
Vanguard ELECTRIC

A Southern States Company

Southern States

# ANSI
## Post Type
## INSULATORS CATALOG

# INDEX

Vanguard ELECTRIC

40,000sqf Warehouse - Ample Stock of most common TR references.

Intro

# INTRODUCTION
## General Info

**Vanguard Electric, LLC** is a U.S member company of the Southern States Group of companies (www.southernstatesllc.com) dedicated to sourcing top quality electrical components for internal use by other group companies, as well as by the customers they serve.

**Vanguard Electric** brings to its customers high quality products that have been carefully researched, vetted and adapted to the U.S market so they meet all technical requirements at very competitive prices. Our highly specialized team is dedicated to source OEM products from top world manufacturers that comply with the highest standards that we have defined for our brand. Vanguard Electric stands for quality, competitive pricing and total reliability on all aspects that are critical for your successful projects.

At **Vanguard Electric, LLC**, consistent with the spirit of the group we are part of, we recognize the importance of providing a quality product to our customers. Further, we believe that the customer's buying experience as a whole ultimately determines whether or not continued success is attainable. To ensure successful projects for our customers, we strive to offer a combination of features that we are confident will provide a very satisfactory experience with our company:

- Top quality product manufactured to our specification (and in full compliance of applicable U.S and applicable international standards) by top world-class manufacturers. We establish long-term relationships, constantly monitor their facilities, and require the highest standards.
- We buy in large quantities (in many products for our sister group companies) and transfer the savings to our customers. We offer very competitive pricing so you know you are paying for top quality products but not for large overheads or overpriced brand names.
- Vanguard Electric, LLC keeps a seasoned team of engineers and specialized consultants that provide our customers with effective and reliable support at every step (selection, application, troubleshooting, service).

- Tough quality assurance requirements, which we monitor constantly to assure compliance.
- Clear, complete and easily available technical information (online and in printed format).
- A professional inside sales group supported by a solid network of local agents in the U.S. We want to always be available to you.
- Domestic (U.S.A) service and support.
- A large stock of the most popular references used in the market (customer specific stocking programs available).

**VANGUARD ELECTRIC – ANSI POST TYPE INSULATORS**

Our post type insulator product lineup is among the most complete in today's market. We offer all ANSI C29.9 TR references from the TR-202 to the TR-391, with many variations in strength, leakage distance, shed configuration, color, and special seismic requirements.

**General Features**

- Manufactured in state of the art ISO9001 certified, highly automated facilities which results in highly uniform and reliable production.
- High strength solid-core porcelain body.
- Wet Process porcelain manufacturing system (isostatic process used for some of ultra high strength designs).
- Designed in compliance to ANSI C29.9 and CSA C156.1 standards (please contact us to certify compliance to other standards).
- Routine testing as per ANSI C29.9 includes dimensional, alignment, ultrasonic, mechanical strength.
- Multiple options of shed designs, strength, leakage distance, color, fittings, special seismic requirements.
- We stock ANSI 70 Gray insulators (most commonly used in the U.S). Chocolate brown insulators available upon request.
- ASTM A153M galvanized cast iron fittings. Bolt holes are protected against oxidation with special silicone grease and plastic caps. Fittings are cemented to the porcelain using carefully formulated and cured high strength Portland cement and silica sand.
- **5 Year warranty.**

KEY

# KEY TO THE CATALOG NUMBERS

| | |
|---|---|
| V | VANGUARD ELECTRIC |
| TR | ANSI C29.9 POST TYPE |
| XXX | THREE DIGITS DESCRIBING TR REFERENCE (202, 205, ..., 391) |
| S | **STRENGTH**<br>S: STANDARD STRENGTH<br>H: HIGH STRENGTH |
| S | **LEAKAGE DISTANCE**<br>S: STANDARD LEAKAGE DISTANCE<br>H: HIGH LEAKAGE DISTANCE<br>1 TO 9: SPECIAL HIGHER LEAKAGE DISTANCE ( ASSIGNED BY VANGUARD) |
| G | **COLOR:**<br>G: GRAY<br>B: BROWN |

**EXAMPLE: VTR208SSG = VANGUARD ELECTRIC TR208, STANDARD STRENGTH, STANDARD LEAKAGE DISTANCE, GRAY COLOR**

Available Options (upon request)

For Post Type Insulators there are many variations not necessarily listed in this catalog.

Some of the available variations that Vanguard Electric can provide (upon request) are:

- High strength units (extra high strength, special seismic designs, etc.)
- High leakage distance units special for highly humid or contaminated areas.
- Special metal end caps with custom made perforations.
- Special shed designs (alternating large/small, plain, others)
- IEC (Not ANSI) Post Types.

Notes

# DATA SHEET NOTES

1. All VE catalog numbers as shown in this chart correspond to gray porcelain designs. To specify chocolate porcelain please refer to Catalog Coding System page at the end of this catalog.

2. This catalog is intended for general reference. It shows the basic dimensions of each insulator. For detailed dimensional data please contact Vanguard Electric, LLC or download the insulator drawing from www.vanguardelec.com

3. All bolt holes are provided with imperial system threads with built in tolerance to accommodate galvanized bolts. For detailed dimensions please download the insulator drawing from www.vanguardelec.com. Special bolt threading available upon request.

4. Applicable standards: ANSI C29.9

5. Special designs with different variations to the listed specifications (dimensions, strength, shed designs, bolt circles, etc.) are available upon request.

6. ANSI C29.9 mechanical ratings are ultimate values not to be used as work load ratings. Designers shall refer to ANSI C2-1997 for recommendations on insulator work loads (which in broad terms specify 40% of ultimate cantilever strength and 50% of ultimate torsion strength).

7. TR288-HL (High Leakage) and TR289-HL are listed in consideration of them being a common requirement for many U.S utilities. For all other TR references this catalog only details the ANSI standard leakage distance version. Higher leakage units are available upon request.

# TECHNICAL INFO

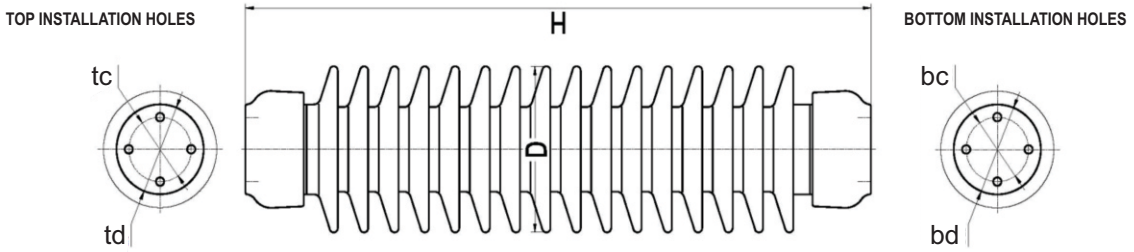


FIGURE 1

| ANSI TR Reference | TR202 | TR222 | TR205 | TR225 | TR208 | TR227 | TR210 | TR231 | TR214 | TR267 |
|---|---|---|---|---|---|---|---|---|---|---|
| VE Catalog # | VTR202SSG | VTR222SSG | VTR205SSG | VTR225SSG | VTR208SSG | VTR227SSG | VTR210SSG | VTR231SSG | VTR214SSG | VTR267SSG |
| **Dimensions inches** | | | | | | | | | | |
| H | 7.5 | 10 | 10 | 12 | 14 | 15 | 18 | 20 | 22 | 24 |
| D (max shed diameter) | 5.83 | 6.1 | 6.22 | 6.69 | 6.22 | 7.48 | 7.1 | 8.27 | 7.32 | 8.46 |
| Top Cap diameter (td) | 4.02 | 6.26 | 4.17 | 6.26 | 4.8 | 6.26 | 4.8 | 6.26 | 5.43 | 6.26 |
| Bottom Cap diameter (bd) | 4.02 | 6.26 | 4.17 | 6.26 | 4.8 | 6.26 | 4.8 | 6.26 | 5.43 | 6.26 |
| Top BCD (tc) | 3 | 5 | 3 | 5 | 3 | 5 | 3 | 5 | 3 | 5 |
| Bottom BCD (bc) | 3 | 5 | 3 | 5 | 3 | 5 | 3 | 5 | 3 | 5 |
| Leakage distance inches | 10.5 | 10.5 | 15.5 | 15.5 | 24 | 29.3 | 37 | 37 | 42.99 | 43 |
| Net weight (approx.) lb | 13.2 | 28.6 | 15.4 | 33.9 | 27.5 | 49.5 | 34.1 | 59.4 | 45.1 | 70.4 |
| **Mechanical Properties** | | | | | | | | | | |
| Cantilever strength lb | 2000 | 4000 | 2000 | 4000 | 2000 | 4000 | 2000 | 4000 | 2000 | 4000 |
| Tension strength lb | 7000 | 15000 | 8500 | 20000 | 10000 | 20000 | 12000 | 25000 | 13938 | 25000 |
| Torsion strength inch-lb | 6000 | 12000 | 10621 | 14000 | 8000 | 16000 | 10000 | 20000 | 12000 | 20000 |
| Compression strength lb | 10000 | 20000 | 10000 | 20000 | 10000 | 20000 | 15000 | 30000 | 15000 | 60000 |
| **Electrical Properties** | | | | | | | | | | |
| Critical impulse flashover (+) kV | 105 | 105 | 125 | 125 | 170 | 170 | 225 | 225 | 280 | 280 |
| Impulse withstand voltage kV | 95 | 95 | 110 | 110 | 150 | 150 | 200 | 200 | 250 | 250 |
| Low frequency withstand voltage (wet) kV | 30 | 30 | 45 | 45 | 60 | 60 | 80 | 80 | 100 | 100 |
| **Radio Influence Voltage Data** | | | | | | | | | | |
| Test voltage to ground kV | 5 | 5 | 10 | 10 | 15 | 15 | 22 | 22 | 30 | 30 |
| Maximum RIV at 1000 kHz µV | 50 | 50 | 50 | 50 | 100 | 100 | 100 | 100 | 200 | 200 |
| | Figure 1 | Figure 1 | Figure 1 | Figure 1 | Figure 1 | Figure 1 | Figure 1 | Figure 1 | Figure 1 | Figure 1 |

| ANSI TR Reference | TR216 | TR278 | TR286 | TR287 | TR288 | TR288-HL | TR289 | TR289-HL | TR291 | TR295 |
|---|---|---|---|---|---|---|---|---|---|---|
| VE Catalog # | VTR216SSG | VTR278SSG | VTR286SSG | VTR287SSG | VTR288SSG | VTR288S1G | VTR289SSG | VTR289S1G | VTR291SSG | VTR295SSG |
| **Dimensions inches** | | | | | | | | | | |
| H | 30 | 30 | 45 | 45 | 54 | 54 | 54 | 54 | 62 | 62 |
| D (max shed diameter) | 7.71 | 8.66 | 8.46 | 8.58 | 7.56 | 8.5 | 8.27 | 8.82 | 8.15 | 8.07 |
| Top Cap diameter (td) | 5.43 | 6.26 | 6.22 | 6.26 | 6.26 | 6.26 | 6.54 | 6.54 | 6.26 | 6.26 |
| Bottom Cap diameter (bd) | 5.43 | 6.26 | 6.22 | 6.26 | 6.26 | 6.26 | 6.54 | 6.54 | 6.26 | 6.26 |
| Top BCD (tc) | 3 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Bottom BCD (bc) | 3 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Leakage distance inches | 72 | 72 | 99 | 99 | 116 | 132 | 116 | 132 | 132 | 132 |
| Net weight (approx.) lb | 66 | 85.8 | 141.9 | 136.4 | 127.6 | 160.6 | 168.9 | 184.7 | 178.2 | 176.4 |
| **Mechanical Properties** | | | | | | | | | | |
| Cantilever strength lb | 1500 | 3000 | 1700 | 2600 | 1400 | 1450 | 2200 | 2200 | 1200 | 2000 |
| Tension strength lb | 16000 | 25000 | 20000 | 25000 | 20000 | 20000 | 25000 | 25000 | 20000 | 25000 |
| Torsion strength inch-lb | 15000 | 40000 | 40000 | 90000 | 40000 | 40000 | 90000 | 90000 | 40000 | 90000 |
| Compression strength lb | 25000 | 60000 | 60000 | 75000 | 60000 | 60000 | 75000 | 75000 | 60000 | 75000 |
| **Electrical Properties** | | | | | | | | | | |
| Critical impulse flashover (+) kV | 390 | 390 | 610 | 610 | 710 | 710 | 710 | 710 | 810 | 810 |
| Impulse withstand voltage kV | 350 | 350 | 550 | 550 | 650 | 650 | 650 | 650 | 750 | 750 |
| Low frequency withstand voltage (wet) kV | 145 | 145 | 230 | 230 | 275 | 275 | 275 | 275 | 315 | 315 |
| **Radio Influence Voltage Data** | | | | | | | | | | |
| Test voltage to ground kV | 44 | 44 | 73 | 73 | 88 | 88 | 88 | 88 | 103 | 103 |
| Maximum RIV at 1000 kHz µV | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 500 | 500 |
| | Figure 1 | Figure 1 | Figure 1 | Figure 1 | Figure 1 | Figure 1 | Figure 1 | Figure 1 | Figure 1 | Figure 1 |

**NOTE:** Please refer to notes on page 6.

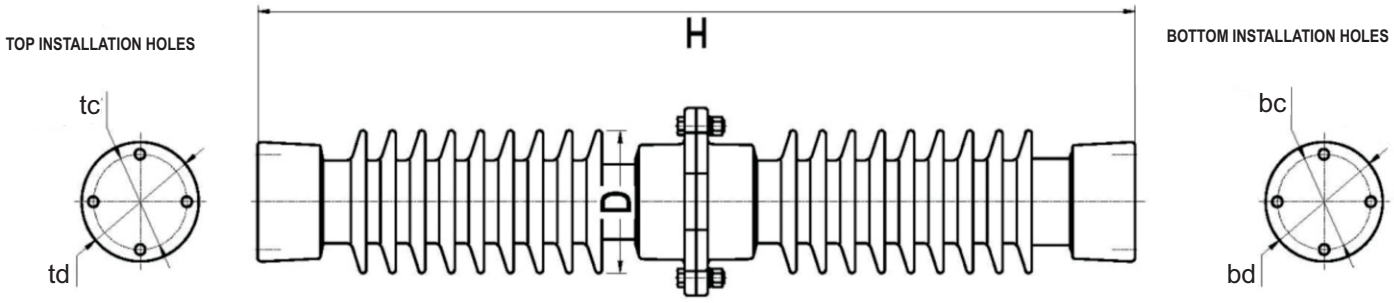


FIGURE 2

| ANSI TR Reference | TR304 | TR308 | TR312 | TR316 | TR362 | TR324 | TR367 | TR368 | TR369 |
|---|---|---|---|---|---|---|---|---|---|
| VE Catalog # | VTR304SSG | VTR308SSG | VTR312SSG | VTR316SSG | VTR362SSG | VTR324SSG | VTR367SSG | VTR368SSG | VTR369SSG |
| **Dimensions inches** | | | | | | | | | |
| H | 80 | 80 | 92 | 92 | 92 | 106 | 106 | 106 | 106 |
| D (max shed diameter) | 7.48 | 8.07 | 7.72 | 8.07 | 9.45 | 8.07 | 8.66 | 9.45 | 9.25 |
| Top Cap diameter (td) | 6.26 | 6.26 | 6.3 | 6.26 | 8.46 | 6.26 | 6.3 | 8.46 | 6.26 |
| Bottom Cap diameter (bd) | 6.26 | 6.26 | 6.3 | 6.26 | 8.46 | 6.26 | 8.46 | 8.46 | 8.46 |
| Top BCD (tc) | 5 | 5 | 5 | 5 | 7 | 5 | 5 | 7 | 5 |
| Bottom BCD (bc) | 5 | 5 | 5 | 5 | 7 | 5 | 7 | 7 | 7 |
| Leakage distance inches | 165 | 165 | 198 | 198 | 198 | 231 | 231 | 231 | 231 |
| Net weight (approx.) lb | 209 | 242 | 226.6 | 261.8 | 367.4 | 316.8 | 314.6 | 453.2 | 411.4 |
| **Mechanical Properties** | | | | | | | | | |
| Cantilever strength lb | 950 | 1450 | 800 | 1250 | 2300 | 1000 | 1450 | 2050 | 2050 |
| Tension strength lb | 20000 | 25000 | 20000 | 25000 | 40000 | 25000 | 20000 | 40000 | 20000 |
| Torsion strength inch-lb | 40000 | 90000 | 40000 | 90000 | 120000 | 90000 | 40000 | 120000 | 40000 |
| Compression strength lb | 60000 | 75000 | 60000 | 90000 | 100000 | 75000 | 60000 | 100000 | 60000 |
| **Electrical Properties** | | | | | | | | | |
| Critical impulse flashover (+) kV | 1010 | 1010 | 1210 | 1210 | 1210 | 1410 | 1410 | 1410 | 1410 |
| Impulse withstand voltage kV | 900 | 900 | 1050 | 1050 | 1050 | 1300 | 1300 | 1300 | 1300 |
| Low frequency withstand voltage (wet) kV | 385 | 385 | 455 | 455 | 455 | 525 | 525 | 525 | 525 |
| **Radio Influence Voltage Data** | | | | | | | | | |
| Test voltage to ground kV | 146 | 146 | 146 | 146 | 146 | 220 | 220 | 220 | 220 |
| Maximum RIV at 1000 kHz µV | 500 | 500 | 500 | 500 | 500 | 1000 | 1000 | 1000 | 1000 |
| | Figure 2 | Figure 2 | Figure 2 | Figure 2 | Figure 2 | Figure 2 | Figure 2 | Figure 2 | Figure 2 |

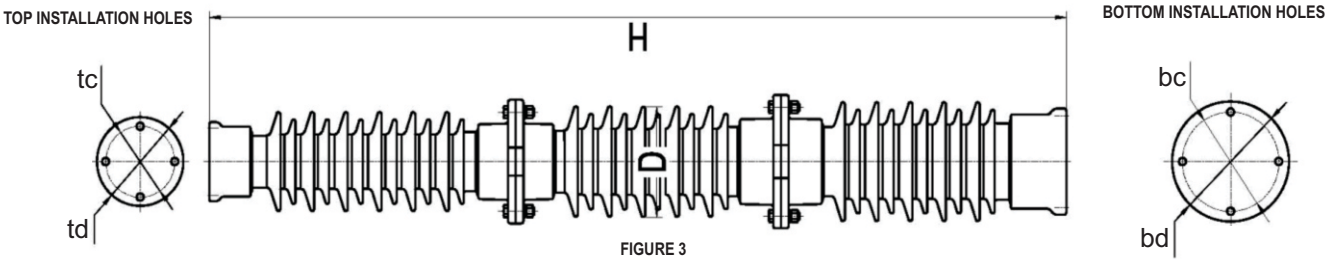


FIGURE 3

| ANSI TR Reference | TR330 | TR371 | TR372 | TR373 | TR379 | TR391 |
|---|---|---|---|---|---|---|
| VE Catalog # | VTR330SSG | VTR371SSG | VTR372SSG | VTR373SSG | VTR379SSG | VTR391SSG |
| **Dimensions inches** | | | | | | |
| H | 122 | 122 | 122 | 122 | 128 | 152 |
| D (max shed diameter) | 8.19 | 8.58 | 9.45 | 9.17 | 9.76 | 9.45 |
| Top Cap diameter (td) | 6.26 | 6.26 | 8.46 | 6.26 | 6.26 | 6.3 |
| Bottom Cap diameter (bd) | 6.26 | 8.46 | 8.46 | 8.46 | 8.46 | 8.47 |
| Top BCD (tc) | 5 | 5 | 7 | 5 | 5 | 5 |
| Bottom BCD (bc) | 5 | 7 | 7 | 7 | 7 | 7 |
| Leakage distance inches | 264 | 264 | 264 | 264 | 280 | 330 |
| Net weight (approx.) lb | 363 | 396 | 550 | 457.6 | 536.2 | 510.4 |
| **Mechanical Properties** | | | | | | |
| Cantilever strength lb | 900 | 1170 | 1750 | 1750 | 1700 | 1400 |
| Tension strength lb | 25000 | 20000 | 40000 | 20000 | 20000 | 20000 |
| Torsion strength inch-lb | 90000 | 40000 | 120000 | 40000 | 40000 | 40000 |
| Compression strength lb | 90000 | 60000 | 100000 | 60000 | 60000 | 60000 |
| **Electrical Properties** | | | | | | |
| Critical impulse flashover (+) kV | 1610 | 1610 | 1610 | 1610 | 1710 | 2000 |
| Impulse withstand voltage kV | 1470 | 1470 | 1470 | 1470 | 1550 | 1800 |
| Low frequency withstand voltage (wet) kV | 590 | 590 | 590 | 590 | 620 | 710 |
| **Radio Influence Voltage Data** | | | | | | |
| Test voltage to ground kV | 220 | 220 | 210 | 220 | 318 | 318 |
| Maximum RIV at 1000 kHz µV | 1000 | 1000 | 1000 | 1000 | 2000 | 2000 |
| | Figure 2 | Figure 2 | Figure 2 | Figure 2 | Figure 2 | Figure 3 |


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