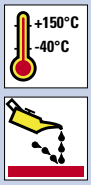
ACW0219 - Hot oil resistant thin-wall 150°C automotive engine harness wire ISO 6722 Class D



- T4 Rated (3000 hours @ 150°C)
- Unique dual-wall, bonded insulation
- Mechanically tough
- Excellent resistance at high temperature to engine fluids
- Designed to be compatible with all harness shop processes
- Proven high level of compatibility with materials used in the harnessing process
- 50 Volts. Thin-wall
- Available in twisted pairs and triples

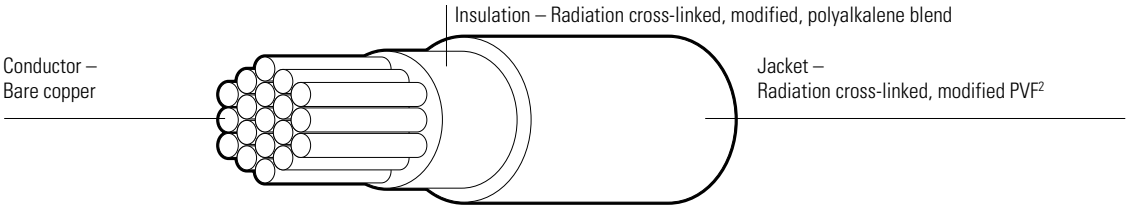
ACW or Automotive Composite Wall wire was developed to be the most cost effective wire in the 150°C D class. It was designed to meet both the requirements of the OEMs and the harness shops. The product is dual-wall in construction using modified polyolefin fluoropolymer outer. This combination of materials offers outstanding performance at optimum cost. What differentiates ACW automotive wire from other dual-wall technologies is the bonding that joins the two layers together. The unique bonding technology ensures that the insulation behaves as a single layered product.

The ACW bonding increases the resistance to mechanical damage during harness manufacture that has been the down side to conventional dual-wall technologies.

Taking advantage of the inherent flexibility of the polyolefinic inner layer ACW automotive wire offers excellent handleability.

With conventional dual-wall technologies another risk exists. If the outer layer is damaged it is feasible that fluids, like windscreen wiper solution, can wick down the interface of the insulation to the connector resulting in system interference or failure. The bonding prevents this happening with ACW. ACW offers automotive wire offers a significant cost saving versus traditional 150°C wire like ETFE, superior performanc versus crosslinked polyethylene and vastly superior hydrolytic stability versus polyesters. ACW is approved and used by many OEMs and is available in barrels and Niehoff packaging formats.

Ordering information



Conductor						Finished wire Diameter				
Part number	CSA	Stranding No/dia	Diameter Maximum	Minimum Overall Insulation Thicknes	Maximum Resistance @ 20°C	Lower spec limit	Target	Upper spec limit	Aproximate Weight	Copper Weight For information
	(mm²)	(mm)	(mm)	(mm)	(ohms/km)	(mm)	(mm)	(mm)	(kg/km)	(kg/km)
ACW0219-0.35-*	0.35	7/0.26	0.80	0.20	52.00	1.20	1.30	1.40	4.50	3025
ACW0219-0.50-*	0.50	19/0.19	1.00	0.22	37.10	1.40	1.50	1.60	6.00	4.40
ACW0219-0.75-*	0.75	19/0.23	1.20	0.24	24.70	1.70	1.80	1.90	9.40	6.50
ACW0219-1.00-*	1.00	19/0.26	1.35	0.24	18.50	1.90	2.00	2.10	11.00	8.50
ACW0219-1.50-*	1.50	19/0.32	1.70	0.24	12.70	2.20	2.30	2.40	16.00	12.60
ACW0219-2.50-*	2.50	19/0.41	2.15	0.28	7.60	2.70	2.85	3.00	25.00	21.00
ACW0219-4.0-*	4.00	56/0.31	2.50	0.32	4.70	3.40	3.55	3.70	40.00	36.00
ACW0219-6.0-*	6.00	84/0.31	2.95	0.32	3.10	4.00	4.15	4.30	61.00	54.00
ACW0219-10.0-*	10.00	80/0.41	4.50	0.48	1.82	5.50	5.75	6.00	104.00	95.00

Standard colours

Colour	Code	Colour	Code	Colour	Code
Black	0	Orange	3	Violet	7
Brown	1	Yellow	4	Grey	8
Red	2	Green	5	White	9
Pink	2L	Blue	6		

Ordering description

The '*' in the part number shall be replaced by a standard numerical colour code designator as per above.

Additional number after base colour indicates stripe. e.g. ACW0219-0.50-96 is a white base colour with blue stripe.

Where stripes are required the wire carries two co-extruded longitudinal stripes of the same colour.

The individual stripe width is a minimum of 10% of the wire circumference with an overall stripe coverage of 30% maximum.

* Co-extruded longitudinal stripes are not available on gauge size 10mm

ACW0219 is available in twisted pairs and triples. e.g. A standard part number will be ACW0229-0.50-0/9- mm ^{2} black and white pair.

All specifications are subject to change. Consult Tyco Electronics for the latest specification

Typical properties of ACW0219-0.75		Method	Typical value
	Operating temperature	ISO 6722	-40°C to 150°C
	Voltage		50 Volts
	Thermal life	ISO 6722	3000 hours @ 150°C
	Heat shock	ISO 6722	>240 hours @ 175°C
	Abrasion (7N, 0.45 mm radius blade)	ISO 6722	> 700 cycles
	Flammability	ISO 6722	Pass. 45° < 30 seconds
	Insulation strip force		< 40 N
	Volume resistivity	ISO 6722	1.5 x 10^{15} Mohms m
	Hot oil (ASTM1)	24 hours @ 135°C	No breakdown at 1KV
	10 minute dip in ASTM oil	1000 hours @ 150°C	for 1 minute
	Battery acid resistance	20 hours @ RT	< 1% swell
	Auto transmission fluid (Dexron III)	20 hours @ 50°C	
	Ozone resistance (100pphm @ 65°C)	ISO 6722	Pass
	Mycological (28 days @ 30°C)	Din IEC 60068-2-10	Pass
	Hydrolysis	35 days, 85°C, 48V	Pass
	Shrinkage @ 150°C for 15 minutes	ISO 6722	< 1%
	PVC tape and wire compatibility	3000 hours @ 150°C	No breakdown @ 1KV

Specifications	
	Tyco Electronics Raychem WSD 1223
	WSK-1A348-A4
	ISO 6722 (as above)
	BMW GS.95
	VW 60306
	Fiat 9 91107

ACW0219 performance highlights	
	Suitable for direct routing through high temperature areas without use of additional protection or heat-shields due to its excellent mechanical properties at elevated temperatures.
	Excellent mechanical and high temperature fluid resistance means that ACW automotive wire is suitable for use in the harsh environment of the care where 150°C performance is required.
	Excellent low temperature performance down to -40°C.
	Designed to be compatible with wire handling equipment used by all major manufacturers including ultra sonic welding.
	Proven high level of compatibility with materials used in the harnessing process. In particular, pvc tapes and wires.
	Tough enough to be used in harnesses without conventional secondary protection giving cost, size and weight savings.
	Resistance to wicking of fluids between the interface of the insulation system.
	Supplied in barrels or Neihoffs for fast automatic handling and lead preparation using standard equipment.

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