

Hangzhou Easy Electric Wire and Cable Co.,LTD

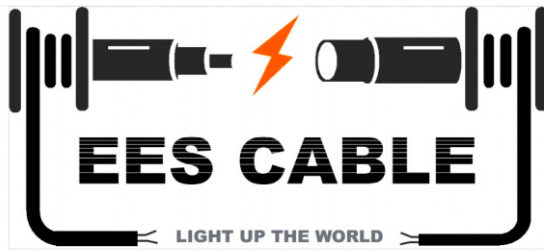
Add: Room 305, Building 2, No. 380 Fengxin Road, Hangzhou, China

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Test Certificate (ACS strand wire 19/2.10mm, 20.3% IACS)

No.	Description	Technical Particulars (after strand)	Test Data																	
1	Numbers of Drums		1																	
2	Length(M)/Drum																			
3	Overall Diameter	Nom.: 10.5mm Min.: 10.4mm Max.:	10.55																	
4	DC Resistance(Max.)	1.313Ω/km	1.188																	
5	Lay Ratio	Inner Lay: 10-16	14.76																	
		Outer Lay:10-16	11.61																	
6	Lay Direction	Inner Lay: Left	左																	
		Outer Lay:Right	右																	
7	Surface	free from any joints /welding's with smooth surface finish	OK																	
8	Single Wire Diameter	Non.: 2.10mm Min.: 2.07mm Max.:	2.12	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11
9.00	Max. Resistivity at 20°C	84.8Ω mm ² / Km	79.07	78.63	79.53	79.36	80.22	80.15	78.21	78.42	79.20	80.78	78.99	79.31	79.20	80.22	78.89	79.31	79.97	80.08
10	Thickness of Aluminum (mm)	10% of Nominal Wire Radius (Min. 0.105mm)	0.113	0.110	0.114	0.111	0.112	0.110	0.115	0.116	0.111	0.119	0.116	0.115	0.114	0.117	0.113	0.114	0.116	0.114
11	Breaking Load (KN)	Min.: 1237Mpa	1416	1409	1372	1414	1367	1351	1388	1420	1433	1395	1384	1391	1391	1393	1351	1404	1376	1403
12	% Elongation on 250 mm G.L	Min.1.5(at fracture)/Min.1.0(after fracture)	2.16/1.0	2.29/1.0	2.34/1.2	2.20/1.2	2.17/1.0	2.05/1.0	2.11/1.0	2.26/1.2	2.30/1.0	2.17/1.0	2.32/1.2	2.34/1.2	2.36/1.0	2.11/1.0	2.19/1.0	2.06/1.2	2.14/1.0	2.30/1.0
13	Torsion Test(100xD)	Min.20	39	41	43	37	39	41	40	37	39	40	38	37	40	40	38	38	41	37
14	Stress at 1% Extension (KN)	Min.: 1200Mpa	1277																	

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HANGZHOU EASY ELECTRIC WIRE AND CABLE CO., LTD.



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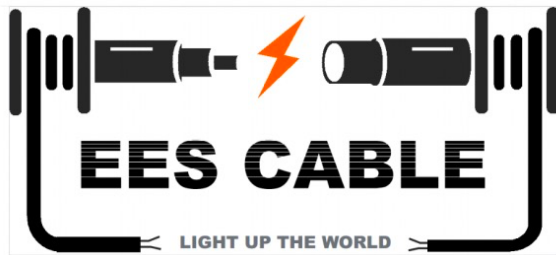
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Test Certificate (ACS strand wire 19/2.10mm, 20.3% IACS)

No.	Description	Technical Particulars (after strand)	Test Data																		
1	Numbers of Drums		7																		
2	Length(M)/Drum																				
3	Overall Diameter	Nom.: 10.5mm Min.: 10.4mm Max.:	10.53																		
4	DC Resistance (Max.)	1.313Ω/km	1.204																		
5	Lay Ratio	Inner Lay: 10-16	14.60																		
		Outer Lay:10-16	10.95																		
6	Lay Direction	Inner Lay: Left	左																		
		Outer Lay:Right	右																		
7	Surface	free from any joints /welding's with smooth surface finish	OK																		
8	Single Wire Diameter	Non.: 2.10mm Min.: 2.07mm Max.:	2.09	2.10	2.11	2.11	2.11	2.11	2.11	2.09	2.09	2.09	2.10	2.10	2.10	2.10	2.11	2.11	2.11	2.11	2.11
9.00	Max. Resistivity at 20 °C	84.8Ω mm ² / Km	78.29	79.46	80.29	79.83	79.34	80.18	79.48	79.22	79.77	79.01	79.01	80.01	79.32	79.53	79.20	79.55	80.11	79.34	79.73
10	Thickness of Aluminum (mm)	10% of Nominal Wire Radius (Min. 0.105mm)	0.113	0.110	0.116	0.114	0.115	0.109	0.113	0.110	0.114	0.113	0.140	0.109	0.113	0.140	0.113	0.110	0.116	0.117	0.113
11	Breaking Laod (KN)	Min.: 1237Mpa	1489	1466	1391	1429	1445	1347	1383	1476	1410	1445	1507	1522	1450	1499	1454	1500	1446	1443	1440
12	% Elongation on 250 mm G.L	Min.1.5(at fracture)/Min.1.0(after fracture)	2.17/1.0	2.05/1.0	2.11/1.0	2.26/1.2	2.30/1.0	2.17/1.0	2.16/1.0	2.29/1.0	2.34/1.2	2.20/1.2	2.17/1.0	2.05/1.0	2.11/1.0	2.11/1.0	2.19/1.0	2.06/1.2	2.14/1.0	2.27/1.0	2.34/1.2
13	Torsion Test(100xD)	Min.20	39	43	40	38	39	36	41	38	40	37	41	40	39	37	41	40	36	38	41
14	Stress at 1% Extension (KN)	Min.: 1200Mpa	1248																		

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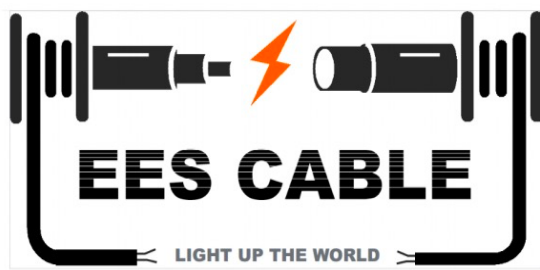
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Test Certificate (ACS strand wire 19/2.10mm, 20.3% IACS)

	Description	Technical Particulars (after strand)	Test Data																		
1	Numbers of Drums		12																		
2	Length(M)/Drum																				
3	Overall Diameter	Nom.: 10.5mm Min.: 10.4mm Max.:	10.51																		
4	DC Resistance (Max.)	1.313Ω/km	1.198																		
5	Lay Ratio	Inner Lay: 10-16	15.07																		
		Outer Lay:10-16	10.66																		
6	Lay Direction	Inner Lay: Left	左																		
		Outer Lay:Right	右																		
7	Surface	free from any joints /welding's with smooth surface finish	OK																		
8	Single Wire Diameter	Non.: 2.10mm Min.: 2.07mm Max.:	2.11	2.10	2.10	2.10	2.10	2.10	2.10	2.11	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10
	Max. Resistivity at 20 °C	84.8Ω mm ² / Km	79.73	78.84	78.45	80.19	78.97	79.32	78.59	79.41	80.01	79.04	78.73	79.18	80.39	79.77	80.22	79.98	79.32	79.01	79.49
10	Thickness of Aluminum (mm)	10% of Nominal Wire Radius (Min. 0.105mm)	0.114	0.103	0.110	0.109	0.113	0.110	0.114	0.107	0.116	0.113	0.118	0.114	0.110	0.113	0.112	0.114	0.116	0.112	0.114
11	Breaking Laod (KN)	Min.: 1237Mpa	1427	1504	1436	1468	1365	1435	1416	1417	1511	1374	1445	1438	1446	1495	1448	1510	1405	1451	1523
12	% Elongation on 250 mm G.L	Min.1.5(at fracture)/Min.1.0(after fracture)	2.34/1.2	2.20/1.2	2.17/1.0	2.05/1.0	2.11/1.0	2.11/1.0	2.19/1.0	2.06/1.2	2.11/1.0	2.26/1.2	2.30/1.0	2.17/1.0	2.17/1.0	2.05/1.0	2.11/1.0	2.26/1.2	2.30/1.0	2.17/1.0	2.32/1.2
13	Torsion Test(100xD)	Min.20	41	37	40	39	37	38	39	39	41	37	40	36	41	38	41	40	39	37	41
14	Stress at 1% Extension (KN)	Min.: 1200Mpa	1261																		

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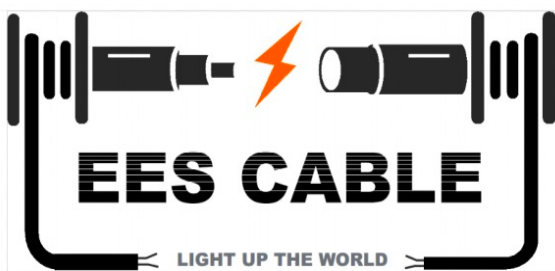
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Test Certificate (ACS strand wire 19/2.10mm, 20.3% IACS)

No.	Description	Technical Particulars (after strand)	Test Data																		
1	Numbers of Drums		16																		
2	Length(M)/Drum																				
3	Overall Diameter	Nom.: 10.5mm Min.: 10.4mm Max.:	10.51																		
4	DC Resistance (Max.)	1.313Ω/km	1.198																		
5	Lay Ratio	Inner Lay: 10-16	13.80																		
		Outer Lay:10-16	10.76																		
6	Lay Direction	Inner Lay: Left	左																		
		Outer Lay:Right	右																		
7	Surface	free from any joints /welding's with smooth surface finish	OK																		
8	Single Wire Diameter	Non.: 2.10mm Min.: 2.07mm Max.:	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10
	Max. Resistivity at 20 °C	84.8Ω mm ² / Km	80.36	79.59	78.84	80.12	79.64	78.93	80.16	79.34	80.11	78.95	79.12	78.47	80.29	79.40	80.13	78.90	78.47	80.11	80.26
10	Thickness of Aluminum (mm)	10% of Nominal Wire Radius (Min. 0.105mm)	0.113	0.116	0.110	0.109	0.114	0.113	0.112	0.113	0.110	0.109	0.117	0.115	0.114	0.119	0.115	0.114	0.109	0.112	0.113
11	Breaking Laod (KN)	Min.: 1237Mpa	1462	1459	1429	1462	1436	1407	1419	1456	1521	1428	1449	1502	1477	1490	1499	1449	1467	1406	1503
12	% Elongation on 250 mm G.L	Min.1.5(at fracture)/Min.1.0(after fracture)	2.30/1.0	2.17/1.0	2.17/1.0	2.05/1.0	2.11/1.0	2.19/1.0	2.06/1.2	2.11/1.0	2.26/1.2	2.30/1.0	2.17/1.0	2.17/1.0	2.34/1.2	2.20/1.2	2.17/1.0	2.05/1.0	2.11/1.0	2.06/1.2	2.06/1.2
13	Torsion Test(100xD)	Min.20	41	36	40	38	37	41	40	38	36	39	41	40	36	38	37	40	39	38	41
14	Stress at 1% Extension (KN)	Min.: 1200Mpa	1288																		

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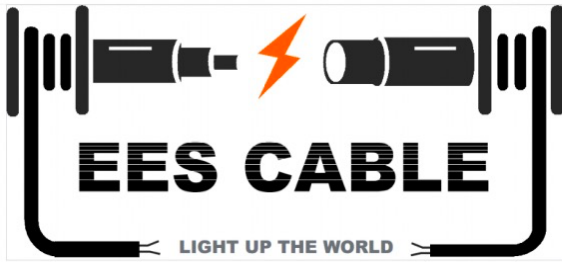
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Test Certificate (ACS strand wire 19/2.10mm, 20.3% IACS)

No.	Description	Technical Particulars (after strand)	Test Data																		
1	Numbers of Drums		21																		
2	Length(M)/Drum																				
3	Overall Diameter	Nom.: 10.5mm Min.: 10.4mm Max.:	10.50																		
4	DC Resistance (Max.)	1.313Ω/km	1.275																		
5	Lay Ratio	Inner Lay: 10-16	14.44																		
		Outer Lay:10-16	11.33																		
6	Lay Direction	Inner Lay: Left	左																		
		Outer Lay:Right	右																		
7	Surface	free from any joints /welding's with smooth surface finish	OK																		
8	Single Wire Diameter	Non.: 2.10mm Min.: 2.07mm Max.:	2.10	2.10	2.10	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	
	Max. Resistivity at 20 °C	84.8Ω mm ² / Km	79.36	78.75	79.40	80.11	80.07	79.94	80.11	78.21	77.54	78.74	79.71	79.25	78.91	79.40	81.05	79.90	78.77	79.07	78.43
10	Thickness of Aluminum (mm)	10% of Nominal Wire Radius (Min. 0.105mm)	0.115	0.114	0.112	0.117	0.115	0.116	0.110	0.117	0.112	0.113	0.117	0.115	0.117	0.114	0.115	0.114	0.120	0.117	0.119
11	Breaking Laod (KN)	Min.: 1237Mpa	1530	1452	1459	1399	1428	1449	1436	1423	1365	1427	1419	1411	1426	1457	1447	1446	1444	1465	1471
12	% Elongation on 250 mm G.L	Min.1.5(at fracture)/Min.1.0(after fracture)	2.11/1.0	2.11/1.0	2.19/1.0	2.06/1.2	2.11/1.0	2.26/1.2	2.30/1.0	2.30/1.0	2.17/1.0	2.17/1.0	2.34/1.2	2.20/1.2	2.17/1.0	2.11/1.0	2.26/1.2	2.30/1.0	2.30/1.0	2.17/1.0	2.16/1.0
13	Torsion Test(100xD)	Min.20	47	42	49	50	47	45	42	46	47	44	45	47	46	45	44	42	47	49	47
14	Stress at 1% Extension (KN)	Min.: 1200Mpa	1327																		

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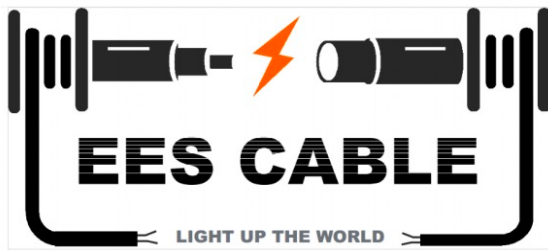
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Test Certificate (ACS strand wire 19/2.10mm, 20.3% IACS)

No.	Description	Technical Particulars (after strand)	Test Data																		
1	Numbers of Drums		27																		
2	Length(M)/Drum																				
3	Overall Diameter	Nom.: 10.5mm Min.: 10.4mm Max.:	10.50																		
4	DC Resistance (Max.)	1.313Ω/km	1.272																		
5	Lay Ratio	Inner Lay: 10-16	15.39																		
		Outer Lay:10-16	11.80																		
6	Lay Direction	Inner Lay: Left	左																		
		Outer Lay:Right	右																		
7	Surface	free from any joints /welding's with smooth surface finish	OK																		
8	Single Wire Diameter	Non.: 2.10mm Min.: 2.07mm Max.:	2.09	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.11	2.11	2.11	2.11	2.11	2.11	
	Max. Resistivity at 20 °C	84.8Ω mm ² / Km	78.05	79.41	80.27	79.45	78.27	79.94	80.57	79.42	79.07	78.75	79.27	79.07	78.41	80.25	79.22	79.94	80.50	79.40	78.47
10	Thickness of Aluminum (mm)	10% of Nominal Wire Radius (Min. 0.105mm)	0.115	0.117	0.112	0.115	0.117	0.110	0.114	0.117	0.115	0.114	0.113	0.120	0.117	0.114	0.117	0.115	0.114	0.117	0.110
11	Breaking Laod (KN)	Min.: 1237Mpa	1525	1493	1483	1483	1439	1474	1488	1480	1484	1482	1474	1486	1454	1371	1440	1457	1455	1457	1439
12	% Elongation on 250 mm G.L	Min.1.5(at fracture)/Min.1.0(after fracture)	2.34/1.2	2.20/1.2	2.17/1.0	2.05/1.0	2.11/1.0	2.11/1.0	2.26/1.2	2.30/1.0	2.17/1.0	2.17/1.0	2.11/1.0	2.11/1.0	2.19/1.0	2.17/1.0	2.16/1.0	2.29/1.0	2.34/1.2	2.20/1.2	2.19/1.0
13	Torsion Test(100xD)	Min.20	42	46	44	47	49	40	46	51	47	42	47	49	44	47	46	42	47	44	47
14	Stress at 1% Extension (KN)	Min.: 1200Mpa	1317																		

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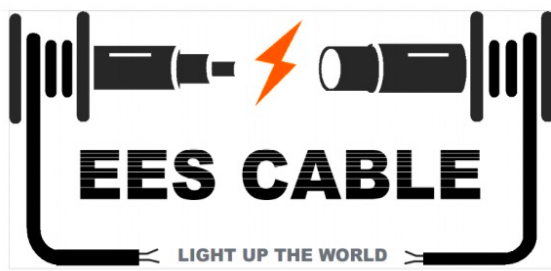
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No.	Description	Technical Particulars (after strand)	Test Data																		
1	Numbers of Drums		32																		
2	Length(M)/Drum																				
3	Overall Diameter	Nom.: 10.5mm Min.: 10.4mm Max.:	10.50																		
4	DC Resistance (Max.)	1.313Ω/km	1.251																		
5	Lay Ratio	Inner Lay: 10-16	14.92																		
		Outer Lay:10-16	11.61																		
6	Lay Direction	Inner Lay: Left	左																		
		Outer Lay:Right	右																		
7	Surface	free from any joints /welding's with smooth surface finish	OK																		
8	Single Wire Diameter	Non.: 2.10mm Min.: 2.07mm Max.:	2.10	2.08	2.10	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11
	Max. Resistivity at 20 °C	84.8Ω mm ² / Km	77.91	79.47	78.40	79.21	78.90	79.27	80.15	79.87	79.50	78.27	79.40	79.72	79.94	79.81	78.42	79.07	78.50	81.15	79.40
10	Thickness of Aluminum (mm)	10% of Nominal Wire Radius (Min. 0.105mm)	0.112	0.117	0.115	0.114	0.115	0.111	0.117	0.115	0.114	0.117	0.115	0.112	0.117	0.119	0.114	0.117	0.112	0.113	0.115
11	Breaking Laod (KN)	Min.: 1237Mpa	1480	1480	1461	1503	1464	1467	1488	15003	1416	1452	1460	1460	1512	1443	1414	1476	1359	1416	1445
12	% Elongation on 250 mm G.L	Min.1.5(at fracture)/Min.1.0(after fracture)	2.17/1.0	2.17/1.0	2.34/1.2	2.20/1.2	2.17/1.0	2.11/1.0	2.11/1.0	2.11/1.0	2.19/1.0	2.17/1.0	2.26/1.2	2.30/1.0	2.30/1.0	2.17/1.0	2.17/1.0	2.34/1.2	2.20/1.2	2.17/1.0	2.05/1.0
13	Torsion Test(100xD)	Min.20	47	50	46	44	45	47	42	39	41	40	47	45	49	46	42	47	41	47	44
14	Stress at 1% Extension (KN)	Min.: 1200Mpa	1275																		

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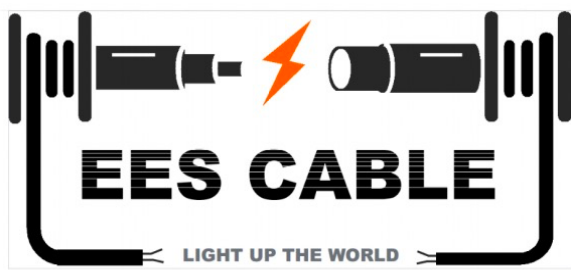
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Test Certificate (ACS strand wire 19/2.10mm, 20.3% IACS)

No.	Description	Technical Particulars (after strand)	Test Data																		
1	Numbers of Drums		38																		
2	Length(M)/Drum																				
3	Overall Diameter	Nom.: 10.5mm Min.: 10.4mm Max.:	10.50																		
4	DC Resistance (Max.)	1.313Ω/km	1.249																		
5	Lay Ratio	Inner Lay: 10-16	14.28																		
		Outer Lay:10-16	11.61																		
6	Lay Direction	Inner Lay: Left	左																		
		Outer Lay:Right	右																		
7	Surface	free from any joints /welding's with smooth surface finish	OK																		
8	Single Wire Diameter	Non.: 2.10mm Min.: 2.07mm Max.:	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10
	Max. Resistivity at 20 °C	84.8Ω mm ² / Km	80.01	79.41	78.44	77.25	79.37	79.77	80.75	80.64	78.90	79.25	78.46	79.40	80.37	79.44	78.90	79.07	79.50	78.90	79.47
10	Thickness of Aluminum (mm)	10% of Nominal Wire Radius (Min. 0.105mm)	0.114	0.112	0.115	0.117	0.114	0.110	0.115	0.114	0.112	0.110	0.111	0.114	0.117	0.110	0.115	0.114	0.119	0.117	0.115
11	Breaking Laod (KN)	Min.: 1237Mpa	1531	1437	1483	1437	1432	1450	1439	1481	1445	1461	1469	1429	1488	1524	1521	1464	1529	1450	1535
12	% Elongation on 250 mm G.L	Min.1.5(at fracture)/Min.1.0(after fracture)	2.06/1.2	2.11/1.0	2.26/1.2	2.30/1.0	2.30/1.0	2.17/1.0	2.17/1.0	2.17/1.0	2.05/1.0	2.11/1.0	2.36/1.0	2.11/1.0	2.19/1.0	2.06/1.2	2.14/1.0	2.17/1.0	2.11/1.0	2.26/1.2	2.30/1.0
13	Torsion Test(100xD)	Min.20	41	47	49	50	44	47	46	42	47	4	45	44	47	45	47	44	46	49	50
14	Stress at 1% Extension (KN)	Min.: 1200Mpa	1334																		

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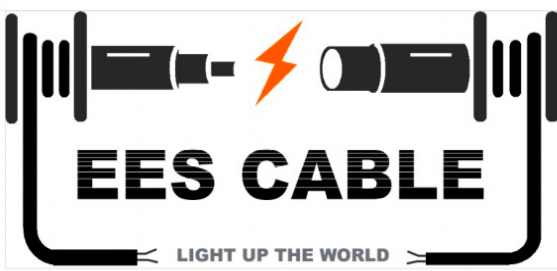
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Test Certificate (ACS strand wire 19/2.10mm, 20.3% IACS)

No.	Description	Technical Particulars (after strand)	Test Data																		
1	Numbers of Drums		45																		
2	Length(M)/Drum																				
3	Overall Diameter	Nom.: 10.5mm Min.: 10.4mm Max.:	10.50																		
4	DC Resistance (Max.)	1.313Ω/km	1.247																		
5	Lay Ratio	Inner Lay: 10-16	14.76																		
		Outer Lay:10-16	11.71																		
6	Lay Direction	Inner Lay: Left	左																		
		Outer Lay:Right	右																		
7	Surface	free from any joints /welding's with smooth surface finish	OK																		
8	Single Wire Diameter	Non.: 2.10mm Min.: 2.07mm Max.:	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.11	2.11	2.11
	Max. Resistivity at 20 °C	84.8Ω mm ² / Km	77.97	79.41	80.11	79.20	79.87	78.42	79.07	78.47	79.77	81.07	79.42	78.11	79.40	79.51	79.77	78.27	79.27	79.48	78.11
10	Thickness of Aluminum (mm)	10% of Nominal Wire Radius (Min. 0.105mm)	0.114	0.117	0.115	0.119	0.110	0.117	0.112	0.117	0.115	0.116	0.117	0.110	0.112	0.117	0.116	0.115	0.117	0.114	0.117
11	Breaking Laod (KN)	Min.: 1237Mpa	1459	1506	1490	1505	1474	1533	1467	1456	1471	1487	1469	1434	1515	1463	1411	1422	1460	1444	1440
12	% Elongation on 250 mm G.L	Min.1.5(at fracture)/Min.1.0(after fracture)	2.11/1.0	2.26/1.2	2.30/1.0	2.30/1.0	2.17/1.0	2.17/1.0	2.30/1.0	2.17/1.0	2.17/1.0	2.34/1.2	2.20/1.2	2.30/1.0	2.30/1.0	2.17/1.0	2.17/1.0	2.17/1.0	2.05/1.0	2.11/1.0	2.26/1.2
13	Torsion Test(100xD)	Min.20	44	46	47	42	45	44	47	49	55	46	47	50	42	44	40	47	49	42	47
14	Stress at 1% Extension (KN)	Min.: 1200Mpa	1296																		

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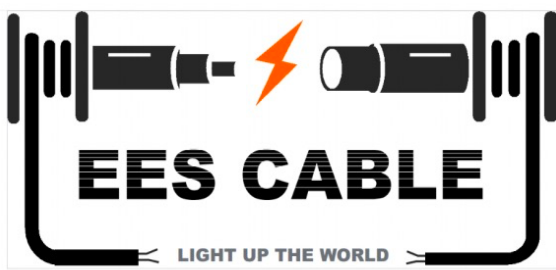
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Test Certificate (ACS strand wire 19/2.10mm, 20.3% IACS)

No.	Description	Technical Particulars (after strand)	Test Data																		
1	Numbers of Drums		49																		
2	Length(M)/Drum																				
3	Overall Diameter	Nom.: 10.5mm Min.: 10.4mm Max.:	10.51																		
4	DC Resistance (Max.)	1.313Ω/km	1.245																		
5	Lay Ratio	Inner Lay: 10-16	14.78																		
		Outer Lay:10-16	11.70																		
6	Lay Direction	Inner Lay: Left	左																		
		Outer Lay:Right	右																		
7	Surface	free from any joints /welding's with smooth surface finish	OK																		
8	Single Wire Diameter	Non.: 2.10mm Min.: 2.07mm Max.:	2.11	2.11	2.11	2.11	2.11	2.11	2.10	2.10	2.11	2.11	2.11	2.11	2.10	2.10	2.10	2.10	2.10	2.11	2.10
	Max. Resistivity at 20 °C	84.8Ω mm ² / Km	80.15	79.87	79.50	78.27	79.40	79.72	79.07	78.41	80.25	79.22	79.94	80.50	80.13	78.90	78.47	80.11	78.59	79.41	80.01
10	Thickness of Aluminum (mm)	10% of Nominal Wire Radius (Min. 0.105mm)	0.117	0.115	0.114	0.117	0.115	0.112	0.120	0.117	0.114	0.117	0.115	0.114	0.115	0.114	0.109	0.112	0.114	0.107	0.116
11	Breaking Laod (KN)	Min.: 1237Mpa	1488	15003	1416	1452	1460	1460	1486	1454	1371	1440	1457	1455	1499	1449	1467	1406	1416	1417	1511
12	% Elongation on 250 mm G.L	Min.1.5(at fracture)/Min.1.0(after fracture)	2.11/1.0	2.11/1.0	2.19/1.0	2.17/1.0	2.26/1.2	2.30/1.0	2.11/1.0	2.19/1.0	2.17/1.0	2.16/1.0	2.29/1.0	2.34/1.2	2.17/1.0	2.05/1.0	2.11/1.0	2.06/1.2	2.19/1.0	2.06/1.2	2.11/1.0
13	Torsion Test(100xD)	Min.20	42	39	41	40	47	45	49	44	47	46	42	47	37	40	39	38	39	39	41
14	Stress at 1% Extension (KN)	Min.: 1200Mpa	1292																		

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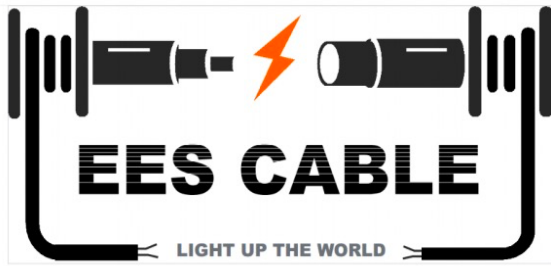
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Test Certificate (ACS strand wire 19/2.10mm, 20.3% IACS)

No.	Description	Technical Particulars (after strand)	Test Data																		
1	Numbers of Drums		56																		
2	Length(M)/Drum																				
3	Overall Diameter	Nom.: 10.5mm Min.: 10.4mm Max.:	10.53																		
4	DC Resistance (Max.)	1.313Ω/km	1.248																		
5	Lay Ratio	Inner Lay: 10-16	14.82																		
		Outer Lay:10-16	11.73																		
6	Lay Direction	Inner Lay: Left	左																		
		Outer Lay:Right	右																		
7	Surface	free from any joints /welding's with smooth surface finish	OK																		
8	Single Wire Diameter	Non.: 2.10mm Min.: 2.07mm Max.:	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.11	2.11	2.11	2.11	
	Max. Resistivity at 20 °C	84.8Ω mm ² / Km	80.57	79.42	79.07	78.75	79.27	79.07	78.41	80.16	79.34	80.11	78.95	79.12	78.47	80.29	79.40	80.11	80.07	79.94	80.11
10	Thickness of Aluminum (mm)	10% of Nominal Wire Radius (Min. 0.105mm)	0.114	0.117	0.115	0.114	0.113	0.120	0.117	0.112	0.113	0.110	0.109	0.117	0.115	0.114	0.112	0.117	0.115	0.116	0.110
11	Breaking Laod (KN)	Min.: 1237Mpa	1488	1480	1484	1482	1474	1486	1454	1419	1456	1521	1428	1449	1502	1477	1459	1399	1428	1449	1436
12	% Elongation on 250 mm G.L	Min.1.5(at fracture)/Min.1.0(after fracture)	2.26/1.2	2.30/1.0	2.17/1.0	2.17/1.0	2.11/1.0	2.11/1.0	2.19/1.0	2.06/1.2	2.11/1.0	2.26/1.2	2.30/1.0	2.17/1.0	2.17/1.0	2.34/1.2	2.19/1.0	2.06/1.2	2.11/1.0	2.26/1.2	2.30/1.0
13	Torsion Test(100xD)	Min.20	46	51	47	42	47	49	44	47	47	40	42	47	37	40	49	50	47	45	42
14	Stress at 1% Extension (KN)	Min.: 1200Mpa	1288																		

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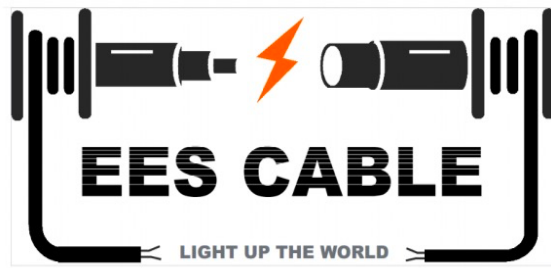
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Test Certificate (ACS strand wire 19/2.10mm, 20.3% IACS)

No.	Description	Technical Particulars (after strand)	Test Data																		
1	Numbers of Drums		61																		
2	Length(M)/Drum																				
3	Overall Diameter	Nom.: 10.5mm Min.: 10.4mm Max.:	10.55																		
4	DC Resistance (Max.)	1.313Ω/km	1.249																		
5	Lay Ratio	Inner Lay: 10-16	14.83																		
		Outer Lay:10-16	11.74																		
6	Lay Direction	Inner Lay: Left	左																		
		Outer Lay:Right	右																		
7	Surface	free from any joints /welding's with smooth surface finish	OK																		
8	Single Wire Diameter	Non.: 2.10mm Min.: 2.07mm Max.:	2.10	2.10	2.10	2.10	2.10	2.10	2.11	2.11	2.11	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10
	Max. Resistivity at 20 °C	84.8Ω mm ² / Km	80.57	79.07	78.75	79.27	79.07	78.41	80.25	79.22	79.94	78.42	79.07	78.47	79.77	81.07	79.42	78.11	79.40	79.77	78.27
10	Thickness of Aluminum (mm)	10% of Nominal Wire Radius (Min. 0.105mm)	0.114	0.115	0.114	0.113	0.120	0.117	0.114	0.117	0.115	0.117	0.112	0.117	0.115	0.116	0.117	0.110	0.112	0.116	0.115
11	Breaking Laod (KN)	Min.: 1237Mpa	1488	1484	1482	1474	1486	1454	1371	1440	1457	1533	1467	1456	1471	1487	1469	1434	1515	1411	1422
12	% Elongation on 250 mm G.L	Min.1.5(at fracture)/Min.1.0(after fracture)	2.26/1.2	2.17/1.0	2.17/1.0	2.11/1.0	2.11/1.0	2.19/1.0	2.17/1.0	2.16/1.0	2.29/1.0	2.17/1.0	2.30/1.0	2.17/1.0	2.17/1.0	2.34/1.2	2.20/1.2	2.30/1.0	2.30/1.0	2.17/1.0	2.17/1.0
13	Torsion Test(100xD)	Min.20	46	47	42	47	49	44	47	46	42	44	47	49	55	46	47	50	42	40	47
14	Stress at 1% Extension (KN)	Min.: 1200Mpa	1288																		

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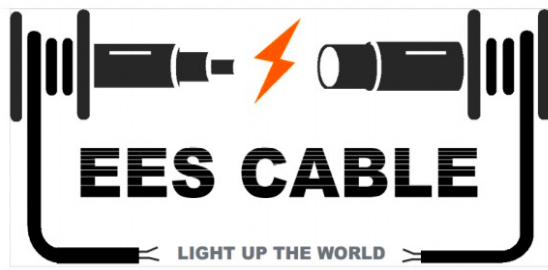
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Test Certificate (ACS strand wire 19/2.10mm, 20.3% IACS)

No.	Description	Technical Particulars (after strand)	Test Data																		
1	Numbers of Drums		63																		
2	Length(M)/Drum																				
3	Overall Diameter	Nom.: 10.5mm Min.: 10.4mm Max.:	10.52																		
4	DC Resistance (Max.)	1.313Ω/km	1.248																		
5	Lay Ratio	Inner Lay: 10-16	14.80																		
		Outer Lay:10-16	11.70																		
6	Lay Direction	Inner Lay: Left	左																		
		Outer Lay:Right	右																		
7	Surface	free from any joints /welding's with smooth surface finish	OK																		
8	Single Wire Diameter	Non.: 2.10mm Min.: 2.07mm Max.:	2.11	2.11	2.11	2.11	2.11	2.11	2.10	2.11	2.11	2.11	2.11	2.10	2.10	2.10	2.11	2.11	2.11	2.11	2.10
	Max. Resistivity at 20 °C	84.8Ω mm ² / Km	78.90	79.27	80.15	79.87	79.50	78.27	78.41	80.25	79.22	79.94	80.50	80.13	78.90	78.47	79.40	81.05	79.90	78.77	80.26
10	Thickness of Aluminum (mm)	10% of Nominal Wire Radius (Min. 0.105mm)	0.115	0.111	0.117	0.115	0.114	0.117	0.117	0.114	0.117	0.115	0.114	0.115	0.114	0.109	0.114	0.115	0.114	0.120	0.113
11	Breaking Laod (KN)	Min.: 1237Mpa	1464	1467	1488	15003	1416	1452	1454	1371	1440	1457	1455	1499	1449	1467	1457	1447	1446	1444	1503
12	% Elongation on 250 mm G.L	Min.1.5(at fracture)/Min.1.0(after fracture)	2.17/1.0	2.11/1.0	2.11/1.0	2.11/1.0	2.19/1.0	2.17/1.0	2.19/1.0	2.17/1.0	2.16/1.0	2.29/1.0	2.34/1.2	2.17/1.0	2.05/1.0	2.11/1.0	2.11/1.0	2.26/1.2	2.30/1.0	2.30/1.0	2.06/1.2
13	Torsion Test(100xD)	Min.20	45	47	42	39	41	40	44	47	46	42	47	37	40	39	45	44	42	47	41
14	Stress at 1% Extension (KN)	Min.: 1200Mpa	1280																		

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Test Certificate (ACS strand wire 19/2.10mm, 20.3% IACS)

	Description	Technical Particulars (after strand)	Test Data																		
1	Numbers of Drums		66																		
2	Length(M)/Drum																				
3	Overall Diameter	Nom.: 10.5mm Min.: 10.4mm Max.: 10.6mm	10.54																		
4	DC Resistance (Max.)	1.313Ω/km	1.244																		
5	Lay Ratio	Inner Lay : 10-16	14.85																		
		Outer Lay:10-16	11.73																		
6	Lay Direction	Inner Lay: Left	左																		
		Outer Lay:Right	右																		
7	Surface	free from any joints /welding's with smooth surface finish	OK																		
8	Single Wire Diameter	Non.: 2.10mm Min.: 2.07mm Max.: 2.13mm	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.11	2.11	2.11	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10
	Max. Resistivity at 20°C	84.8Ω mm ² / Km	79.45	78.27	79.94	80.57	79.42	79.27	79.07	78.41	80.25	79.22	80.50	78.47	80.29	79.40	80.13	78.90	78.47	80.11	78.46

10	Thickness of Aluminum (mm)	10% of Nominal Wire Radius (Min. 0.105mm)	0.115	0.117	0.110	0.114	0.117	0.113	0.120	0.117	0.114	0.117	0.114	0.115	0.114	0.119	0.115	0.114	0.109	0.112	0.111
11	Breaking Load (KN)	Min. : 1237Mpa	1483	1439	1474	1488	1480	1474	1486	1454	1371	1440	1455	1502	1477	1490	1499	1449	1467	1406	1469
12	% Elongation on 250 mm G.L	Min.1.5(at fracture)/Min.1.0(after fracture)	2.05/1.0	2.11/1.0	2.11/1.0	2.26/1.2	2.30/1.0	2.11/1.0	2.11/1.0	2.19/1.0	2.17/1.0	2.16/1.0	2.34/1.2	2.17/1.0	2.34/1.2	2.20/1.2	2.17/1.0	2.05/1.0	2.11/1.0	2.06/1.2	2.36/1.0
13	Torsion Test(100xD)	Min.20	47	49	40	46	51	47	49	44	47	46	47	40	36	38	37	40	39	38	45
14	Stress at 1% Extension (KN)	Min. : 1200Mpa	1288																		

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