

## RG® Resistance Graded Station Post Insulators

LAPP RG Station Post insulators employ a semi-conductor glaze which inhibits arcing and flashover—especially important in contaminated areas. First installed in the 1970's, these station posts have an established record of excellent performance in contamination problem areas with coastal salt fog or mist, industrial pollution and agricultural dust or chemicals.

The semi-conductive glaze is a permanent, integral part of the LAPP RG Station Post insulator. Applied as part of the normal manufacturing process, the station post insulator is less costly than insulators which are first glazed with a regular glaze and then covered with a hydrophobic coating.

- **Eliminate Need to Over-Insulate in Contaminated Areas**  
Over-insulation may reduce the number of flashovers in contaminated areas; however, its effectiveness is never certain. In addition, larger insulators may require larger structures, which can increase costs.  
  
RG Station Post insulators eliminate the need to over-insulate. They hold voltage in environments that caused flashover in regular insulators having two to three times the leakage distance.
- **Eliminate Need for Washing and Greasing/Coating in Contaminated Areas**  
Washing can cost utilities hundreds of thousands (millions?) of dollars a year. RG Station Posts eliminate the need for washing. Additionally, RG Station Post insulators eliminate the need for costly greasing/coating maintenance.
- **Reduces Radio Noise and TV Interference**  
RG Station Post insulators reduce both radio noise and TV interference. At operating voltage, RIV on RG station posts remains at near zero under most conditions of surface contamination.

## RG® Resistance Graded Station Post Insulators Superior Performance from Three Factors

- **Linear Voltage Distribution**
  - Voltage drop across the entire length of the RG insulator surface is uniform so that all parts of the insulator are evenly stressed.
- **Heating Effect**
  - The small current flow over the electrically equivalent resistor created on the surface of an RG Station Post insulator warms the surface to a few degrees above ambient temperature. This discourages moisture accumulation, and moisture is usually necessary to make contaminants conductive.
- **Prevent Dry Band Arcing**

Dry bands form on RG Station Post insulators with uneven wetting and drying, just as they do on regular insulators. RG insulators, however, provide a conductive shunt path across the dry bands, preventing any visible scintillation or arcing. There are no local arcs that can grow into full length flashover.

### Flashover and Withstand Values

ANSI no longer requires testing for the electric values in the following table. The data in this table is intended as a reference.

BIL	Average Flashover Values			Withstand Values
	Power Frequency		Critical Impulse	Power Frequency
	Dry, kV	Wet, kV	Negative, kV	Dry, kV
95	60	40	120	35
110	85	55	200	50
150	110	75	250	70
200	145	100	290	95
250	170	125	340	120
350	235	180	475	175
550	385	285	780	280
650	435	335	900	335
750	485	380	1020	385
900	575	475	1240	465
1050	660	570	1450	545
1300	745	660	1650	610
1470	830	740	1850	680
1550	865	780	1950	710
1800	990	900	2240	810
2050	1100	990	2600	940

### Summary of Switching Surge Withstands and Switching Surge Critical Flashovers for 900 kV BIL to 3300 kV BIL LAPP Insulator Station Posts

The flashover withstand values are the average of many tests on the same or an equivalent test specimen. Because they are averages of test values read directly from a test curve, without safety factors commonly associated with catalog values, they should not be considered as ratings.

BIL	Insulator Height, inches	Dry				Wet			
		Positive, kV		Negative, kV		Positive, kV		Negative, kV	
		WS	CFO	WS	CFO	WS	CFO	WS	CFO
900	80	745	825	985	1210	690	770	830	935
1050	92	855	955	1115	1380	805	900	945	1050
1300	106	980	1105	1260	1565	935	1045	1025	1180
1550	128	1145	1285	1445	1825	1105	1275	1210	1350
1800	152	1280	1460	1590	2050	1255	1450	1340	1460
2050	182	1410	1600	1720	2250	1390	1595	1435	1610
2425	210	1620	1845	1950	2460	1630	1770	1590	1800
2675	240	1750	2010	2120	2620	1790	1920	1710	1950
3050	270	1870	2140	2280 (*)	2760 (*)	1920	2060	1825	2100
3300	300	2950	2240	2420 (*)	2900 (*)	2000	2200	1930	2250

(\*) Extrapolated Values.  
Wave shape: 200 x 4000 microseconds.  
Tested with Base 24' above ground using 4" IPS Bus.

**IEC Station Posts: RG® Resistance Graded Station Post Insulators and Equivalent Regular Glaze**

IEC Designation	Regular Glaze Catalog Number	RG Glaze Catalog Number
C10-60	400624	500001M
C10-95	400174	500002M
C10-125	400210	500144M
C10-150	400176	500145M
C10-170	400177	500146M
C10-200	400178	500147M
C6-250	400272	500005M
C10-250	400179	500148M
C6-325	400195	500149M
C10-325	400181	500150M
C6-450	400192	500151M
C10-450	400193	500152M
C6-550	400093	500153M
C10-550	400609	500154M
C6-650	400322	500155M
C10-650	400249	500156M
C6-750	400611	500157M
C10-750	400613	500158M
C6-950	400171	500159M
C10-950	400374	500160M
C6-1050	400283	500161M
C10-1050	400327	500162M
C6-1175	400067	500163M
C10-1175	400549	500164M
C6-1300	400521	500165M
C10-1300	400412	500166M
C6-1425	400501	500167M
C10-1425	400615	500168M
C6-1550	400020	500169M
C10-1550	400023	500170M
C12.5-250	Information available upon request.	
C20-250	Information available upon request.	