, type 3R and 3RX ventilated enclosures are not suitable.

Rationale:

Type 3R and 3RX are only required to meet a rain test, which consists of a water spray falling downwards at a 45 degree angle from above the enclosure. All other enclosures for outdoors in Table 65 are required to pass a wind blown dust test. There is currently a CSA working group tasked with fixing this problem.

Direction:

Historically, type 3R and 3RX have been widely accepted for outdoor installations. Due to installations being planned and equipment ordered months before the installation takes place, this could be a surprise to the installer if not accepted. Going forward, inspectors shall request a letter to be provided from the manufacturer of the equipment stating if the enclosure is suitable for blowing snow and rain. If the manufacturer doesn't provide the letter, other means can be employed to reduce the effects of the blowing snow and rain. Alternative measures such as wind blocks or location in protected areas that will minimize the entry of rain and snow to the enclosure will be considered on a case by case basis.