

PSCC Subcommittee WebEx Virtual Meeting Minutes - DRAFT

Designation: PSCCC-F0	Name: IEEE Fiber Optics Subcommittee
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Meeting Location: Teams	Meeting Times 09:30 AM-12:30 PM	Meeting Date: 2023/06/21	Minutes Revised: 2023/06/27	Minutes Approved:
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Presiding Officer: Chair: Delavar Khomarlou, Vice Chair: Jack Roughan Secretary: John Jones	Recorded by: J. Jones, J. Roughan, D. Khomarlou,
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Attendance: Total attendees = 16 members + 5 Guests (M: Member, CM: Corresponding Member, G: Guest, I: IEEE)

	Affiliation	Attending via Phone (P) / Web (W) or Local (L) / Absent (A)	M/CM/ G/I
Marie Henshaw	AFL	W	M
Peyton Campbell	AFL	W	M
Robert (Bob) Kluge	ATC – Retired	W	M
Corrine Dimnik	Kinectrics	WA – (started mtg)	M
John Jones	PLP	W	M
Josep Martin Regalado	Prysmian	W	M
Felix Chen	ZTT China	W	M
Jack Roughan	ZTT China	W	M
Gabriel Okafor	HPS	W	M
Tewfik Schehade	Independent Consultant	W	M
Delavar Khomarlou	Hydro One Networks	W	M
Brett Boles	Southern Company	W	M
Mike Riddle	Incab	W	M
Monty Tuominen	MWT Consulting LLC –BP (Retired)	W	M
Tom Thompson/Erin Spiewak	IEEE (liaison)	A	I
Emma Fulina	Shanghai Electric Cable Research Institute (SECRI)	W	M
Austin Farmer	AFL	A	M
Jaclyn Whitehead	AFL	A	M
Mark Naylor	AFL	A	M
Mike Warntjes	ATC (?)	A	M
Jacob Palmer	PLP	A	M
Paul Baird	Prysmian	A	M
Linda Cai	ZTT China	A	M
Lemon Lu	ZTT China	A	M
Greg Bennett	Southern Company	A	M
Christopher E. Royer	AEP	A	M
Yi Guo	Shanghai Electric Cable Research Institute (SECRI)	A	M
Jared Smith	AEP	W	G→M
Guests (New and Old)			

Dimitry Gilbert	Incab	W	G
James Formea	Eaton – A0 Chair	W	A0 -G
Neil Saia		W	G
Nathanael Winslow		W	G
Jeff Pack		W	G
Ernest Gallo	Ericson	A	G
Christian Riddle	Incab	A	G
Andrew Cresswell	Hubbell	A	G
ShenYiChun	ZTT	A	G
Jay Herman	EPRI	W	G
Jeff Wang	ZTT	A	G
Donna Pericolosi	ATC	A	G
Dan Baggett	AFL	A	G
Haide Leung	Kinectrics	A	G

Note:

G→M : Guest is eligible to become member if requested.

Item no.	Notes	Action by
CALL TO ORDER	June 21, 2023, 0930 EDT	D. Khomarlou
INTRODUCTIONS, QUORUM	<p>Quorum With 16/25 members and 5 guests on Teams, no IEEE representative in this meeting. More than 50 % of members.</p> <p>James Formea, chair of PSCCC parent committee discussed the importance of having F0 integrated into the overall structure of PSCCC, and for F0 to have face-to-face meetings with PSCCC/PSRC in their meetings which are in January, May or September. These meetings will result in great deal of cross-pollination among F0 members and other PSCCC subcommittee/Working Group (WG) members.</p> <p>F0 chair mentioned membership diversity – manufacturing, testing, utilities both domestic and international which is different from the rest of PSCCC, also our focus is mainly on fiber optic cables on transmission /distribution lines. There is merit to this approach even though it will require some meeting fees to be paid by members and we will consider having our meeting in Sep 2024 with PSCCC.</p> <p>Jared Smith from AEP has attended 3 meetings as guest and becomes a member – Welcome Jared.</p>	
CHAIR'S REMARKS	<p>Chair presentation is attached.</p> <p>Marie Henshaw – AFL, accepted to be F0 representative to PSCCC awards working group. Requires meeting with the committee. (3-6 hours per year total – 3/year). Benefits: Exposure, learn how IEEE works, and champion the awards for our group.</p> <p>Per A0 instructions, we must re-organize back to WG. 4 x WGs as identified in chair presentation. Each WG will have chair and vice chair. WG will have set of rules and Policy&Procedure (P&P) manual to guide its operation. WG training for each Chair and vice-chair Not mandatory but helpful. Two IEEE courses (Anti-trust and ..) are mandatory for WG chair/vice.</p> <p>Chair and Vice for each of our WG will be provided by September meeting. If anyone volunteers to chair/vice-chair a WG (F1-F4) that is provided in Chair's presentation, please don't be shy.</p> <p>Due to our new work in Fiber End of Life, we need expertise in Fiber (at strand level) and could benefit from having an expert from Corning or OFS or any other of our current manufacturers who draw their own fiber. If anyone knows or wants to reach out to these experts within the companies, please do.</p>	D. Khomarlou
AGENDA APPROVAL	Agenda for the June 21, 2023, virtual meeting was sent to all members prior to the call. The agenda was approved in this meeting. Agenda: Jack Roughan Proposed. John Jones Second the motion.	D. Khomarlou
APPROVAL OF PREVIOUS MINUTES	Draft Minutes of April 12-13, 2023, virtual meeting has been placed in iMeetCentral and sent to members. Minutes were approved in this meeting. Motion to Approve... Second the motion. Jack Roughan These minutes will be posted in the IEEE PSCCC website as Final for public access.	D. Khomarlou
IEEE 1138 News	IEEE 1138 has been placed on nomination list for PES award	Corrine Dimnik

Item no.	Notes	Action by
IEEE 1591.3 and 1594 Wrap Cable	<p>Marie Henshaw -AFL mentioned that AFL representative for 1591.3 and 1594 helically-applied cable will be reaching out and possibly attend September meeting.</p> <p>Note from Previous Meetings: Retirement of TIA-455-30 and replacement with TIA-455-204 applies to these two standards as well.</p> <p>IEEE 1594 and 1591.3 Radio Interference Voltage (RIV) & noise: Currently these standards call on standard BS5049 Part 2 (CISPR). 1591.3 calls on IEC 61284 and there is a corresponding ANSI/NEMA CC-1. IEEE has the standard IEEE 1829-2017. Could we harmonize all our standards to either call on IEC or IEEE standard with respect to RIV&Noise clauses. This will need to be incorporated into 1591.4 as well. He will investigate if there is a substitute standard that we can use for RIV&Noise limits as well as measurements. Jack checked the IEEE 1829 and confirmed that it references the CISPR standard, so we can just use the IEEE 1829 standard for our future documents.</p>	Mark Naylor
IEEE 1595 Standard - 1595D6 OPPC ->Publication	<p>No new information</p> <p>IEEE 1595 was finally published on April 11, 2023.</p>	Jack Roughan
1591.1 OPGW hardware	<p>1591.1 – J. Jones. Recirculating should be up within the next week. Comments from IEEE Editor covered metric for English unit and the use of “shall” in a Note. JLJ made changes and submitted to Tom Thompson</p>	J. Jones/ B. Kluge
OPPC Hardware 1591.4	<p>1591.4 OPPC Hardware Draft D4 has gone into Balloting as of June 20,2023 for 30 days.</p> <p>Chair will look at status by first week of July and may require additional direct emails to get participation/approval.</p>	L. Cai/ J. Roughan
IEEE 524 liaison	<p>No new Info as 524 hasn't met since F0 last meeting.</p> <p>From Previous meeting: Cody Davis chair of IEEE 524 wants to make the standard smaller and suggested to remove references to ADSS out of 524. This would make the sheave recommendation somewhat irrelevant as it mainly deals with ADSS installation scenarios. Latest revision of IEEE 524 is 2016. A new one is beginning with a goal 2025.</p> <p>Jack Roughan to attempt to convince to keep ADSS in the standard. If ADSS installation (and possibly OPGW installation) is removed from IEEE 524, then does PSCCC-F0 want to pick up this work. This may not be the best option as it requires a great deal of work to create a new installation guideline and PSCCC-F0 (our group) has traditionally not been involved in Installation Standards/Guidelines.</p> <p>From Josep Presentation, there is an IEC Technical Report (TR-2016): Guidelines for installation on Optical fiber cable that may be used as our guide for the work PSCCC-F0 undertakes for IEEE 524, should they accept.</p>	NA
IEEE 1591.x Task Force Group	<p>This task force aims to make all 1591.x standards produced by F0 uniform in content. Will work in new cycle of standards. IEC dB vs dB/km discussion (see IEC liaison) can have impact on this work. Jack Roughan is leading the group. Nothing new to report.</p> <p>Background information from previous meetings. Current membership is 13: Jack Roughan, Linda Cai, Lemon Lu, Josep Martin Regalado, Tewfik Schehade, John Jones, Mark Naylor, Del Khomarlou, Corrine Dimnik, Denise Frey, Dan Baggett, Peyton Campbell, Gabriel Okafor.</p>	J. Roughan

Item no.	Notes	Action by
<p>IEEE 525 and PSCCC E0 Liaison</p> <p>And</p> <p>EPRI Work</p>	<p>IEEE 525- DKH</p> <ul style="list-style-type: none"> - Cables within substation - Reference IEEE 1138 and 1222. - Grounding in substations. - Utility members are good candidates to become Liaison. <p>E0 and F0 have provided comments to IEEE 525 four years ago. Chair attended substation committee. 525 didn't have any further comments on F0/E0 comments.</p> <p>PSCCC-E0 Wireline subcommittee (D. Khomalrou liaison) is working towards: Revise IEEE 367. Methods of GPR calculation. GPR input. IEEE 487-2015: IEEE Standard for the Electrical Protection of Communications Facilities Serving Electric Supply Locations -- General Considerations</p> <p>Limited members and dealing with relatively obsolete technology. Meet only virtually for 3 hours every month. E0 future form is being discussed.</p> <p>Jay Herman – EPRI – planning to write a strategic fiber guidebook. Member utilities, end of life is a big issue.</p>	<p>D. Khomarlou</p>
<p>IEC Liaison</p> <p>ITU Liaison</p>	<p>IEC standard chart (placed in the document)</p> <p>Joseph leads the short-circuit and lightning work</p> <p>The dB vs dB/km criteria for some tests, especially those that deal with short length of the cable should be considered. Some entities monitor dB – test length of 20 to 50 meters and using an optical switch.</p> <p>Joseph suggested that 1222 needs to be reviewed whereas 1138 is acceptable (dB vs. dB/km).</p> <p>The discussion on when to use one method vs another has taken place in the past with entire meetings dedicated to this important topic. Time will be set aside to cover the discussion in September.</p> <p>Other Items (paraphrasing from Pep email): A fast review of IEEE 1138 and IEEE 1122-2019 shows some points which should be reviewed:</p> <ol style="list-style-type: none"> 1) For tensile test (6.5.1.2), the pass criteria are in dB, not dB/km. That's different for IEEE 1138 that specifies dB/km. – To be discussed in September, but 1138 may be the correct one. 2) For AVT, the number of cycles is only 1 million (but it was 100 million in 2011 revision). Is that right? 1 million looks very low amount – Likely an error as it was 100 million in previous revision. 3) Pass criteria for Sheave test is 1.0 dB/km. Looks a huge value – To be discussed in September. 4) Pass criteria for AVT and Galloping is 0.2 dB/km. Looks a large value. Being a distributed test, units are dB/km but different than tensile test - Should be reviewed. IEEE 1222 has an error – should have 100 million for cycling Aeolian Vibration. Error shows 1 million. <p>Background on dB vs dB/km: For Tensile test procedure since IEC will consider dB not dB/km. Differentiation of “distributed test in dB/km” vs “local test in dB” but discussion ended and IEC will consider dB units for the pass criteria of Tensile test based on the fact that in most of the times, fibers are monitored individually (not in a loop).</p>	<p>Josep Martin Regaldo</p>
<p>IEEE 1222</p>	<p>No New item for IEEE 1222.</p>	<p>P. Baird</p>
<p>Sheave Size Recommendation/ IEEE 524</p>	<p>Discussed under IEEE 524 Liaison</p>	<p>J. Roughan</p>

Item no.	Notes	Action by
<p>Preforming Concern - OPGW, OPPC</p>	<p>This item was not discussed and is placed here only for reference.</p> <p>Preforming is a standard part of cabling. Critical in outside layer to help contain the wrap if damaged. Pass/Fail for routine test requirement. Could be added to next update for IEEE 1138. It may be covered by other standards that are referenced.</p> <p>IEEE 1138 standard may need to be updated in the next cycle with information on preforming wire. IEC 61089 – covers preforming wires. There are other standards that have similar wording.</p> <p>Add test to 1138 and 1595.</p> <p>IEEE 1595 OPPC: In the OPPC standard- regarding dead-ends, a statement that the dead-end rating is transferable to OPGW cables of lesser rated designs.</p>	
<p>Presentation</p>	<p>None in this meeting.</p>	
<p>New /Other Business</p>	<p>OPPC/OPGW/ADSS/Helical End of Life Determination Study and Scope</p> <p>Discussion on writing a new technical guide which describes any new type test, factory or field testing for aerial cables (all fiber cables or perhaps only aerial cables) to determine End-of-Life(EOL) criteria for F0 cables.</p> <p>The material associated with this work and discussion is included further down in these minutes and will be placed in a discussion document in iMeetCentral.</p> <p>Study group for Sensing applications (Brillouin, Raman,..) using aerial fiber optic cable.</p> <p>Didn't have time to discuss in this meeting.</p> <p>Background Info from Previous Meeting: Items to consider:</p> <ul style="list-style-type: none"> • Are there advantages to test cables in factory/type test setting when they are used for sensing applications? • Tests required for cables/fiber strands used for Raman temperature sensing application, • Tests required for cables/fiber strands used in Brillouin strain and temperature sensing applications. • Distributed Acoustic sensing, • Testing of multimode fibers used in Raman sensing at 1092 nm and 1550 nm. How can this be done when there is no test equipment (e.g, MM at 1550 nm)? <p>Other Work Considered: Tewfik – asked about standards for other fiber cables. Mike Riddle suggested blown in fiber and FTTH application. (Mentioned 2 companies turn-key. – cable TV is one). Joseph – will provide a summary of IEC information – Placed in this document. Corning is present in all. Will need Corning and OFS representative in our group. Telcordia standards – comment broad and not helpful.</p>	
<p>ITEMS REPORTED OUT OF EXECUTIVE SESSION</p>	<p>NA</p>	

Item no.	Notes	Action by
OTHER ITEMS	Discussion on what F0 would look in T&D - may confine F0 to a narrow application field. Monty comments: Electric fields or Magnetic Fields – there was a working group that focused on this for ADSS. Corona field effects.	
CLOSING	Please let chair / vice-chair know if you don't yet have access to iMeetCentral.	
TIME OF FINAL ADJOURNMENT	Meeting was adjourned on June 21, 2023, at 12:20 PM EDT.	
NEXT MEETINGS	The next Meeting will be a face-to-face and hybrid meeting in September: Incab America has gracefully agreed to Host the meeting. Location: Grapevine, Texas – close to DFW airport. Time: Wednesday September 20, 2023: 9AM to 4PM Central Time. Thursday September 21, 2023: 9 AM – 1 PM Central Time Will aim to have a hybrid setting for those who can't travel. Details will be sent out. Will send directions and hotel info through email after June meeting.	
MATERIAL TO BE PLACED IN iMeetCentral or Attached	<ol style="list-style-type: none"> 1. IEEE Copyright statement (included in this document) 2. IEEE Patent and duty to inform clause (included in this document) 3. Chair Presentation - June 2023 (to be attached to email) 	

IEC LIAISON - JOSEP

IEC SC86A WG3 (Optical Cables) Liaison report May 2023 

IEC SC86A WG3 meeting hold on May 10th-12th 2023 in Kyoto (Japan). 51 out of 102 members attended

RELEVANT TOPICS TO IEEE PES PSCCC-FO GROUP

- Status of roll-out plan for IEC 60794-1-2x (optical cable test procedures)


Standard	Required	Published	FDIS	CD/CDV	Draft	Deleted	To Start
-1-21 (mechanical)	36	0	0	4 (+4)	7 → 2	4 → 5(+1)	25
-1-22 (environmental)	20	4	0	9 (+7)	10 → 3	4	0
-1-23 (cable elements)	12	5 (+4)	0 → 2	9 → 3	1	1	0
-1-24 (electrical)	4	4	0	0	0	0	0
Total	72	9 → 13	2	11 → 16	18 → 6	9 → 0	25

Committee draft for comments (CD)
Committee draft for vote (CDV)
Final draft international standard (FDIS)

- New Draft assignments:

14 New Drafts assigned →

- 60794-1-102 – Abrasion, E2 – Tai Liu
- 60794-1-103 – Crush Resistance, E3 – Tai Liu (CN)
- 60794-1-105 – Stripping force, E5A – Dongxiang Wang
- 60794-1-106 – Repeated Bend, E6 – Yi Guo
- 60794-1-107 – Torsion, E7 – Zhou Juan
- 60794-1-108 – Flexing, E8 – Hiroki Ishikawa
- 60794-1-117 – Bending Stiffness, E17A – Jianbin Duan
- 60794-1-118 – Bending under tension, E18A – Yi Guo
- 60794-1-119 – Aeolian vibration, E19 – Josep Martin (ES)
- 60794-1-125 – Ripcord functional test, E25 – David Kozischek
- 60794-1-129 – Straight midspan access, E29 – Zhou Juan
- 60794-1-130 – Co-efficient of friction between cables, E30 – Taiji Sakamoto
- 60794-1-132 – Creep test (for ADSS), E32 – Jose O Valenzuela (MX)
- 60794-1-135 – Sheave test (OPGW & OPAC), E18B – Yi Guo (CN)

IEC SC86A WG3 (Optical Cables) Liaison report May 2023 

- Stability dates of published relevant standards (no changes)

Publication Number	Standard	Stability Date	Publication Number	Standard	Stability Date
IEC 60794-1-219:2021 ED1	Material compatibility	2024 ^(b)	IEC 60794-4-2016 ED2	Aerial cables for OHTL	2024
IEC 60794-1-220:2022 ED1	Salt spray corrosion	2025	IEC 60794-4-10:2014 ED2	OPGW	2024
IEC 60794-1-401:2021 ED1	Short-circuit	2024	IEC 60794-4-20:2018 ED2	ADSS	2024
IEC 60794-1-402:2021 ED1	Lightning	2024	IEC 60794-4-30:2021 ED1	OPPC	2024
IEC 60794-1-403:2021 ED1	Electrical continuity	2024			
IEC 60794-1-404:2022 ED1	Current temperature test	2025			

- Other interesting topics:

- Neverending discussion about **dB** vs **dB/km** focused on Tensile test. I tried to argue based on "distributed test in dB/km" vs "local test in dB". IEC will definitively consider dB sincemost of the times, fibers are monitored individually.
- Fast check IEEE 1122 vs IEEE 1138 shows:
 - For tensile test (6.5.1.2) in IEEE1122, the pass criteria is in **dB**. That's different for IEEE 1138, since it is in dB/km.
 - For AVT, the number of cycles is only 1 million (but it was 100 millions in 2011 revision). Looks small # of cycles
 - For Sheave, pass criteria is 1.0 dB/km. Looks a huge value
 - For Galloping, pass criteria is 0.2 dB/km. Looks a large value. Being a distributed test, units are dB/km but different than tensile test, why

Next meetings: Autumn 2023 - Nov 17-20th 2023 in Milano (IT); Spring 24 → Paris (FR); Autumn 24 → Edinburgh (UK).

IEC CABLE STANDARDS - From Josep Indoor Cables

- 60794-2 Ed4 2017; Optical fibre cables - Part 2: Indoor cables - Sectional specification; stability date 2024
- 60794-2-10 Ed2 2011; Optical fibre cables - Part 2-10: Indoor optical fibre cables - Family specification for simplex and duplex cable; stability date 2023
- 60794-2-11 Ed3 2019; Optical fibre cables - Part 2-11: Indoor cables - Detailed specification for simplex and duplex cables for use in premises cabling; stability date 2025
- 60794-2-12 Draft - In house cabling (not approved)
- 60794-2-20 Ed3 2013; Optical fibre cables - Part 2-20: Indoor cables - Family specification for multi-fibre optical cables; stability date 2024 (family spec)
- 60794-2-21 Ed3 2019; Optical fibre cables - Part 2-21: Indoor cables - Detailed specification for multi-fibre optical distribution cables for use in premises cabling; stability date 2025
- 60794-2-22 Ed1 2016; Optical fibre cables - Part 2-22: Indoor cables - Detail specification for multi-simplex breakout optical cables for use in terminated breakout cable assemblies; stability date 2024
- 60794-2-23 CDV Optical fibre cables - Part 2-23: Indoor cables – Detail specification for multi-fibre cables for use in MPO connector terminated cable assemblies (Next step FDIS)
- 60794-2-24 CDV Optical fibre cables - Part 2-24: Indoor cables – Detailed specification for multiple multi-fibre unit cables for use in MPO connector terminated breakout cable assemblies (Next step FDIS)

60794-2-30 Ed3 2019; Optical fibre cables - Part 2-30: Indoor cables - Family specification for optical fibre ribbon cables for use in terminated cable assemblies; stability date 2024
60794-2-31 Ed3 2019; Optical fibre cables - Part 2-31: Indoor cables - Detailed specification for optical fibre ribbon cables for use in premises cabling; stability date 2025
60794-2-40 Ed2 2008; Optical fibre cables - Part 2-40: Indoor optical fibre cables - Family specification for A4 fibre cables; stability date 2024
60794-2-41 Ed1 2008; Optical fibre cables - Part 2-41: Indoor cables - Product specification for simplex and duplex buffered A4 fibres; stability date 2024
60794-2-42 Ed1 2008; Optical fibre cables - Part 2-42: Indoor cables - Product specification for simplex and duplex cables with A4 fibres; stability date 2024
60794-2-50 Ed2 2020; Optical fibre cables - Part 2-50: Indoor cables - Family specification for simplex and duplex cables for use in terminated cable assemblies; stability date 2024
60794-2-51 Document withdrawn.

Outdoor Cables

60794-3 Ed4 2014; Optical fibre cables - Part 3: Outdoor cables - Sectional specification; stability date 2025
60794-3-10 Ed3 2015; Optical fibre cables - Part 3-10: Outdoor cables - Family specification for duct, directly buried and lashed aerial optical telecommunication cables; stability date 2024
60794-3-11 Ed2 2010; Optical fibre cables - Part 3-11: Outdoor cables - Product specification for duct, directly buried, and lashed aerial single-mode optical fibre telecommunication cables; stability date 2024
60794-3-12 Ed2 2021; Optical fibre cables - Part 3-12: Outdoor cables - Detailed specification for duct and directly buried optical telecommunication cables for use in premises cabling; stability date 2024
60794-3-20 Ed3 2016; Optical fibre cables - Part 3-20: Outdoor cables - Family specification for self-supporting aerial telecommunication cables; stability date 2024
60794-3-21 Ed2 2015; Optical fibre cables - Part 3-21: Outdoor cables - Product specification for optical self-supporting aerial telecommunication cables for use in premises cabling; stability date 2024
60794-3-30 Ed2 2008; Optical fibre cables - Part 3-30: Outdoor cables - Family specification for optical telecommunication cables for lakes, river crossings and coastal application; stability date 2024
60794-3-40 Ed2 2022; Optical fibre cables - Part 3-40: Outdoor cables - Family specification for cables for storm and sanitary sewers; stability date 2027
60794-3-50 Document withdrawn
60794-3-60 Document withdrawn
60794-3-70 Ed1 2021; Optical fibre cables - Part 3-70: Outdoor cables - Family specification for outdoor optical fibre cables for rapid/multiple deployment; stability date 2025

Aerial cables along electrical power lines

60794-4 Ed2 2018; Optical fibre cables - Part 4: Sectional specification - Aerial optical cables along electrical power line; stability date 2024

60794-4-10 Ed2 2014; Optical fibre cables - Part 4-10: Family specification - Optical ground wires (OPGW) along electrical power lines; stability date 2024

60794-4-20 Ed 2 2018; Optical fibre cables - Part 4-20: Sectional specification - Aerial optical cables along electrical power lines - Family specification for ADSS (all dielectric self-supported) optical cables; stability date 2024

60794-4-30 Ed1 2021; Optical fibre cables - Part 4-30: Aerial optical cables along electrical power lines - Family specification for optical phase conductor (OPPC) optical cables; stability date 2024 (OPPC)

Microduct cabling for installation by blowing

60794-5 Ed2 2014; Optical fibre cables - Part 5: Sectional specification - Microduct cabling for installation by blowing; stability date 2024

60794-5-10 Ed1 2014; Optical fibre cables - Part 5-10: Family specification - Outdoor microduct optical fibre cables, microducts and protected microducts for installation by blowing; stability date 2024

60794-5-20 Ed1 2014; Optical fibre cables - Part 5-20: Family specification - Outdoor microduct fibre units, microducts and protected microducts for installation by blowing; stability date 2024

Indoor-Outdoor Cables

60794-6 Ed1 2020; Optical fibre cables - Part 6: Indoor-outdoor cables - Sectional specification for indoor-outdoor cables; stability date 2025

60794-6-10 Ed1 2020; Optical fibre cables - Part 6-10: Indoor-outdoor cables - Family specification for universal indoor-outdoor cables; stability date 2025

60794-6-20 Ed1 2020; Optical fibre cables - Part 6-20: Indoor-outdoor cables - Family specification for flame retardant outdoor cables; stability date 2025

60794-6-30 Ed1 2020; Optical fibre cables - Part 6-30: Indoor-outdoor cables - Family specification for weatherised indoor cables; stability date 2025

Fire resistant optical fibre data communication cables

60794-7 (under development, draft)

Automotive

60794-8 (under development, draft)

Technical Report Document set

TR 62222 Ed3 2021; Fire performance of communication cables installed in buildings; stability date 2025

TR 62362 Ed2 2020; Selection of optical fibre cable specifications relative to mechanical, ingress, climatic or electromagnetic characteristics – Guidance; stability date 2024

TR 62470 Ed1 2011; Guidance on techniques for the measurement of the coefficient of friction (COF) between cables and ducts; stability date 2024

TR 62690, Ed1 2014; Hydrogen effects in optical fibre cables – Guidelines; stability date 2032

TR 62691, Ed2 2016; Guidelines to the installation of optical fibre cables; stability date 2024

TR 62901, Ed1 2016; Guide for the selection of drop cables; stability date 2024

TR 62959, Ed1 2021; Shrinkage effects on cable and cable element end termination – Guidance; stability date 2025

TR 63194, Ed1 2019; Guidance on colour coding of optical fibre cables; stability date 2024

TR 63431, Microduct Technology (under development, CD)

TR 63442, Rodent (under development, CD)

TR 63484, Fungus (under development, draft)

Chair Presentation:

To be Attached to Minutes.

Fiber EOL Discussion:

Dr. Karaday, who has since passed, did a lot of work on ADSS tracking and ageing. Some of his reports are available through Bonneville Power and are public.

Jay Herman mentioned track resistant testing at EPRI. Bernie Claremont was involved (now passed). EPRI currently doesn't have any large fiber EOL studies per Jay Herman.

Hydro Quebec did studies and chair was given permission to present those. We could draw on those findings which defined EOL criteria as a function of ice-storm and other environmental issue exposure.

Mike Riddle did a presentation on how to choose the appropriate fiber for each application which had great and relevant information.

Chair suggested to create a link for papers and resources in public domain (and in IEEE) covering useful life testing.

For OPGW – a drill-down approach is suggested as follows:

- Metal outer layer wires to be studied/tested first,
- Metal inner layer wires next,
- Optical tube and its integrity to be tested next (tube integrity and welds, deformation, ultrasonic detection, water blocking gel issues, temperature,..)
- Individual fibers inside tube to be checked last. Fiber strain/stress/high temp exposure/stress cracks/...

Shield wire EOL is defined in one utility as 70 years, but is determined mainly through twist test in laboratory. OPGW tests must be done in-service as OPGW sample can't be cut and sent to lab. Mike Riddle agreed with non-destructive, in-service, testing.

Items to consider mainly for ADSS and Helically Wrapped Fiber (Manufacturer suggested life for ADSS is 25 years):

- Information/reports on ADSS ageing from the Accelerated ageing chamber formerly at Arizona state university (Dr. Karaday)
- Utilities Telecom Council (UTC) paper on OPGW and ADSS fiber ageing – Chair shared two graphs from this expensive report. Mostly a survey of utilities in the US.
- Study of pollution on ADSS and its effects on ageing
- Issues associated with premature ageing due to E-field tracking on jacket
- Issues associated with premature ageing due to Corona – More problematic in
- Aramid Yarn/Kevlar exposure to water due to cracks in jacket
- Fiber /optical unit ageing

Initial work –

- Brainstorm on available tools and tests and things to test
- Brainstorm on available research (CIGRE WG, EPRI, IEEE, Dr. Karaday Work,...)
- Produce a table of contents

Items to Consider for fiber strands:

Wavelengths specification for testing the effects of Hydrogenation and OH - absorption (two different phenomena) on Fiber strands:

- OH** -- 1383 nm
- H₂**, -- 1240 nm and 1625 nm

Photon Kinetic has OTDR capable of testing at 1240 nm

There is also a photon-counting OTDR capable of millimeter resolution from Luciol Instruments – Switzerland. This OTDR is primarily geared towards FTTH market, but can be useful for finding faults at short range.

Question: Can we use DSTS on individual fibers?

Common mechanism for ACSR failure as Corrosion, loss of galvanization and fatigue. Corrosion often happens at bottom of sag whereas fatigue happens at clamps (dissimilar mass coming into contact).

Kinectrics LineView and possibly Forward Looking InfraRed (FLIR) for identification of metal issues.

Other Info:

A word document showing some of the areas /ideas relevant to this topic is placed in iMeetCentral. All members are encouraged to use this file and append/edit new material so that we can get this work go forward.

MAINTENANCE SCHEDULE FOR STANDARDS UNDER PSCCC-F0

PRIORITY	DUE DATE	STANDARD NUMBER	STANDARD TITLE	LAST PUBLISH ED DATE	ACTION (DEV / REVISION / COMMENTS ONLY)	COMMENTS
	New PAR submitted. June 2024	IEEE-1138-2021	IEEE Standard for Testing and Performance for Optical Ground Wire (OPGW) for Use on Electric Utility Power Lines	2021	Published in 2021	Published in November 2021.
	No Active PAR Published in 2020	IEEE 1222-2011	IEEE Standard for Testing and Performance for All-Dielectric Self-Supporting (ADSS) Fiber Optic Cable for Use on Electric Utility Power Lines	2020	Published 2020	Published 2020
	No Active PAR. Published in 2020	IEEE 1594-2020	IEEE Standard for Helically Applied Fiber Optic Cable Systems (Wrap Cable) for Use on Overhead Utility Lines	2020	Replaced 2008 version	Published in 2020
	No Active PAR.	IEEE 1595-2023	Draft Standard for Testing and Performance for Optical Phase Conductor (OPPC) for Use on Electrical Utility Power Lines		Published April 12, 2023	
2	Active PAR Ex. Dec. 2022	IEEE 1591.1-2012	IEEE Standard for Testing and Performance of Hardware for Optical Ground Wire (OPGW)	2012	Passed Ballot on April 14, 2023	Ballot re-circulation to be initiated prior to June 20, 2023.
	No Active PAR Published in 2020	IEEE 1591.3-2020	IEEE Standard for Qualifying Hardware for Helically Applied Fiber Optic Cable Systems (WRAP Cable)	2020	Replaced 2011 version	Published in 2020
1	PAR Approval May 2019 Exp. Dec. 2023	IEEE 1591.4-DRAFT	Standard for Testing and Performance of Hardware for Optical Fiber Composite Overhead Phase Conductor (OPPC)		D4	Standard under final stages of development. Ballot initiated June 19, 2023
	NA	IEEE 1591.2-2017	IEEE Standard for Testing and Performance of Hardware for All-Dielectric Self-Supporting (ADSS) Fiber Optic Cable	2018	No new Activity	May be revised as part of 1591.x task force work.
	Published Date: Apr. 2017	IEEE 524-2016	IEEE Guide for the Installation of Overhead Transmission Line Conductors		For comment only	Liaison Report
	NA	IEEE 524-2016	IEEE PSCCC-F0 recommendation for sheave sizing			Information provided for inclusion in IEEE 524.
	NA	IEEE 525-2016	IEEE Guide for the Design and Installation of Cable Systems in Substations		For comment only	Liaison Report. Table Q updated. Comment resolution pending

* * *

Participants, Patents, and Duty to Inform

All participants in this meeting have certain obligations under the IEEE-SA Patent Policy.

- Participants [**Note: Quoted text excerpted from IEEE-SA Standards Board Bylaws subclause 6.2**]:
 - “Shall inform the IEEE (or cause the IEEE to be informed)” of the identity of each “holder of any potential Essential Patent Claims of which they are personally aware” if the claims are owned or controlled by the participant or the entity the participant is from, employed by, or otherwise represents
 - “Should inform the IEEE (or cause the IEEE to be informed)” of the identity of “any other holders of potential Essential Patent Claims” (that is, third parties that are not affiliated with the participant, with the participant’s employer, or with anyone else that the participant is from or otherwise represents)
- The above does not apply if the patent claim is already the subject of an Accepted Letter of Assurance that applies to the proposed standard(s) under consideration by this group
- Early identification of holders of potential Essential Patent Claims is strongly encouraged
- No duty to perform a patent search

Patent Related Links

All participants should be familiar with their obligations under the IEEE-SA Policies & Procedures for standards development. Patent Policy is stated in these sources:

- IEEE-SA Standards Boards Bylaws (Clause 6) <http://standards.ieee.org/develop/policies/bylaws/sect6-7.html>
- IEEE-SA Standards Board Operations Manual (Clause 6.3) <http://standards.ieee.org/develop/policies/opman/sect6.html>
- Material about the patent policy is available at <http://standards.ieee.org/about/sasb/patcom/materials.html>

If you have questions, contact the IEEE-SA Standards Board Patent Committee Administrator at patcom@ieee.org or visit” <http://standards.ieee.org/about/sasb/patcom/index.html>

This patent information (slide set) is available at: <https://development.standards.ieee.org/myproject/Public/mytools/mob/slideset.ppt>

Call for Potentially Essential Patents

If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance (LOA): • Either speak up now, or

Provide the chair of this group with the identity of the holder(s) of any and all such claims as soon as possible, or Cause an LOA to be submitted

Don’t discuss the interpretation, validity, or essentiality of patents/patent claims.

Don’t discuss specific license rates, terms, or conditions. • Relative costs, including licensing costs of essential patent claims, of different technical approaches may be discussed in standards development meetings. • Technical considerations remain primary focus

Don’t discuss or engage in the fixing of product prices, allocation of customers, or division of sales markets.

Don’t discuss the status or substance of ongoing or threatened litigation.

Don’t be silent if inappropriate topics are discussed ... do formally object.

Other Guidelines for IEEE Meetings

All IEEE-SA standards meetings shall be conducted in compliance with all applicable laws, including antitrust and competition laws.

See *IEEE-SA Standards Board Operations Manual*, clause 5.3.10 and “Promoting Competition and Innovation: What You Need to Know about the IEEE Standards Association’s Antitrust and Competition Policy” for more details.