



Type NM-B Cu-Clad Conductor

600V | Premium Building Wire

Copper-Clad Aluminum Conductors



Defined by
CODE

Conductors drawn from a copper-clad aluminum rod, with the copper metallurgically bonded to an AA 8000 series aluminum core, where oxygen-free copper forms a minimum of 10 percent of the cross-sectional area of a solid conductor or each strand of a stranded conductor.

Application Standards — UL (UL-83, UL-719, UL-1581, UL-2556); NFPA 70 (NEC®) Article 334; ASTM-B-566; NEMA RV 2-2011

Conductors — For wire sizes 12-10, solid annealed THHN Copper-Clad Aluminum with solid Copper Clad Aluminum ground. For 8 AWG sizes and larger, stranded annealed THHN Copper-Clad Aluminum with solid Copper-Clad Aluminum ground.

Conductor Insulation — Color-coded Polyvinyl Chloride (PVC) compound meeting the required thickness of Type THHN or THWN-2 with a heat-stabilized Nylon jacket rated for 90°C in dry locations.

Grounding Conductor — For NM-B 12-10 AWG sizes: ground will be 12-10 AWG, solid, annealed conductor. For NM-B 8 AWG sizes and larger: ground will be 8 AWG, solid, annealed.

NM-B Jacket — Made with 30-mil flame retardant and moisture resistant PVC to safety listing standards. Colors according to industry norms and specific application.



- 1) PVC jacket
- 2) Kraft paper sleeve
- 3) Listed THHN conductors rated at 90°C
- 4) Listed Copperweld Bimetallic Conductor

Identification, Applications and Usage

Copperweld® Copper-Clad Aluminum Type NM-B (non-metallic sheathed cable) is referenced by Article 334 of the National Electrical Code. OSHA safety listed: UL E492024. ETL listing: 5021266.

Wiring Methods: Per Article 334 of the NEC, Copperweld® Type NM-B shall not be used in wet or damp locations where an electrolyte might be present. It may only be used in dry locations for indoor wiring. Copperweld® NM-B cable should be sized per NEC ampacity table 310.16 using the 60°C column. It may be used as the primary electrical conductor for the residential branch circuit system, providing service for outlets, switches and 240 Volt appliance loads. It cannot be used as a service entry cable, nor can it be buried. Copperweld NM-B must be protected from physical damage per Article 300.4 of the NEC. It must not be installed in locations exposed to corrosive fumes or vapors. Per Article 590, Copperweld® NM-B can be used in temporary installations as feeders and branch circuits for power and lighting. Type NM-B is rated 600-volt for both exposed and concealed work in dry locations, as defined by the National Electrical Code.

Identified for use with wiring devices, splice connectors and equipment terminals rated for CC, Cu, Cu/Al and CO/ALR. When terminating with twist-on splice connectors, pre-twisting is not required. Torque until the wires are tight under the cap and visibly twisted together two times outside of the cap to ensure electrical contact. Do not over-torque or under-torque. Ensure secure connection limiting wire deformation. Copperweld® NM-B is made with ASTM B-566 Copper-Clad Aluminum bare wire, which carries its own component listing, RU DVVU2 and DVVV2. Copperweld NM-B conductors are suitable to terminate on 15 and 20 ampere rated wiring devices (receptacles and snap switches) marked "copper only" or "CO/ALR." For termination on devices rated 30 amperes or greater, the termination must be marked "CU/AL" or equivalent. Please consult UL Product IQ guide information TRT and WJQR if further confirmation is required. Copperweld® NM-B CCA conductor satisfies Article 110.14 Electrical Connections as being a similar metal to copper for the purposes of electrical connections. Copperweld® NM-B may be pigtailed to single-metal copper wire in dry locations. Copperweld® NM-B cable should not be terminated with single-metal aluminum wire without the application of an oxide inhibitor or a terminal or connector specifically listed for the intermixing of dissimilar conductor metals. Copperweld® ASTM B-566 Copper-Clad Aluminum wire is not dissimilar to copper, brass or zinc-plated steel.

Copperweld® NM-B Specifications

Type	Size (AWG or KCMIL)	Strands	Standard Jacket Color	Ground Wire Size (Solid AWG)	Insulation Thickness (in)*		Allowable Amperage at 60°C	Outside Diameter (in)	Approx. Weight (lbs/1000 ft)	Standard Packaging	Standard 48x48 Pallet Qty
					PVC	Nylon					
NM-B	12/2-G	1	White	12	0.015	0.004	15	0.191 x 0.403	45.51	250' Coil, 1000' Wood Reel	108/12
NM-B	12/3-G	1	White	12	0.015	0.004	15	0.191 x 0.522	61.25	250' Coil, 1000' Wood Reel	81/12
NM-B	10/2-G	1	Yellow	10	0.020	0.004	25	0.222 x 0.487	67.21	250' Coil, 1000' Wood Reel	81/12
NM-B	10/3-G	1	Yellow	10	0.020	0.004	25	0.222 x 0.637	89.84	250' Coil, 1000' Wood Reel	54/12
NM-B	8/2-G	7	Orange	8	0.030	0.005	35	0.277 x 0.693	123.64	1000' Wood Reel	10
NM-B	8/3-G	7	Orange	8	0.030	0.005	35	0.582	160.67	1000' Wood Reel	10
NM-B	6/2-G	7	Black	8	0.030	0.005	40	0.314 x 0.769	155.65	1000' Wood Reel	10
NM-B	6/3-G	7	Black	8	0.030	0.005	40	0.674	213.06	1000' Wood Reel	10
NM-B	4/2-G	7	Black	8	0.040	0.006	55	0.385 x 0.909	225.49	1000' Wood Reel	8
NM-B	4/3-G	7	Black	8	0.040	0.006	55	0.843	315.91	1000' Wood Reel	4

Ampacity of NM-B conductors are based on NFPA 70 (NEC) Table 310.16 for a temperature rating of the conductors of 60°C according to article 334.80 (Ampacity for NM Cable). See 110.14 (C), 240.4(D), 310.15(B) and 334.80 for other limitations where applicable. Note: Additional ampacity limitations, adjustments or corrections may apply per 310.16, 334.80 and 240.4 of the NEC

* Jacket thickness for NM-B cable is 30 mils

Allowable Ampacities

Jacket Color	Copperweld® Cu-Clad					Standard Copper			
	Cu-Clad AWG	Copper AWG X-ref	60°C (140°F)	75°C (167°F)	90°C (194°F)	Copper AWG	60°C (140°F)	75°C (167°F)	90°C (194°F)
			<small>Types: TW, UF</small>	<small>Types: RHW, THHW, THW, THWN, XHHW, USE</small>	<small>Types: TBS, SA, SIS, THHN, THHW, THW, THWN-2, RHH, RHW-2, USE-2, XHH, XHHW, XHHW-2, ZW-2</small>		<small>Types: TW, UF</small>	<small>Types: RHW, THHW, THW, THWN, XHHW, USE, ZW</small>	<small>Types: TBS, SA, SIS, RFP, FEP, MI, RHH, RHW-2, THHN, THHW, THW-2, THWN-2, USE-2, XHH, XHHW, XHHW-2, ZW-2</small>
White	12**	Replaces	15	20	25	14**	15	20	25
Yellow	10**	Exceeds by 5 Amps	25	30	35	12**	20	25	30
Orange	8*	Exceeds by 5 Amps	35	40	45	10**	30	35	40
Black/Other	6	Replaces	40	50	55	8	40	50	55
Black/Other	4	Replaces	55	65	75	6	55	65	75

* Refer to 310.15(B)(2) for the ampacity correction factors where the ambient temperature is other than 30°C (86°F).

** Refer to 240.4(D) for conductor overcurrent protection limitations.