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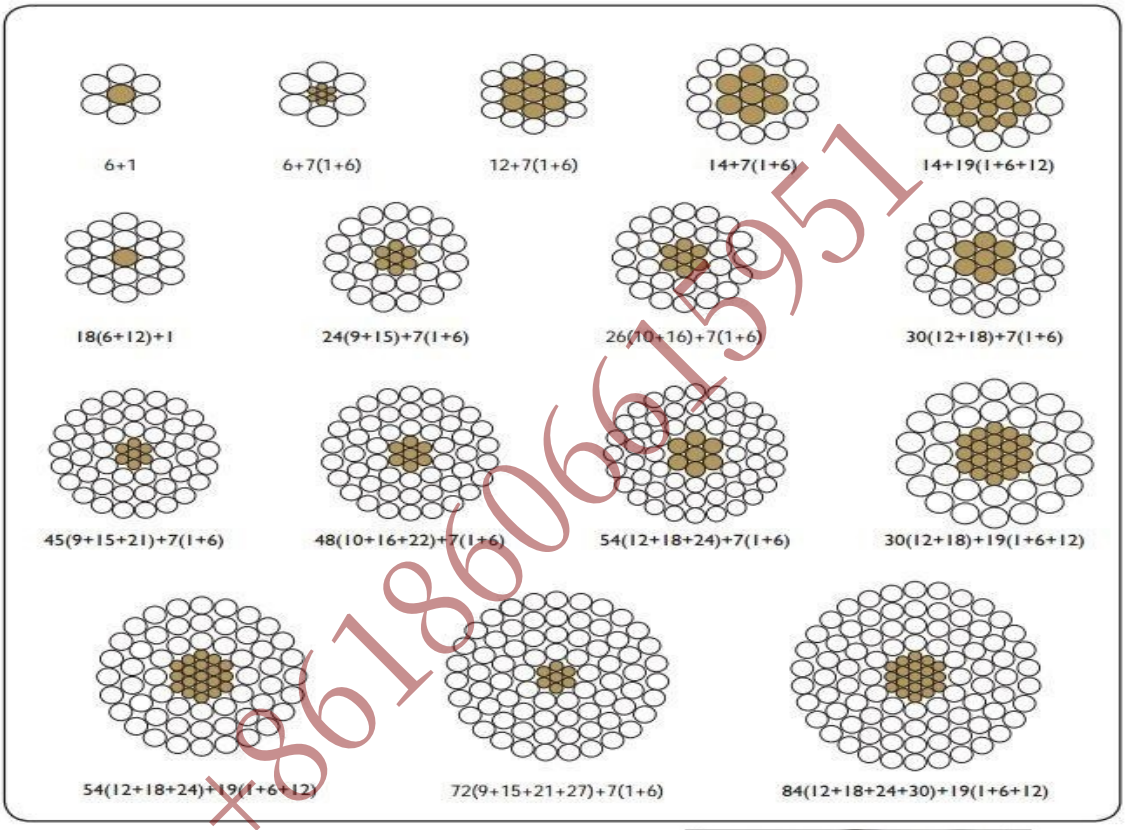
ACSR cable manufacturing process

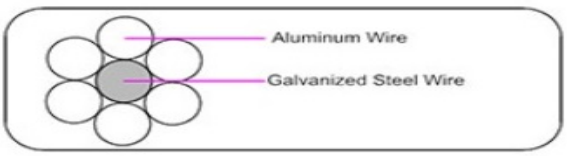
1. Introductions:

ACSR conductors are widely used for electrical power transmission over long distances, since they are ideal for long overhead lines spans. They are also used as a messenger for supporting overhead electrical cables.

ACSR conductors are formed by several wires of aluminum and galvanized steel, stranded in concentric layers. The wire or wires which form the core, are made of galvanized steel and the external layer or layers, are of aluminum. Galvanized steel core consist normally of 1, 7 or 19 wires. The diameters of steel and aluminum wires can be the same, or different.

2. Structure and type：





3. ACSR parameter:

Area				Standing and wire diameter		Overall diameter	Machine requirement
Nominal.	Actual						
Al/Steel	Al	Steel	Total	Aluminum	Steel		
mm2	mm2	mm2	mm2	mm	mm	mm	Model
16/2.5	15.3	2.5	17.80	6/1.80	1/1.80	5.4	Tubular strander 1+6

25/4.0	23.8	4.0	27.80	6/2.25	1/2.5	6.8	
35/6.0	34.3	5.7	40.00	6/2.70	1/2.70	8.1	
44/32.0	44.0	31.7	75.70	14/2.00	7/2.40	11.2	Tubular strander 1+6 and rigid stranding 12+18
50/8.0	48.3	8.0	56.30	6/3.20	1/3.20	9.6	Tubular strander 1+6
50/30	51.2	29.8	81.00	12/2.33	7/2.33	11.7	Tubular strander 1+6 and rigid stranding 12+18
70/12	69.9	11.4	81.30	26/1.85	7/1.44	11.7	
95/15	94.4	15.3	109.70	26/2.15	7/1.67	13.6	
95/55	96.5	56.3	152.80	12/3.20	7/3.20	16.0	
120/20	121.1	19.8	141.40	26/2.44	7/1.90	15.5	
120/70	122.0	71.3	193.30	12/3.60	7/3.60	18.0	
125/30	127.9	29.8	157.70	30/2.33	7/2.33	16.3	
150/25	148.9	24.2	173.10	26/2.70	7/2.10	17.1	
170/40	171.8	40.1	211.90	30/2.70	7/2.70	18.9	
185/30	183.8	29.8	213.60	26/3.00	7/2.33	19.0	
210/35	209.1	34.1	243.20	26/3.20	7/2.49	20.3	
210/50	212.1	49.5	261.60	30/3.00	7/3.00	21.0	
230/30	230.9	29.8	260.70	24/3.50	7/2.33	21.0	
240/40	243.0	39.5	282.50	26/3.45	7/2.68	21.9	
265/35	263.7	34.1	297.80	24/3.74	7/2.49	22.4	
300/50	304.3	49.5	353.70	26/3.86	7/3.00	24.5	
305/40	304.6	39.5	344.10	54/2.68	7/2.68	24.1	Tubular strander 1+6 and rigid stranding 12+18+24
340/30	339.3	29.8	369.10	48/3.00	7/2.33	25.0	
380/50	382.0	49.5	431.50	54/3.00	7/3.00	27.0	
385/35	386.0	34.1	420.10	48/3.20	7/2.49	26.7	
435/55	434.0	59.3	490.60	54/3.20	7/3.20	28.8	
450/40	448.7	39.5	488.20	48/3.45	7/2.68	28.7	
490/65	490.3	63.6	553.90	54/3.40	7/3.40	30.6	
495/35	494.1	34.1	528.20	45/3.74	7/2.49	29.9	
510/45	510.2	45.3	555.50	48/3.68	7/2.87	30.7	
550/70	550.0	71.3	621.30	54/3.60	7/3.60	32.4	
560/50	561.7	49.5	611.20	48/3.86	7/3.00	32.2	
570/40	565.5	39.5	610.30	45/4.00	7/2.68	32.2	
650/45	698.5	45.3	653.49	45/4.30	7/2.87	34.4	
680/85	678.8	86.0	764.8	54/4.00	19/2.40	36.0	

4. Machine requirements:

No.	**Machine name**	**Model&Structure**	**Remark:**
Low Investment(500 is meaning bobbin size)			
1	Tubular strander	JJG-500/1+6	Adopt twisting 7 galvanized steel wire
2	Rigid strander	JLK-500/12+18	Adopt twisting 30 aluminum conductor
3	Rigid strander	JLK-500/12+18+24	Adopt twisting 54 aluminum conductor

Standard Investment(630 is meaning bobbin size)			
1	Tubular strander	JJG-630/1+6	Adopt twisting 7 galvanized steel wire
2	Rigid strander	JLK-630/12+18	Adopt twisting 30 aluminum conductor
3	Rigid strander	JLK-630/12+18+24	Adopt twisting 54 aluminum conductor

Note: if the galvanized steel wire is 19(1+6+12), it need tubular strander 1+18 or 1+12 (high cost, we not rommend)

5. Machine Pictures:

5.1 Tubular strander: it can use for steel wire, copper,aluminum etc. max 700rpm. Min production capacity is 9000-80000km/8 hours.

5.2 Rigid strander: it can use for copper, aluminum etc. max 220rpm. Min production capacity is around 50000-90000km/8 hours.

Note: Production capacity is depend on stranding pitch. Calculation formula: picth*RPM*60 minutes*8 hours