

### Aluminium P-Clips

- ALU-P-Clip with / without chloroprene Insert

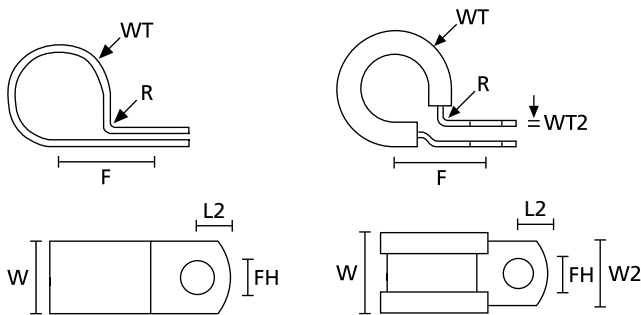
Manufactured from a high quality aluminium these P-Clips provide flexibility and yet give a permanent fixing in the most arduous of environments. The addition of a Chloroprene insert provides the cable or pipe bundle with a high degree of protection against vibration, reduces noise and also offers electrical isolation.

#### Features and Benefits

- Simple, secure pipe or cable fixing (e. g. caravan construction)
- Combine with chloroprene insert for vibration resistance (e. g. retain capacitors on PCB)
- Ideal for use in high temperatures
- Suitable for applications needing strength of metal components



P-Clips manufactured in polyamide, aluminium or aluminium with a chloroprene insert.



Aluminium P Clips

Aluminium P Clips with a Chloroprene insert

**Material specification please see page 22.**

TYPE	Width (W)	Width (W2)	Wall (WT)	Wall (WT2)	Hole Ø (FH)	Bundle Ø max.	Fixing Hole Centres (F2)	Radius (R)	Material	Colour	Article-No.
ALU4	12.7	-	0.80	-	5.2	6.4	11.6	1.6	AL	Natural (NA)	211-10040
ALU5	12.7	-	0.80	-	5.2	8.0	12.6	1.6	AL	Natural (NA)	211-10050
ALU6	12.7	-	0.80	-	5.2	9.5	13.4	1.6	AL	Natural (NA)	211-10060
ALU7	12.7	-	0.80	-	5.2	11.1	14.2	1.6	AL	Natural (NA)	211-10070
ALU8	12.7	-	0.80	-	5.2	12.7	15.0	1.6	AL	Natural (NA)	211-10080
ALU10	12.7	-	0.80	-	5.2	15.9	16.6	1.6	AL	Natural (NA)	211-10100
ALU11	12.7	-	1.30	-	5.2	17.5	19.1	2.8	AL	Natural (NA)	211-10110
ALU12	12.7	-	1.30	-	5.2	19.1	19.9	2.8	AL	Natural (NA)	211-10120
ALU13	12.7	-	1.30	-	5.2	20.6	20.7	2.8	AL	Natural (NA)	211-10130
ALU4C	16.3	12.7	3.70	0.8	5.2	3.2	11.6	1.6	AL, CR	Black (BK)	211-15040
ALU5C	16.3	12.7	3.70	0.8	5.2	4.8	12.6	1.6	AL, CR	Black (BK)	211-15050
ALU6C	16.3	12.7	3.70	0.8	5.2	6.4	13.4	1.6	AL, CR	Black (BK)	211-15060
ALU7C	16.3	12.7	3.70	0.8	5.2	8.0	14.2	1.6	AL, CR	Black (BK)	211-15070
ALU8C	16.3	12.7	3.70	0.8	5.2	9.5	15.0	1.6	AL, CR	Black (BK)	211-15080
ALU9C	16.3	12.7	3.70	0.8	5.2	11.1	15.8	1.6	AL, CR	Black (BK)	211-15090
ALU10C	16.3	12.7	3.70	0.8	5.2	12.7	16.6	1.6	AL, CR	Black (BK)	211-15100

All dimensions in mm. Subject to technical changes.



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TYPE	Width (W)	Width (W2)	Wall (WT)	Wall (WT2)	Hole Ø (FH)	Bundle Ø max.	Fixing Hole Centres (F2)	Radius (R)	Material	Colour	Article-No.
ALU11C	16.3	12.7	4.50	1.3	5.2	14.3	19.1	2.8	AL, CR	Black (BK)	211-15110
ALU12C	16.3	12.7	4.50	1.3	5.2	15.9	19.9	2.8	AL, CR	Black (BK)	211-15120
ALU13C	16.3	12.7	4.50	1.3	5.2	17.5	20.7	2.8	AL, CR	Black (BK)	211-15130
ALU14C	16.3	12.7	4.50	1.3	5.2	19.1	21.5	2.8	AL, CR	Black (BK)	211-15140
ALU15C	16.3	12.7	4.50	1.3	5.2	20.6	22.3	2.8	AL, CR	Black (BK)	211-15150
ALU16C	16.3	12.7	4.50	1.3	5.2	22.2	23.1	2.8	AL, CR	Black (BK)	211-15160
ALU17C	16.3	12.7	4.50	1.3	5.2	23.8	23.9	2.8	AL, CR	Black (BK)	211-15170
ALU18C	16.3	12.7	4.50	1.3	5.2	25.4	24.6	2.8	AL, CR	Black (BK)	211-15180
ALU19C	16.3	12.7	4.50	1.3	5.2	27.0	25.5	2.8	AL, CR	Black (BK)	211-15190
ALU20C	16.3	12.7	4.50	1.6	5.2	28.6	27.0	3.2	AL, CR	Black (BK)	211-15200
ALU22C	16.3	12.7	4.50	1.6	5.2	31.8	28.6	3.2	AL, CR	Black (BK)	211-15220
ALU23C	16.3	12.7	4.50	1.6	5.2	33.3	29.4	3.2	AL, CR	Black (BK)	211-15230
ALU25C	16.3	12.7	4.50	1.6	5.2	36.5	30.8	3.2	AL, CR	Black (BK)	211-15250
ALU26C	16.3	12.7	4.50	1.6	5.2	38.1	31.7	3.2	AL, CR	Black (BK)	211-15260
ALU28C	16.3	12.7	4.50	1.6	5.2	41.3	33.3	3.2	AL, CR	Black (BK)	211-15280
ALU29C	16.3	12.7	4.50	1.6	5.2	42.9	34.1	3.2	AL, CR	Black (BK)	211-15290
ALU30C	16.3	12.7	4.50	1.6	5.2	44.5	34.9	3.2	AL, CR	Black (BK)	211-15300
ALU34C	16.3	12.7	4.50	1.6	5.2	50.8	38.1	3.2	AL, CR	Black (BK)	211-15340
ALU24C	16.3	12.7	4.50	1.6	5.2	34.9	30.2	3.2	AL, CR	Black (BK)	211-15240

All dimensions in mm. Subject to technical changes.

## Material Specification Overview

Material	Shortcut	Operating Temperature	Colour**	Flammability	Material Properties*	
Aluminium-alloy	AL	-40 °C to +180 °C	Natural (NA)		<ul style="list-style-type: none"> <li>Corrosion resistant</li> <li>Antimagnetic</li> </ul>	RoHS
Chloroprene	CR	-20 °C to +80 °C	Black (BK)		<ul style="list-style-type: none"> <li>Weather-resistant</li> <li>High yield strength</li> </ul>	RoHS
Ethylenterafluorineethylen	E/TFE	-80 °C to +170 °C	Blue (BU)	UL94 V0	<ul style="list-style-type: none"> <li>Resistance to radioactivity</li> <li>UV-resistant, not moisture sensitive</li> <li>Good chemical resistance to: acids, bases, oxidizing agents</li> </ul>	RoHS
Polyacetal	POM	-40 °C to +90 °C, (+110 °C, 500 h)	Natural (NA)	UL94 HB	<ul style="list-style-type: none"> <li>Limited brittleness sensitivity</li> <li>Flexible at low temperature</li> <li>Not moisture sensitive</li> <li>Robust on impacts</li> </ul>	RoHS
Polyamide 11	PA11	-40 °C to +85 °C, (+105 °C, 500 h)	Black (BK)	UL94 HB	<ul style="list-style-type: none"> <li>Bio-plastic, derived from vegetable oil</li> <li>Strong impact resistance at low temperature</li> <li>Very low moisture absorption</li> <li>Weather-resistant</li> <li>Good chemical resistance</li> </ul>	RoHS HF
Polyamide 12	PA12	-40 °C to +85 °C, (+105 °C, 500 h)	Black (BK)	UL94 HB	<ul style="list-style-type: none"> <li>Good chemical resistance to: acids, bases, oxidizing agents</li> <li>UV-resistant</li> </ul>	RoHS HF
Polyamide 4.6	PA46	-40 °C to +150 °C (5000 h), +195 °C (500 h)	Natural (NA), Grey (GY)	UL94 V2	<ul style="list-style-type: none"> <li>Resistance to high temperatures</li> <li>Very moisture sensitive</li> <li>Low smoke sensitive</li> </ul>	RoHS HF LFH
Polyamide 6	PA6	-40 °C to +80 °C	Black (BK)	UL94 V2	<ul style="list-style-type: none"> <li>High yield strength</li> </ul>	RoHS
Polyamide 6.6	PA66	-40 °C to +85 °C, (+105 °C, 500 h)	Black (BK), Natural (NA)	UL94 V2	<ul style="list-style-type: none"> <li>High yield strength</li> </ul>	RoHS HF
Polyamide 6.6, Glassfibre reinforced	PA66GF13, PA66GF15	-40 °C to +105 °C	Black (BK)	UL94 HB	<ul style="list-style-type: none"> <li>Good resistance to: lubricants, vehicle fuel, salt water and many solvents</li> </ul>	RoHS HF
Polyamide 6.6 heat and UV stabilised	PA66HSW	-40 °C to +105 °C	Black (BK)	UL94 V2	<ul style="list-style-type: none"> <li>High yield strength</li> <li>Modified elevated max. temperature</li> <li>UV-resistant</li> </ul>	RoHS HF
Polyamide 6.6 Heat Stabilised	PA66HS	-40 °C to +105 °C	Black (BK), Natural (NA)	UL94 V2	<ul style="list-style-type: none"> <li>High yield strength</li> <li>Modified elevated max. temperature</li> </ul>	RoHS HF
Polyamide 6.6 High Imp. Mod., Heat Stab.	PA66HIRHS	-40 °C to +105 °C	Black (BK)	UL94 HB	<ul style="list-style-type: none"> <li>Limited brittleness sensitivity</li> <li>Higher flexibility at low temperature</li> <li>Modified elevated max. temperature</li> </ul>	RoHS
Polyamide 6.6 High Imp. Mod. scan black	PA66HIR(S)	-40 °C to +80 °C, (+105 °C, 500 h)	Black (BK)	UL94 HB	<ul style="list-style-type: none"> <li>Limited brittleness sensitivity</li> <li>Higher flexibility at low temperature</li> </ul>	RoHS HF
Polyamide 6.6 High Impact Modified	PA66HIR	-40 °C to +80 °C, (+105 °C, 500 h)	Black (BK)	UL94 HB	<ul style="list-style-type: none"> <li>Limited brittleness sensitivity</li> <li>Higher flexibility at low temperature</li> </ul>	RoHS

Tefzel® is a registered trademark of DuPont.  
General linguistic usage for cable ties made from raw material E/TFE is Tefzel®-Tie. In addition to Tefzel® from DuPont HellermannTyton is also using equivalent E/TFE raw material from other suppliers.

\*\*More colours on request.

\*These details are only rough guide values. They should be regarded as a material specification and are no substitute for a suitability test. Please see our datasheets for further details.

= Minimum Tensile Strength

## Material Specification Overview

Material	Shortcut	Operating Temperature	Colour**	Flammability	Material Properties*	RoHS	HF	LFH
<b>Polyamide 6.6</b> high impact modified, heat and UV stabilised	PA66-HIRHSW	-40 °C to +110 °C	Black (BK)	UL94 HB	<ul style="list-style-type: none"> <li>Limited brittleness sensitivity</li> <li>Higher flexibility at low temperature</li> <li>Modified elevated max. temperature</li> <li>High yield strength, UV-resistant</li> </ul>	RoHS	HF	
<b>Polyamide 6.6</b> UV Resistant	PA66W	-40 °C to +85 °C, (+105 °C, 500 h)	Black (BK)	UL94 V2	<ul style="list-style-type: none"> <li>High yield strength</li> <li>UV-resistant</li> </ul>	RoHS	HF	
<b>Polyamide 6.6 V0</b>	PA66V0	-40 °C to +85 °C	White (WH)	UL94 V0	<ul style="list-style-type: none"> <li>High yield strength</li> <li>Low smoke emission</li> </ul>	RoHS	HF	LFH
<b>Polyamide 6.6 V0</b> High Oxygen Index	PA66-V0-HOI	-40 °C to +85 °C, (+105 °C, 500 h)	White (WH)	UL94 V0	<ul style="list-style-type: none"> <li>High yield strength</li> <li>Low smoke emissions</li> </ul>	RoHS	HF	LFH
<b>Polyamide 6.6</b> with metal particles	PA66MP	-40 °C to +85 °C, (+105 °C, 500 h)	Blue (BU)	UL94 HB	<ul style="list-style-type: none"> <li>High yield strength</li> </ul>	RoHS	HF	
<b>Polyamide 6</b> high impact modified	PA6HIR	-40 °C to +80 °C	Black (BK)	UL94 HB	<ul style="list-style-type: none"> <li>Limited brittleness sensitivity</li> <li>Higher flexibility at low temperature</li> </ul>	RoHS		
<b>Polyester</b>	SP	-50 °C to +150 °C	Black (BK)		<ul style="list-style-type: none"> <li>UV-resistant</li> <li>Good chemical resistance to: most acids, alkalis and oils</li> </ul>	RoHS	HF	LFH
<b>Polyetheretherketone</b>	PEEK	-55 °C to +240 °C	Beige (BGE)	UL94 V0	<ul style="list-style-type: none"> <li>Resistance to radioactivity</li> <li>Not moisture sensitive</li> <li>Good chemical resistance to: acids, bases, oxidizing agents</li> </ul>	RoHS	HF	LFH
<b>Polyethylene</b>	PE	-40 °C to +50 °C	Black (BK), Grey (GY)	UL94 HB	<ul style="list-style-type: none"> <li>Low moisture absorption</li> <li>Good chemical resistance to: most acids, alcohol and oils</li> </ul>	RoHS	HF	
<b>Polyolefin</b>	PO	-40 °C to +90 °C	Black (BK)	UL94 V0	<ul style="list-style-type: none"> <li>Low smoke emissions</li> </ul>	RoHS	HF	LFH
<b>Polypropylene</b>	PP	-40 °C to +115 °C	Black (BK), Natural (NA)	UL94 HB	<ul style="list-style-type: none"> <li>Floats in water</li> <li>Moderate yield strength</li> <li>Good chemical resistance to: organic acids</li> </ul>	RoHS	HF	
<b>Polypropylene, Ethylene-Propylene-Dien-Terpolymer-rubber free of Nitrosamine</b>	PP, EPDM	-20 °C to +95 °C	Black (BK)	UL94 HB	<ul style="list-style-type: none"> <li>Good resistance to high temperatures</li> <li>Good chemical and abrasion resistance</li> </ul>	RoHS	HF	
<b>Polyvinylchloride</b>	PVC	-10 °C to +70 °C	Black (BK), Natural (NA)	UL94 V0	<ul style="list-style-type: none"> <li>Low moisture absorption</li> <li>Good chemical resistance to: acids, ethanol, oil</li> </ul>	RoHS		
<b>Stainless Steel</b>	SS304, SS316	-80 °C to +538 °C	Natural (NA)		<ul style="list-style-type: none"> <li>Corrosion resistant</li> <li>Antimagnetic</li> </ul>	RoHS	HF	LFH
<b>Thermoplastic Polyurethane</b>	TPU	-40 °C to +85 °C	Black (BK)	UL94 HB	<ul style="list-style-type: none"> <li>High elastic</li> <li>Good chemical resistance to: acids, bases, oxidizing agents</li> </ul>	RoHS	HF	

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