Claims

1. An asphalt composition comprising an asphalt and a polyester,

the polyester being a polycondensate of a polyethylene terephthalate, an alcohol, and a carboxylic acid compound, the alcohol containing an alkylene oxide adduct of bisphenol A,

the polyester has a molar ratio (B)/(E) of a structural unit (B) derived from the alkylene oxide adduct of bisphenol A and a structural unit (E) composed of ethylene glycol and terephthalic acid derived from the polyethylene terephthalate of 30/70 or more and 95/5 or less,

the polyester is contained in an amount of 0.5 parts by mass or more and 50 parts by mass or less relative to 100 parts by mass of the asphalt, and

the ratio (P)/(A) of a mass proportion (P) of the structural unit derived from the polyethylene terephthalate in the polyester to an asphaltene content (A) in the asphalt of 0.15 or more and 3.5 or less.

2. The asphalt composition according to claim 1, wherein the polyethylene terephthalate is a recovered polyethylene terephthalate.

3. The asphalt composition according to claim 1 or 2 wherein the polyester has an acid value of 2 mgKOH/g or more and 40 mgKOH/g or less.

4. The asphalt composition according to any one of claims 1 to 3, further comprising a thermoplastic elastomer.

5. The asphalt composition according to claim 4, wherein the thermoplastic elastomer is at least one selected from the group consisting of a styrene/butadiene block copolymer, a styrene/butadiene/styrene block copolymer, a styrene/butadiene random copolymer, a styrene/isoprene block copolymer, a styrene/isoprene/styrene block

copolymer, a styrene/isoprene random copolymer, an ethylene/vinyl acetate copolymer, and an ethylene/acrylic acid ester copolymer.

6. A method of producing an asphalt composition, the method comprising

Step 1: a step of subjecting a polyethylene terephthalate, an alcohol component containing an alkylene oxide adduct of bisphenol A, and a carboxylic acid component to a polycondensation reaction in the presence of an esterification catalyst to obtain a polyester, and

Step 2: a step of mixing an asphalt with the polyester obtained in the Step 1

the polyester has a molar ratio (B)/(E) of a structural unit (B) derived from the alkylene oxide adduct of bisphenol A and a structural unit (E) composed of ethylene glycol and terephthalic acid derived from the polyethylene terephthalate of 30/70 or more and 95/5 or less,

the polyester is contained in an amount of 0.5 parts by mass or more and 50 parts by mass or less relative to 100 parts by mass of the asphalt, and

the ratio (P)/(A) of a mass proportion (P) of the structural unit derived from the polyethylene terephthalate in the polyester to an asphaltene content (A) in the asphalt of 0.15 or more and 3.5 or less.

7. The method of producing an asphalt composition according to claim 6, wherein the polyethylene terephthalate is a recovered polyethylene terephthalate.

8. An asphalt mixture comprising the asphalt composition according to any one of claims 1 to 5 and an aggregate.

9. A method of producing an asphalt mixture, the method comprising:

Step 1: a step of subjecting a polyethylene terephthalate, an alcohol component containing an alkylene oxide adduct of bisphenol A, and a carboxylic acid component to a polycondensation reaction in the presence of an esterification catalyst to

obtain a polyester, and

Step 2: a step of mixing a heated aggregate, an asphalt, and the polyester obtained in the Step 1,

the polyester has a molar ratio (B)/(E) of a structural unit (B) derived from the alkylene oxide adduct of bisphenol A and a structural unit (E) composed of ethylene glycol and terephthalic acid derived from the polyethylene terephthalate of 30/70 or more and 95/5 or less,

the polyester is contained in an amount of 0.5 parts by mass or more and 50 parts by mass or less relative to 100 parts by mass of the asphalt, and

the ratio (P)/(A) of a mass proportion (P) of the structural unit derived from the polyethylene terephthalate in the polyester to an asphaltene content (A) in the asphalt of 0.15 or more and 3.5 or less.

10. The method of producing an asphalt mixture according to claim 9, wherein in the step of mixing of the Step 2,

(i) the asphalt is added to and mixed with the heated aggregate, and then the polyester was added and mixed,

(ii) the asphalt and the polyester are simultaneously added to and mixed with the heated aggregate, or

(iii) a mixture of the asphalt and the polyester mixed with heat in advance is added to and mixed with the heated aggregate.

11. The method of producing an asphalt mixture according to claim 9 or 10, wherein the polyethylene terephthalate is a recovered polyethylene terephthalate.