

INDOOR CABLE

TECHNICAL FIELD

[0001] The present invention relates to an optical fiber cable and so forth that is inconspicuous when installed indoors.

Background Art

[0002] Usually, when an optical fiber cable is drawn indoors, an indoor cable is used. The indoor cable is connected to an optical line termination device, which is then connected to various fiber-optic-utilizing equipments by LAN cables and so forth.

[0003] As such optical fiber cables, for example, an optical fiber cable comprising tension members, an optical fiber core arranged between the tension members, and an outer sheath that wraps these together, which further comprises one or more cable sheath notch arranged along the periphery of the outer sheath in the longitudinal direction, is known (Patent Document 1).

RELATED ART

Patent Documents

[0004] Patent Document 1: JP2008-A-65038

SUMMARY

[0005] However, when the indoor cable is installed indoors, the indoor cable tends to stand out, thereby spoiling the overall appearance of the interior.

[0006] Embodiments of the present invention seek to provide an indoor cable and so forth that can be installed without spoiling the appearance of the interior, which is also excellent in installation workability.

[0007] According to an aspect of the present invention, there is provided an indoor cable, which comprises an optical fiber core, tension members arranged on both sides of the optical fiber core in a cross section vertical to the longitudinal direction, and an outer sheath that is arranged in such a way so as to cover the tension

members and the optical fiber core, wherein the optical fiber core, the tension members, and the outer sheath are all composed of transparent materials.

[0008] The transparent materials that compose the optical fiber core, the tension members, and the outer sheath all have total light transmittances of 60% or higher, and a haze value of 15% or lower.

[0009] It is preferable that the transparent material of the outer sheath is a material comprising urethane resin, flexible acrylic resin, PVC, polypropylene, low-density polyethylene, or nylon as its base material.

[0010] It is preferable that the transparent material of the tension members is a fiber-reinforced plastic with polyethylene naphthalate, polyethylene terephthalate, or polycarbonate monofilaments, glass fibers, high-strength polypropylene fibers, or ultra-high molecular weight polyethylene fibers, or a transparent resin reinforced by glass fillers.

[0011] The cross-sectional shape of the indoor cable may be substantially rectangular, and the width of the longer sides may be 1.7 mm to 3.1 mm.

[0012] Since the optical fiber core, tension members, and the outer sheath are all composed of transparent materials, it is less likely to spoil the appearance when installed indoors. For example, although colored optical fiber cores are normally used as the optical fiber core in order to differentiate optical fiber cores or to enhance visibility, the colored layer is deliberately removed.

[0013] Further, although tension members have normally been composed of non-transparent materials such as steel wire and aramid fiber-reinforced plastics, the tension members are deliberately composed of transparent materials. Thus, the tension members do not stand out.

[0014] Furthermore, although the outer sheath has normally been colored in light colors such as white, so as not to stand out against light-colored wallpapers and so forth, the outer sheath is deliberately composed of transparent

members. By composing all components with transparent materials, the indoor cable does not stand out when installed indoors.

[0015] In particular, when the transparent members that compose the indoor cable have total light transmittances, defined by JIS K7361-1, of 60% or higher, and haze values, defined by JIS K7136, of 15% or lower, such effect is enhanced.

[0016] Further, as the material for the transparent tension members, by applying a fiber-reinforced plastic with polyethylene naphthalate, polyethylene terephthalate, or polycarbonate monofilaments, glass fibers, high-strength polypropylene fibers, or ultra-high molecular weight polyethylene fibers, or a transparent resin reinforced by glass fillers, strength and transparency can both coexist.

[0017] Further, as the material for the transparent outer sheath, by applying a material comprising urethane resin, flexible acrylic resin, PVC, polypropylene, low-density polyethylene, or nylon as its base material, with its tensile strength, breaking extension, rigidity and so forth adjusted, properties required by a cable outer sheath and sufficient transparency can both be secured.

[0018] Furthermore, when the cross-sectional shape of the indoor cable is substantially rectangular and the width of the longer sides of the indoor cable is 3.1 mm or smaller, the indoor cable becomes inconspicuous, since its size is not too large. Further, when the width of the longer sides of the indoor cable is 1.7 mm or larger, its handling property also becomes excellent.

Effect of the Invention

[0019] According to embodiments of the present invention, an indoor cable that does not spoil the appearance of the interior, which is also excellent in installation workability, can be provided.

BRIEF DESCRIPTION OF DRAWINGS

[0020] [FIG. 1] FIG. 1 is a sectional scheme of the indoor cable 1.

DESCRIPTION OF SOME EMBODIMENTS

Claims

1. An indoor cable comprising:
an optical fiber core,
tension members arranged on both sides of the optical fiber core in a cross section vertical to the longitudinal direction, and
an outer sheath that is arranged in such a way so as to cover the tension member and the optical fiber core, wherein
the optical fiber core, the tension members, and the outer sheath are all composed of transparent materials, and
the transparent materials that compose the optical fiber core, the tension members, and the outer sheath all have total light transmittances of 60% or higher, and a haze value of 15% or lower.
2. The indoor cable according to Claim 1, wherein materials composing the tension members and the outer sheath have refractive indexes close to a refractive index of the optical fiber core.
3. The indoor cable according to Claim 1, wherein the transparent material of the tension members is a fiber-reinforced plastic with polyethylene naphthalate, polyethylene terephthalate, or polycarbonate monofilaments, glass fibers, high-strength polypropylene fibers, or ultra-high molecular weight polyethylene fibers, or a transparent resin reinforced by glass fillers.
4. The indoor cable according to Claim 1, wherein the transparent material of the outer sheath is a material comprising urethane resin, flexible acrylic resin, PVC, polypropylene, low-density polyethylene, polyethylene terephthalate, or nylon as its base material.
5. The indoor cable according to Claim 1, wherein the cross-sectional shape of the indoor cable is substantially rectangular and the width of the longer sides is 1.7 mm to 2.0 mm and the width of the shorter sides is 1.1 mm to 1.6 mm.