

Mark 3 Polymeric Insulators



This range of polymeric insulators is designed to directly replace ceramic insulators used for Mark 3A, 3B and 3C equipment. Separate designs cover either Tension or Cantilever applications ensuring full compliance to the latest Network Rail mechanical load specifications (Factor of Safety: 4).

Moulded onto high strength GRP rods, these insulators utilise Henley's unique EPDM dielectric cladding material. This highly successful cladding has been proven around the world from deserts to arctic environments for more than 30 years. The material has outstanding

pollution and weathering performance which, coupled with its non-flammability, also makes it ideal for tunnels and stations where natural rain-washing is not possible.

W.T. Henley insulators are light and low profile.

Manufactured with Malleable Iron end-fittings, (aluminium end-fittings can be supplied on request).

- **Product approval PA05/534**
- **Network Rail standard RT/E/S/21082**
- **Direct replacement for porcelain insulators for tension and cantilever applications. Less than 15mm deflection at max. working load of 941Nm.**
- **Unique Henley EPDM cladding material.**
- **Supplied with Malleable iron end fittings (aluminium on request).**
- **Light weight and low profile.**



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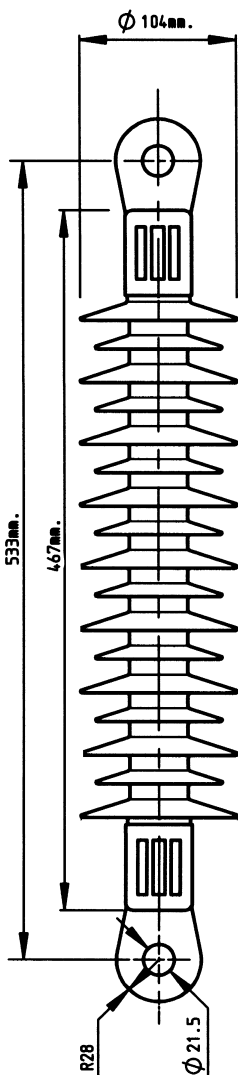
Mark 3 Tension Insulators

Network Rail Product approval: PA05/534

The W.T. Henley specified mechanical load is 100kN (SML) for this range of Mark 3 insulators. This gives a factor of safety of 4 against the maximum permissible working load (21.1 8kN). As a routine test we apply 50kN (RTL).



Typical tension insulator data



Electrical Data

CREEPAGE (mm)	1165
TAUT STRING (mm)	400
IMPULSE FLASHOVER (DRY) (kVp)	+ve 235/ -ve 330
IMPULSE WITHSTAND (DRY) (kVp)	222
AC I min. FLASHOVER (DRY) (kV)	163
AC I min. WITHSTAND (DRY) (kV)	154
AC I min. FLASHOVER VERT. (WET) (kV)	135
AC I min. WITHSTAND VERT. (WET) (kV)	120
AC I min. FLASHOVER 45 (WET) (kV)	140
AC I min. WITHSTAND 45 (WET) (kV)	125
AC I min. FLASHOVER HOR. (WET) (kV)	150
AC I min. WITHSTAND HOR. (WET) (kV)	136

Mechanical Data

Specified Mechanical Load (SML)	100kN
Routine Tensile Test Load	50kN
Compression Failing Load	> 70kN
Torsional Failing Load	> 400Nm

1. Specified Electrical Tests

1.1 Dry Lighting Impulse Tests	:IEC 383/BS137
1.2 Power Frequency Voltage Tests	:IEC383/BS137
1.3 "Merry-go-Round" Tracking Test	:EFI Specification
1.4 Inclined Plane Tracking Test	:IEC 587/BS5604
1.5 Design Tests	:IEC 1109 Section 5

2. Specified Mechanical Tests

2.1 Design Test	:IEC 1109 Section 5
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3. Specified Environmental Tests

3.1 1000hr. Salt/Fog Test	:IEC 1109/BS EN60507
3.2 5000hr. Ageing Test	:IEC 1109 Annex C
3.3 Desert Sunshine Exposure Test	:40 Weeks in Arizona
3.4 Iron Oxide Burning Test	:B.B. Spec.QA/PI-A

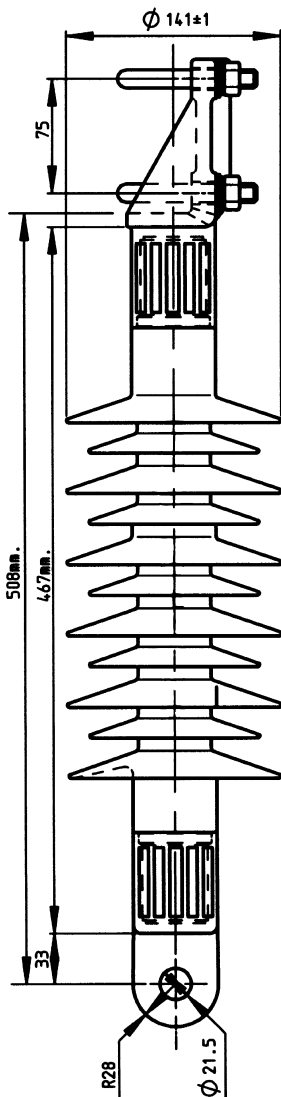
Mark 3 Cantilever Insulators

Network Rail Product approval: PA05/534

Specifically designed to meet the requirements of a maximum permissible working load of 941 Nm with a factor of safety of 4, this range has less than 15mm of deflection at this maximum load.



Typical cantilever insulator data



Electrical Data

CREEPAGE (mm)	1116
TAUT STRING (mm)	365
IMPULSE FLASHOVER (DRY) (kVp)	+ve 245/ -ve281
IMPULSE WITHSTAND (DRY) (kVp)	235
AC I min. FLASHOVER (DRY) (kV)	157
AC I min. WITHSTAND (DRY) (kV)	147
AC I min. FLASHOVER VERT. (WET) (kV)	115
AC I min. WITHSTAND VERT. (WET) (kV)	103
AC I min. FLASHOVER 45 (WET) (kV)	130
AC I min. WITHSTAND 45 (WET) (kV)	110
AC I min. FLASHOVER HOR. (WET) (kV)	124
AC I min. WITHSTAND HOR. (WET) (kV)	114

Mechanical Data

Deflection at Max Permissible working Load (941Nm)	8mm
Specified Mechanical Load (SML)	100kN
Cantilever Failing Load	12.0kN
Compression Failing Load	> 70kN
Torsional Failing Load	> 400Nm

1. Specified Electrical Tests

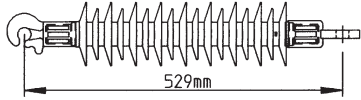
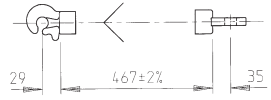
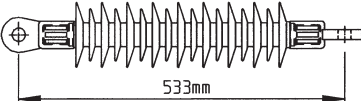
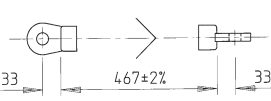
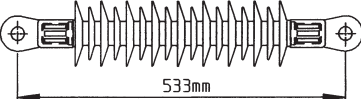
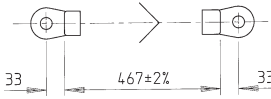
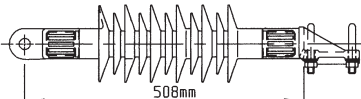
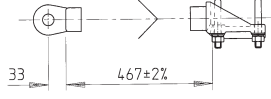

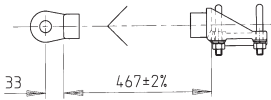
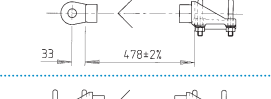
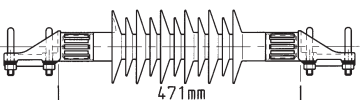
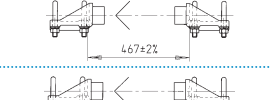
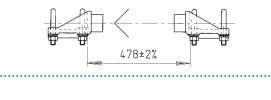
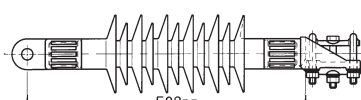
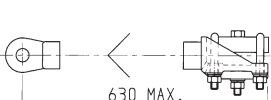
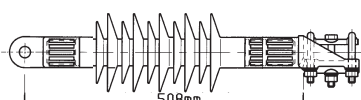
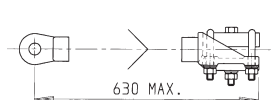
1.1 Dry Lighting Impulse Tests	:IEC 383/BS137
1.2 Power Frequency Voltage Tests	:IEC383/BS137
1.3 "Merry-go-Round" Tracking Test	:EFI Specification
1.4 Inclined Plane Tracking Test	:IEC 587/BS5604
1.5 Design Tests	:IEC 1109 Section 5

2. Specified Mechanical Tests

2.1 Design Test	:IEC 1109 Section 5
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3. Specified Environmental Tests

3.1 1000hr. Salt/Fog Test	:IEC 1109/BS EN60507
3.2 5000hr. Ageing Test	:IEC 1109 Annex C
3.3 Desert Sunshine Exposure Test	:40 Weeks in Arizona
3.4 Iron Oxide Burning Test	:B.B. Spec.QA/P.I-A

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