



New connection on: : 09-05-2018 : 05:41:51 - Last disconnection on: : 08-05-2018 : 17:49:52

V 4.0.0.44358(LP,U,linux) (Rev:43856 2017-04-27 09:03:29 +0200#(D201802))(RPM D201802)

Welcome to EPOQUE Rebuild under the Production Environment

[No database/cluster active] ..fi epodoc

 Database: EPODOC

[EPODOC: SS 1] (buffer 2d tube+) and (fiber 2w optic)

Results in EPODOC 230

[SS 2] * and PD<20140618

Results in EPODOC 201

[SS 3] * and polymer+

Results in EPODOC 16

[SS 4] ..li



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PN - [US2013129290](#) A1 20130523
PNFP - US8855455 B2 20141007
PR - US201113303350 20111123
AP - US201113303350 20111123
DT - *; Rep
CT - || STSE (B2)
[US6253012](#) B1 20010626 [
] (KELLER DAVID A [US], et al)
[US2006088263](#) A1 20060427 [
] (TANAKA KAZUNORI [JP], et al)
- || R141 (A1)
[US6253012](#) B1 [];
[US2006088263](#) A1 []
CCI - [G02B6/441](#)
CCA - [G02B6/443](#) ; [G02B6/4436](#)



- PA - (A1)
KELLER DAVID [US]; RAYNOR
CHRISTOPHER [US]; GOOCH TERRY
[US]; YODER RANDIE [US]; ROUSE
DAN [US]; PUNCH ANDREW [US]
- (B2)
KELLER DAVID [US]; RAYNOR
CHRISTOPHER [US]; GOOCH TERRY
[US]; YODER RANDIE [US]; ROUSE
DAN [US]; PUNCH ANDREW [US];
NEXANS [FR]
- TI - (A1 B2)
FIBER OPTIC CABLE
- AB - (A1 B2)
An arrangement provides for an
optical fiber cable having a
plurality of **fiber optic** elements
including a glass portion and a UV
optical coating portion. A plurality
of **buffer tubes** each contain one or
more of the plurality of optical
fibers made of a fire
retardant **polymer**. A jacket
surrounds the **buffer tubes** also
made of a fire retardant **polymer**.
The fire retardant **polymers** for the
plurality of **buffer tubes** and for the
jacket are selected from PVDF
(PolyVinylidene Fluoride) or FRPVC
(Fire Resistance Poly Vinyl
Chloride). The ratio of
total **polymer** to UV optical coating
of the **fiber optic** elements, by area,
is substantially in the range of 5:1
to 9:1.

2/16 © EPODOC / EPO

- PN - [US2011038586](#) A1 20110217
- PNFP - US8867878 B2 20141021
- PR - US20100816467
20100616; US20090220784P 20090626
- AP - US20100816467 20100616
- DT - **
- CT - || STSE (B2)
[US4230395](#) A 19801028 [] (DEAN NOEL
S, et al)
[US5684904](#) A 19971104 [] (BRINGUIER
ANNE G [US], et al)

- [US2005031277](#) A1 20050210 [] (JAPON SONIA [CH])
- [US2006198585](#) A1 20060907 [] (KELLER DAVID [US], et al)
- [JPH02226107](#) A 19900907 [] (MOGI AKIO, et al)
- || R141 (A1)
- [US2006198585](#) A1 [];
- [US2005031277](#) A1 [];
- [US5684904](#) A [];
- [US4230395](#) A [];
- [JPH02226107](#) A []
- CTNP - || STSE (B2)
- [] <http://scifun.chem.wisc.edu/chemweek/polymers/polymers.html>, Jun. 6, 1997
- || R141 (A1)
- [] <http://scifun.chem.wisc.edu/chemweek/polymers/polymers.html>, 6, June 1997
- CCI - [G02B6/441](#) ; [G02B6/443](#) ; [G02B6/4484](#)
- PA - (B2)
- KELLER DAVID [US]; NEXANS [FR]
- TI - (A1 B2)
- FIBER OPTIC CABLE DESIGN WITH CLEAR BUFFER TUBES**
- AB - (A1 B2)
- A **fiber optic** cable has at least one fiber and at least one **buffer tube** surrounding the fiber, with the fiber being loosely held within the **buffer tube**. A jacket surrounds the tube where the at least one **buffer tube** is constructed from an extruded transparent **polymer**, allowing the arrangement of the fiber within the **buffer tube** to be visible along the entire length of the tube.

PN - [EP2275849](#) A2 20110119
 PNFP - EP2275849 A3 20160629
 PR - US20090220784P
 20090626; US20100816467
 20100616
 AP - EP20100305686 20100625
 DT - *, Rep
 CT - || STSE (A3)
[US6915052](#) B2 20050705
 [XYI] (BOOGH SONIA JAPON [CH])
 [X] 1-3,5,6,8,9
 * figures 1,2 *
 * column 1, lines 24-43 *
 * column 1, line 61 - column 2,
 line 12 *
 * column 2, line 1 - line 12 *
 * column 3, line 31 - line 35 *
 * column 6, line 7 - line 56 *
 [Y] 4
 [I] 7,10;
[US6404962](#) B1 20020611
 [X] (HARDWICK III NATHAN E [US],
 et al)
 [X] 1-3,5,6,8-10
 * column 1, line 5 - line 36 *
 * column 1, line 29 - line 36 *
 * figure 17 *
 * column 8, line 27 - line 51 *
 * column 14, line 64 - column 15,
 line 9 *
 * column 18, line 4 - line 5 *;
[EP1217350](#) A1 20020626 [Y] (CIT
 ALCATEL [FR])
 [Y] 4
 * column 5, paragraph 21; claims
 1,3,4 *;
[US7269318](#) B2 20070911
 [A] (COOK THOMAS CHRISTOPHER
 [US])
 [A] 1,2,5,6,8-10
 * claims 3,4,5 *
 * column 1, line 6 - line 9 *
 * column 4, line 15 - line 24 *
 * figure 5 *;
[JPH02226107](#) A 19900907
 [A] (FUJIKURA LTD)
 [A] 1,2,8,9
 * abstract *;
[US4983333](#) A 19910108 [A] (BLEW

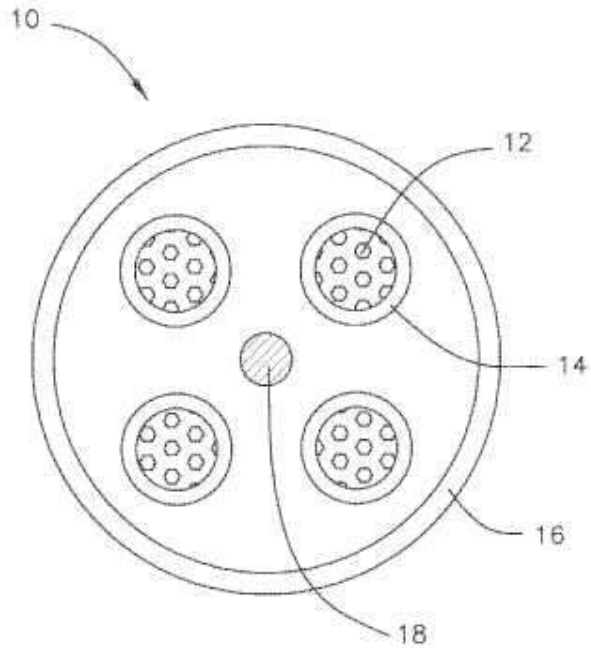


FIG. 3

DOUGLAS J [US])

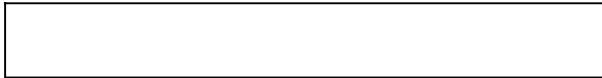
[A] 7

* the whole document *

- CCI - [G02B6/441](#) ; [G02B6/443](#) ;
[G02B6/4484](#)
- PA - (A2 A3)
NEXANS [FR]
- TI - (A2 A3)
Fiber optic cable with clear **buffer tubes**
- AB - (A2)
A **fiber optic** cable has at least one fiber and at least one **buffer tube** surrounding the fiber, with the fiber being loosely held within the **buffer tube**. A jacket surrounds the tube where the at least one **buffer tube** is constructed from an extruded transparent **polymer**, allowing the arrangement of the fiber within the **buffer tube** to be visible along the entire length of the tube.

4/16 © EPODOC / EPO

- PN - [US7257305](#) B1 20070814
- PR - US20040940435 20040914
- AP - US20040940435 20040914
- DT - *
- CT - [US5074639](#) A []; [US2005078923](#)
A1 []
- CCI - [G02B6/4467](#)
- PA - AT & T CORP [US]
- TI - Method and apparatus for removing an isolation closure from a **fiber optic** cable
- AB - The present invention is an apparatus and method for repairing an isolation gap in a fiber cable after removing an isolation closure from the cable. A flexible, curable **polymeric** material is first applied in the gap over the fiber **buffer tube**. A flexible wire mesh strengthening member is then placed over the gap and over the exposed metallic elements of the fiber cable on both sides of the gap.



The strengthening member is closed around the fiber cable and is woven with the metallic elements of the cable. A heat shrink material is then applied over the strengthening member and is sealed by heating. The heat shrink material may be sealed with a **polymer** sealant.

5/16 © EPODOC / EPO

PN - [US2005281517](#) A1 20051222

PR - US20040872226 20040618

AP - US20040872226 20040618

DT - *, Rep

CT - || R141 (A1)

[US6178278](#) B1 [];

[US5390273](#) A [];

[US5495546](#) A [];

[US2003049002](#) A1 [];

[US5201020](#) A [];

[US5509097](#) A [];

[US5621841](#) A [];

[US2002041744](#) A1 [];

[US6374023](#) B1 [];

[US6377738](#) B1 [];

[US6546175](#) B1 [];

[US4826278](#) A [];

[US5016973](#) A [];

[US4930860](#) A [];

[US5761362](#) A [];

[US5917978](#) A [];

[US6253012](#) B1 [];

[US6404961](#) B1 [];

[US5133034](#) A [];

[US5539851](#) A [];

[US6085009](#) A [];

[US6421486](#) B1 [];

[US2003128941](#) A1 [];

[US4687294](#) A [];

[US4952012](#) A [];

[US5343549](#) A [];

[US6108267](#) A [];

[US4770489](#) A [];

[US5247599](#) A [];

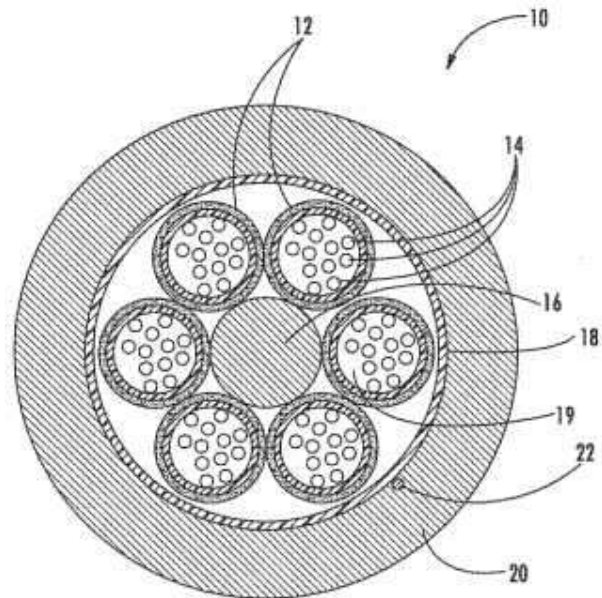
[US5448670](#) A [];

[US5355427](#) A [];

[US5566266](#) A [];

[US6137936](#) A [];

[US6299246](#) B1 [];



[US6459837](#) B1 [];
[US6463199](#) B1 [];
[US4781433](#) A [];
[US5574816](#) A [];
[US5684904](#) A [];
[US6487347](#) B2 [];
[US5371824](#) A [];
[US5852698](#) A [];
[US6496628](#) B1 [];
[US2003228116](#) A1 [];
[US6658185](#) B2 []

- CCI - [G02B6/4429](#)
- TI - Multi-layered **buffer tube** for optical fiber cable
- AB - A multi-layer **buffer tube** for a **fiber optic** cable comprises: a radially inward first layer formed into an elongate cylinder, the first layer being formed of a first **polymeric** material; and a radially outward second layer formed into an elongate cylinder that circumferentially overlies the radially inner layer, the second layer being formed of a second **polymeric** material that differs from the second material. In this configuration, the **buffer tube** can be formed of materials that can provide the benefits associated with those materials, and the combination of materials can compensate for some of the shortcomings of the materials when used alone.

PN - [US2008205828](#) A1 20080828

PNFP - US7499617 B2 20090303

PR - US20070710380 20070223

AP - US20070710380 20070223

DT - *; Rep

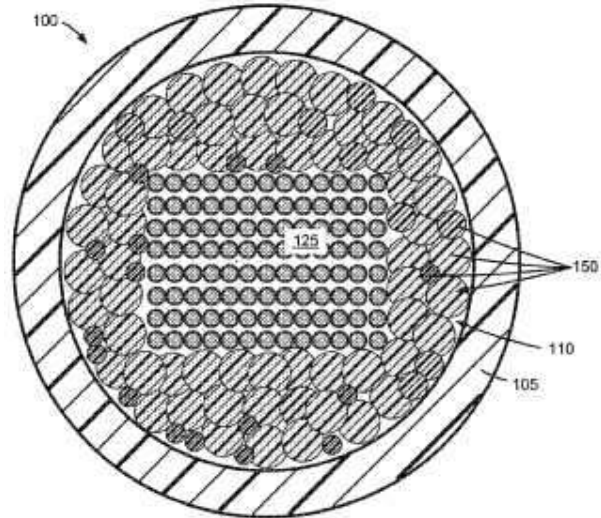
CT - || STSE (B2)
[US5698615](#) A 19971216 [] (POLLE HUBERT [DE])
 - || R141 (A1)
[US5698615](#) A []

CCI - [G02B6/4404](#) ; [G02B6/4494](#)

PA - (A1)
 SUPERIOR ESSEX COMM LP
 - (B2)
 SUPERIOR ESSEX COMM LP [US]

TI - (A1 B2)
 Method and apparatus for disposing water absorbent material in a **fiber optic** cable

AB - (A1 B2)
 A **fiber optic** cable can comprise spheres or balls that are coated with a water absorbent material, such as a super absorbent **polymer** ("SAP"). The spheres can provide clean and efficient carriers for introducing SAP into the cable during manufacturing. The spheres can have a diameter in a range of 20 microns to 2.5 millimeters and can be disposed in the cable's interstitial spaces, for example between the cable's optical fibers and a surrounding **buffer tube**. The SAP material can adhere to the spheres as a cross-linked coating or via electrostatic charge, for example. Beyond absorbing any water that may enter the cable, the spheres can provide cushioning or mechanical protection for the optical fibers. When the cable receives stress, motion among the spheres can absorb the stress to shield the fibers from damage.



PN - [US2008205832](#) A1 20080828

PNFP - US7529450 B2 20090505

PR - US20070710129 20070223

AP - US20070710129 20070223

DT - *; Rep

CT - || STSE (B2)
[US4711523](#) A 19871208 [] (IRI EIJI [JP], et al)
[US5698615](#) A 19971216 [] (POLLE HUBERT [DE])
[US5762847](#) A 19980609 [] (KAMPS RAINER [DE], et al)
[US6326551](#) B1 20011204 [] (ADAMS SCOTT M [US])
[US6380298](#) B2 20020430 [] (FLAUTT MARTIN CHARLES [US], et al)
[US6658185](#) B2 20031202 [] (BOSISIO CLAUDIO [IT], et al)
[US6922512](#) B2 20050726 [] (NECHITAILO NICHOLAS V [US])
[US2004076386](#) A1 20040422 [] (NECHITAILO NICHOLAS V [US])
[US2006234052](#) A1 20061019 [] (FLAUTT MARTIN C [US], et al)
- || R141 (A1)
[US6380298](#) B2 [];
[US2004076386](#) A1 [];
[US5762847](#) A [];
[US6922512](#) B2 [];
[US2006234052](#) A1 [];
[US4711523](#) A [];
[US5698615](#) A [];
[US6326551](#) B1 [];
[US6658185](#) B2 []

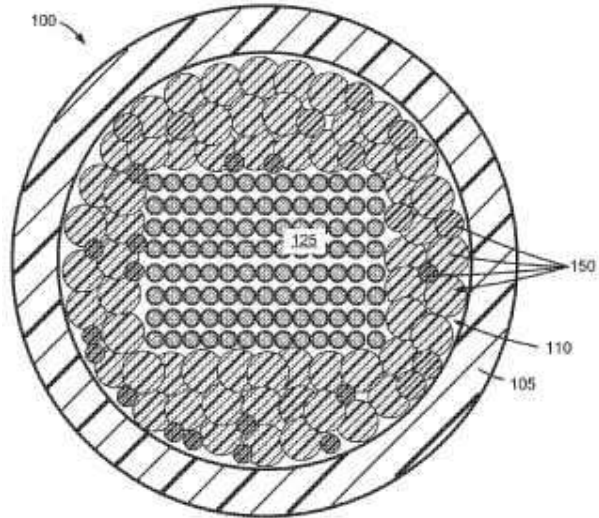
CCI - [G02B6/4429](#)

CCA - [G02B6/443](#)

PA - (A1)
SUPERIOR ESSEX COMM LP
- (B2)
SUPERIOR ESSEX COMM LP [US]

TI - (A1 B2)
Fiber optic cable comprising improved filling material and method of fabrication

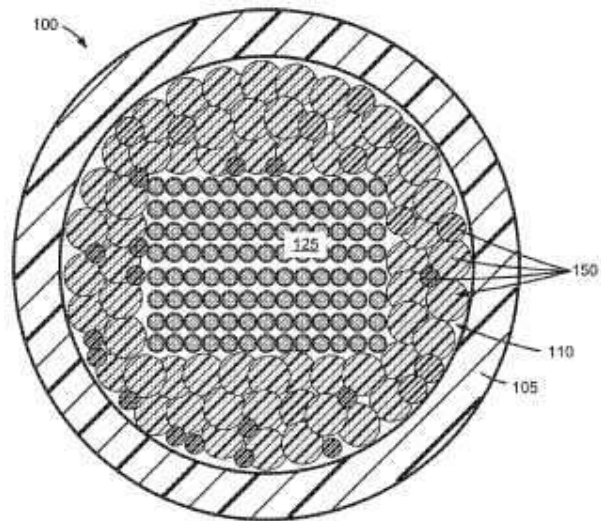
AB - (A1 B2)
A **fiber optic** cable can comprise small spheres or balls disposed in



the cable's interstitial spaces, for example between the cable's optical fibers and a surrounding **buffer tube**. The spheres can comprise foam rubber, closed-cell or open-cell porous **polymer**, or some other soft material. Typical diameters for the spheres can be in a range of 1 to 2.5 millimeters. A soft composition of the spheres can cushion the optical fibers and physically impede water ingress into the cable. Additional fiber protection can arise from the ability of the loose spheres to rotate individually, in a ball-bearing effect. Thus, sphere-to-sphere motion can absorb physical stresses associated with bending, twisting, bumping, and stretching the cable during installation, thereby shielding the fibers from damage.

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- PN - [US2008205830](#) A1 20080828
- PR - US20070710128 20070223
- AP - US20070710128 20070223
- DT - *; Rep
- CT - || R141 (A1)
[US6380298](#) B2 [];
[US2004076386](#) A1 [];
[US5762847](#) A [];
[US7231119](#) B2 [];
[US2006234052](#) A1 [];
[US7277615](#) B2 [];
[US4711523](#) A [];
[US5698615](#) A [];
[US6326551](#) B1 [];
[US6658185](#) B2 []
- CCI - [G02B6/4404](#) ; [G02B6/4494](#)
- PA - SUPERIOR ESSEX COMM LP
- TI - Method and apparatus for protecting optical fibers of a cable
- AB - A **fiber optic** cable can comprise loose spheres or balls disposed in the cable's interstitial spaces, for



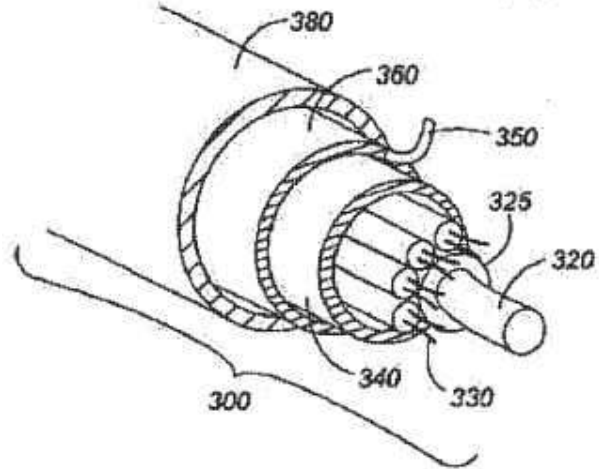
example between the cable's optical fibers and a surrounding **buffer tube**. The spheres can have a diameter in a range of 20 microns to 2.5 millimeters. The composition of the spheres can include a material that absorbs water, such as a super absorbent **polymer** ("SAP"). The SAP material can be distributed uniformly within each sphere. The spheres not only can provide a carrier to facilitate inserting SAP material in the cable during manufacturing, but also can cushion the cable's fibers when the cable is placed in service. When the cable receives stress, motion among the spheres can absorb the stress to shield the fibers from damage.

9/16 © EPODOC / EPO

- PN - [US6463199](#) B1 20021008
- PR - US19990322625 19990528; US20000677222 20000929
- AP - US20000677222 20000929
- DT - *
- CT - [US4770489](#) A []; [US5247599](#) A [];
[US5408564](#) A []; [US6066397](#) A [];
[US6122424](#) A []
- CCI - [G02B6/4492](#)
- CCA - [G02B6/441](#) ; [G02B6/4429](#)
- PA - CORNING CABLE SYS LLC [US]
- TI - **Fiber optic** cables with at least one water blocking zone
- AB - A **fiber optic** cable comprises a jacket defining an interior passageway therethrough, at least one optical fiber disposed in the interior passageway of the outer jacket, and a water blocking zone having, for example, a solid **polymer** foam material contacting and surrounding at least one optical fiber over at least a portion of a length thereof and filling a space between at least one optical fiber and the inner wall of the cable. The invention is applicable to many different configurations of **fiber optic** cables, including those having one or more **buffer tubes** containing the optical fiber(s) as well as cables without any **buffer tube**. The optical fibers can be in loose and unbundled form, in bundled arrangements, or in ribbonized form. The water blocking zone preferably is relatively soft and resilient, and can be in the form of discrete foamed or non-foamed portions spaced apart along the length of the cable.

10/16 © EPODOC / EPO

PN - [US2005058412](#) A1 20050317
 PNFP - US6882784 B2 20050419
 PR - US20030660149 20030911
 AP - US20030660149 20030911
 DT - *; Rep
 CT - || STSE (B2)
 [US4798445](#) A 19890117 [
] (YAMAMOTO TAKASHI [JP], et al)
 [US6650815](#) B1 00000000 []
 [US2003228116](#) A1 20031211 [
] (DAVIS C SHAWN [US], et al)
 - || R141 (A1)
 [US4798445](#) A [];
 [US5574816](#) A [];
 [US6650815](#) B2 [];
 [US2003228116](#) A1 []
 CCI - [G02B6/4429](#)
 CCA - [G02B6/441](#)
 PA - (B2)
 SUPERIOR ESSEX COMM LP [US]
 TI - (A1 B2)
 BUFFER TUBES FOR FIBER OPTIC
 CABLES
 AB - (A1 B2)
 A communication cable for
 transmitting various
 communication signals. The cable
 comprises **buffer tubes** for optical
 fiber cables that are robust, crush
 resistant, flexible, and cost
 effective. To obtain these
 properties, the **buffer tubes** contain
 a **polymeric** mixture of high impact
 polystyrene and styrene-butadiene-
 styrene. The **polymeric** mixture for
 the **buffer tubes** may also contain
 crystalline polystyrene and/or
 acrylonitrile-butadiene-styrene.



PN - [US5651081](#) A 19970722

PR - US19950561044
19951120; US19940258328
19940610

AP - US19950561044 19951120

DT - *

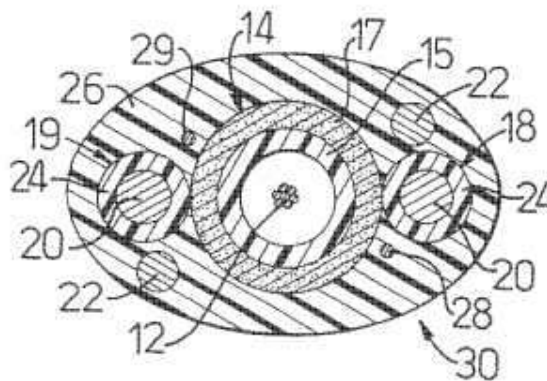
CT - [US1216337](#) A []; [US2186788](#) A [];
[US3766307](#) A []; [US4237337](#) A [];
[US4420220](#) A []; [US4423306](#) A [];
[US4467138](#) A []; [US4469538](#) A [];
[US4729628](#) A []; [US4770489](#) A [];
[US4815814](#) A []; [US4944570](#) A [];
[US5029974](#) A []; [US5109457](#) A [];
[US5125063](#) A []; [US5138685](#) A [];
[US5150443](#) A []; [US5189718](#) A [];
[US5469523](#) A []; [EP0040929](#) A1 [];
[FR2543729](#) A1 []; [DE3031833](#) A1 [];
[DE8809330U](#) U1 []; [DE4142729](#) A1 [];
[GB332303](#) A []; [GB355087](#) A [];
[GB474712](#) A []; [GB2107896](#) A [];
[GB2179470](#) A []

CCI - [G02B6/4416](#) ; [G02B6/4403](#) ;
[G02B6/4432](#) ; [G02B6/4433](#) ;
[G02B6/4495](#) ; [H01B11/22](#)

PA - COMMScope INC [US]

TI - Composite **fiber optic** and electrical cable and associated fabrication method

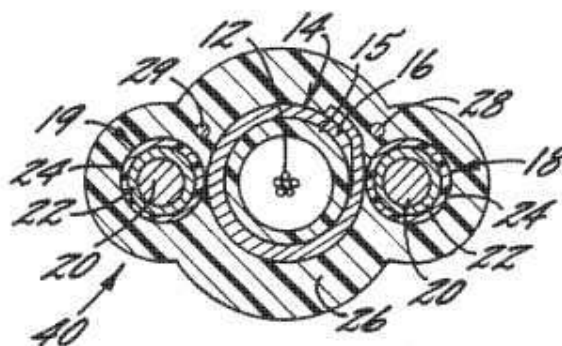
AB - A composite **fiber optic** and electrical cable having a core which loosely contains at least one optical fiber, one or more electrical conductors having an outer **polymer** insulating layer, one or more strength members and a surrounding protective jacket. The protective jacket is formed of a **polymer** material which forms a distinct mechanically separate phase from the **polymer** material forming the insulation layer surrounding the respective electrical conductors. For example, the jacket can be made of a **polymer** material having a melting temperature lower than the



melting temperature of the insulating material of the electrical conductors. As a result, the **polymer** jacket does not bond with the insulating material during production of the cable. The jacket can, thus, be easily stripped from the electrical conductors during installation of the cable to facilitate the attachment of the electrical conductors to a signal repeater, or power source, or other electrical devices. The cable is manufactured by advancing the core, the electrical conductors and the strength members through an extruder which forms the protective jacket thereabout. The core can be supplied from a storage reel or can be fabricated in-line just prior to extruding the jacket around the **buffer tube**, the electrical conductors and the strength members, by extruding a **buffer tube** loosely around the optic fibers.

12/16 © EPODOC / EPO

- PN - [US5469523](#) A 19951121
- PR - US19940258328 19940610
- AP - US19940258328 19940610
- DT - **
- CT - [US1216337](#) A []; [US2186788](#) A [];
[US3766307](#) A []; [US4237337](#) A [];
[US4420220](#) A []; [US4423306](#) A [];
[US4469538](#) A []; [US4770489](#) A [];
[US4815814](#) A []; [US4944570](#) A [];
[US5029974](#) A []; [US5109457](#) A [];
[US5125063](#) A []; [US5138685](#) A [];
[US5150443](#) A []; [US5189718](#) A [];
[EP0040929](#) A1 []; [GB332303](#) A [];
[GB355087](#) A []; [GB474712](#) A []
- CCI - [G02B6/4416](#) ; [G02B6/4403](#) ;
[G02B6/4432](#) ; [G02B6/4433](#) ;
[G02B6/4495](#) ; [H01B11/22](#)
- PA - COMMScope INC [US]
- TI - Composite **fiber optic** and electrical cable and associated fabrication



method

AB

- A composite **fiber optic** and electrical cable having a core which loosely contains at least one optical fiber, a pair of copper clad steel electrical conductors having an outer **polymer** insulating layer, and a **polymer** jacket. The jacket is made of a **polymer** material having a melting temperature lower than the melting temperature of the insulating material of the electrical conductors. As a result, the **polymer** jacket does not bond with the insulating material during production of the cable. The jacket can thus be easily stripped from the electrical conductors during installation of the cable to facilitate the attachment of the electrical conductors to a signal repeater, or power source, or other electrical device. The cable is manufactured by advancing the core and electrical conductors through an extruder which forms the jacket around the core and electrical conductors. The core may be supplied from a storage reel or may be fabricated just prior to extruding the jacket around the **buffer tube** and electrical conductors, by extruding a **buffer tube** loosely around the optic fibers and then surrounding the **buffer tube** with a reinforcing layer.

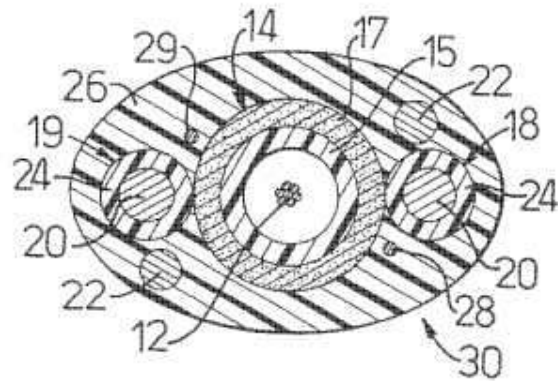
PN - [WO9534838](#) A1 19951221

PR - US19940258328 19940610

AP - WO1995US06629 19950525

DT - **

CT - |EP| ISR (A1)
[US4729628](#) A 19880308 [Y] (KRAFT
 HEINRICH A [DE], et al)
 [Y] 1-7,10,14,19,24,28,29
 * figure -; claim - *;
[US4467138](#) A 19840821 [Y] (BROREIN
 WILLIAM J [US])
 [Y] 1-7,10,14,19,24,28,29
 * figure -; claim - *;
[FR2543729](#) A1 19841005 [A] (CABLES
 DE LYON GEOFFROY DELORE [FR])
 [A] 1,10,15-17,19
 * figure -; claim - *;
[DE4142729](#) A1 19930701 [A] (RHEYDT
 KABELWERK AG [DE])
 [A] 1,10,12,14
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[GB2107896](#) A 19830505
 [A] (STANDARD TELEPHONE CABLES
 LTD)
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[GB2179470](#) A 19870304
 [A] (TELEPHONE CABLES LTD)
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[DE3031833](#) A1 19820506 [A] (FELTEN
 & GUILLEAUME CARLSWERK [DE])
 [A] 1
 * figure -; claim - *;
[US5138685](#) A 19920811
 [AD] (ARROYO CANDIDO J [US], et al)
 [AD] 1
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[US4420220](#) A 19831213 [AD] (DEAN
 NOEL S [GB], et al)
 [AD] 1
 * figure -; claim - *;
[US5189718](#) A 19930223
 [AD] (BARRETT MICHAEL J [US], et al)
 [AD] 1
 * figure -; claim - *;
[US5029974](#) A 19910709
 [AD] (NILSSON RICHARD C [US])
 [AD] 1



* figure -; claim - *;
[DE8809330U](#) U1 19890824
 [A] (FELTEN&GUILLEAUME)
 [A] 1,14
 * figure -; claim - *

- CCI - [G02B6/4403](#) ; [G02B6/4416](#) ;
[G02B6/4432](#) ; [G02B6/4433](#) ;
[G02B6/4495](#) ; [H01B11/22](#)
- PA - COMMSCOPE INC [US]; BLEW
 DOUGLAS J [US]; CARLSON BRUCE J [US]
- TI - COMPOSITE **FIBER OPTIC** AND
 ELECTRICAL CABLE AND ASSOCIATED
 FABRICATION METHOD
- AB - A composite **fiber optic** and electrical
 cable having a core which loosely
 contains at least one optical fiber, a
 pair of copper clad steel electrical
 conductors having an outer **polymer**
 insulating layer, and a **polymer**
 jacket. The jacket is made of
 a **polymer** material having a melting
 temperature lower than the melting
 temperature of the insulating
 material of the electrical conductors.
 As a result, the **polymer** jacket does
 not bond with the insulating material
 during production of the cable. The
 jacket can thus be easily stripped
 from the electrical conductors during
 installation of the cable to facilitate
 the attachment of the electrical
 conductors to a signal repeater, or
 power source, or other electrical
 device. The cable is manufactured by
 advancing the core and electrical
 conductors through an extruder
 which forms the jacket around the
 core and electrical conductors. The
 core may be supplied from a storage
 reel or may be fabricated just prior to
 extruding the jacket around the **buffer**
tube and electrical conductors, by
 extruding a **buffer tube** loosely
 around the optic fibers and then
 surrounding the **buffer tube** with a
 reinforcing layer.

PN - [CA2621610](#) A1 20080823

PR - US20070710128 20070223

AP - CA20082621610 20080212

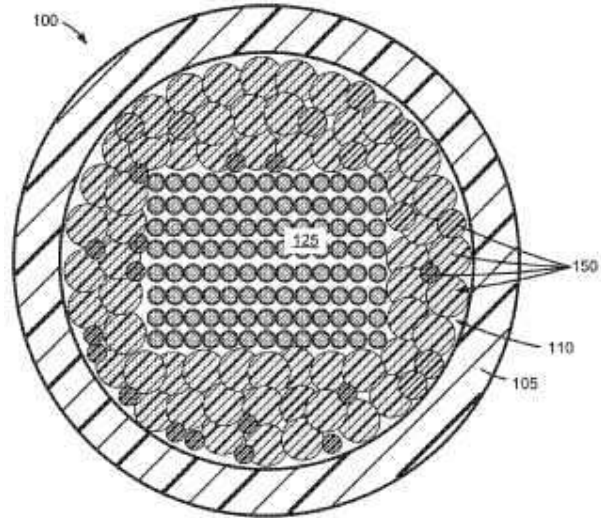
DT - I

CCI - [G02B6/4404](#) ; [G02B6/4494](#)

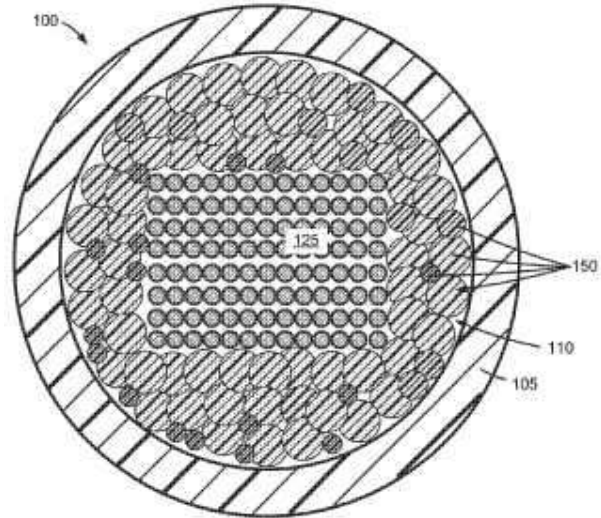
PA - SUPERIOR ESSEX COMM LP [US]

TI - METHOD AND APPARATUS FOR PROTECTING OPTICAL FIBERS OF A CABLE

AB - A **fiber optic** cable can comprise loose spheres or balls disposed in the cable's interstitial spaces, for example between the cable's optical fibers and a surrounding **buffer tube**. The spheres can have a diameter in a range of 20 microns to 2.5 millimeters. The composition of the spheres can include a material that absorbs water, such as a super absorbent **polymer** ("SAP"). The SAP material can be distributed uniformly within each sphere. The spheres not only can provide a carrier to facilitate inserting SAP material in the cable during manufacturing, but also can cushion the cable's fibers when the cable is placed in service. When the cable receives stress, motion among the spheres can absorb the stress to shield the fibers from damage.



- PN - [CA2621004](#) A1 20080823
- PR - US20070710129 20070223
- AP - CA20082621004 20080212
- DT - I
- CCI - [G02B6/4429](#)
- CCA - [G02B6/443](#)
- PA - SUPERIOR ESSEX COMM LP [US]
- TI - **FIBER OPTIC** CABLE COMPRISING IMPROVED FILLING MATERIAL AND METHOD OF FABRICATION
- AB - A **fiber optic** cable can comprise small spheres or balls disposed in the cable's interstitial spaces, for example between the cable's optical fibers and a surrounding **buffer tube**. The spheres can comprise foam rubber, closed-cell or open-cell porous **polymer**, or some other soft material. Typical diameters for the spheres can be in a range of 1 to 2.5 millimeters. A soft composition of the spheres can cushion the optical fibers and physically impede water ingress into the cable. Additional fiber protection can arise from the ability of the loose spheres to rotate individually, in a ball-bearing effect. Thus, sphere-to-sphere motion can absorb physical stresses associated with bending, twisting, bumping, and stretching the cable during installation, thereby shielding the fibers from damage.



PN - [CA2589543](#) A1 20080823

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DT - I

CCI - [G02B6/4494](#) ; [G02B6/4404](#)

PA - SUPERIOR ESSEX COMM LP [US]

TI - METHOD AND APPARATUS FOR DISPOSING WATER ABSORBENT MATERIAL IN A **FIBER OPTIC CABLE**

AB - A **fiber optic** cable can comprise spheres or balls that are coated with a water absorbent material, such as a super absorbent **polymer** ("SAP"). The spheres can provide clean and efficient carriers for introducing SAP into the cable during manufacturing. The spheres can have a diameter in a range of 20 microns to 2.5 millimeters and can be disposed in the cable's interstitial spaces, for example between the cable's optical fibers and a surrounding **buffer tube**. The SAP material can adhere to the spheres as a cross-linked coating or via electrostatic charge, for example. Beyond absorbing any water that may enter the cable, the spheres can provide cushioning or mechanical protection for the optical fibers. When the cable receives stress, motion among the spheres can absorb the stress to shield the fibers from damage.

