

# Glastic® Standoff Insulators

**High-Strength Insulators –  
Shatter, Moisture & Flame-Resistant**



**G**lastic standoff Insulators are molded of Underwriters Laboratories Incorporated® (UL) Recognized flame resistant fiberglass-reinforced thermoset polyester molding compound. Glastic Insulators 1603, 2015, 1461, 1872, 1642 and 2450 are UL Recognized according to UL Standard for Safety 891. They feature shatter resistance and closer height tolerances than commonly available in porcelain insulators. Moisture and heat resistance properties of Glastic Insulators are higher than those of conventional plastic insulators.

## **Voltage Rating:**

This is only meant to be a guide for indoor service. Insulators mounted within a suitable electrical cabinet are considered indoors even though the cabinet itself is outdoors. An insulator will withstand its rated voltage continuously but industry standards or other specifications may require a different spacing from conductor to ground for a particular voltage. Wet or dirty conditions may require derating an insulator.

## **Outdoor Use:**

Glastic Insulators are primarily intended to be used indoors or inside a suitable enclosure. Insulators 1642 and 2450 should not be used upside down if there is a possibility of the center hole filling with water.

## **Short Time Electrical Strength:**

For most insulator designs, this is the external flashover voltage in air. A few insulators will puncture instead. The value given is an average of 15 parts tested.

## **Cantilever Strength:**

One end of the insulator is bolted to a flat plate and force is applied to the insert on the other end in a direction parallel to the end at a distance from the plate equal to the insulator height.

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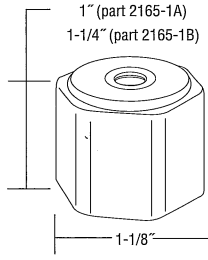
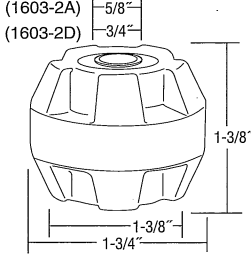
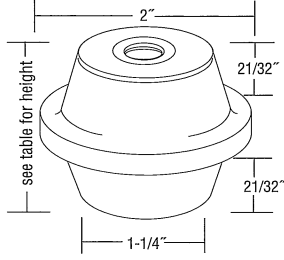
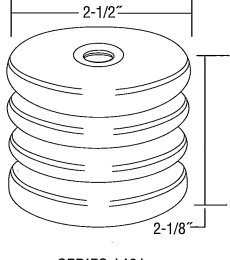
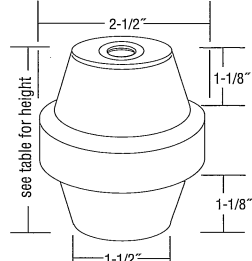
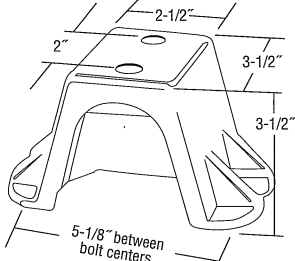
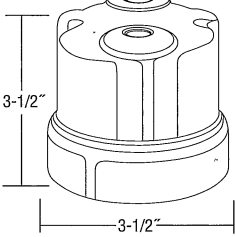
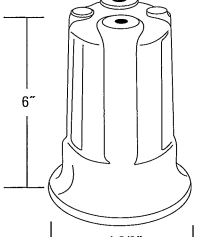
**Red Seal Electric Co.**

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Cleveland, Ohio 44111

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# Glastic® Standoff Insulators

 <p>1" (part 2165-1A) 1-1/4" (part 2165-1B)</p> <p>1-1/8"</p> <p>SERIES 2165 PANEL AND SWITCHBOARD INSULATORS</p>	 <p>(1603-2A) 5/8" (1603-2D) 3/4"</p> <p>1-3/8"</p> <p>1-3/8" 1-3/4"</p> <p>1603-2A STD. 1603-2D WIDE 600 VOLT HIGH STRENGTH STANDOFF INSULATOR</p>
 <p>2"</p> <p>see table for height</p> <p>21/32"</p> <p>1-1/4"</p> <p>21/32"</p> <p>SERIES 2015 CENTER-POST INSULATORS</p>	 <p>2-1/2"</p> <p>2-1/8"</p> <p>SERIES 1461 APPARATUS STANDOFF INSULATORS</p>
 <p>2-1/2"</p> <p>see table for height</p> <p>1-1/8"</p> <p>1-1/8"</p> <p>1-1/2"</p> <p>SERIES 1872 CENTER-POST INSULATORS</p>	 <p>2-1/2"</p> <p>2"</p> <p>3-1/2"</p> <p>3-1/2"</p> <p>5-1/8" between bolt centers</p> <p>PART NO. 2035-1 A FRAME INSULATOR</p>
 <p>3-1/2"</p> <p>3-1/2"</p> <p>PART NO. 1642-10-E 5KV STANDOFF INSULATOR Meets the requirements specified for a 4.8KVA-20 Indoor Insulator per NEMA SG-6-1995.</p>	 <p>6"</p> <p>4-3/8"</p> <p>PART NO. 2450-15 15KV STANDOFF INSULATOR Meets the requirements specified for a 13.2KVA-20 Indoor Insulator per NEMA SG-6-1995.</p>

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## DIMENSIONS

PART NO.	HEIGHT	THREAD SIZE	SUGGESTED INDOOR VOLTAGE RATING	SHORT TIME ELECTRICAL STRENGTH KV	WEIGHT POUND
2165-1A	1"	1/4" X 20 X 5/16" DEEP	600	18.6	0.06
2165-1B	1-1/4"	1/4" X 20 X 5/16" DEEP	600	----	0.06
1603-2A	1-3/8"	3/8" X 16 X 3/8" DEEP	600	10.0	0.19
1603-2D	1-3/8"	3/8" X 16 X 3/8" DEEP	600	10.0	0.19
2015-1A	1-1/2"	1/4" X 20 X 1/2" DEEP	1500	33.4	0.20
2015-2A	1-1/2"	5/16" X 18 X 7/16" DEEP	1500	33.4	0.19
2015-3A	1-1/2"	3/8" X 16 X 3/8" DEEP	1500	33.4	0.20
2015-2B	1-3/4"	5/16" X 18 X 7/16" DEEP	2000	----	0.25
2015-3B	1-3/4"	3/8" X 16 X 3/8" DEEP	2000	----	0.25
2015-2C	2"	5/16" X 18 X 7/16" DEEP	2300	43.1	0.30
2015-3C	2"	3/8" X 16 X 9/16" DEEP	2300	43.1	0.31
2015-4C	2"	1/2" X 13 X 5/8" DEEP	2300	43.1	0.30
2015-3D	2-1/4"	3/8" X 16 X 9/16" DEEP	2700	----	0.36
2015-4D	2-1/4"	1/2" X 13 X 5/8" DEEP	2700	----	0.36
1461-1A	2-1/8"	3/8" X 16 X 9/16" DEEP	2500	49.3	0.61
1461-1B	2-1/8"	1/2" X 13 X 5/8" DEEP	2500	27.9	0.61
1461-1C	2-1/8"	5/8" X 11 X 5/8" DEEP	2500	21.0	0.61
1872-1A	2-1/2"	3/8" X 16 X 9/16" DEEP	3200	51.4	0.44
1872-2A	2-1/2"	1/2" X 13 X 5/8" DEEP	3200	51.4	0.45
1872-3F	2-5/8"	5/8" X 11 X 11/16" DEEP	3400	----	0.60
1872-1B	2-3/4"	3/8" X 16 X 9/16" DEEP	3600	----	0.53
1872-2B	2-3/4"	1/2" X 13 X 5/8" DEEP	3600	----	0.51
1872-1C	3"	3/8" X 16 X 9/16" DEEP	4100	----	0.59
1872-2C	3"	1/2" X 13 X 5/8" DEEP	4100	----	0.60
1872-1D	3-1/4"	3/8" X 16 X 9/16" DEEP	4500	----	0.67
1872-2D	3-1/4"	1/2" X 13 X 5/8" DEEP	4500	----	0.67
1872-1E	3-1/2"	3/8" X 16 X 9/16" DEEP	5000	55.2	0.76
1872-2E	3-1/2"	1/2" X 13 X 5/8" DEEP	5000	55.2	0.58
1872-3E	3-1/2"	5/8" X 11 X 11/16" DEEP	5000	55.2	0.74
2035-1	3-1/2"	2" BOLT CIRCLE	5000	----	1.20
1642-10E	3-1/2"	3/8" X 16 X 9/16" DEEP 2" BOLT CIRCLE	5000	----	1.78
2450-15	6"	3/8" X 16 X 9/16" DEEP 2" BOLT CIRCLE	15000	----	3.49
2450-81	6"	same as 2450-15 except 4 aluminum inserts top & bottom	15000	----	3.50
2450-82	6"	same as 2450-15 except 4 steel inserts top & bottom	15000	----	3.80
2450-91	6"	same as 2450-15 except 5 alum. inserts on top & 4 on bottom	15000	----	3.51

## Voltage Rating:

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## Outdoor Use:

Glastic Insulators are primarily intended to be used indoors or inside a suitable enclosure. Insulators 1642 and 2450 should not be used upside down if there is a possibility of the center hole filling with water.

## Short Time Electrical Strength:

For most insulator designs, this is the external flashover voltage in air. A few insulators will puncture instead. The value given is an average of 15 parts tested.

## Cantilever Strength:

One end of the insulator is bolted to a flat plate and force is applied to the insert on the other end in a direction parallel to the end at a distance from the plate equal to the insulator height.

# Glastic® Standoff Insulators

## Torque Strength:

One end of the insulator is bolted to a flat plate and a normal steel bolt is tightened into the insert on the other end with a torque wrench. The bolt will fail before the insulator and the values published are approximately the values at which bolts fail. If you use tensile steel bolts, the insert threads will strip before the bolts fail, but at higher torque values than we publish. 5kV and 15kV insulators are tested differently.

## UL Recognition:

All Glastic Insulators are molded from UL Recognized molding materials (UL File E23525). When submitting your equipment to UL, you may need to furnish the molding material grade number used for a particular insulator. This information is available from Glastic Corporation. All of the molding materials used in Glastic Insulators have a generic relative Thermal Index of 130° C electrical/130° C

mechanical. Glastic 1603, 2015, 1461, 1872, 1642 and 2450 Insulators are UL Recognized according to UL standard for Safety 891 (UL File E81713).

## PHYSICAL AND ELECTRICAL PROPERTIES

VALUES	2165	1603-2A	1603-2D	2015	1461	1872	2035-1	1642-10-E	2450-15
Tensile Strength (lbs.)	1000	2,000	2500	2,000	3,000	2,500	2,500	3,000	5,000
Cantilever Strength (inch lbs.)	400	1,500	1,800	1,750	3,500	3,000	3,600	6,000	10,000
Compression Strength (lbs.)	8000	20,000	20,000	20,000	60,000	25,000	25,000	20,000	20,000
Torque Strength (ft. lbs.)	12	25	30	50	50	50	----	200	285
Arc Resistance (sec.)	180	180	180	180	180	180	180	180	180
UL Subject 94 Flame Resistance	94 V-0	94 V-0	94 V-0	94 V-0	94 V-0	94 V-0	94 V-0	94 V-0	94 V-0
Height Tolerance (in.)	± .015	± .015	± .015	± .015	± .015	± .015	± .015	± .010	± .015
Creep Distance (in.)	Insulator Height	1-5/8	1-5/8	1/4 Plus Insulator Height	3-1/4	5/16 Plus Insulator Height	3-1/2	3-11/16	7
Dry Hi-Pot (volts) NEMA Specs.	----	----	----	----	----	----	----	19,000	36,000
Dew Hi-Pot (volts) NEMA Specs.	----	----	----	----	----	----	----	15,000	26,000
Impulse (volts, 1.5 x 40 wave)	----	----	----	----	----	----	----	60,000	95,000
Track Resistance (minutes)	600	600	600	600	600	600	600	600	600

	INSERT TYPE AVAILABILITY			
	ALUMINUM N.C.*	STEEL N.C.*	ALUMINUM METRIC	INSERTS - TOP/BOTTOM
2165	S	N/A	S	1/1
1603	S	N/A	C	1/1
2015	S	C	C	1/1
1461	S	N/A	C	1/1
1872-1&2	S	C	C	1/1
1872-3F	C	S	C	1/1
1642	S	N/A	N/A	2/4
2450-1	S	C	N/A	2/4
2450-8	C	S	N/A	4/4
2450-9	C	N/A	N/A	5/4

S= Stock Item C= Custom Order \* = US Standard Thread

## Engineering Solutions



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