



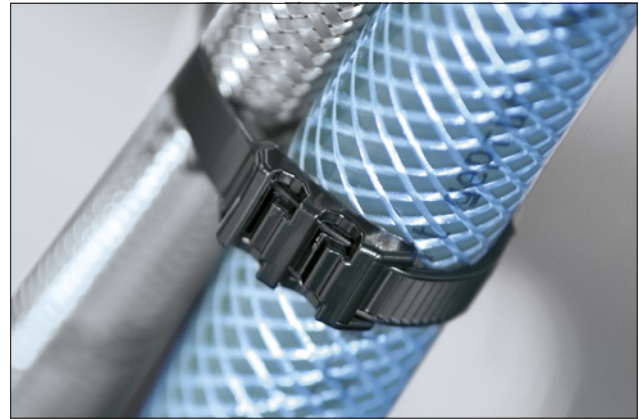
Cable ties with low profile head

Robusto-Series

Robusto cable ties have many technical features which make them suitable for use in many applications for fixing and supporting cables, pipes and other elements. The polyamide 11 used to manufacture these ties offers excellent resistance to chemicals in even the most challenging environments such as offshore, oil rigs, construction vehicles, trucks and trailers.

These cable ties have excellent UV resistance as well as being highly resistant to chemicals like chlorides: recommended for use on galvanised steel, especially on solar panel installations.

In addition, the material has a high impact resistance to low temperatures which enables Robusto ties to be used in areas where it is cold, for example at high altitudes or Nordic countries.



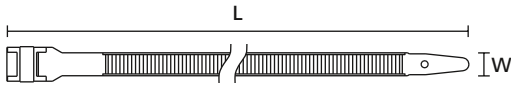
Low profile head cable tie, Robusto-Series.

Features and Benefits

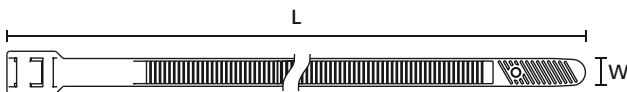
- Made of polyamide 11, a completely sustainable bioplastic derived from vegetable oil
- Outside serrated with a round, innovative head and one or two flexible stop pawls
- Low insertion force for manual, tool-free application
- High tensile strength
- Soft material for easy handling without damaging cables
- High UV resistance for long-term outdoor application
- Stable technical performance even at very low temperatures
- High resistance to chemicals, including chlorides
- Low water absorption rate for consistent technical performance and high durability
- Pre-locking feature



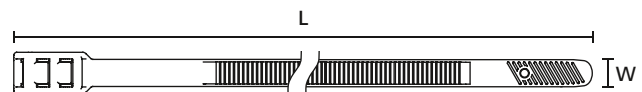
Application video: Robusto



Robusto (LPH922)



Robusto (LPH942)



Robusto (LPH962, LPH992)

TYPE	Width (W)	Length (L)	Bundle Ø max.	N	Material	Colour	Pack Cont.	Tools	Article-No.
Robusto (LPH922)	9.0	123.0	22.0	310	PA11	Black (BK)	100 pcs.	1;3;9-12	112-00025
Robusto (LPH942)	9.0	180.0	42.0	360	PA11	Black (BK)	100 pcs.	1;3;9-12	112-00011
Robusto (LPH962)	9.0	260.0	62.0	530	PA11	Black (BK)	100 pcs.	1;3;9-12	112-00012
Robusto (LPH992)	9.0	355.0	92.0	530	PA11	Black (BK)	100 pcs.	1;3;9-12	112-00013

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

Recommended Tools					
1	3	9	10	11	12
MK10-SB	MK21	MK6	MK9	MK9HT	MK9P

For more information on toolings please refer to the Application Tooling chapter.

Material specification please see page 24.

Material Specification Overview

MATERIAL	Material Shortcut	Operating Temperature	Colour**	Flammability	Material Properties*	Material Specifications
Aluminium-alloy	AL	-40 °C to +180 °C	Natural (NA)		<ul style="list-style-type: none"> Corrosion resistant Antimagnetic 	RoHS
Chloroprene	CR	-20 °C to +80 °C	Black (BK)		<ul style="list-style-type: none"> Weather-resistant High yield strength 	RoHS
Ethylene Tetrafluoroethylene	E/TFE	-80 °C to +170 °C	Blue (BU)	UL94 V0	<ul style="list-style-type: none"> Resistance to radioactivity UV-resistant, not moisture sensitive Good chemical resistance to: acids, bases, oxidizing agents 	RoHS
Polyacetal	POM	-40 °C to +90 °C, (+110 °C, 500 h)	Natural (NA)	UL94 HB	<ul style="list-style-type: none"> Limited brittleness sensitivity Flexible at low temperature Not moisture sensitive Robust on impacts 	RoHS
Polyamide 11	PA11	-40 °C to +85 °C, (+105 °C, 500 h)	Black (BK)	UL94 HB	<ul style="list-style-type: none"> Bio-plastic, derived from vegetable oil Strong impact resistance at low temperature Very low moisture absorption Weather-resistant Good chemical resistance 	HF RoHS
Polyamide 12	PA12	-40 °C to +85 °C, (+105 °C, 500 h)	Black (BK)	UL94 HB	<ul style="list-style-type: none"> Good chemical resistance to: acids, bases, oxidizing agents UV-resistant 	HF RoHS
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"> Resistance to high temperatures Very moisture sensitive Low smoke sensitive 	HF LFH RoHS
Polyamide 6	PA6	-40 °C to +80 °C	Black (BK)	UL94 V2	<ul style="list-style-type: none"> High yield strength 	RoHS
Polyamide 6, high impact modified	PA6HIR	-40 °C to +80 °C	Black (BK)	UL94 HB	<ul style="list-style-type: none"> Limited brittleness sensitivity Higher flexibility at low temperature 	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"> High yield strength 	HF RoHS
Polyamide 6.6, glass-fibre reinforced	PA66GF13, PA66GF15	-40 °C to +105 °C	Black (BK)	UL94 HB	<ul style="list-style-type: none"> Good resistance to: lubricants, vehicle fuel, salt water and many solvents 	HF RoHS
Polyamide 6.6, heat and UV stabilised	PA66HSW	-40 °C to +105 °C	Black (BK)	UL94 V2	<ul style="list-style-type: none"> High yield strength Modified elevated max. temperature UV-resistant 	HF RoHS
Polyamide 6.6, heat stabilised	PA66HS	-40 °C to +105 °C	Black (BK), Natural (NA)	UL94 V2	<ul style="list-style-type: none"> High yield strength Modified elevated max. temperature 	HF RoHS
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"> Limited brittleness sensitivity Higher flexibility at low temperature 	RoHS
Polyamide 6.6, high impact modified, heat and UV stabilised	PA66HIRHSW	-40 °C to +110 °C	Black (BK)	UL94 HB	<ul style="list-style-type: none"> Limited brittleness sensitivity Higher flexibility at low temperature Modified elevated max. temperature High yield strength, UV-resistant 	HF RoHS
Polyamide 6.6, high impact modified, heat stabilised	PA66HIRHS	-40 °C to +105 °C	Black (BK)	UL94 HB	<ul style="list-style-type: none"> Limited brittleness sensitivity Higher flexibility at low temperature Modified elevated max. temperature 	RoHS
Polyamide 6.6, high impact modified, scan black	PA66HIR(S)	-40 °C to +80 °C, (+105 °C, 500 h)	Black (BK)	UL94 HB	<ul style="list-style-type: none"> Limited brittleness sensitivity Higher flexibility at low temperature 	HF RoHS
Polyamide 6.6, UV-resistant	PA66W	-40 °C to +85 °C, (+105 °C, 500 h)	Black (BK)	UL94 V2	<ul style="list-style-type: none"> High yield strength UV-resistant 	HF RoHS

Tefzel® is a registered trademark of DuPont. General linguistic usage for cable ties made from raw material E/TFE is Tefzel®-Tie. **More colours on request.

In addition to Tefzel® from DuPont HellermannTyton is also using equivalent E/TFE raw material from other suppliers.

*These details are only rough guide values. They should not be regarded as a material specification and are no substitute for a suitability test. Please see our datasheets for further details.



= Minimum Loop Tensile Strength for Cable Ties (Newton)

HF = Halogenfree

LFH = Limited Fire Hazard

RoHS = Restriction of Hazardous Substances

MATERIAL	Material Shortcut	Operating Temperature	Colour**	Flammability	Material Properties*	Material Specifications
Polyamide 6.6 , with metal particles	PA66MP	-40 °C to +85 °C, (+105 °C, 500 h)	Blue (BU)	UL94 HB	<ul style="list-style-type: none"> High yield strength Metal and X-Ray detectable 	HF RoHS
Polyamide 6.6 V0	PA66V0	-40 °C to +85 °C	White (WH)	UL94 V0	<ul style="list-style-type: none"> High yield strength Low smoke emission 	HF LFH RoHS
Polyamide 6.6 V0 , High Oxygen Index	PA66V0-HOI	-40 °C to +85 °C, (+105 °C, 500 h)	White (WH)	UL94 V0	<ul style="list-style-type: none"> High yield strength Low smoke emissions 	HF LFH RoHS
Polyester	SP	-50 °C to +150 °C	Black (BK)	Halogen free	<ul style="list-style-type: none"> UV-resistant Good chemical resistance to: most acids, alkalis and oils 	HF LFH RoHS
Polyetheretherketone	PEEK	-55 °C to +240 °C	Beige (BGE)	UL94 V0	<ul style="list-style-type: none"> Resistance to radioactivity Not moisture sensitive Good chemical resistance to: acids, bases, oxidizing agents 	HF LFH RoHS
Polyethylene	PE	-40 °C to +50 °C	Black (BK), Grey (GY)	UL94 HB	<ul style="list-style-type: none"> Low moisture absorption Good chemical resistance to: most acids, alcohol and oils 	HF RoHS
Polyolefin	PO	-40 °C to +90 °C	Black (BK)	UL94 V0	<ul style="list-style-type: none"> Low smoke emissions 	HF LFH RoHS
Polypropylene	PP	-40 °C to +115 °C	Black (BK), Natural (NA)	UL94 HB	<ul style="list-style-type: none"> Floats in water Moderate yield strength Good chemical resistance to: organic acids 	HF RoHS
Polypropylene, Ethylene- Propylene-Dien- Terpolymere-rubber free of Nitrosamine	PP, EPDM	-20 °C to +95 °C	Black (BK)	UL94 HB	<ul style="list-style-type: none"> Good resistance to high temperatures Good chemical and abrasion resistance 	HF RoHS
Polypropylene with metal particles	PPMP	-40 °C to +115 °C	Blue (BU)	UL94 HB	<ul style="list-style-type: none"> Floats in certain liquids Metal and X-Ray detectable Heat resistant Moderate yield strength Good chemical resistance 	RoHS
Polyvinylchloride	PVC	-10 °C to +70 °C	Black (BK), Natural (NA)	UL94 V0	<ul style="list-style-type: none"> Low moisture absorption Good chemical resistance to: acids, ethanol and oil 	RoHS
Stainless Steel, Stainless Steel	SS304, SS316	-80 °C to +538 °C	Natural (NA)	Non burning	<ul style="list-style-type: none"> Corrosion resistant Antimagnetic Weather resistant Outstanding chemical resistance 	HF LFH RoHS
Thermoplastic Polyurethane	TPU	-40 °C to +85 °C	Black (BK)	UL94 HB	<ul style="list-style-type: none"> High elasticity Good chemical resistance to: acids, bases and oxidizing agents 	HF RoHS

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