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Specification of Aluminium strip for Armored cable

1. Scope

This provisions specify specification of Aluminium strip for use of aluminum tape armoured cable

2. Requirements

2.1. Alloy. Temper ,specification

Alloy. Temper ,specification shall comply with following table 1

Alloy	Temper	Thickness(mm)	Width(mm)	Width tolerance(mm)	
10 60	0		Double aluminum tape armoured: 25~50mm The vertical covered argon arc welding corrugated aluminium sheath >80~400mm	$10 \leq W < 50$ ± 0.15	
	H12、 H22	0.50 \pm 0.03 0.60 \pm 0.04 0.65 \pm 0.06			
	H14、 H24	0.75 \pm 0.06 0.80 \pm 0.06 0.90 \pm 0.06			
	H16、 H26	1.00 \pm 0.06 1.10 \pm 0.07 1.20 \pm 0.07			
	H18	1.30 \pm 0.08 1.40 \pm 0.08 1.50 \pm 0.08			
10 70	0				$50 \leq W < 100$ ± 0.25
	H12、 H22	1.60 \pm 0.09 1.70 \pm 0.09 1.80 \pm 0.09			$100 \leq W < 150$ ± 0.50
	H14、 H24	1.90 \pm 0.09 2.00 \pm 0.10 2.10 \pm 0.10			$150 \leq W < 200$ ± 0.80
	H16、 H26	2.20 \pm 0.10 2.30 \pm 0.10 2.40 \pm 0.10			$200 \leq W$ ± 1.00
	H18	2.50 \pm 0.10 2.60 \pm 0.12 2.70 \pm 0.12			
1070A	0				
	H12、 H22	2.80 \pm 0.12 2.90 \pm 0.12 3.00 \pm 0.12			
	H14、 H24				
	H16、 H26				
	H18				
11 00	0				
	H12、 H22				
	H14、 H24				



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	H16、H26			
	H18			

2.2 chemical composition: comply with standard of GB/T 3190-2008 or ASTM B 209

2.3 Physical properties: refer to table 2

Alloy	Temper	Thickness mm	Tensile strength Rm/MPa	The strength of extension Rp0.2/MPa	Break Elogation*
					% A50mm
1060	0	>0.30~0.50	60~100	15	18
		>0.50~1.50			23
		>1.50~6.00			25
	H12, H22	>0.50~1.50	H12: 80~120	60	6
		>1.50~6.00	H22: 80		H12: 12, H22: 10
	H14, H24	>0.30~0.50	H14: 95~135 H24: 95	70	2
		>0.50~0.80			2
		>0.80~1.50			4
		>1.50~3.00			6
	H16, H26	>0.30~0.50	H16: 110~155 H26: 110	75	2
		>0.50~0.80			2
		>0.80~1.50			3
		>1.50~4.00			5
	H18	>0.30~0.50	125	85	2
		>0.50~1.50			3
		>1.50~3.00			4
1070	O	>0.30~0.50	55~95	—	20
		>0.50~0.80			25
		>0.80~1.50		15	30
		>1.50~6.00			35
	H12, H22	>0.30~0.50	H12: 70~100 H22: 70	—	3
		>0.50~0.80			4
		>0.80~1.50		55	6
		>1.50~3.00			8



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	H14, H24	>0.30~0.50	H14: 85~120	—	2	
		>0.50~0.80			3	
		>0.80~1.50	H24: 85	65	4	
		>1.50~3.00			5	
	H16, H26	>0.20~0.50	H16: 100~135	—	1	
		>0.50~0.80			2	
		>0.80~1.50	H26: 100	75	3	
		>1.50~4.00			4	
	H18	>0.30~0.50	120	—	1	
		>0.50~0.80			2	
		>0.80~1.50			3	
		>1.50~3.00			4	
1070A	O, H111	>0.20~0.50	60~90	15	23	
		>0.50~1.50			25	
		>1.50~3.00			29	
	H12, H22	>0.20~0.50	80~120	H12: 55 H22: 50	H12: 5, H22: 7	
		>0.50~1.50			H12: 6, H22: 8	
		>1.50~3.00			H12: 7, H22: 10	
	H14, H24	>0.20~0.50	100~140	H14: 70 H24: 60	H14: 4, H24: 5	
		>0.50~1.50			H14: 4, H24: 6	
		>1.50~3.00			H14: 5, H24: 7	
	H16, H26	>0.20~0.50	110~150	H16: 90 H26: 80	H16: 2, H26: 3	
		>0.50~1.50			H16: 2, H26: 3	
		>1.50~4.00			H16: 3, H26: 4	
	H18	>0.20~0.50	125	105	2	
		>0.50~1.50			2	
		>1.50~3.00			2	
	1100	O	>0.30~0.50	75~105	25	17
			>0.50~1.50			22
			>1.50~6.00			30
H12, H22		>0.30~0.50	95~130	75	3	
		>0.50~1.50			5	
		>1.50~6.00			8	
H14, H24		>0.30~0.50	110~145	95	2	
		>0.50~1.50			3	
		>1.50~4.00			5	



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	H16、H26	>0.30~0.50	130~165	115	2
		>0.50~1.50			3
		>1.50~4.00			4
	H18	>0.20~0.50	150	—	1
		>0.50~1.50			2
		>1.50~3.00			4
*A50mm is applied to plate whose thickness is less than 12.5mm (here is only for reference)					

2.4. Surface quality

Aluminium strip surface defect depth should not exceed allowed negative deviation of strip thickness, to ensure the minimum thickness of the strip.

Aluminum belt should be tight, without loose rolls, connectors.

sand paper is allowed to miner grind surface miner defect of strip surface, the grinding depth should not exceed allowed negative deviation of strip thickness, and to ensure minimum thickness of the strip.

Aluminium strip Apperance shall comply with table 3 regulation

Table 3 Aluminium strip surface requirements

Defect	Aluminium cold rolled strip		Aluminium Hoting rolled strip
	When Thickness <2.0mm width ≤500mm	Other size	
Nitrate track	—	Not allowed	Not allowed
Fold	Not allowed	Minor allowed	Minor allowed
Oxidation	—	Minor allowed	Minor allowed
Oil stain	Annealing temper: Minor allowed	Annealing tempe: Minor allowed	—
layer	Less than 0.5mm		Less than 0.5mm
telescope	Less than 1mm		Less than 1mm
crack, corrosion, wear vent, peeling, burr	Not allowed		
scratch, wounded, loose dendritic pattern, metal or nonmetal inclusion, oil, emulsion, rolling marks, color difference,dark lines.	Minor allowed		
spread of spots	When thickness is over 0.6mm : not allowed		
bubble	Not allowed		



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3. Testing methods

3.1 chemical composition

As per Standard of GB/T 20975 《Aluminium and aluminium alloy chemical composition analysis 》 or ASTM B 209

3.2 . Measurements

3.2.1. Thickness measurements

Use accuracy of 0.01 mm micrometer for measurements

To measure thickness at places of 10mm away from both sides and at middle

3.2.2. Width measurements

Use 50 degrees with vernier caliper (measurement accuracy 0.02 mm)for checking width when aluminium strip width is less than 120mm.

Use steel ruler width accuracy 0.02 mm to check width when aluminium strip width is more than 120mm.

3.2.3. Edge bending measurement

Pull straight lines at any two points whose distance is 2000mm along strip side, then measure max. Distance from side to straight line

3.2.4. Physical properties.

As per ASTM B 209

3.2.5. Bending test

As per ASTM B 209

3.2.6. others: As per ASTM B 209

4. Packing, storage, transportation, labling

4.1 labling

Each roll shall indicate in labling the following items or requirements as per order

Alloy, temper, size, lot number, net weight, gross weight,production date, inspection date, inspector, order no.。

4.2. Mill's testing report

Mill test report shall be supplied together with each lot shipment which will include:

Manufacturer's name and address, Alloy, temper, size, lot number, net and gross weight, inspector,inspection detail report , packing date, production date.