

# TECHNICAL SPECIFICATION

## Aluminum Conductor Steel Reinforced

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<b>Version</b>	<b>Date</b>	<b>Prepared</b>	<b>Reviewed</b>	<b>Approved</b>

## 1. SCOPE

This specification covers the general requirements and performance of conductor which ZTT offered including electrical characteristics, mechanical characteristics, packing information etc.

## 2. QUALITY CONTROL STANDARD

ISO 9001	Quality Management Systems
ISO 14001	Environmental Management Systems
OHSAS 18001	Occupational Health and Safety Management Systems

## 3. TEST AND INSPECTION

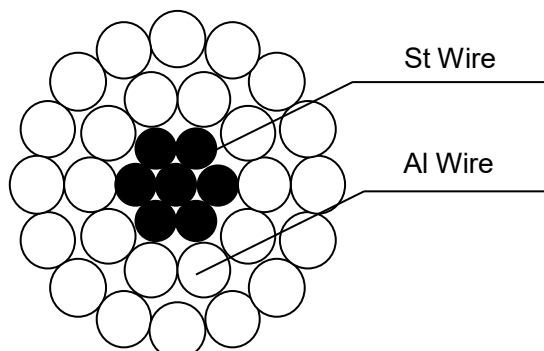
ACSR shall be accordance with applicable standard of ACSR and requirements of customer. The following test items shall be carried out according to corresponding reference.

No	Item	Reference
<b>Tests for Steel Wire</b>		
1	Dimensions	PN-IEC 1089
2	Tensile strength	PN-IEC 1089
3	Elongation	PN-IEC 1089
4	Torsion	PN-IEC 1089
5	Mass of zinc	PN-IEC 1089
<b>Tests for Aluminum Wire</b>		
1	Dimensions	PN-IEC 1089
2	Tensile strength	PN-IEC 1089
3	Elongation	PN-IEC 1089
4	Wrapping	PN-IEC 1089
5	Resistivity test	PN-IEC 1089
<b>Tests for Conductor</b>		
1	Dimensions	PN-IEC 1089
2	Lay ratio and direction of lay	PN-IEC 1089
3	Number and type of wires	PN-IEC 1089
4	Mass per unit length	PN-IEC 1089

## 4. CONSTRUCTION AND SPECIFICATION FOR ACSR

### 4.1. Conductor Structure

ACSR – AFL-6 240



#### 4.1.1. Conductor Technical Structure

Parameter		Unit	Value
Structure	Center: Steel wire	Nos./mm	1/2.70
	Layer 1: Steel wire		6/2.70
	Layer 2: Aluminum wire		10/3.4
	Layer 3: Aluminum wire		16/3.4
Standard		/	PN-IEC 1089
Stranding direction of outer layer		Direction	Right-hand
Conductor diameter		mm	21.70
Cross section		mm <sup>2</sup>	276.2
Conductor weight		kg/km	971
Rated tensile strength		kN	82.8
Modulus of Elasticity		GPa	77.1
Coefficient of linear expansion		10 <sup>-6</sup> /°C	18.5
Max. DC Resistance at 20°C		Ω/km	0.1240
Lay ratio	Aluminum layer	times	All inner layers 10-16 Outer layer 10-14
	Steel layer		6-wire layer 16-26

#### 4.1.2. Properties of Aluminum Wire (Before Stranding)

Parameter	Unit	Value
Diameter and tolerance	mm	3.4±0.03
Min. tensile strength	MPa	165
Max. resistivity at 20°C	Ω·mm <sup>2</sup> /m	0.028264

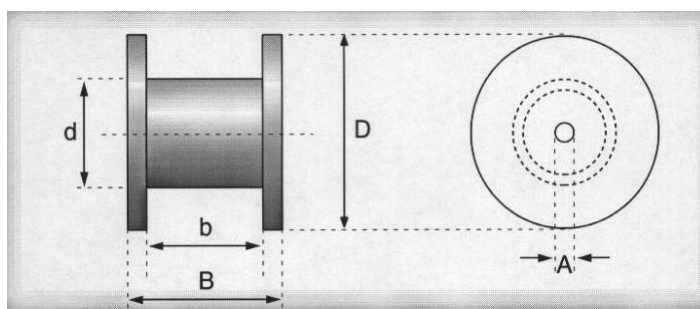
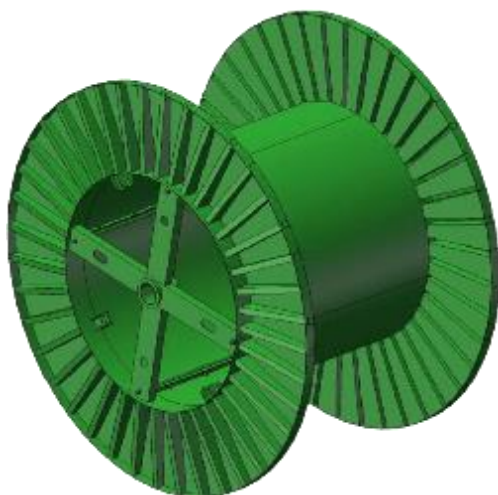
#### 4.1.3. Properties of Steel wire (Before stranding)

Parameter	Unit	Value
Diameter and tolerance	mm	2.7±0.04
Min. tensile strength	MPa	1350
Min. tension at 1% elongation	MPa	1140
Min elongation at 250 mm	%	3.0
Class of zinc coating	/	Class A
Min. mass of zinc Coating	g/m <sup>2</sup>	230

**Note: All Sizes and Values are Nominal Value**

## 5. PACKING AND DRUM FOR CONDUCTOR

The required marking shall be printed with a weather-proof material on the outsides of drum according to customer's requirement.



Cable Type	Drum Length (m)	Drum Dimensions					Gross Weight (Approx.) kg	Drum Type
		D mm	d mm	B mm	b mm	A mm		
ACSR-AFL-6 240 26/3.4+7/2.7	3100	1800	800	1100	900	105	3190	Steel

Note :The value "D" does not contain the dimension of seal.