CLAIMS

1. A non-metallic armored submarine cable, characterized in that the submarine cable comprises a central cable consisting of one or more electric units, an armoring layer and an outer cladding layer, the armoring layer is twisted around outside of the central cable, the outer cladding layer is sleeved outside the armoring layer, and is formed by reversely tightly winding a multi-layer polypropylene winding rope material, the armoring layer is formed by twisting a plurality of round or flat non-metallic armoring elements and/or a plurality of armoring metal wires, wherein

when the non-metallic armoring elements are round, the non-metallic armoring elements are formed by a non-metallic rod and an outer sheath extruded and wrapped outside the non-metallic rod, or the non-metallic armoring elements are formed by a central rod body composed of a plurality of stacked non-metallic rods and an outer sheath extruded and wrapped outside the central rod body, ~~and~~

when the non-metallic armoring elements are flat, the non-metallic armoring elements are formed by a central rod body composed of a plurality of horizontally arranged non-metallic rods and an outer sheath extruded and wrapped outside the central rod body,

the armoring layer comprises a first armoring layer and a second armoring layer, the first armoring layer is formed by twisting the plurality of round or flat non-metallic armoring elements and/or the plurality of armoring metal wires, the second armoring layer is formed by twisting the plurality of round or flat non-metallic armoring elements, or formed by twisting the plurality of round or flat non-metallic armoring elements and the plurality of armoring metal wires that have the same shape as the non-metallic armoring elements and are spaced apart from the non-metallic armoring elements, and the first armoring layer and the second armoring layer have opposite twisting directions; and

the second armoring layer is disposed outside the first armoring layer.

2. The non-metallic armored submarine cable according to claim 1, characterized in that the non-metallic rod is a round rod structure, which is formed by impregnating aramid fiber material, fiber reinforced composite material or polyethylene material with polyurethane resin, and then heating and curing, a diameter of the round rod structure

is 2-5 mm, the outer sheath is a protective layer structure formed by extruding and wrapping using a polymer, the protective layer structure has a thickness of 1-3 mm and a density of 0.96-1.15 g/cm^3.

3. The non-metallic armored submarine cable according to claim 1, characterized in that the non-metallic armoring elements have a density of 1.0-1.3 g/cm^3, the non-metallic armoring elements have a diameter of 4-8 mm when the non-metallic armoring elements are round, the non-metallic armoring elements have a thickness of 3-5 mm and a width of 6-8 mm when the non-metallic armoring elements are flat, side edges of the non-metallic armoring elements are all provided with an arc chamfer with an arc radius of 0.2-0.8 mm.

4. The non-metallic armored submarine cable according to any one of claims 1 to 3, characterized in that the central cable consists of one electric unit~~, the armoring layer comprises a first armoring layer and a second armoring layer, the first armoring layer is formed by twisting the plurality of round or flat non-metallic armoring elements and/or the plurality of armoring metal wires, the second armoring layer is formed by twisting the plurality of round or flat non-metallic armoring elements, or formed by twisting the plurality of round or flat non-metallic armoring elements and the plurality of armoring metal wires that have the same shape as the non-metallic armoring elements and are spaced apart from the non-metallic armoring elements, and the first armoring layer and the second armoring layer have opposite twisting directions~~.

5. The non-metallic armored submarine cable according to claim 4, characterized in that when the first armoring layer is formed by twisting the plurality of round non-metallic armoring elements, a plurality of optical fiber units are arranged in the first armoring layer, wherein the optical fiber units and the non-metallic armoring elements are symmetrically arranged at intervals.

6. The non-metallic armored submarine cable according to claim 4, characterized in that a wrapping tape layer or an inner liner layer is arranged between the first armoring layer and the second armoring layer.

7. The non-metallic armored submarine cable according to claim 4, characterized in that the electric unit is sequentially provided with a waterproof conductor, a conductor shield layer, a conductor insulation layer, an insulation shield layer, a waterproof buffer layer, a metal shield layer and an inner sheath from inside to outside, wherein an inner liner layer is arranged between the armoring layer and the inner sheath.

8. The non-metallic armored submarine cable according to any one of claims 1 to 3, characterized in that the central cable consists of a plurality of electric units~~, the armoring layer comprises a first armoring layer and a second armoring layer, the first armoring layer is formed by twisting the plurality of round or flat non-metallic armoring elements and/or the plurality of armoring metal wires, the second armoring layer is formed by twisting the plurality of round or flat non-metallic armoring elements, or formed by twisting the plurality of round or flat non-metallic armoring elements and the plurality of armoring metal wires that have the same shape as the non-metallic armoring elements and are spaced apart from the non-metallic armoring elements, and the first armoring layer and the second armoring layer have opposite twisting directions~~.

9. The non-metallic armored submarine cable according to claim 8, characterized in that the electric units are sequentially provided with a waterproof conductor, a conductor shield layer, a conductor insulation layer, an insulation shield layer, a first waterproof buffer layer, a metal shield layer, a second waterproof buffer layer and an inner sheath from inside to outside, the plurality of electric units are twisted to form a cable and are externally bundled with a wrapping tape layer, a gap between the wrapping tape layer and the plurality of electric units is provided with a filling material to form a filling layer, an inner liner layer is arranged between the wrapping tape layer and the first armoring layer, and the wrapping tape layer or the inner liner layer is arranged between the first armoring layer and the second armoring layer.

10. The non-metallic armored submarine cable according to claim 9, characterized in that a plurality of optical fiber units are further arranged in ~~a~~the gap between the wrapping tape layer and the plurality of electric units.